IIMA

विद्याविनियोगाद्विकास:

भारतीय प्रबंध संस्थान अहमदाबाद

INDIAN INSTITUTE *of* MANAGEMENT AHMEDABAD

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

December 7-9, 2024

• Conference Theme •

Confluence of Growth, Sustainability, and Resilience

BOOK OF ABSTRACTS

IIMA

विद्याविनियोगाद्विकासः

IMRC 2024

India Management Research Conference

IIM Ahmedabad

About IIM Ahmedabad

Established in 1961, the Indian Institute of Management Ahmedabad (IIMA) is a premier, global institution that spearheads advancements in management education. For over six decades, the institute has garnered enduring recognition for its contributions to knowledge creation, professional practice, and policy formulation. This acclaim is a testament to its exceptional pedagogy, groundbreaking research, and unwavering commitment to cultivating visionary leaders. IIMA fosters a dynamic ecosystem of collaboration, actively engaging with industry, government, and social enterprises to generate a progressive societal impact. The institute prioritises research as the cornerstone of its academic excellence. Our faculty's diverse intellectual pursuits fuel a robust research environment, fostering exploration of cutting-edge, interdisciplinary themes. True to our mission, IIMA's research not only expands the frontiers of knowledge but also translates directly into actionable insights for the business world.

IIMA
विद्याविनियोगाद्विकासः
IMRC
2024
India Management
Research Conference
IIM Ahmedabad
December 7-9, 2024
Indian Institute of Management Ahmedabad

Key Developments in India

Ten years ago, India was placed amidst the ‘Fragile Five’— a set of vulnerable nations, dependent on foreign investments to drive growth. Today, India is the fifth largest economy in the world with a GDP worth $ 4.1 billion. From ‘Fragile Five’ to ‘Top Five’ in less than a decade—India has challenged stereotypes, rewired perceptions, and reframed policy narratives.

Of the many initiatives aimed at creating a pool of opportunities in India, some of the most striking include Make in India, Start-up India, Digital India, the Smart City Mission, and the Atal Mission for Rejuvenation and Urban Transformation. From launching a Unified Payments Interface (UPI) to promote digital transactions to the implementation of the ‘one nation-one tax’ Goods & Services Tax (GST); from carefully curating a much-needed National Education Policy (NEP) to introducing a new foreign direct investment policy and from developing a new 25,000 km highway network worth ₹ 20,000 crore under the PM Gati Shakti Master Plan to launching a comprehensive National Logistics Policy (NLP); —India has come a long way from being the 10th largest economy in the world back in 2014.

Amidst numerous reforms, a major reform over the last ten years has been the government’s conscious entrustment of the private sector as a co-partner in furthering the nation’s development agenda. It is here that academia bridges the gap by conducting research in management that can help analyze policy effectiveness, identify opportunity with policy interventions and formulate strategies for scaling development among others.

Centres of Excellence @ IIMA

The institute hosts 10 Centres of Research Excellence that are committed to engaging with the GoI and the industry at large to solve pressing national and international challenges of the country and beyond, and solving management problems with cutting-edge tools. As researchers, IIMA faculty are pioneers who enable new and exciting interdisciplinary collaborations; they take a solid grounding in theory and run it through a mill of questions and conjectures until future-oriented insights emerge.

IIMA's Centres of Research Excellence act as intellectual engines, each one driving groundbreaking insights across a vast landscape of fields including but not limited to financial markets, artificial intelligence, behavioral science, digital transformation, health services, transportation and logistics, leadership, sustainability, entrepreneurship, and gold policy. Here, researchers don their interdisciplinary thinking caps, examining business challenges through multifaceted lenses. This collaborative spirit fuels rigorous research, leading to the publication of seminal papers and reports that push the frontiers of knowledge. The centres actively engage with industry practitioners and tackle contemporary problems together, fostering lively discourse through panel discussions and roundtables. This vital exchange acts as a two-way bridge, disseminating research findings while simultaneously informing future research directions.

India Management Research Conference: IIM Ahmedabad (IMRC 2024)

Spearheaded by the institute's Centres of Research Excellence, IIMA is happy to announce its inaugural India Management Research Conference: IIM Ahmedabad (IMRC) —a three-day mega event that presents research scholars, academics, and industry practitioners with an opportunity to network, explore diverse research themes, and gain valuable insights into IIMA's cutting-edge research. Besides increasing the visibility of the institute's research, another core objective of the IMRC is to serve as a recruitment forum for exceptional Ph.D. students. Over the years, IMRC hopes to evolve as a premium management conference in India.

With 11 tracks spread across three days, the theme for this year's conference is Confluence of Growth, Sustainability, and Resilience. This dynamic exchange of ideas promises to shape the future of management research, while also serving as a recruitment forum for exceptional Ph.D. students. Join us at IMRC 2024 to be part of this momentous occasion!

Organizing Committee

Conference Patron:

Prof. Bharat Bhasker, Director, IIM Ahmedabad

Sr. No.	Centres & Tracks	Organizing Committee
1	Centre for Innovation Incubation and Entrepreneurship (CIIE)	Prof. Sunil Sharma
2	Centre for Management of Health Services (CMHS)	Prof. Viswanath Pingali Prof. Rajesh Chandwani
3.	India Gold Policy Centre (IGPC)	Prof. Sundaravalli Narayanaswami
4a.	Misra Centre for Financial Markets and Economy (MCFME) (FAE Track)	Prof. Sanket Mohapatra Prof. M. Jayadev, IIM B
4b.	Misra Centre for Financial Markets and Economy (MCFME) (Real Estate Track)	Prof. Prashant Das Prof. Abhiman Das
5.	NSE Centre for Behavioral Science in Finance, Economics and Marketing (NSE-CBS)	Prof. Joshy Jacob Prof. Pritha Dev
6.	Centre for Transportation and Logistics (CTL)	Prof. Debjit Roy Prof. Sandip Chakrabarti
7.	Centre for Digital Transformation (CDT)	Prof. Pankaj Setia Prof. Swanand Deodhar
8.	Centre for Sustainability and Corporate Governance Research (CSCG)	Prof. Anish Sugathan Prof. Neerav Nagar
9.	Ashank Desai Centre for Leadership and Organisational Development (ADCLOD)	Prof. Neharika Vohra
10.	Brij Disa Centre for Data Science and Artificial Intelligence (CDSA)	Prof. Ankur Sinha Prof. Sriram Sankaranarayanan
11.	Network Science in Management	Prof. Anindya Chakrabarti Prof. Pritha Dev Prof. Amit Nandkeolyar Prof. Sourav Borah Prof. Sandip Chakrabarti

IMRC 2024 Mentor Committee

- Prof. Rishikesha T. Krishnan - Director, IIM Bangalore
- Prof. Debashis Chatterjee - Director, IIM Kozhikode
- Prof. Archana Shukla - Director, IIM Lucknow
- Prof. Manoj Kumar Tiwari - Director, IIM Mumbai
- Prof. Pawan Kumar Singh - Director, IIM Tiruchirappalli
- Prof. Bhimaraya Metri - Director, IIM Nagpur
- Prof. Arvind Sahay - Director, MDI

IIMA
विद्याविनियोगाद्विकासः

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

SPEAKERS

Conference Keynote Speaker

Dr. V. Anantha Nageswaran

Chief Economic Advisor,
Government of India

Prof. Noshir Contractor

Jane S. & William J. White Professor of
Behavioral Sciences, Northwestern
University, Illinois

Track 02: Management in Health Services

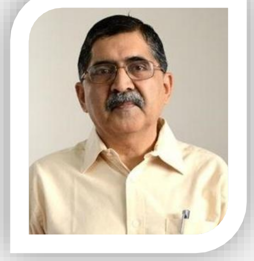
Prof. Mayank Kumar
Panelist
Assistant professor of Information Systems at the Indian Institute of Management Bangalore

Dr Priyanka Sharma
Panelist
Assistant Professor, Indian Institute of Management Lucknow (IIM-L)

Dr. Sabine Kapasi
Panelist
Healthcare Professional | Finance & Data Science Expert | Global Health Strategist

Mahesh Vyas
Panelist

Dr Shuchin Bajaj
Panelist
Founder Director of Ujala Cygnus Hospitals



Dr. Dileep Mavalankar
Panelist
Former Director of IIPHG & Vice President western region, PHFI, and Distinguished Honorary Professor of Public Health of IIPHG.

Prof. P.R. Sodani
Panelist
President of IIHMR University, Jaipur, India

Rajiv Sharma
Panelist
Managing Director of Sterling Accuris Wellness Pvt Limited

Dr. Vibhor Gupta
Panelist
Director of Medical Operations & Quality for South Asia at Cancer Treatment Services International,

Track 03: Gold & Precious Metals: Business and Economic Policies

Somasundaram PR
Keynote Speaker
Chartered and Cost Accountant based in Mumbai

Swaminathan Gurumurthy Keynote
Keynote Speaker
Chartered accountant by profession and a high-standing corporate advisor

Shri Pradeep Ramakrishnan
Keynote Speaker
Executive Director, IFSCA

Sachin Jain
Keynote Speaker
REGIONAL CEO, INDIA
WORLD GOLD COUNCIL

Track 04A: Finance, Accounting, and Economics

Dr Chetan Ghate
Panelist
Director, Institute of Economic Growth

Dr Prachi Mishra
Panelist
Director & Head, Ashoka Isaac Center for Public Policy, Ashoka University

Dr Ajit Ranade
Panelist
Vice Chancellor, Gokhale Institute of Politics and Economics, Former Chief Economist, Aditya Birla Group

Mahesh Vyas
Panelist
Managing Director & CEO, Centre for Monitoring Indian Economy Pvt Ltd

Track 04A: Finance, Accounting, and Economics (Fintech and Open Banking Panel)

Mr Joseph Joshy
Moderator
International Financial Services Centers Authority

Shree Muralidhar Manchala
Panelist
Reserve Bank of India

Mr Yashraj Erande
Panelist
Boston Consulting Group

Ms Sugandh Saxena
Panelist
Fintech Association for Consumer Association

Track 04B: Real Estate

Dr. Barry A.N. Bloom
Keynote Speaker
President and Chief Operating Officer of Xenia Hotels & Resorts, Inc., a NYSE-listed real estate investment trust

Prof. N. Edward Coulson
Keynote Speaker
Professor of Economics and Public Policy and Director, Center for Real Estate, Paul Merage School of Business, UC Irvine

Prof. Franz Fuerst
Keynote Speaker
Professor of Real Estate and Urban Economics at the University of Cambridge, a Fellow/Director of Studies at Trinity Hall, Cambridge

R.V. Verma
Keynote Speaker
Chairman Encore ARC
Earlier Positions held
Chairman
AU Small Finance Bank
CMD

Track 05: Behavioral Science in Management

Dr. Tirthankar Patnaik
Keynote Speaker
Chief Economist, NSE India

Prof. Sumitash Jana
Featured Speaker
Assistant Professor of Cognitive Neuroscience, Department of Humanities & Social Sciences, IIT Delhi

Krishan Mishra
Panelist
CEO, FPSB India

Rajesh Krishnamoorthy
Panelist
Independent Director AMC, PGIM India Mutual Fund

Joydeep Roy
Panelist
India Financial Services Advisory Leader, PwC India

Dr. Dipesh Shah
Panelist
Executive Director (Development), IFSCA, GIFT City

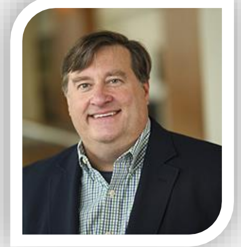
Prof. Joshy Jacob
Panelist
Professor, Finance & Accounting, IIMA

Track 06: Transportation and Logistics

Prof. Vinod Singhal
Keynote Speaker
Charles W. Brady Chair Professor of Operations Management, Georgia Institute of Technology, Scheller College of Business

Dr. Manish Bansal
Featured Speaker
Associate Professor, Grado Department of Industrial and Systems Engineering, Virginia Tech, USA

Dr. Shashank Rao
Featured Speaker
Jim W. Thompson Professor of Supply Chain Management,
Auburn University



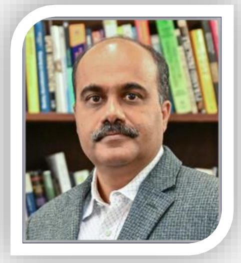
Prof. Robert Glenn Richey, Jr.
Featured Speaker
Harbert Eminent Scholar in Supply Chain Management, Auburn University's Harbert College of Business

Prof. Debjit Roy
Featured Speaker
Operations and Decision Sciences, IIM Ahmedabad & Co-Chair, Centre for Transportation and Logistics

Prof. Sandip Chakrabarti
Featured Speaker
Associate Professor, Public Systems Group, IIM Ahmedabad, Chairperson, Public Systems Group & Co-Chair, Centre for Transportation and Logistics

Prof. Samrat Roy
Featured Speaker
Assistant Professor, Operations and Decision Sciences, IIM Ahmedabad

Track 07: Digital Transformation



Prof. Pankaj Setia

Keynote Speaker

The IIMA Chair Professor of Information Systems and Strategy Founding Chairperson, Centre for Digital Transformation

Track 08: India Responsible Capital Conference (IRCC 2024)

Prof. Rohini Pande

Keynote Speaker & Panelist

Henry J. Heinz II Professor of Economics and Director of the Economic Growth Center at Yale University

Prof. Adrija Majumdar

Featured Speaker

Faculty member and the current chairperson in the Information Systems area at IIM Ahmedabad

Prof. Anirban Adhikary

Featured Speaker

Dean of Faculty and Research, Associate Professor, and Young Faculty Research Chair at IIM Udaipur

Shri Alpan Raval

Panelist

Chief AI/ML Scientist Wadhwani Institute for Artificial Intelligence

Shri Chetan Savla

Panelist

President – Sustainability and Strategic Projects Kotak Mahindra Bank Limited

Shri P. S. Narayan

Panelist

Global Head: Sustainability, Wipro Managing Trustee: Wipro Foundation

Mr. Syed Farhan

Panelist

Associate Director, Carbon Markets PwC India

Mr. Atul Mittal

Panelist

Director Growth, South Asia Sistema.bio

Track 09: Leadership Research & Practice in the Context of Changes in the World of Work

Prof. Balagopal Vissa

Keynote Speaker

Professor of Entrepreneurship and Family Enterprise and The André and Rosalie Hoffmann Chaired Professor of Family Enterprise at INSEAD

Prof. Mats Alvesson

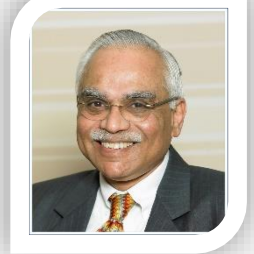
Featured Speaker

Professor of Organization Studies at the University of Bath, UK and is also affiliated with Lund University, Sweden

Debashish Ghosh

Panelist

Senior Human Resources professional with over 20 years of experience in managing end-to-end functions in HR



Prasad Kumar

Panelist

Founder of Human Endeavour Associates, a niche consultancy firm specializing in strategic advisory for owner and partner led companies

Prof. Ashish Pandey

Panelist

Associate Professor with Shailesh J. Mehta School of Management, Indian Institute of Technology Bombay, Mumbai

Prof. Veena Vohra

Panelist

Human Resources and Behavioral Sciences and Vice Dean (Accreditation, Ranking, Industry, Alumni) at the School of Business Management

Prof. T V Rao

Panelist

Chairman of T V Rao Learning Systems Pvt. Ltd.,

Track 10: Data Science & Artificial Intelligence

Prof. Samrat Gupta
Keynote Speaker
Associate Professor, Information Systems area,
Indian Institute of Management Ahmedabad

Prof. Sumit Kunnumkal
Keynote Speaker
Professor of Operations Management,
Indian School of Business

Track 11: Network Science in Management

Prof. Noshir Contractor
Keynote Speaker
Jane S. & William J. White Professor of
Behavioral Sciences, Northwestern
University, Illinois

Anuraag Aekka
Featured Speaker
Research Consultant,
Development Research
Group, World Bank

Prof. Sudarshan Kumar
Featured Speaker
Faculty member in the Finance and Control
group at IIM Calcutta

Prof. Anirban Adhikary
Featured Speaker
Dean of Faculty and Research, Associate
Professor, and Young Faculty Research
Chair at IIM Udaipur

Prof. Snehal Awate
Featured Speaker
Faculty of Strategy at S. J.
Mehta School of
Management of IIT Bombay

Prof. Anand Shrivastava
Featured Speaker
Associate Professor of Economics, and
Faculty Fellow at the Centre for Sustainable
Employment, Azim Premji University

IIMA
विद्याविनियोगाद्विकासः

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

PAPER PRESENTATIONS

Index of Submissions

Track 01: Entrepreneurship: Facilitators & Hurdles Related to Scaling Up of Startups

Submission Index	Title	Authors
69	Grit and the Grind: How Organizational Grit Shapes Entrepreneurial Decision-Making and Long-Term Survival	Rajarshi Mukherjee
231	Drivers facilitating women led Startups to Scale Up and Sustain	Meena Vaidyanathan, Rajeshwari Balasubramanian and Resmi Bhaskaran
286	From Setbacks to Success: The Interplay of Setbacks, Emergent Learning, and Entrepreneurial Alertness	Sukriti Pandey and Ruchika Khetarpal
340	“The Changing Landscape of Start-ups: A Comparative Study of Government Policies in Andhra Pradesh”	Y Sudha Chandra and V Lakshmi Sharma
341	Founding team human capital and initial funding: A legitimacy perspective	Sumit Jaiswal, Chitra Singla and K V Gopakumar
371	Shaping the Future: Perspectives of Established & Aspiring Entrepreneurs on India's Business Landscape	Kamal Gulati
396	Resilience of Microclusters of Creative Entrepreneurs During Crises	Sawan Rathi, Josh Siepel, Monica Masucci and Roberto Camerani
455	Startups and innovation: how do Indian government policies fare?	Aneesha Chitgupi, Diya Uday and Karthik Suresh
484	Do the Decision-making styles of rural women entrepreneurs facilitate the growth of micro-enterprises? An empirical investigation	Anuja Sharma, Raunak Gupta, Rajesh Gupta and Piyush Kumar Sinha
490	Investigating the Nexus between Personality Traits and Sustainable Entrepreneurial Intentions	Zeba Danish, Dr Parvaiz Talib, Omama Zaman and Saib Fakhar
505	Measuring Differences in the Outlook on Business Constraints of Start-up Entrepreneurs and Incubators: The Case of Bhutan	Sapnam Adhikari and Debdatta Saha
507	Gender Dynamics in Entrepreneurial Impression Management: Female Entrepreneurs’ Behaviours with Subordinates in High Power-Distance Cultures	Nidhi Singh and Kumarsawan Shakya
568	Unveiling the evolutionary dynamics: Nurturing deep-tech startups within entrepreneurial ecosystems	Radhika Agarwal
595	Entrepreneurship Unleashed: Navigating Enablers, Overcoming Obstacles, and Scaling New Heights	Yamini Rani and Prof. Bindu Arora
606	Effect of Innovativeness Narrative on Entrepreneurial Fundraising through Equity Crowdfunding	Dhruven Zala, Swanand Deodhar and Adrija Majumdar
766	SME Dealing Cross National Distance: Synthetizing the Current Literature and Future Agendas.	Rupali Singh, Shreya Mishra and Arvind V Shukla
845	Seeing Obstacles or Opportunities: The Influence of Entrepreneurial Intentions on Perceived Opportunities	Vipasha Gaur, Adithya N., Sowmiyaa Subramaniam and

		Madhur Kishor Oza
921	Everything Changes So Fast- Using Sensemaking for Addressing Challenges in Understanding Culture in Indian Startups	Deepashri Galgali
1041	The Primacy of Equity Compensation: Employee Ownership vs. Investor Equity in Early-Stage Startup Success	Kislay Singh
1043	Determinants of Entrepreneurial Readiness and the Role of Gender-A Study with Reference to Students of Higher Education Institutions in India	Manisha Singh and Fatima Qasim Hasan
1176	Unpacking E-commerce Start-up Success in India: A Qualitative Investigation of External Environmental Factors	Akshita Dwivedi, Vibhuti Tripathi and Aviral Satyanisth

Track 02: Management in Health Services

Submission Index	Title	Authors
31	Patient Safety Culture impact on Patient Satisfaction using the Kano model in a Multi-Specialty Hospital	Saranya M and Priya K N
85	Socio-cultural Dimensions of Healthcare Access: Addressing Heterogeneity amongst Tribal communities	Sonal Mobar Roy
150	AI in Digital Health: Enhancing Patient Engagement and Outcomes through Personalized Care and Predictive Analytics	Rahul Chauhan, Bhoomi Chauhan and Na Na
153	Evaluating the Impact of Public Policy Interventions on Social Equity: A Multidimensional Analysis of Income Equality, Health Disparities, and Affordable Housing Access	Rahul Chauhan, Salim Shamsher and Bhoomi Chauhan
560	Application Of Healthcare Failure Mode And Effects Analysis (HFMEA) In The Proactive Risk Assessment Of The Administration Of Chemotherapy	Lisha Crasto and Feroz Ikbal
578	What is most effective in overcoming barriers to the uptake of pre-paid healthcare subscription: Use of Influencer, customer testimonial, or credit provision?	Madhur Mohan, Vedha Ponnappan, Prakash Satyavageeswaran and Raghunath Rao
590	Novel Generative AI Powered Platform for Precision Oncology Applications	Santosh Dixit, Akshay Chitlangia and Viswanath Pingali
880	Evaluating the impact of for-profit organizations in care delivery within the PPSA framework on TB medications and patients' outcomes: A mixed methods approach	Ashish Sachdeva and Samriddhi S Gupte
923	Reaching the unreached: Access to maternal healthcare in vulnerable population	Swati Sisodia
949	Quality of Reporting of Maternal and Child Health Indicators in India: An Assessment of Health Information Management System (HMIS) Data	Nibras K. Thodika, Althaf Shajahan and Muhammed Shafi K
1083	Evaluating Healthcare Quality in NCR: International Patient Experiences in Medical Value Travel	Nabanita Choudhury

1088	Trust and Technology: Analyzing Health Portal Use During the Pandemic	Dr. Vibhu Teraiya and Ms. Mamta Rani
1167	Impact of Electronic Health Records, Telemedicine and Mobile Health Interventions in Community and Health Settings	Amartya Krishnaditya and Dr. Dhananjay D. Mankar

---

Track 03: Gold & Precious Metals: Business and Economic Policies

Submission Index	Title	Authors
168	Impact of Ukraine-Russia War on Diamond City of India	Geeta Sharma and Priyanka Gandhi
368	Advanced Time Series Forecasting of Indian Gold Prices with Bidirectional GRU RNN Model: An Economic Perspective	Affan Ali
411	Measures & Determinants of Success: The Role of Product Life Cycle in Commodity Futures	Yashmin Khatun and Dushyant Ashok Mahadik
468	Role of gold ETF for different investor styles: Does sustainability matters?	Dr.Sruthy Madhavan and Dr. Dhaya Alex
604	Astrological and Numerological Influences on Gemstone Purchases: Consumer Behavior Insights	Sidhharrth S Kumaar
779	Systematic Review on Technological Advancements in Handcrafted Artisan Production for the Preservation and Sustainability of Cultural Heritage in Metal Craft	Basu Vansit and Dr. Monika Sheoran
780	QUANTILE REGRESSION MODELING OF GOLD PRICE DETERMINANTS IN INDIA	Parnvi Niganiya and Garima Dohar
853	Gold's Dual Impact: Analyzing Import Effects on India's Fiscal Deficit and Strategies for Domestic Gold Mobilization	Dr. Rajitha Ramachandran, Prof Rama Narayanaswam and Dr. Sreevas Vtk
857	Fostering Tech-Based Inclusion Leveraging Entrepreneurial Ecosystems for Growth	Ipseeta Nanda and Vivek Kumar
1102	ICT-Enabled Strategies for Enhancing Sustainability and Ethical Standards in the Jewellery making Industry: A Case Study of Loharpura’ s Jewellery Precision Tool Makers	Rajkhush Kumar, Kashmira Ganji and Suvendu Naskar

---

Track 04A: Finance, Accounting, and Economics

Submission Index	Title	Authors
59	Impact of Increased Board Oversight on Related Party Transactions	Sumeet Rajput
93	Reliance on Part-time Labor and Operating Efficiency: The Moderating Role of Task Complexity	Joanna Golden, Raj Mashruwala and Mikhail Pevzner
166	Does Exclusive Relationship with Government Banks Matter during Climate Shocks?	Harish Kamal, Samit Paul and Avijit Bansal

178	Factors Affecting Trade in Manufactures at Various Technology Levels Between India and ASEAN: A Panel Gravity Model Approach	Nikhat Khalid
187	Do Fiscal Incentives for Innovation Lower Output Prices? Evidence from R&D Tax Credits	Rahul Singh and Tanya Jain
217	GLOBAL VALUE CHAINS, A DEVELOPMENT PARADIGM? EVIDENCE FROM THE INDIAN EXPERIENCE	Priya David
318	The impact of mega mergers on depositors: Evidence from Indian commercial banks	Sakshi Narula
350	Foreign Ownership and Corporate Risk Taking: Evidence from India	Dr.Souvik Banerjee
356	Passive Ownership and Investment Efficiency	M Mareeswaran
395	Does Audit Partner-Client Proximity Enhance Audit Efficiency? Evidence from COVID-19 Lockdowns	Siddharth Purohit, Naman Desai and Gopal Krishnan
443	Finding the needle in the (hay)stack of equity return-determinants	Srinath Mitragotri
477	Institutional Investor Price Support and Stock Price Crash Risk: Evidence from Indian Pledging Firms	R Shruti, M Thenmozhi and Chinmoy Ghosh
495	Global Supply Chain Vulnerabilities: Assessing Firm Risk, Environmental Commitments, and Information Channels in the wake of COVID-19	Huzaifa Shamsi
514	Assessing the impact of Financial Extension services on Intrahousehold resource allocation: Evidence from Rural India	Abhishek Tripathy, Abhiman Das, Vivek Pandey and Hari Nagarajan
518	Venture Capital Syndicate Centrality and IPOs: Information and Investor Attention	Samhitha Kasibhatta and Sudhakara Reddy Syamala
699	Can ESG Moderate The Relationship Between Oil Shocks and Capital Structure?	Purba Bhattacherjee and Prof. Sibanjan Mishra
752	Informed Trading and ESG-Evidence from NYSE	Meera Davi Chalissery and Aravind Sampath
767	Green Bonds and Crude Oil Prices: Exploring Dynamic Linkages and Implications for Climate Financing	Haseen Ahmed, Rajbeer Kaur and Silky Vigg Kushwah
775	Political Uncertainty and Initial Public Offerings: The Mediating Role of Political Connections	Purvi Jhawar and Jayanta Kumar Seal
824	Spatial Data-Driven Approach to Crop Insurance Rate Making	Bhaktideepa Sahu and Dushyant Ashok Mahadik
828	CFO Compensation and Corporate Governance: Evidence from India	Anil Kumar and Sudhir Jaiswall
854	Operational creditor rights and trade credit- Evidence from policy interventions	Shreyansh Chaurasiya
877	The Impact of Investor Trading on Mutual Fund Performance in India: A Detailed Analysis of Return Gaps	Shreya Sil, Reshma Ramesh and Prashant Mushtagi
897	The Political Economy of Bank Supervision	Pranav Garg
912	The ESG Paradigm: Exploring the Relationship between Disclosure and Corporate Performance	Smruti Ranjan Sahu and Divya Choudhary
916	Impact of the Twitter Tone about FOMC on Intraday S&P 500 Index Returns	Sakshi Jain and Varadraj Bapat
991	Is the trading pattern of Foreign Institutional Investors prior to IPOs indicative of their interest in the IPO stocks ?	Somak Mukherjee, Arnab Bhattacharya and Ashok Banerjee

993	Digital vs. Traditional: Does the Mode of Financial Inclusion Influence Financial Resilience? Evidence from Emerging Markets	Rahul Verma and Devlina Chatterjee
998	Do behavioural factors explain the liquidity beta anomaly in India?	Ankita Tilak, Rajesh Shaoo and Preeti Roy
1010	Unveiling Inequality: Evidence from an Unconditional Cash Transfer in Indian Agriculture	Neeraj Katewa and Debdatta Pal
1062	Prevalence of REM practices in India: Value Enhancing or Opportunistic	Srishty Mehra and Surender Rao Komera
1144	Fiscal-Monetary Interaction and Sovereign Bond Yields: Evidence from Speeches of Central Banks and Finance Ministries	Kunal Biswas, Srinivasan Murali, Abhinav Anand and Jalaj Pathak
1199	Are Two Chiefs Better Than One? Financial Executives and Layoffs	Vishal Baloria

Track 04B: Real Estate

Submission Index	Title	Authors
87	Relationship between sustainable real estate assets and other asset classes: Implications for portfolio diversification strategies	Ritesh Patel
113	Assessing the Stigma Impact on Real Estate/ Property Value: A Study of Select Indian Cities	Ramakrishna Nallathiga, Snehil Bindal, Ajay Chaurasia and Mayur Talodhikar
249	Chronology of thermal comfort research – Key contributions and shifts in understanding.	Shivani Senthilkumar and Poulomee Ghosh
328	Evolution of REIT Corporate Structures and Governance: An Empirical Study to Identify Responsive REIT Governance Best Practices for Indian REITs	Manish Srivastava
353	The Appraisal Gap: Disparity in Collateral Assessment	Abhiman Das, Nirupama Kulkarni and Niranjan Kumar
367	Collateral Type and CMBS Deal Structure: A perspective from 1999 to 2022	Karan Bhanot
417	Sustainable investing strategies and their impact on the decarbonisation of real estate	Parag Cameron-Rastogi and Chris Pyke
432	Examining housing satisfaction in Japan through Sen's 'capability theory'	Piyush Tiwari and Jyoti Shukla
536	Agency Cost of Choosing Green	Cayman Seagraves, Mariya Letdin, Chongyu Wang and Tingyu Zhou
557	Mortgage Market & Its Impact on Housing Prices in India: Role of AI	Mrinalini Mrinalini and Dr. Rajni Kant Rajhans
573	Short-Term Spillovers and Long-Term Stability: A Study of Lodging REITs Amid Financial Market Turbulence	Apostolos Ampountolas
575	The Impact of ASC 842 on REITS	Cayman Seagraves, Nottely Seagraves and Philip Seagraves

579	It's All in the Detail: Individual ESG Factors and Firm Value	Ramya R Aroul, Julia Freybote and Riette Carstens
584	The Numbers Game: Effects of Listing and Counteroffer Pricing Format in Housing Bargaining	Haaris Mateen, Franklin Qian, Ye Zhang and Tianxiang Zheng
613	Development of Linear and Multiple Regression Model for the Optimal Allocation of Infrastructure: A Case Study of Pune Municipal Corporation	Komal Handore
634	Spatial Modelling of Residential Real Estate Prices in Bengaluru, India	Kapil Gupta, Soudeep Deb and Venkatesh Panchapagesan
646	Jointness versus Independence in House Purchase Decisions of Indian Households: Head of Household or Family matters?	Biswajit Patra, Babli Rani Gupta and Anu K Jose
770	Market for Transferable Development Rights: Factors affecting demand	Astha Agarwalla, Prashant Das, Komal Mimani and Garima Manuja
793	Stakeholder View: Zero-Carbon Strategies for Real Estate Markets in India	Ashish Gupta and Graeme Newell
919	Creating Equitable Cities: Spatial Justice in Land Value Capture for Sustainable Transit Financing	Sagar Verma
1217	Performance Evaluation and Investment Strategies in REITs in India	Anil Kashyap, Shruti Vaishampayan, Shivatej N, Vijay Narayanan K, Mahesh Dhinakaran and Harsha E

Track 05: Behavioral Science in Management

Submission Index	Title	Authors
90	Serial Mediation: Place Identity and Place Attachment in the Relationship between Perception of the Residents and Willingness to Participate in Rural Tourism	Dr. Sonia Bhatt
296	Who Consumes Fake news? A Game of Misinformation and Consumer Attributes	Rishab Lodh and Oindrila Dey
317	Do Emotions Influence One's Perception of Risk? A Cumulative Prospect Theory Experiment	Arz Taneja, Sakshi Singh and Avantika Rajaram
383	Employee Silence or Everyday Sadism: Understanding voice behavior in organizations	Pranjal Tripathi and Anindo Bhattacharjee
412	Subliminal Faces and Consumer Decisions: Analysing the Impact of subliminally presented human and animal faces on Consumers' Willingness to Pay and Decision-Making Time.	Rabia Abhay and Sibin Mathew Nesin
424	Financial Somatics: A Multidisciplinary Approach to Understanding Financial Decision-Making Through the Lens of Dance Movement Therapy (Explores the theoretical underpinnings of DMT and finance)	Swetha N and Rajiv Kalebar
428	Pigeons, Pigs, Peacocks, and the Post Office: A Multimodal Economic History Discourse Analysis of Small Savings Ads as Nudges in British India (1860-1947)	Tanya Ahuja

452	AI-Generated Greenwashing: How Gen-AI Content Negatively Impacts Green Influencers	Priya Narayanan
510	Invisible walls: gender identity in online and offline learning environments Online versus offline classes: When does identity threat hit worse?	Arindra Nath Mishra and Shayani Sengupta
545	Salience of 'us versus them' in coloured jersey - ODI cricket as a natural experiment	Subrato Banerjee, Vipra Jain and Priyanka Kothari
567	WHEN DOES SUSTAINABLE PACKAGING NOT WORK? CONSUMER INFERENCES FOR CORE AND PERIPHERAL CUES	Kashish Gupta
594	Impact of HR analytics implementation on firm performance in the retail sector: The mediating effect of organisational agility, customer satisfaction, and customer agility	Rubvita Chadha Rajput and Rakesh Naik Vadithe
627	Impact of Concurrent Competitions on Participant Efforts in Crowdsourcing Platforms	Dhruven Zala, Swanand Deodhar and Samrat Gupta
656	Setting fixed deposit rates just right: Evidence from cognitive sciences	Anshul Punia and Manish Kumar Singh
801	Using Entertainment to Change Norms: Educating Mothers-in-Law in India on the X&Y Chromosomes	Pallavi Vyas and Aditi Upadhyay
913	Monopoly Pricing under Heterogeneous Social Concerns and Network Externality: The Case of Vaccines	Sumana Kundu
934	Leveraging Influencers to Counteract Cancel Culture: A Comprehensive Framework for Brand Crisis Management	Divya Mishra and Dr. Nidhi Maheshwari
970	Human vs AI-designed advertisement: Which is preferred?	Manvi Jain, Yash Chakarvarty and Arvind Sahay
1002	A STUDY OF TEMPORAL ORIENTATION OF INDIAN FIRMS	Sridhar Y V and Dhirendra Mani Shukla
1072	Breaking the Bias : Assessing Nudge Effectiveness in Overcoming Decision Making prejudices	Pillai Rjs Arun, Rabia Abhay, Sibin Mathew Nesin and Sangeeta Mehrolia
1142	Playful Work Design Leads to In-role Performance : A Diary Study	Sree Charan M and Murugan Pattusamy
1173	An experimental study of bidder and creditor behavior in Bankruptcy Auctions	Rajesh Kumar Acha

Track 06: Transportation and Logistics

Submission Index	Title	Authors
41	Performance Evaluation of Integrated Transportation System	Anjum Mirza
54	Channel Choice and Impact of Platform's Valued Added Services on the Electric Vehicle Rental Market	Sanchari Guha Niyogi, Srikanth Krishnaprasad and Arqum Mateen
96	Low Carbon Green Supply Chain Routes for Sustainable Construction: A Case Study of Mumbai Region	Rajshri Patil, Priti Pandey and Rajshri Patil
102	Reverse Logistics as a lucrative Supply Chain Strategy	Dr. Shaan R S
198	Optimizing Logistics Efficiency: A Comprehensive Approach through Milk Run Enhancement with FMEA and Intralogistics Precision using Kanban Cards	Aman Hadap
201	Designing a New Sustainable Product and Government Subsidies: The Role of Social Learning	Ranit Saha and Sumanta Basu
205	Network Revenue Management with Pooling	Sumit Kunnumkal, Asrar Ahmed and Milind Sohoni
207	A framework to compare real-world contracts between suppliers and long-distance logistics service providers in a cold-chain context	Vinay Reddy Venumuddala
211	Assessing Drivers' Switching and Continued Usage Intention: The Transition to Electric Autorickshaws in Public Transport	Pushpam T Davis and T Chandrasekar
280	On-demand ride services using dual capacities: competing under non-discriminatory regulations	Srikanth Krishnaprasad
282	Order mixing and routing strategies for human-robot collaborative warehouses	Rashika Gupta and Debjit Roy
387	Analyses of Business Models Pertaining to the Electric Vehicle Industry	Tridib Guha and Avijit Raychaudhuri
444	IMPROVING OPERATIONAL EFFICIENCY OF PUBLIC TRANSIT SYSTEMS	Prateek Agarwal, Tarun Rambha, Prashanth Kokkonda and Mohammad Anas Jamil
446	Risk Management for Road Projects in Mountainous Terrain – A Case study of learnings from the Himalayan Belt	Modish Kumar and Hemant Manuj
473	Benchmarking the Historic Efficiencies of the Indian Railways: Some Policy Perspectives	Ila Garg and Dr. Sabyasachi Roy
502	Eye on Logistics and Engagement: How Shopping Goals Influence Livestream Selling	Faizul Haque, Sumanta Basu, Vishal Bansal and Peeyush Mehta
541	Are vehicle scrappage policies effective? An evidence from India	Ankit Sharma
544	Swarm Versus System-Directed. Analysis of Human-Robot Collaborative Policies in Order Pick Systems	Mahdi Ghorashi Khalilabadi, Debjit Roy and René De Koster
610	Hygiene Factor for Reducing Operational Logistics Cost in Distribution - Case of Cement Industry in India	Bhavya Maloo and Vidya G Mohan
622	Solving the capacity optimization problem in the semiconductor industry: the implementation dilemma	Shantanu Bagchi, Jaimini Bhattacharyya and Shiva Esturi

630	Parking Infrastructure and Challenges in Indian Cities: Insights from Twitter Data Analysis	Sagar Verma
659	AI-Enabled Logistic Nudging for Sustainable Consumption	Vinayak Vishwakarma and Nitu Mathuriya Mathuriya
677	Charge Schedule Optimization for Solar-Integrated Electric Bus Transit Systems	Rito Brata Nath, Madhusudan Baldua, Vivek Vasudeva and Tarun Rambha
681	Electric Truck – Possible Future of Trucking Industry in India for Economic Efficiency	Mahendra Parihar
686	Responsible Menu Choice Design to Reduce Food Waste and Improve Access for Low-Income Customers- A Step Towards Sustainable Food Supply Chains	Sagnik Sarkar, Debjit Roy and Tugce Martagan
694	Commute Distance and Residential Characteristics: Weathering the Storm	Nachiket Gosavi and Naga Siva Gayatri Dittakavi
732	AUTOMATED DECISION-MAKING FOR EITV CHARGING IN CONTAINER TERMINALS	Abhinav Tiwari, Aasheesh Dixit and Vijay Gupta
739	Resilient Transportation Systems for Older Adults: A Global Review with Policy Recommendations for India	Jayanth Kumar Narsim and Sandip Chakrabarti
747	Retail Effort Paradox: Does More Effort Always Deter Supplier Encroachment?	Faizul Haque, Sumanta Basu, Vishal Bansal and Peeyush Mehta
751	Beyond Electric Vehicle Adoption: Should Government Support Battery Management System Development for Battery Lifecycle Management	Nandan Kumar Singh, Nishant Kumar Verma and Milan Kumar
756	Analyzing the impact of no-fly zone restriction on drone delivery	Shamik Pushkar and Elkafi Hassini
806	A Structural Analysis of Freight Delays in the Indian Railway Network	Himanshu Arha, Kashish Arora, Milind Sohoni and Raja Gopalakrishnan
838	Value of Carbon Credit Markets to Farmers: Impact on Consumer and Social Welfare	Lalbabu Nishad and Govind Kumawat
852	Building Last-Mile Connectivity to Urban Public Transit Systems – Designing Optimal Fixed-Route Feeder Networks	Murari Srinivasa, Rajluxmi V. Murthy and Reshma Chandrasekharan
914	Inventory Management of Deteriorating Complementary Goods with Demand Dependent on Price, Promotional Efforts and Trade Credit	Prakshal Jain and Arijit Goswami
950	Identification and Resolution of Supply Chain Management Challenges in a Social Organization	Ravichandran N and Venkataramanaiah Saddikuti
1005	Mapping Research Trends with Factorial Analysis in Adoption of Green Vehicles	Paras Rajyaguru and Dr. Vaishali Dhingra
1025	OPTIMIZING SUPPLY CHAIN MANAGEMENT USING PROCESS MINING	Shreya Saraf and Sudhanshu Shekhar
1091	Fairness and Equilibrium Pricing Strategies in the Online Food Delivery Market: A Game Theory and Mechanism Design Approach	Ashish Kumar and Suresh Jakhar
1187	Cardinality-based Disaggregated formulation and cutset inequalities for the Steiner Tree Problem	Md Shahrukh Anjum, Trilochan Sastry and Jitamitra Desai
1197	Does telecommuting promote long-distance weekend travel?	M Muskan and Sandip Chakrabarti

Track 07: Digital Transformation

Submission Index	Title	Authors
213	Exports and Data-Related IT Outsourcing Expenditure in Emerging Economies: Evidence from India	Bibek Bhattacharya, Rajarshi Mukherjee and Adrija Mazumdar
345	Exploring the Integration of Avatars in Metaverse-Based Healthcare: Insights from Patients and Doctors	Kousik Mandal and Sudin Bag
399	Digital Health for All: An Endowment-Dissemination Perspective	Sawan Rathi
429	Redefining the Paradigm: AI-Enabled Capability Transitions in Indian Technology Outsourcing Firms	Rajarshi Mukherjee and Pritha Chatterjee
435	Guiding Choices, Shaping Voices: Role of Digital Nudging and Choice Supportive Bias in Online Consumer Review Writing Behavior	Anjali Pathania and Gowhar Rasool
451	Leveraging AI in Shaping Organizational Diversity and Inclusion: A Quantitative Approach	Dr. Vaishali Patil and Dr. Irbha Magotra
516	The Impact of Video Length and Tourism Type on Viewer Engagement and Travel Intentions: An Experimental Study	Samridhi Mishra and Aditya Shankar Mishra
609	Can augmented reality augment the sense-making and exploration potential of a tourist place?”	Ruchi Payal
644	Decoding the Predictors of Teachers' Behavioural Intention to Use ChatGPT using extended UTAUT model: Evidence from four Developing Economies of the World	Rakesh Kumar Meet, Yog Mishra, Waleed Mugahed Al-Rahmi and Fahad Alblehai
647	Why so serious? The effects of adding humor to online compliance trainings	Somraj Sarkar and Shweta Sharma
652	Role of technology enablers for implementation of HR analytics in the Indian IT sector: A mediation analysis	Rakesh Naik Vadithe, Bikrant Kesari and Rubvita Chadha Rajput
663	Leveraging AI Public Goods for Social Impact	Manisha Rathi and Shankhadeep Banerjee
716	Challenges in developing LLM platform in the Indian context: Assimilation from the Indus Project	Padmini Ramamurthy and Dr. Sujeet Kumar Sharma
830	Operational Consequences of Blockchain Technology Adoption in Supply Chains: Do Motivation, Vulnerability, and Industry Context Matter?	Alok Raj, Samit Paul, Atanu Chaudhuri and Ujjal Mukherjee
836	VICARIOUS TRAVEL EXPERIENCE: TRAVELLING THE WORLD THROUGH THE SOCIAL MEDIA INFLUENCERS ON INSTAGRAM	Sudhir Bhatia and Harbhajan Bansal
869	The Influence of Subjective Norms and Monitoring Perceptions on Mitigating Information Security Policy Violations in Hybrid Work Environments	Balagopal N and Saji Mathew
886	How Rewards Shape the Impact of Gamification: Role of Gamer Orientation and Reward Responsiveness	Shubham Gupta, Garima Saxena and Tapas Ranjan Moharana
900	Exploring the link between HRM 4.0 and strategic agility: A qualitative inquiry	Abhyudaya Anand Mishra, Mridul Maheshwari and Jatin Pandey

973	From Growth to Development: The Impact of Information and Communication Technology (ICT) on Human Development Index (HDI) in BRICS Economies	Neetu Kumari
975	Health Misinformation on Social Media: Psychological Drivers and Mitigation Strategies	Muhammed Sadiq T, Saji K Mathew and Ranganathan Chandrasekaran
989	Promotion of Rural Tourism through Virtual Reality: Impact of Content Richness on Consumer's Perceived Value and Behavioral Intention	Vikas Choudhary and Tanmoy Bag
1053	Abstract or Concrete lingo? When Chatbots apologise for service failure in Online Travel Agencies	Rishab Chauhan and Payal Mehra
1055	The Experience of Digitalization: Exploring the Interaction of the Poshan Tracker App and the Anganwadi Workers	Nitya Jadeja
1089	Impact of Geo-cultural Diversity on Teams' Innovation Performance	Dhruven Zala and Shanmuga Priya A
1090	Silent Voices: Uncovering the Hidden Customer Experience Indicators in AI-Enabled B2B Services	Subisha K R and Saji K Mathew
1119	When Your Words Are Worried: Unveiling Linguistic Markers of Privacy Concern to Understand Affordances of Smart Technology	Abhishek Kumar Jha and Saurabh Kumar
1145	REIMAGINING LAST-MILE DELIVERY: LEVERAGING PUT-TO-LIGHT SYSTEMS IN MICRO FULFILLMENT CENTRES	Nisa James, Bajnu Abdu and Robert Jeyakumar Nathan

Track 08: India Responsible Capital Conference (IRCC 2024)

Submission Index	Title	Authors
64	Job Seekers' perceptions of corporate social responsibility practices (CSRP) and organizational attractiveness: a multi-group analysis	Dr. Esrafil Ali and Prof. Indranil Bose
92	SRIMA – A new model of Sustainability integrating people, technology and process	Shyni Carmel Mary Susaipragasam, Xavier Mj and Joe Arun C
108	Strategic Portfolio Management: Navigating Macroeconomic Influences and ESG Principles for Optimal Stock Selection	Amit Kumar and Vinit Sikka
111	Exploring the significance of Community Participation in ensuring the sustainability of Corporate Social Responsibility Programs	Trilochana Dash and Dr. Chandan Kumar Sahoo
225	Validating the efficacy of The GreenSCOR model in creating sustainability performance for manufacturing companies: A sufficient and necessary condition analysis	Soumya Prakash Rath and Nikunj Kumar Jain

233	The Impact of Financial Distress and Governance Dynamics on Earnings Management: Insights from the Pandemic	Amandeep Kaur, Archana Singh and Girish Chandra Maheshwari
242	Perceived Board Diversity and Perceived Firm Performance: mediating role of Perceived Inclusion	Dr. Purva Kachhy and Dr. Narayan Baser
250	Promotion of social enterprise as driver of sustainable economic growth: Empirical evidence from Gondia, Maharashtra	Kshitij Sharma
260	Sustainability: Influence of firm's country of origin (COO) policies on green consumption behaviour (GCB)	Vishal Sinha
261	Which Directors Are Incentive-Aligned with Shareholders - And Does Their Gender Matter?	Arun Upadhyay and Vikram Nanda
268	Is the supply chain of Indian electric vehicle (EV) companies environmentally-viable (E-V)? A sustainability reporting and disclosure perspective.	Ranjan Kumar and Ishaan Sai
275	Understanding the impact of greenwashing on consumers' purchase intention in the context of Indian Fashion Industry	Abhijeet Vikramaditya Tiwari, Shivangi Jaiswal and Ruchika Joshi
284	Corporate Board Diversity and ESG Performance: Evidence from G7 firms	Himanshu Joshi and Prachi Bhatt
285	Analysing the impact of corporate social responsibility on the environmental performance of manufacturing firms in India: the role of sustainability disclosures and ISO 14001 certification	Baikunthanath Sahoo, Santosh Kumar Sahu and Krishna Malakar
303	SYNERGIZING DIVERSITY FOR SUSTAINABILITY: EVIDENCE FROM BOARD GENDER DIVERSITY AND ESG PERFORMANCE	Vishakha Jaiswal
309	IT INVESTMENTS: A DOUBLE-EDGED SWORD FOR CORPORATE SOCIAL PERFORMANCE – INSIGHTS FROM THEORY OF SMART MACHINES	Pramendra Singh Tank and Bibek Bhattacharya
326	Intersection of ESG Disclosure and Financial Distress: The Differential Impacts Across Varying Levels of Distress Risk	Divyam Jain, K N Badhani and Ashish Kumar
348	Roles of CEO and Board Characteristics on Sustainability Reporting	Sreejith Kumar Krishnakumar
355	Sustainable Supply Chain Financing: Way Forward for India	Sunil Rajak, Sarvesh Kumar and Santosh Kumar
357	Buyer Power and Vertical Mergers in Supply Chain Competition	Srishti Gupta
369	Corporate Sustainability on a Crossroad: The Case of Sunbird Straws	Pallavi Datta, Yugantar Singh and Shailavi Modi
434	Board Gender Diversity and Climate Risk Disclosure	Abhinav Anand, Jalaj Pathak, Arun Upadhyay and Chi Zhang
461	MAPPING STAKEHOLDERS PERCEPTIONS OF DESTINATION RESILIENCE TO CLIMATE CHANGE: AN EXPLORATORY CASE STUDY OF THE ANDAMAN ISLANDS	Ankit Kumar, Sumiran Maheshwari and Ranjeet Kumar Raman
485	Virtual Reality in Tourism: Impact of Animistic communication on consumer sentiment	Naveenkumar Hanagandi
486	Information Technology enablers for Auto Sector to embrace circular economy	Amar Jadhav
487	Auditor Familiarity and Audit Quality in Business Groups	Sairam Moturi, Vijaya Bhaskar Marisetty and Sanjay Kallapur

489	Threads of Change: How India can redefine Fashion Sustainability?	Shivangi Jaiswal, Prince Dubey, Abhijeet Tiwari and Ruchika Joshi
493	Critical Lens: GHG Metrics in the Plastic Circular Economy (A Case Study Approach for Plastic Waste Management in India)	Snehal Jariwala, Ankita Morbia and Ankrati Jain
500	Integration of sustainability dimensions with corporate purpose of private actors with specific reference to the Corporate Sustainability Due Diligence Directive (CSDDD)	Priyansha Hajela
517	Balancing Growth with Sustainability: A Systematic Review of Tourism Gentrification	Athira C and Meera Prathapan
528	Green Bonds and the Inflation Reduction Act (IRA)	Sanjay Kumar Jain
537	Implementing Vehicle Scrappage Policy in Developing Economies with Informal Scrapping Centers and Diverse Producers	Karthik Ramaswamy and Rajeev R Tripathi
554	Towards Sustainable Metallurgy: A Framework Analysis of Charcoal-Driven Steel Production	Rupali Bhakat and Neelesh Mishra
555	GENDER DIVERSITY AND FIRM PERFORMANCE: ROLE OF EQUALITY	Mafruza Sultana, Pooja Gupta and Asit K Barma
564	Examining the Influence of Mental Accounting on Green Investment Intentions: Insights from the Theory of Planned Behavior	Rinky Yadav and Jagriti Gupta
569	Do Environmental, Social, and Governance (ESG) Disclosures Influence Corporate Value? Empirical Evidence from India	Neelam Chauhan, Dr. Purva Kansal and Dr. Keshav Malhota
570	WHEN DOES SUSTAINABLE PACKAGING NOT WORK? CONSUMER INFERENCES FOR CORE AND PERIPHERAL CUES	Kashish Gupta
608	THE IMPACT OF INTERNAL CARBON PRICING ON CORPORATE CAPITAL STRUCTURE: A PANEL DATA ANALYSIS	Nithin.K. Warrier and Dr.Smitha Nair
668	Strategic Evaluation of India's Net Zero Roadmap: Assessing Readiness and Resilience in the Transitioning Energy Sector	Anand Acharya, Shruti Sharma Rana and Akansha Sethi
725	The Shadow of Misconduct: How Unethical Behavior by One Firm Impacts the Valuation of Its Industry Peers	Urvashi Khandelwal and Chitranshu Khandelwal
856	Market Preparedness for Policy Interventions towards Domestic Sustainable Markets: A study on Thai Rice Supply Chain	Gideon Balasingam, Rebecca Anns, Shobana S and Deepthi Krishnan
862	A comparative study on methodologies for greenhouse gas estimation for agriculture in Tajikistan	Gideon Balasingam, Rebecca Anns, Shobana S and Deepthi Krishnan
881	Impact of Corporate Innovation Culture on Emission Reduction Target Disclosure	Urvashi Khandelwal, Dr. Prateek Sharma, Dr. Alok Raj and Dr. Samit Paul
889	The Strategic Role of Green HRM in Transforming Stakeholder Pressure into Sustainable Performance	Nanditha Dev and Dr. Johney Johnson
891	The CSR Puzzle: Decrypting its Influence on Financial Distress in India	Priya Dhawan and Neeru Chaudhry
901	The Green Fallacy: Investigating the Relationship between Greenwashing and Firm Risk	Bhagya Bhutani and Sonali Jain

904	CEO compensation, family firms and Institutional investors: evidence from India	Gobinda Gopal Pahari and Chandra Sekhar Mishra
928	Visualizing the ESG Performance: The Case of Photographs in Indian Financial Reports	Divya Soni, Advaita Rajendra and Kirti Saxena
931	GREEN PRODUCT MANAGEMENT: THE LINCHPIN OF A STARTUP'S SUSTAINABILITY	Eswar Prasad Manapuram and Dr. Truptha Shankar
944	On Forest, Environmental Policies, and Rainfall: Evidence from India's National Forest Policy	Neeraj Katewa, Lavanya Lavanya and Shreya Mishra
955	Climate Change Financing and Regulatory Framework - Lessons from European Union	Kriti Johri and Kriti Johri
968	A Comprehensive Analysis of Discrepancies in Assurance Statements among Energy Sector Corporations: A Gap Assessment and Strategic Implications for Enhanced Sustainability Reporting Practices	Anand Acharya, Shruti Sharma Rana and Bhawna Singh
974	Blessed with Resources, Cursed with Poverty: A Cooperative Game Solution to Deal with the Paradox	Rajeev R Tripathi and Ronit Neogy
1023	The Tripod of Modern Banking: Digital Payment Adoption, ESG Performance, and Financial Performance of Indian Banking Sector	Shivani Jain and Jagadish Prasad Sahu
1051	SUSTAINABLE 'INNOVATIONS' THROUGH REVERSE LOGISTICS AND LEAN PACKAGING	Nagamalini Thiravidamani and Reeves Wesley J
1064	Study of Impact Investment	Swati Mulani and Dr. Vidhisha Vyas
1067	On the Relationship between ESG and Default Risk.	Rajat Rakshit and Dr. Preeti Roy
1092	Impactful Company Secretaries Insights from Indian Public Listed Companies	Biju Varkkey, Virangi Shah, Varsha Kandala and Jaseena Mol
1134	Navigating the Green Labyrinth: A Framework for Integrating AI and Digital Sustainability	Sachin Choubey
1140	Board interlocks and technological knowledge transfer	Shikhar Bhardwaj
1158	A case study on Climate Risk Assessment and Management in Indian Financial Institutions	Manish Ranjan
1188	Connecting Through Anthropomorphism: How Human-Like Messages Enhance Empathy, Warmth, and Authenticity in Green Product Purchases with Nature Connectedness as a Moderator	Pooja Pooja, Vaishali Pandey and Vibhuti Tripathi
1198	Assessing the significance of relationship between ESG factors and financial performance on energy intensive companies in India	Digantika Ghosh and Dr. Shruti Sharma Rana
1202	Are Developing Country Firms Facing a Downward Bias in ESG Scores?	Jairaj Gupta, R. Shruti and Xia Li
1216	Steering green initiatives: role of environmental management teams and board attributes	Vidya Mahadevan and Sowmya Subramaniam
1228	Consequences of Mandatory Environmental Social and Governance (ESG) Reporting Policy on ESG Disclosure Quality	Muhammad Sani Khamisu and Ratna Achuta Paluri

Track 09: Leadership Research & Practice in the Context of Changes in the World of Work

Submission Index	Title	Authors
18	Leader Resilience in the Digital Era – A Job Demand-Resource Perspective	Laveena D, Sumi Jha and Nikhil K Mehta
66	The Relationship between Feedback Frequency, Task Performance, and Arousal Levels: A Study Using Electrodermal Activity	Mitali Saxena and Venkat Ganuthula
131	Leadership and Identity Development at the Confluence of Gender, Caste, and Reservation in India	Dina Banerjee, Alka Sharma and Ashay Kadam
134	The Impact of Inclusive Leadership: How Engagement and Inclusive Climate Shape Employee Experience	Apoorva Tiwari and Vishakha Kumari
144	The relationship between Organizational Silence and Organizational Citizenship Behavior: Moderating role of Ethical Leadership	Rekhapriyadharshini A, Rajesh Matha and Reeves Wesley
214	Leadership in the Ancient Indian Jain Organizations	Alka Jain
215	"My Group wants me to share knowledge, but my leader doesn't": Examining role of behavioural flexibility and unethical pro-organizational behaviour in group creative role identity and knowledge sharing	Vinit Ghosh
232	The examination of Respectful Inclusion as a dimension for reducing discrimination in Social Work practice	Ragland Gamaliel
237	Creative Leadership: How Creative Leader Behaviour and Psychological Safety Drive Organizational Performance and Success	Alipta Dutta and Prof. Asha Bhandarker
254	The serially mediating roles of Relational Energy and Harmonious Passion in the relationship between Superior-Expressed Humility and Subordinate Adaptive Performance	Radhika Chandhok and Dr. Rinki Dahiya
301	Unveiling Common and Unconventional Leadership Strategies Amid Uncertainty: An Empirical Study of Indian Tech Startups and Global Corporations	Eswar Prasad Manapuram and Dr. Truptha Shankar
352	Assessing the Indian Banking Work Environment for Creativity: A 4-Step Adaptation Protocol	Madhura Hate and Satishchandra Kumar
370	Evidence-based leadership development for physicians: A qualitative study from India	Kamal Gulati
372	Twenty Years of Silence: Shining a Light on Gender Disparities in Academic Medical Leadership in India	Kamal Gulati
382	The impact of Ethical Leadership on Organization Citizenship Behavior in Indian Private Sector Banks: the mediating role of Happiness at Work	Animesh Singh and Dr. Rashi Banerji
413	Enablers of Technostress for Gen Z: A TISM-MICMAC perspective	Santanu Mandal, Devi Prasad Kotni, G. Kartheepan Kartheepan and Eswar Koushik
427	Navigating the Hive: Role of Queen Bee Syndrome on leadership development and Career Advancement	Shreya Mrinal and Dr. K. Lavanya Latha
471	The impact of big five personality on virtual collaboration: The role of team communication as a moderator.	Anchal Kukreti and Shatrughan Yadav

476	The Role of Leadership in Creating Meaningful Work to Reduce Turnover Intention.	Ankita Verma and Shatrughann Yadav
513	Servant Leadership in Education: The Impact on Student Green Behaviour through Environment Concern	Mudang Tagiya and Odang Mara
521	A systematic literature review on the relationship between HR Practices and subjective well-being: Developing a novel model using AMO framework	Harleen Kaur and Parul Malik
543	Leadership Strategies for Managing Remote Work in the Post-Covid Era	Shabnam Ibrahim, Ayesha Farooq and Irna Ishrat
548	“Employee Engagement amid Surveillance: The Mediating Role of Psychological Safety”	Subhi Tyagi, Dr. Sangeeta Sahney and Dr. Monika Tanwar
588	TOWARD THE MEASUREMENT OF REMOTE PSYCHOLOGICAL CAPITAL: SCALE DEVELOPMENT AND VALIDATION	Vineet Arora, Amit Shukla and Jasvir Nachatar Singh
619	Navigating Toxicity: a qualitative analysis of leadership hurdles among healthcare professionals	Fousia Azeez and Dr. Nimitha Aboobaker
637	Beyond Adversity: Unveiling the Positive Power of Perceived Discrimination on Motivational Strivings	Hera Wali and Nishant Uppal
653	ABUSIVE SUPERVISION AND EMPLOYEE WORK ALIENATION: MEDIATING ROLE OF EMPLOYEE UNETHICAL BEHAVIOR. A CONCEPTUAL REVIEW	Asmabi Kk and Smarty Mukundan
670	Inclusive Leadership and Employee Outcomes – Examining the mediating roles of Psychological Safety, Perceived Inclusion, and Employee Thriving	Virajanand Varma, Reshmi None and Devika Gulla
706	Organizational culture and employee voice in the public sector: A perspective	Lokesh Malviya
714	Inclusive Leadership: A Bibliometric Analysis of Past Milestones and Future Research	Shubhangi Chowdhry
718	Do Relational Leaders Impact Change Readiness for Digital Transformation? Interplay of Mindfulness and Resilience of Employees	Sonali Narbariya
783	Exploring Leadership Perception Shifts in Online vs. Offline Communication Environments	Kanishk Upadhyay and Lalit Krishna
786	Leadership Styles and their Impact on Organizational Culture and Performance – Transformational Service leadership as the way forward	Vidya Aswath and Celina A
792	Building organizational resilience through culture: a case of Tessarakt	Naziya Zaina Naufal, Priya Nair Rajeev and Rahil Mehdi
810	Integrating Spiritual Practices into Contemporary Leadership: revisiting Patanjali Yoga Sutras	Lakshmi Kumari and Priya Rajeev
840	Silent Struggles: Workplace Loneliness and Employees Wellbeing- The Moderating role of Inclusive Leadership	Vaishali Jadon
884	An Analysis of Human Resource Management Policy Challenges on the Gig Economy	Debarna Das, Dr S.N. Ragavendra and Ruma Agnes
892	Radical Resilient Leadership: How Narendra Modi's Vision is Transforming Indian Politics Amid Global Uncertainties	Shubham Shah, Harish Rawat, Vibha Swaroop and Dr. Ashish Sinha
952	Leadership Dynamics: Influence on Organizational Culture and Performance	Obaidullah Saidkhily, Ayyoob A, Amal Sabah and Dr. Aparna Sajeev

981	Employee Silence beyond organizations: A review and Conceptual Framework for the Future Research	Jasveen Kaur and Sushma Rani
982	From Intent to Impact: HRM in the Gig Economy	Vaishnavi Gautam, Mridul Maheshwari and Manish Gupta
995	Mission 'Transition:' Analysing Perceived Leadership Adaptation Challenges in Military to Corporate Career Transition, using Grounded Theory	Tanya Ahuja
1011	Identity Leadership and Turnover Intentions: A serial mediation model	Utkarsh Nigoti and Virajanand Varma
1045	Understanding leader-member exchange dynamics through personality congruence: Implications for work engagement and employee well-being	Veer Pratap Singh Rana and Neerpal Rathi
1086	Navigating the Shadows: A Meta-Analysis of Toxic Leadership in Educational Institutions	Sonu Kumari, Sunita Rani and Ankur Sabharwal
1101	"The Shackles of Leader Aggressive Humour": A Systematic Review and Future Research Direction	Akanksha Mishra
1132	Examining integrity-based trust on bullying and employee silence: An experimental causal-chain study	Dr Arathi Krishna, Dr Devi Soumyaja and Dr. Rahul R Lexman
1136	Unveiling the mechanism of inclusive leadership and organizational learning culture on career sustainability among IT employees: The mediating role of psychological capital	Ravina Matani and Dr. Tripti Singh
1148	Employers' and Employees' Perceptions of Career Break through the Lens of Psychological Contracts: A Qualitative Study	Sumit Manderna and Mridul Maheshwari
1177	Investigating the Influence of Positive Leadership on Flourishing of Women in the IT Sector: Exploring the Connection through Work Engagement	Baisakhi Debnath, Harold Andrew Patrick and Richa Tiwari
1191	Understanding the Impact of Analytics and Artificial Intelligence (AI) at Workplace in Enhancing Employee Engagement Mediated by Employee Trust and Age - A Mixed-Methods Approach Using PLS-SEM and FSQCA	Manish Bharthi and Dr Prakash Tiwari

---

Track 10: Data Science & Artificial Intelligence

Submission Index	Title	Authors
8	A New Algorithm for LU Factorization through Fast Matrix Multiplication	Yajush Bhatia
10	Intelligent Authentication Gateway: Bridging the Gap between Traditional and FIDO2 Security through AI/ML Enhancement	Dasari Nishith, Ikshit Samanta. and Dr. Rajarajan G
106	Revolutionizing Health Diagnostics: The Impact of AI and Machine Learning on Precision Medicine	Krish Somaiya
151	Unveiling Investment Opportunities: Leveraging Artificial Intelligence to Navigate Millennials' Behavioral Finance Biases in Investment Decision-Making	Rahul Chauhan, Salim Shamsher and Rahul Chauhan
189	Transforming Academic Writing: AI and the Convergence of Global Standards	Arjun Prakash, Shruti Aggarwal, Jeevan John Varghese and Joel John Varghese
206	Design of an AI-based Information System to Improve Freshness Efforts in Long-Distance Cold Chain Transport	Vinay Reddy Venumuddala
219	Artificial Intelligence in Stock Market Forecasting: Exploring the Long Short-Term Memory Model for Stock Prediction	Iqbal K I and Remya Ramachandran
404	Smashing the Silicon Ceiling: Stronger IPR and Female Participation in Chinese AI Patenting	Shubhangi Agrawal, Sawan Rathi, Chirantan Chatterjee and Matthew Higgins
547	Unpacking the Period Paradox: The causal link between Menstrual Health and Hygiene and Mental Health Outcomes in Nepal	Karan Babbar
636	A divide-and-conquer approach for spatio-temporal analysis of large house price data from Greater London	Kapil Gupta and Soudeep Deb
657	Demand forecasting for a Pure Play Fashion Retailer using Neural Network	Ravi Kumar P, Ettishri Rajput, Kaja Bantha Navas R and Mohit Kumar
684	Artificial Intelligence in the Recruitment Process as an e-HRM Practice	Suba D and Dr. Arockiam K
696	Forecasting Domestic Water Consumption and leakages – an IoT approach	Hemanth Venkatesh Murthy and Gopal Krishna Sharma
768	A Dual-Space Regularized Approach for Sign Prediction of Edges in Signed Social Networks	Mukul Gupta
771	A machine learning approach to analyzing user behavior and optimizing workflow	Anupama Raveendran and Dhanya M
818	Sotto Voce: The Impacts of Technology to Enhance Worker Voice	Smit Gade, Achyut Adhvaryu, Teresa Molina and Anant Nyshadham
876	A Comprehensive Framework for Detecting Fraudulent Consumers in Electricity Distribution Using Advanced Machine Learning and Optimisation Techniques	Shubhradeep Nandi, Revanth Sai R and Charan M Sai
930	Comparative Analysis of Transformation Functions for Modelling Diminishing Advertising Impact on Sales	Deval Patel and Sagar Kadam
980	Enhancing AI Financial Advice: Centralized Memory Repositories and Small Language Model Integration	Sai Srikanth Madugula and Kiran Kumar Ravulakollu
999	Proximity-based approximation algorithms for integer bilevel programs	Sriram Sankaranarayanan and Shubha Vatsalya Vanga

1029	Bridging the Data Divide: Leveraging AI to Estimate Constituency-Level Data from District-Level Data	Kaustubh Dabral
1030	Comparative Study of ChatGPT and Gemini in Enhancing Business Management Communication and Decision-Making	Aniket Dwivedi and Kajal Kansal
1042	Cooperative Adoption of Supply Chain Traceability	Sanjith Gopalakrishnan, Devpriyo Ray and Sriram Sankaranarayanan
1052	Beyond Surveys: Using Social Media to Understand Consumer Behavior in Sustainable Food Marketing	Chellapilla Deep Prakash and Joel Joy Polimetla
1071	Eco-Influence: How Instagram Shapes Sustainable Fashion Choices in India	Meenal Sharma, Udit Chawla, Vinod Sharma, Sujit Dutta and Devika Mulchandani
1074	Revisiting Academic Strategies for Sustainable Education: Adoption of a Deep Learning based Facial Emotion Detection Model	Madhumita Guha Majumder, Tushar Tripathi and Tripti Mahara
1109	Automating the Software Testing Life Cycle by leveraging Generative AI	Amit Tandon, Gaurav Padam and Anvi Kohli
1115	A multi-agent model with hybrid Jaya algorithm for multi-objective DFJSP with energy management	Manojkumar Pal, Murari Lal Mittal, Sagar Gughe and Surya Prakash
1161	Reducing Tanking in the NBA: An Analysis of Incentive-Based Policies	Rudresh Raval and Shreya Sam
1204	The Long-Run Effects of Protected Land Rights on Economic Development: Evidence from Scheduled Areas in India	Ankit Bhatia and Ankit Bhatia
1211	Incentivized Exploration via Filtered Posterior Sampling	Anand Kalvit, Yonatan Gur and Aleksandrs Slivkins

Track 11: Network Science in Management

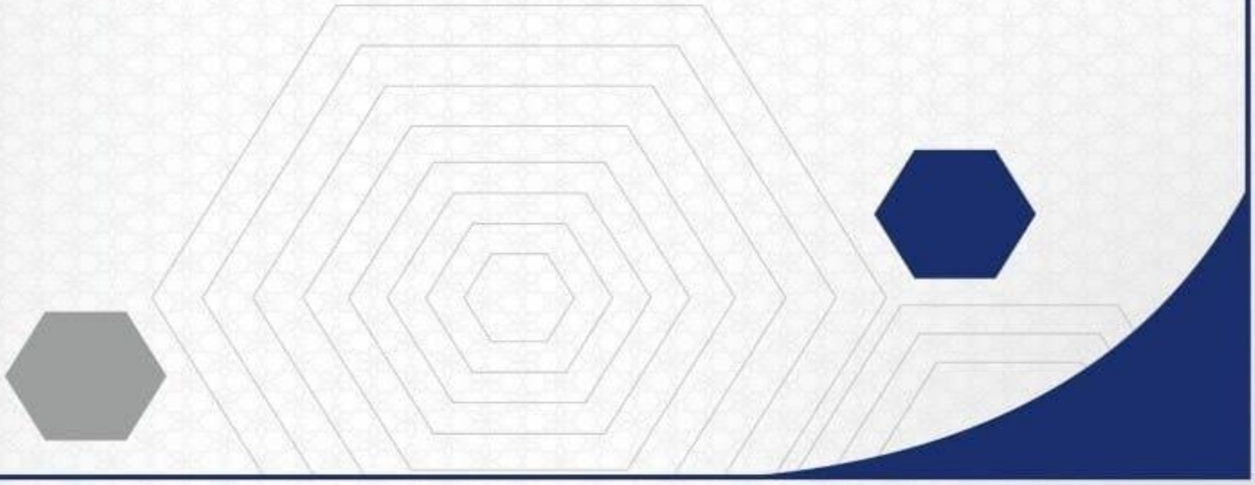
Invited Papers	Title	Authors
1	Conflict Minerals and Sustainability: How do Firm Effort, Supply Base Collaboration, and a Firm’s Influence over Supply Base Affect Conflict Minerals Detection?	Anirban Adhikary
2	Endogenous Production Networks and Firm Dynamics	Anuraag Aekaa
3	Looking outside to catch up: outsourcing strategies and supplier networks in emerging industries	Snehal Awate
4	Fading Stars: How Leaders' Machiavellianism alter their social capital	Prasad Balkundi
5.	Corporate interlinkages and disclosure policy synchronization	Anindya S. Chakrabarti, Sudarshan Kumar, Kaustav Sen
6.	Learning a Network	Promit Choudhury
7.	TBD	Debayan Pakrashi
8.	Caste networks and distress borrowing	Anand Srivastava

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

TRACK 01: ENTREPRENEURSHIP: FACILITATORS & HURDLES RELATED TO SCALING UP OF STARTUPS



Track 01: Entrepreneurship: Facilitators & Hurdles Related to Scaling Up of Startups

69

Submission Number: **69**	Track: **CIIE**

Paper Title: Grit and the Grind: How Organizational Grit Shapes Entrepreneurial Decision-Making and Long-Term Survival

Authors: Rajarshi Mukherjee

Abstract: Abstract Entrepreneurial ventures often navigate uncertain landscapes, driven by the need to experiment and adapt to changing market dynamics. This propensity for experimentation is particularly pronounced in small and new firms, which face the challenges of smallness and newness. However, the myopic focus on short-term survival strategies may lead to early exits, leaving entrepreneurs with regret and counterfactual pondering about their decisions. In this paper, we argue that organizational grit, encompassing purpose, passion, and perseverance, plays a pivotal role in guiding entrepreneurial decision-making and ensuring long-term survival and growth. Introduction Entrepreneurial ventures operate in dynamic environments characterized by constant flux and uncertainty. Within this context, small and new firms face inherent challenges, including the liabilities of smallness and newness, which necessitate a proactive and adaptive approach to decision-making. However, the myopic focus on short-term outcomes may undermine long-term sustainability, leading to premature exits and missed growth opportunities. Entrepreneurs make decisions under constant uncertainty(Knight, 1921; Schumpeter,1942; Kirzner, 1973; Venkataraman, 1997). However, these are scenarios in which entrepreneurs can spot opportunities in the ecosystem through a disequilibrium that remains unobserved by others in the ecosystem, which allows the entrepreneurs to book entrepreneurial profits through the exploitation of disequilibrium (Knight, 1921; Venkataraman,1997; McGrath & MacMillan, 2000) in the ecosystem. Since there is high uncertainty(Mcmullen et al., n.d.) and instability in the ecosystem, entrepreneurs keep experimenting with the strategies and choose the one that best fits the context. While a growing body of literature looks at various aspects of entrepreneurial decision-making have been examined like creativity, moral imagination, and trust, we attempt to look at the process of entrepreneurial decision-making through the lens of intuition and gut feeling of entrepreneurs within the context of a mindset which allows for constant experimentation(Brinckmann et al., 2010; Mintzberg, 1978) with strategy. This happens because when the firms are relatively small and new(Brinckmann et al., 2010), it is easier for the entrepreneurs to pivot based on the firm's needs. While we look at the decision-making process in entrepreneurial firms, we establish that there may be a dichotomy governing the entrepreneurs' decision-making. This happens because when entrepreneurs constantly experiment (Mintzberg, 1978; Mintzberg et al.,1985) and pivot firms based on changing decisions, they might become myopic, missing out on the long-term bigger picture. We establish that firms that need to survive and sustain in the longer term require personal and organizational grit as a construct, which might be absent in most firms. While we understand entrepreneurs go through constant uncertainty and environmental turbulence in the initial days, our research aims to investigate the role of organizational grit in entrepreneurial decision-making. The primary research question, therefore is, RQ: How do counterfactual thinking and grit influence entrepreneurs' decisions? Methodology We establish our point of view through the case study of a food startup in New Delhi, India, which started in 2019 and became profitable within six months of operation. When the sales stagnated beyond a certain threshold, the founders sold off the firm within two years and exited profitably. While this phenomenon might be reflective of serial entrepreneurs, what makes the case interesting is that on reflection, we discovered the founders resorted to counterfactual thinking (Baron, 1998, 1999)and a sense of regret(Khanin et al., 2021) and observed that the construct of grit within the entrepreneurial decision might have been helpful. Based on our discussion with the top management team, we elaborate that entrepreneurial and organizational grit, which are long-term constructs, will not go together with early exits and an experimental mode of strategy execution. The phenomena could be explained through the construct of grit(Duckworth et al., 2007; Duckworth & Quinn, 2009; Jordan et al., 2019), which has elements of purpose(Cardon et al., n.d.), passion(Cardon et al., n.d.; Duckworth et al., 2007) and perseverance(Duckworth et al., 2007; Lastner et al., 2022). Irrespective of the firm's profitability, a gritty firm will not exit and frequently pivot since the purpose of a firm will not change frequently. Findings & Discussion Our analysis reveals three overarching themes: the preference for experimentation and emergent strategy, the role of intuition and gut feeling in decision-making, and the importance of organizational grit for long-term survival. Entrepreneurial ventures often prioritize short-term gains over long-term sustainability, leading to premature exits and missed opportunities. However, firms characterized by organizational grit demonstrate resilience and persistence, enabling them to weather challenges and pursue long-term objectives. Our findings underscore the critical role of organizational grit in guiding entrepreneurial decision-making and ensuring long-term success.

Organizational grit empowers firms to navigate uncertainty and pursue strategic objectives with confidence by fostering a sense of purpose, passion, and perseverance. However, the absence of grit may lead to myopic decision-making and premature exits, highlighting the importance of cultivating grit within entrepreneurial ventures. Implications of Our Study and Future Work: Our study has implications for both academic research and practical application. By highlighting the significance of organizational grit in entrepreneurial decision-making, we contribute to the growing literature on entrepreneurial behavior and firm performance. Future research could further explore the measurement and impact of organizational grit on strategic outcomes, as well as the boundary conditions that influence its efficacy. Practitioners can leverage our insights to cultivate grit within their organizations, fostering resilience and adaptability in dynamic environments. Limitations and Concluding Thoughts While our study provides valuable insights into the role of organizational grit in entrepreneurial decision-making, it is based on a single case study, limiting the generalizability of our findings. Future research could adopt a broader sample and longitudinal approach to validate our findings and explore additional dimensions of organizational grit. Additionally, the subjective nature of qualitative analysis may introduce bias, warranting caution in interpreting the results. We find organizational grit emerges as a critical determinant of entrepreneurial success, shaping decision-making and strategic outcomes. By fostering purpose, passion, and perseverance, entrepreneurial ventures can navigate uncertainty and pursue long-term objectives with confidence. Our study underscores the importance of cultivating grit within organizations, ensuring resilience and sustainability in dynamic environments.

231

Submission Number: **231**	Track: **CIIE**

Paper Title: Drivers facilitating women led Startups to Scale Up and Sustain

Authors: Meena Vaidyanathan, Rajeshwari Balasubramanian and Resmi Bhaskaran

Abstract: Women entrepreneurs both in urban and rural regions of India are playing an increasingly vital role in driving innovation, job creation, poverty alleviation and economic growth (Reddy et.al, 2024; Rani, 2024). However, women-led startups often face unique challenges in scaling up and sustaining their ventures compared to their male counterparts (Gupta and Dwivedi, 2023). Understanding the key drivers that enable women entrepreneurs to successfully scale and sustain their businesses is crucial for a more inclusive and dynamic entrepreneurial ecosystem. Research undertaken thus far in India on the subject have either addressed the issues through the context of gender equality or from the context of all types of entrepreneurial ventures and challenges and opportunities for the same (Gupta and Dwivedi, 2023; Sen, 2023). The Global Entrepreneurship Monitor 2023 shows that while the entrepreneurial environment is improving, a significant gender gap remains, making entrepreneurship particularly challenging for women due to systemic gender biases, and highlighting that entrepreneurs need more than just funding (GEM 2023). The existing literature on women-led enterprises has not examined in depth how the behavioral aspects and thought processes of women entrepreneurs are shaped by the context in which they are emerging, and how these contextual factors impact the key drivers that facilitate the scaling and sustainability of their ventures. Objective: This research study aims to fill the above gap in literature and through adopting a qualitative case study approach investigates the critical factors/drivers that facilitate the scaling up and sustainability of women-led startups. The research will bring critical insights on the key lessons and best practices of women-led startups that have successfully scaled and sustained their businesses. Methodology: The research employs a multi-case study design, examining several women-led startups across different industries and stages of growth. It allows for an in-depth, contextual examination of the phenomenon, providing rich insights into the experiences, strategies, and challenges of women entrepreneurs as they navigate the scaling process. Some examples of drivers could be access to finance and capital, contextually relevant mentorship and skill development opportunities etc. Data is collected through in-depth interviews with founders and key personnel, analysis of company documents and archival records, and observations of the startups' operations and interactions. The case studies are selected based on criteria such as the startup's growth trajectory, industry, and the founder's background and experience. Key research questions: The study is guided by the following research questions: How are ecosystem drivers different for women led Startups to scale up than for others? What internal and external drivers enable women-led startups to scale up their operations and achieve long-term sustainability? What strategies and practices do successful women entrepreneurs employ to overcome barriers and challenges in the scaling process? How do contextual factors, such as industry, geographic location, socio-cultural norms covering role of family, training, influence the scaling and sustainability of women-led ventures? The preliminary findings based on secondary data, suggest that the key drivers facilitating the scaling and sustainability of women-led startups can be categorized into the following themes: Access to

Capital and Financing: Women entrepreneurs often face greater difficulties in securing adequate funding, whether through venture capital, angel investments, or traditional bank loans. In 2020 women-led businesses received just 2.3% of the Venture Capital funding (Bittner and Lau, 2021) across the globe. It is further reported that women entrepreneurs have loan approval rates that are 15-20% lower than that of men. Women-led businesses tend to be perceived as high-risk investments by financiers, and capital investment in women-run businesses remains very limited. Initiatives that improve women's access to diverse financing options, such as gender-lens investing, crowdfunding platforms, and government-backed loan programs, can significantly enhance their ability to scale up. Entrepreneurial Ecosystem Support: The presence of a robust, women-centric entrepreneurial ecosystem, including mentorship programs, networking opportunities, and specialized incubators and accelerators, can provide invaluable support to women founders. These resources help them develop essential business skills, expand their professional networks, and navigate the challenges of scaling up. A recent study by WEP and MSC reveals that only 25% of surveyed women entrepreneurs have access to mentorship, and 64% are unaware of mentorship programs. Formal mentorship is uncommon, especially in smaller towns and cities, though local women's industry associations offer some support. Family-based mentorship is significant, with 24% relying on friends and family, often male relatives, for guidance (Anandharaman and Rangasamy 2023; Korreck 2019). Leveraging Digital Technologies: The strategic adoption of digital technologies, such as e-commerce platforms, cloud-based tools, and data analytics, can enable women-led startups to enhance their operational efficiency, reach new markets, and better understand customer needs. Improving digital literacy and access to technological resources can be a key driver of scaling and sustainability. Cultivating Psychological Resilience: Women entrepreneurs often face unique psychological barriers, such as imposter syndrome, risk aversion, and work-life balance challenges. Developing strategies to build psychological resilience, including access to coaching, peer support, and self-care practices, can help women founders overcome these obstacles and sustain their entrepreneurial journeys. Addressing Sociocultural Norms: Deeply rooted societal norms and gender biases can pose significant hurdles for women entrepreneurs, limiting their access to resources, networks, and opportunities. Initiatives that challenge these norms, promote female role models, and foster a more inclusive entrepreneurial culture can create an enabling environment for women-led startups to thrive. The case studies provide rich, contextual insights into how these drivers interact with each other and are shaped by the specific contexts in which the startups operate. The findings highlight the importance of tailoring support and interventions to the unique needs and challenges faced by women entrepreneurs in different industries, regions, and stages of growth. The study contributes to the growing body of research on women's entrepreneurship by providing a nuanced understanding of the key drivers and strategies that enable women-led startups to scale up and sustain their operations over time. The insights generated can inform the development of targeted policies, programs, and ecosystem-level interventions to support the growth and success of women-led businesses, ultimately fostering a more diverse, equitable, and prosperous entrepreneurial landscape.

286

Submission Number: **286**	Track: **CIIE**

Paper Title: From Setbacks to Success: The Interplay of Setbacks, Emergent Learning, and Entrepreneurial Alertness

Authors: Sukriti Pandey and Ruchika Khetarpal

Abstract: Introduction The study uses experiential learning theory to explain how entrepreneurial experiences of setbacks and failures influences entrepreneurs' perspectives towards failure and help them progress and take advantage of future opportunities through learnings emerged from failure experiences. However, these experiences reduce entrepreneurs' risk-taking ability (Shepherd, 2003). But there is another view like McGrath (1999) says failure may help businesses learn and grow. Thus, in business, entrepreneurial failure is considered important (Cardon and McGrath, 1999; Thornhill and Amit, 2003). According to researchers like (Cope, et al., 2004; Hayward, et al., 2010), entrepreneurs who have failed previously are more equipped to succeed since failure frequently leads to learning and revitalizing entrepreneurial efforts. Entrepreneurs may struggle to learn from failure if they avoid it (McGrath, 1999; Shepherd, 2003). However, only few quantitative research has explored startup failures and learning from them. The current research will evaluate entrepreneurs' obstacles and how their emergent learning ability influences their new enterprises' resilience ability. Theoretical Foundation Throughout the entirety of an entrepreneur's journey of new venture creation, the entrepreneurs encounter a multitude of experiences due to lack of knowledge and expertise. These experiences entail various aspects, including prior startup experience, setbacks encountered during the creation process, and at times even the unfortunate experience of a business closure. We are linking the individual experiences from setbacks with the experiential learning theory. The theory of experiential learning prioritizes direct, active, and individual experiences over passive approaches such as reading literature or following others (Kolb, 1984; Corbett, 2005). It posits that an individual has a cycle of learning from the experiencing followed by reflecting, thinking, and acting. In entrepreneurial journey we are arguing that, when faced with a new and challenging situation, an entrepreneur

strives to comprehend the situation from the previous learnings and its causes via mindful observations, despite encountering setbacks again. Individuals engage in a dynamic process of alternating between contradictory phase of thinking and action, as well as emotion and cognition (Kolb, 1984). Experiential learning theory defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb, et al., 2014, Kolb, 1984) Hypothesis Development Entrepreneurial Setbacks' Experiences Gartner (1985) and Minniti and Bygrave (2001) stressed the dynamic nature of the entrepreneurial process and the prevalence of learning by doing due to critical setbacks during new venture creation, where entrepreneurs often explore various alternatives and make out-of-the-ordinary evolutions to turn the identified opportunity into a feasible business plan. Stokes and Blackburn (2002), Bates (2005), and Singh et al. (2007) comprehend the act of closing a firm as an evolving process of acquiring knowledge. This method raises entrepreneurs' awareness of uncertainty (Bates, 2005). Experiencing a shutdown or exiting a business due to a negative experience may help entrepreneurs learn self-management skills, helping them overcome setbacks and failures. Given these considerations, we suggest the following hypothesis: Hypothesis 1: There is a significant relationship between entrepreneurs' setback experience from prior business venture and firm resilience. Entrepreneurial Alertness Kirzner's seminal research (1973, 1979) defined entrepreneurial alertness as the cognitive ability to actively and deliberately seek out novel ideas in a given setting, connect them with their pre-existing knowledge, and effectively use resources to evaluate and exploit innovative concepts. According to Gaglio and Katz (2001) and Tang (2008), Entrepreneurial Alertness (EA) is crucial to identifying opportunities. It is important to note that EA does not involve business initiative launch, but rather identification. Proactive entrepreneurs are more likely to seize new opportunities, so greater entrepreneurial alertness should lead to new venture success (Shane and Venkataraman, 2000). Thus, the study hypothesized: Hypothesis 2: There is a significant relationship between entrepreneurial alertness and firm resilience. Emergent learning High-level emergent learners may be inspired to carefully examine their actions, identify the causes and effects of their failures (Ucbasaran et al. 2009), and self-reflect on past judgments, decisions, conducts, or inaccuracies (Shepherd 2003). Thus, actively participating in emergent learning increases the likelihood of significant strategic planning changes for entrepreneurs. Emergent learning's situational nature and adaptability allow it to incorporate a wide range of knowledge and expertise about a particular event, such as failure, which is also a phase of an entrepreneurial journey. This means they become irrelevant as circumstances change (Parker 2013; Yamakawa and Cardon 2015). Considering the above, present study propose the following hypothesis: Hypothesis 3: There is a significant relationship between emergent learning and firm resilience. Hypothesis 4: The relationship between entrepreneur's setback experience and firm resilience is mediated by entrepreneurial alertness and emergent learning. Methodology The study uses quantitative methods to examine how entrepreneurial setbacks affect new firm resilience through entrepreneurial alertness and emergent learning. DV is Firm resilience, IV is entrepreneurial setback experience, Mediating Variables are entrepreneurial alertness, and emergent learning. The study sample includes serial entrepreneurs who left their previous business due to losses, mergers, acquisitions, or new ventures. Data was collected using developed scales adopted from existing literatures. Sample size is 344 entrepreneurs with at least one business or startup experience. Data was analyzed using Smart PLS and Structural Equation Modelling. Initial measurement model framework reliability and validity testing was done. The structural model's effect on variables and model fit is tested. To reach study results, data was rigorously tested. Findings The analysis revealed significant relationships among setback experiences, entrepreneurial alertness, emergent learning, and new firm's ability to cope with uncertainty. Entrepreneurial alertness and emergent learning were positively and significantly affected by setbacks. We found that entrepreneurial alertness and emergent learning partially mediate the impact of setback experience on serial entrepreneur-founded emerging firms' ability to recover. Entrepreneurial setbacks directly affect new firm resilience by 0.621. The indirect effect of entrepreneurial alertness is 0.160, while the indirect effect of emergent learning is 0.053 at a 0.001 significance level. In general, the study's measurement model meets the critical thresholds for Individual Indicator Reliability (factor loading), Composite Reliability (CR), and Average Variance Extracted (AVE) (Hair et al., 2022).

340

<table>
<tr><td>Submission Number: 340</td><td>Track: CIIE</td></tr>
<tr><td colspan="2">Paper Title: "The Changing Landscape of Start-ups: A Comparative Study of Government Policies in Andhra Pradesh"</td></tr>
<tr><td colspan="2">Authors: Y Sudha Chandra and V Lakshmi Sharma</td></tr>
<tr><td colspan="2">Abstract: The entrepreneurial landscape in Andhra Pradesh has undergone significant transformations over the past decade, driven by evolving government policies and a growing focus on fostering innovation and startup ecosystems. This paper provides a comprehensive comparative analysis of the government policies impacting startups in Andhra Pradesh, examining</td></tr>
</table>

the historical context, current initiatives, and their implications for the future growth of the region's entrepreneurial ecosystem. The study begins by outlining the historical background of Andhra Pradesh's economic and industrial development, highlighting the key policy milestones that have shaped the state's business environment. The bifurcation of Andhra Pradesh in 2014, which led to the creation of Telangana, marked a pivotal moment in the state's economic history. This event spurred the Andhra Pradesh government to intensify its efforts to attract investment and promote entrepreneurship as a means of economic revitalization. One of the critical aspects explored in this study is the role of various state government initiatives in nurturing startups. The Andhra Pradesh Innovation Society (APIS), established to promote innovation and entrepreneurship, has played a vital role in this regard. APIS has launched several programs aimed at supporting early-stage startups, including incubation, seed funding, and mentorship. The study examines the impact of these initiatives on the startup ecosystem, analyzing success stories and identifying areas for improvement. Furthermore, the paper delves into the policy framework supporting key sectors such as information technology, agriculture, and manufacturing. The state's focus on developing IT hubs and technology parks has been instrumental in attracting tech startups and fostering a culture of innovation. The role of the Andhra Pradesh Industrial Infrastructure Corporation (APIIC) in providing infrastructure and logistical support to startups is also examined, highlighting the significance of public-private partnerships in driving economic growth. A comparative analysis of pre- and post-bifurcation policies reveals the adaptive strategies employed by the state government to address the challenges and opportunities arising from the split. The study explores how policy shifts have influenced the growth trajectories of startups, with particular attention to regulatory changes, tax incentives, and ease of doing business reforms. The introduction of the Andhra Pradesh State Startup Policy in 2014 marked a significant milestone, outlining the government's vision to create a conducive environment for startups through various incentives and support mechanisms. The paper also investigates the role of central government policies and initiatives in complementing state-level efforts. Programs such as Startup India and Digital India have had a cascading effect on the startup ecosystem in Andhra Pradesh, providing additional avenues for funding, market access, and technological adoption. The interplay between state and central policies is analyzed to understand the synergistic effects on startup growth and sustainability. Case studies of prominent startups from Andhra Pradesh, such as KisaanTech, Aha, and Ekincare, are presented to illustrate the real-world impact of government policies. These case studies provide insights into the challenges faced by startups and the strategies employed to navigate the regulatory landscape. Success stories highlight the importance of government support in scaling operations, accessing markets, and driving innovation. Conversely, the challenges underscore the need for continuous policy refinement to address emerging issues such as access to capital, skill development, and market competitiveness. The study also addresses the socio-economic impact of startups on the region. The role of startups in job creation, skill development, and regional economic development is examined, with a focus on how government policies have facilitated these outcomes. The contribution of startups to addressing social issues, such as healthcare, education, and agriculture, is highlighted, showcasing the broader benefits of a vibrant entrepreneurial ecosystem. In addition to analyzing existing policies, the paper offers policy recommendations to enhance the startup ecosystem in Andhra Pradesh. These recommendations are informed by the comparative analysis and aim to address gaps and leverage opportunities for future growth. Key recommendations include the need for enhanced access to capital through venture funds and angel networks, the importance of fostering industry-academia collaborations for innovation, and the role of policy consistency and transparency in building investor confidence. The paper concludes by reflecting on the future outlook for startups in Andhra Pradesh. Emerging trends such as the rise of tech-driven sectors, the growing importance of sustainability, and the impact of global economic shifts are discussed. The potential of Andhra Pradesh to position itself as a leading startup hub in India is explored, emphasizing the need for a strategic vision that aligns government policies with the dynamic needs of the entrepreneurial ecosystem. In summary, this study provides a detailed comparative analysis of the changing landscape of startups in Andhra Pradesh, with a specific focus on the role of government policies. By examining historical context, current initiatives, and future prospects, the paper offers a comprehensive understanding of the interplay between policy and entrepreneurship. The findings underscore the critical role of adaptive and supportive policies in fostering a robust startup ecosystem, driving economic growth, and addressing socio-economic challenges in the region. The insights gained from this study can inform policymakers, entrepreneurs, and stakeholders in their efforts to build a vibrant and sustainable startup ecosystem in Andhra Pradesh.

341

Submission Number: **341**	Track: **CIIE**
Paper Title: Founding team human capital and initial funding: A legitimacy perspective	
Authors: Sumit Jaiswal, Chitra Singla and K V Gopakumar	

Abstract: Introduction Investors rely on various human capital attributes of the founding team, such as education, knowledge, skills, and experience, to form legitimacy perception of new ventures (Zimmerman & Zeitz, 2002). The quality of human capital acts as a proxy for new ventures' future potential (Naiki & Ogane, 2022), helping investors make funding decisions (Hashai & Zahra, 2022). Scholars have given sufficient attention to investors' funding decisions based on the educational background (general human capital) and entrepreneurial experience (specific human capital) of founding team members (Batjargal, 2003; Matusik et al., 2008). Though there is a consensus that investors positively evaluate the entrepreneurial experience of a founding team, the impact of the founding team`s educational credentials on VC funding remains inconclusive. For instance, both technical and management education have been found to elicit favourable and unfavourable responses from VCs (Franke et al., 2008; Hsu, 2007). One possible reason for this could be the limited effort to qualify the educational credentials of founding members (Cooper et al., 1994; Piva & Rossi-Lamastra, 2018), whose management or technical degrees, irrespective of the institutions, are treated as comparable and equivalent In a country like India, which is characterized by institutional voids (Khanna & Palepu, 2010) and where 75% of the new ventures have founding members from engineering or management backgrounds, investors often rely on proxy indicators such as the quality of educational degrees to form their legitimacy perception and assign financial resources to the founding team. This study tries to provide a nuanced understanding of the educational background of founding team members and their initial financial resource acquisition by asking - 1. How does the education of founders from premier management and engineering institutions affect the amount of first funding raised by new ventures? 2. Whether general (premier engineering/management education) and specific human capital (entrepreneurial experience) substitute or complement each other Conceptual Model Financial resources acquired in the early stages help a new venture strategize, develop, and market products or services and establish a competitive positioning vis-à-vis its competitors by adjusting to environmental conditions (Cooper et al., 1994). However, acquiring financial resources in the early stages is challenging (Ko & McKelvie, 2018; Plummer et al., 2016) because external resource providers are skeptical of new ventures' prospects since they lack credible evidence concerning products, technology, team, or market potential (Nagy et al., 2012; Zott & Huy, 2007). In the absence of these indicators, resource providers rely on multiple cues, such as founding teams` characteristics, competence, past background, and networks, to reduce uncertainty and assign legitimacy to new ventures (Zimmerman & Zeitz, 2002). Ascribing legitimacy to new ventures in the early stages helps investors decide the extent of funding they wish to provide. Hence, legitimacy appears to be an appropriate lens in this context. Methodology We focused on new ventures to test our hypotheses. For our study, we sampled firms aged ten years or less from incorporation to first funding, a well-accepted definition of the new venture in the literature (Ko & McKelvie, 2018). We collected data from multiple sources to get information related to investments in the new ventures since their formal incorporation, regardless of the types of investors and other financial and non-financial variables, such as founders' education and entrepreneurial experiences. We used ordinary least squares (OLS) regression to test the relationship between the human capital of founders and the amount of initial funding secured by it. We used the Heckman test to estimate our results to address selection issues (Heckman, 1979) as a robustness check. We also try to establish the legitimacy mechanism using an experimental design. Results Our results suggest that the quality of technical and management degrees of founders impact investors` assessment of new ventures. Resource providers value management degrees more than technical degrees from premier institutions. An increase in the number of founding team members with management degrees from premier institutions increases the amount of first funding received by new ventures. Surprisingly, a higher number of founders with only technical degrees from premier engineering institutions reduces the first funding amount, which is opposite to what we hypothesized. Furthermore, as hypothesized, those founding teams with a higher number of founders who are graduates of both premier engineering and management institutions further increase the amount of first funding. We also find that entrepreneurial experience reverses the negative perception of investors about a new venture that has founders with only technical degrees from premier institutions. Implications Our research contributes to the growing literature on VC financing of new ventures (Colombo, 2021; Ko & McKelvie, 2018). Our results align with previous scholars' findings who argue that founders' educational qualifications act as a source of legitimacy for new ventures (Nagy et al., 2012; Zimmerman & Zeitz, 2002). By focusing on the premier/non-premier engineering and management background of the founding team, we provide evidence for the observations made by scholars to uncover the layers of educational background (Capelleras et al., 2019) that influence resource providers' investment decisions (Colombo & Grilli, 2010; Zott & Huy, 2007). Furthermore, the substitution effect between entrepreneurial experience and technical education suggests the interactive nature of specific and general human capital, which is not much explored in the literature. This study has practical significance for both entrepreneurs and investors. While forming a venture, entrepreneurs should know what kind of founding teams are likely to receive higher legitimacy from resource providers, which would result in larger initial funding. Since initial funding is crucial for the growth and survival of new ventures, it is in the interest of entrepreneurs to realize what investors look for in a new venture in the early stages. Their likelihood of getting higher funding will improve if they have diversity in terms of founding experience and educational background. Our study also provides insights for VCs. Investors could figure out the kinds of new ventures that are getting higher initial funding. It may make them aware of their

biases and could signal whether they are missing other good opportunities by relying too much on founding experience and particular types of educational qualifications.

371

Submission Number: **371**	Track: **CIIE**

Paper Title: Shaping the Future: Perspectives of Established & Aspiring Entrepreneurs on India's Business Landscape

Authors: Kamal Gulati

Abstract: Introduction: This study aims to highlight the intentions, perceptions and understanding of two groups of entrepreneurs (Current and Aspiring) in the context of India's developing economy by seeking to answers the research questions below: Q1: How do opportunity-motivated intellectual entrepreneurs perceive entrepreneurship in a developing country context where necessity-motivated entrepreneurship thrives? Q2: What do aspiring entrepreneurs think of as entrepreneurship compared to the experiences of current entrepreneurs who have already achieved success in a frugal environment? We explored what entrepreneurship means to both groups, their motivation to become entrepreneurs, the skills required to become successful entrepreneurs, the challenges they face, and the strategies they have adopted to withstand the challenges. In addition, we compile recommendations for policymakers, educational institutions and industry leaders for strengthening the entrepreneurial ecosystem in India. Our research paradigm is grounded in the fundamentals of social cognitive theory, which explains how continuous interaction between cognitive, behavioural and environmental factors determine one's actions. Since the interplay between the three factors influence human behaviour, despite the three factors not equally contributing to trigger behavioural patterns, they should be amalgamated to predict individuals' actions. As such, it is important to compile knowledge on the influence of internal and external factors of an individual on their entrepreneurial perception and action as perceived by such an elite group as Chevening fellows. Methods: Data was collected through in-depth semi-structured interviews conducted face-to-face with 19 out of the 22 Chevening fellows from India who attended the Chevening (CRISP) fellowship at the University of Oxford, UK. They are from diverse fields, such as information technology, banking, and healthcare, representing both the public and private sectors. Participants were characterised into two groups: 1. Current (experienced) entrepreneurs (n=10) and 2. Chevening fellows aspiring to be entrepreneurs (n=9). It is important to note that ten current entrepreneurs fall into the statistical category of 10% who have achieved success, while statistically, only one out of the nine aspiring Chevening fellows would make it as a successful entrepreneur unless their education provides an edge to go against the statistics (Kalyanasundaram, 2018). All 19 informants fall into the category of opportunity-based entrepreneurs who identified (or look for) a business opportunity and developed (or aspire to develop) their business as a career choice. They all are well educated, where 18 out of 19 informants had postgraduate or PhD qualifications, and a solitary informant had a bachelor's degree. In contrast to having no option but to earn a living through entrepreneurship, they all had (and have) multiple lucrative career choices in the professional labour market. Two comparable interview protocols validated through a pilot study conducted prior to the event were designed with the help of the literature to understand the detailed background of each informant, including what they do, what entrepreneurship means to them, what motivates them to choose entrepreneurship as a career choice, what skills they think are important for successful entrepreneurship, what type of contextual challenges they (or they may) face, what strategies they have adopted (or may resort) to overcome the challenges they face and what would they advise the aspiring entrepreneurs to as recommended strategies to follow. While each interview which lasted between 60 to 90 minutes, was digitally recorded with permission, the second researcher made notes of responses to capture critical details. Each interview recording was professionally transcribed and presented with associated handwritten notes for analysis. Results: All Current entrepreneurs were Senior Executives (Founders/Chief Executive officers) of their own companies, while Aspiring entrepreneurs were employed in mid- to top-level positions in various private and public sector organisations. Current entrepreneurs could make it successfully in a context where "90% of the start-ups in India fail within the first few years" as quoted by many interviewees. They knew what it took to be a successful entrepreneur. In contrast, the Aspiring entrepreneur group had not experienced the circumstances first-hand and only envisaged the potential scenario. Therefore, the perceptions of the two groups imparted two distinct narratives, namely (i) Entrepreneurship meaning, (ii) Motivation factors, (iii) Skills required, (iv) Challenges, and (v) Strategies to withstand challenges. Majority of the interviewees reiterated that it was very challenging to conduct business in India, especially in comparison to the Western world. What challenges entrepreneurs must withstand to remain in business in an ecosystem with an extreme failure rate was valuable knowledge. Likewise, the frame of mind of Aspiring entrepreneurs and the contrast between the perception of the two groups was imperative to understand if the Aspiring entrepreneurs are prepared for the true rigours of entrepreneurship. Even though Aspiring entrepreneurs were ignorant that they may have to confront ingrained corruption and fraud within the entrepreneurial ecosystem and their traditionally non-collaborative societal and business ecosystem, Current entrepreneurs have faced it first-hand. Though

gaining government funding and grants for start-ups emerged as difficult in Aspiring entrepreneurs' interviews, Current entrepreneurs showed no importance to government grants for their success. Likewise, even though the Aspiring entrepreneurs' felt that there would be resistance from their families due to less time spent focused on them, current entrepreneurs had hardly experienced family resistance to working towards their entrepreneurial ambitions. Conclusions: This study has proposed a future research agenda while focusing on the current difficulties faced by entrepreneurs in a developing Indian economy. It was noted that social and sustainability activities play an important role in non-western contexts when the influences of financial and non-financial incentives for entrepreneurship were explored. It is suggested that entrepreneurship be stimulated by concentrating on various approaches to the identified challenges. This study derives its strength from the profile of professionals who participated in this study. Chevening fellows are selected through a rigorous multi-stage process and are considered best of brains with excellent education and professional work experience in the country. Hence, their opinion about the entrepreneurship ecosystem in India can serve as a valuable resource. The only limitation is that this study covers the perspectives of successful entrepreneurs with low representation of women entrepreneurs.

396

Submission Number: **396** | Track: **CIIE**

Paper Title: Resilience of Microclusters of Creative Entrepreneurs During Crises

Authors: Sawan Rathi, Josh Siepel, Monica Masucci and Roberto Camerani

Abstract: Firms in the creative industries are well-known to be organized in clusters and are particularly reliant upon close-knit production networks and agglomeration. In this paper, we explore the extent to which highly localized agglomerations affect regional resilience. Emerging literature highlights the importance of microgeographies, particularly creative `microclusters' at the street, neighborhood, or town level, as distinct from creative `clusters' at the city level. It suggests entrepreneurs in these microclusters may have distinct characteristics from traditionally conceived clusters identified at the city level. In this paper we use evidence from the UK to suggest that local networks, trust, and knowledge spillovers of entrepreneurs within microclusters, as opposed to clusters, caused these areas to be particularly resilient to crises such as COVID-19. We use official labor market statistics in the UK at a fine-grained MSOA (Medium Super Output Area) level from 2016 to 2022. Using difference-in-differences techniques, we show that during COVID-19, the number of employees in MSOAs that were part of creative microclusters grew by 9.15 percent compared to non-microcluster MSOAs. The effect holds for microclusters but does not hold for creative clusters, suggesting that microclusters were uniquely resilient compared to clusters more broadly. To understand the mechanism of this resilience, we used survey data of entrepreneurs from 900 UK creative firms conducted pre-pandemic. We find that entrepreneurs in microclusters are more likely to sell primarily to businesses, their clients are more likely to be located locally, and they are more likely to place higher value on proximity to customers and other firms in the same sector. We argue, therefore that these local supply chains provided the source of resilience and growth as the UK emerged from the pandemic. These findings about the importance of micro-geographies for resilience have substantial implications for our understanding of drivers of resilience in light of disruptions to distributed global supply chains.

455

Submission Number: **455** | Track: **CIIE**

Paper Title: Startups and innovation: how do Indian government policies fare?

Authors: Aneesha Chitgupi, Diya Uday and Karthik Suresh

Abstract: Introduction When private firms engage in innovation, the ideas and benefits that arise spill over to society at large. An underspend on innovation results in the market failure of “positive externalities”. The state has an important role to play in solving this market failure by encouraging spending on activities that generate innovation (Mashelkar et al., 2024). For this, it is necessary to understand which firms generate these spillovers and how the state should intervene. Governments across the world identify and focus on startups as agents of innovation. In India, the Union government promulgated the Startup India Action Plan, 2016 whose stated objective is to promote innovation. It offers a suite of regulatory exemptions and incentives to encourage innovation by startups. Two key components of this policy are: (i) reduced fees and priority in processing patent and design applications for startups; and (ii) full exemptions on income tax for startups. More recently, the July 2024 Budget abolished the "angel tax" and introduced incentives to promote innovation among startups in the agriculture sector. This environment throws up a number of important and interesting questions of both policy and academic interest. What is innovation? How can innovation be measured? Is the focus on startups as agents of innovation justified? Do state interventions spur innovation? How robust are Indian policies on startups? While there is some global literature that has attempted to answer some of these questions, there is limited academic work in the Indian context. Further, there is also disagreement on some of these questions in the existing literature. We provide a brief overview of this literature below. An overview of the literature We review the literature for three important questions: 1. How should "innovation" be measured? 2. Are startups drivers of innovation? 3. What government interventions are most suited to drive innovation? Some authors have used the number of patents granted as a measure of innovation (Katila, 2000; McAleer & Slottje, 2005; Ponta et al., 2021) while others argue that patents are not good measures of innovation (Reeb & Zhao, 2020). Further, contrary to the strategy governments employ by focusing on startups as agents of innovation, the literature suggests that firm size and innovation are positively correlated (Cohen & Klepper, 1996; Symeonidis, 1996), implying that larger firms drive innovation. There is no consensus on the intervention strategy for governments to incentivize innovation. One strand of the literature suggests that interventions in this field must be in the form of supply-side measures such as relaxing regulations and compliance burdens and providing tax incentives (Yue et al., 2023), while others suggest demand-side strategies through measures such as public procurement (Geroski, 1989; Rothwell & Zegveld, 1988) are the ideal strategy. The debates in the literature are further accentuated by the limited research on these questions in the Indian context. In this paper, we attempt to answer some of these questions in the Indian context. This paper will bridge the gap in Indian literature and serve as a policy piece with learnings for the existing strategy of the government in India. It will also give us some data-based insight into these questions in the context of emerging economies, since current work focuses on firms and markets in the advanced economies. Research questions We examine India's policies on incentivizing innovation by startups. We contextualise the three questions set out in sub-section 1.1 to gain insights into the Indian environment on startups and innovation: 1. What is the impact of existing policies on fostering innovation among startups in India? 2. How accessible are the current set of government policies for startups? 3. How can the existing policy strategies for startups be made more robust? Data and research methodology We employ a mixed-methods approach combining empirical data and a review of government policies. Our empirical data is derived from (i) a hand-collected dataset on patent filings and grants from the Indian Patent Office across different categories of entities for the years 2016-17 to 2020-21, which is substantiated using the annual reports of the Department of Promotion of Industry and Internal Trade (DPIIT), and (ii) minutes of meetings published on the Startup India portal by the Inter-Ministerial Board (IMB) in determining the eligibility of startups for tax incentives. Our legal analysis focuses on the Startup Indian Policy, the statutory framework provided under Section 80-IAC of the Income Tax Act, and related guidelines issued by the DPIIT. We employ this data to test the impact of existing policies on fostering innovation among startups in India. We then use our hand-collected dataset of decisions on tax exemptions to analyse the accessibility of the current suite of incentives offered to startups. Early findings and takeaways Our findings suggest that some government policies may have the intended effect of spurring innovation but not the desired outcome of increasing the share of innovation by startups vis-á-vis other firms. Our findings contribute to the literature on how innovation should be measured by questioning traditional measures of innovation. Further, we find that existing policies are not robust and lack transparency in implementation. India needs to think harder about what "innovation" means in India and what role the government should play in encouraging innovation. Interestingly, some of our findings are in consonance with global literature, which suggests that the Indian context of firms and startups and innovation may not be markedly different from some other countries. These findings give us insight into key questions unanswered in previous literature and lay the foundation for further research in this field.

484

Submission Number: **484**	Track: **CIIE**
Paper Title: Do the Decision-making styles of rural women entrepreneurs facilitate the growth of micro-enterprises? An empirical investigation	
Authors: Anuja Sharma, Raunak Gupta, Rajesh Gupta and Piyush Kumar Sinha	
Abstract: Purpose Since entrepreneurs work in a dynamic environment, numerous factors, such as objectives, environmental factors, alternatives, their probable outcomes, and likewise (Yener, 2020) influence their decision-making style. Entrepreneurs also depend on external ecosystem factors for effective decision-making, as enterprises are interconnected units that cannot thrive without interaction and resource exchange within the entrepreneurial ecosystem (Mack & Mayer, 2016). Research shows that entrepreneur's decision-making style significantly affects their enterprise's success (Lin, 2006)	

or failure (Porter, 1985). It is seen that decision-making style can also be influenced by training and mentoring (Klaczynski et al., 2001). In light of the impetus for improving entrepreneurship among rural women by government and development organizations, several schemes and programs are being implemented in this direction (Saranya & Chandrasekar, 2023). Therefore, we study the aftermath of decision-making styles on micro-enterprises' performance among rural women entrepreneurs. We also look into how physical infrastructure and sociocultural support influence this relationship. We also examine the impact of a training cum mentoring and handholding program on the decision-making styles of the rural women entrepreneurs. Research Methodology The study's data was collected from rural women entrepreneurs from four blocks of a state in India where the Start-up Village Entrepreneurship Program (SVEP) was already implemented. The respondents had completed their 3-day module of the formal training and had undergone the business handholding support provided by the counselors for at least 1 year. The items for the key measurement of this study (decision-making styles and firm performance) were operationalized using the scales previously validated by researchers and scholars (Scott and Bruce, 1995; Chandler and Hanks, 1993). Data collected was analyzed through descriptive statistics, t-test, and PLS-SEM to validate the hypothesis of this study. Findings and Discussion The findings of this study reveal that formal training, mentoring, and handholding support significantly impact the decision-making styles. However, this impact varies from location to location, which allowed the authors to delve deep into these findings and connect with mentors and entrepreneurs from different locations to understand the reasons behind it. Different decision-making styles impacted the performance-related aspects of micro-enterprises in a different manner. While some decision-making styles (dependent) significantly impact only non-financial performance, some (Intuitive and Spontaneous) impact both aspects (financial and non-financial) of the performance, and some (Rational and Avoidant) do not directly affect the performance. While socio-cultural support does not mediate any of the relationships, the availability of the physical infrastructure support fully mediates the relationship between rational decision-making style and financial performance. The physical infrastructure support also partially mediates the relationship between the intuitive decision-making style and the financial performance. Most of the micro-enterprises started by rural women entrepreneurs were trading and service-based. Only a very few of them were having their enterprise in the manufacturing sector. Through subsequent discussions with the mentors and entrepreneurs from the locations under study, it was found that one of the prominent reasons behind having fewer manufacturing enterprises was that starting these enterprises requires high capital investment. Keeping in mind the little to no formal educational background of these rural women entrepreneurs, there was also a need to sensitize them about the importance of being skilled in various areas of technology, management, commerce, and other streams. This will further help them utilize their skills to exploit the local resources and add value through their manufacturing facilities. Linking the results of training cum mentoring and handholding program with the education level of the participants under study, it was inferred that the training program's pedagogy was best effective for improving the decision-making of illiterate or less educated participants. Since the participants only receive classroom training for a duration of 3 days and then their mentoring and handholding was done for a duration of one year, it was inferred that besides classroom training content and pedagogy, the impact of mentoring and handholding also plays a crucial role in impacting the decision-making styles. Contribution and Limitations Embedded in the context of rural and women entrepreneurship, this study contributes to the entrepreneurship literature by expanding the understanding of how decision-making styles and various supporting elements facilitate micro-enterprise performance. Delving deep into the findings of this study, it also exposes the researchers, scholars, and policymakers to the hurdles these rural women entrepreneurs face in the process of starting and sustaining their micro-enterprises. The major limitation is that we have only taken samples from the beneficiaries of one particular training program and in one particular state of India. Future studies can take samples from different training programs and locations to generalize the findings.

490

Submission Number: **490**	Track: **CIIE**
Paper Title: Investigating the Nexus between Personality Traits and Sustainable Entrepreneurial Intentions	
Authors: Zeba Danish, Dr Parvaiz Talib, Omama Zaman and Saib Fakhar	
Abstract: This paper investigates the relationship between personality traits and sustainable entrepreneurial intentions, emphasizing the mediating role of self-efficacy between these factors. As sustainable entrepreneurship gains momentum globally, there is a growing recognition of the intricate connection between economic success, environmental preservation, and social responsibility. This paradigm shift suggests that businesses integrating sustainability into their core operations while generating new economic opportunities can address pressing social and environmental challenges effectively. This study identifies and highlights critical personality traits for fostering sustainable entrepreneurial intentions. These traits include the need for achievement, risk-taking propensity, tolerance of ambiguity, empathy, innovation, and a sense of responsibility. By understanding how these traits influence entrepreneurial behavior, we can better comprehend the	

psychological underpinnings that drive individuals toward sustainable business practices. The research was conducted among Aligarh Muslim University (AMU) students, providing a focused context for assessing sustainable entrepreneurial intentions within an academic environment. By examining the relationship between personality traits and sustainable entrepreneurial intentions, this study sheds light on the motivational drivers that propel students toward sustainable entrepreneurship. Additionally, it delves into self-efficacy as a mediating variable, exploring how an individual's belief in their ability to succeed impacts the relationship between their personality traits and entrepreneurial intentions. The findings of this study are significant, revealing that personality traits have a substantial relationship with sustainable entrepreneurial intentions. More importantly, the study demonstrates that self-efficacy significantly mediates this relationship. This implies that individuals with certain personality traits are more likely to engage in sustainable entrepreneurial activities if they possess a strong sense of self-efficacy. This insight is crucial for developing strategies to enhance sustainable entrepreneurship, highlighting the importance of fostering self-efficacy among potential entrepreneurs. This paper contributes to the broader goal of creating a sustainable economy by exploring the psychological factors that promote sustainable business practices. It provides valuable insights into how specific personality traits influence entrepreneurial behavior, offering a nuanced understanding of how individuals can be encouraged to adopt sustainable practices in their entrepreneurial endeavors. Furthermore, this research has practical implications for policymakers, educators, and business leaders committed to advancing sustainable entrepreneurship. By leveraging the findings of this study, they can design targeted interventions and support systems that nurture the development of sustainable entrepreneurial intentions among individuals, ultimately contributing to a more environmentally conscious and socially responsible business landscape. In conclusion, this paper advances theoretical knowledge and offers practical applications for promoting sustainable entrepreneurship. By identifying key personality traits and understanding their relationship with sustainable entrepreneurial intentions through the mediating role of self-efficacy, this research provides a comprehensive framework for fostering a more sustainable and responsible business environment.

505

Submission Number: **505** | Track: **CIIE**

Paper Title: Measuring Differences in the Outlook on Business Constraints of Start-up Entrepreneurs and Incubators: The Case of Bhutan

Authors: Sapnam Adhikari and Debdatta Saha

Abstract: This paper is an attempt to understand the differences in the outlook of entrepreneurs of startup businesses and incubators, with special reference to Bhutan. Entrepreneurship is a nascent phenomenon in this tiny Himalayan kingdom, but has found recent focus and support from the government in order to address a burgeoning youth unemployment problem. While there is some literature on entrepreneurial aspirations among business students in Bhutan, there is no evidence of how the entrepreneurial ecosystem, which encompasses both incubators and entrepreneurs, envisages the constraints in doing business, to the best of our knowledge. Any large variation within entrepreneurs as well as between entrepreneurs and incubators will have major policy implications for maturing entrepreneurship in Bhutan. This paper uses multiple techniques, such as multidimensional unfolding (MDU) and measures from economic networks, to address the issue of measuring differences in outlook among agents in the entrepreneurial ecosystem in Bhutan.

507

Submission Number: **507** | Track: **CIIE**

Paper Title: Gender Dynamics in Entrepreneurial Impression Management: Female Entrepreneurs' Behaviours with Subordinates in High Power-Distance Cultures

Authors: Nidhi Singh and Kumarsawan Shakya

Abstract: Introduction Entrepreneurs managing startups face a dynamic environment as compared to established businesses (Dushnitsky & Sarkar, 2022; Ahlstrom & Bruton, 2010; Cope, 2005). The stakes are higher for entrepreneurs (involving emotional, financial, and effort invested in the startup, personal reputation in society, and career trajectory) than corporate managers (no/lesser financial investment and personal stakes, and limited influence on career trajectory and reputation in society). In established organizations, policies and formalized practices guide and restrain behaviours and provide limited choices for managerial behaviours (Steel & Mento, 1986; Ferris et al., 1994). On the other hand, entrepreneurs face dynamic contexts, larger business stakes, and a relative lack of formalized rules – leading to more freedom in behaviours, as well as greater concern for the consequences of those behaviors (Jones & Schou, 2023; Nair et al., 2022; Frese et al., 2014; Romanelli, 1989). Their immediate subordinates are often the prime recipients of the entrepreneur's behaviours and important influencers of the consequences for the entrepreneur – including the survival and success of the startup. Impression management behaviours are integral to the entrepreneurs' interpersonal interactions with their immediate subordinates (Goffman, 1959). Hence, entrepreneurs provide a unique context for studying impression management (IM) behaviours. Impression management (IM) involves behaviours aimed at influencing how others perceive an individual (Klotz et al., 2018). IM is essential for navigating social interactions and maintaining workplace harmony (Huang et al., 2013). Despite extensive research on IM, there are some less explored research areas (Bolino et al., 2016). IM is studied mostly in Western cultural contexts, and there is a need to study non-Western contexts (Bolino et al., 2016), such as Asian countries having higher power-distance (Hofstede, 2009; Sanaria, 2016; Jiang et al., 2021). Role Congruity Theory (Eagly & Karau, 2002) posits that subordinates typically expect managers to be male. Female entrepreneurs are likely to face backlash, particularly from male subordinates (Bolino et al., 2016). Female subordinates may not react negatively to female entrepreneurs, expecting empathy and equality (Snodgrass, 1985). Differences in early socialization of girls and boys likely lead to variations in their behaviours in adult professional life (Pandya, 2020; Tao et al., 2022). High power-distance cultures, like India, tend to accept and reinforce social and gender inequalities (Beugelsdijk et al., 2017; Takeuchi et al., 2020; Triana et al., 2024). Therefore, male and female entrepreneurs are expected to behave differently, particularly in startup contexts where formalized policies and rules do not constrain their behaviours. Grounded in Erving Goffman's (1959) impression management theory, this conceptual paper explores female entrepreneurs' IM behaviours and how gender dynamics and high power-distance cultural contexts influence the interactions of female entrepreneurs with their male and female subordinates. Gender and Entrepreneurial Impression Management in High Power-Distance Cultures Male and female entrepreneurs employ different IM behaviours in professional settings (Guadagno & Cialdini, 2007) to achieve desired outcomes (Klotz et al., 2018). Female entrepreneurs displaying soft IM behaviours are considered gender-appropriate, while female entrepreneurs displaying hard IM behaviours tend to face backlash from subordinates (Bolino et al., 2016; Sanaria, 2016). However, leaders and managers are expected to display hard IM behaviours as role-appropriate behaviours (Bolino et al., 2016). Gender differences in the actor and target of IM influence workplace dynamics, which are accentuated in high power-distance cultures (Bolino et al., 2016; Sanaria, 2016). This expectation in high power-distance cultures can lead to heightened scrutiny and backlash against female leaders who deviate from their traditional gender roles (Triana et al., 2024). Hence, female entrepreneurs often choose between role-appropriate behaviours (Bolino et al., 2016; Sanaria, 2016) and gender-appropriate behaviours (Eagly & Karau, 2002; Gaur, 2006). Female entrepreneurs balance gender-appropriate behaviours (Gaur, 2006) while asserting authority in a male-dominated environment. We propose that female entrepreneurs employ different IM behaviours while interacting with male or female subordinates. Proposition 1: Female entrepreneurs use different IM behaviours with male and female subordinates. Conceptual Development In high power-distance cultures, female entrepreneurs face unique challenges in IM. Female entrepreneurs may encounter resistance from male subordinates due to deeply ingrained gender norms and expectations (Eagly & Karau, 2002). Male subordinates may expect traditional authoritative behaviours from their managers, leading to potential backlash when female entrepreneurs employ aggressive IM behaviours (Bolino et al., 2016). Female entrepreneurs need to adopt a balanced approach in dealing with male subordinates, combining assertiveness with traditional gender-appropriate behaviours to mitigate backlash. Hence, we propose: Proposition 2: Female entrepreneurs tend to use gender-appropriate soft IM behaviours with male subordinates. While dealing with female subordinates, an empathetic and inclusive approach may be adopted by female entrepreneurs, aligning with expectations of gender solidarity and support (Snodgrass, 1985; Gaur, 2006). Herein, the role (rather than gender) would be expected to be noticed or primed. Hence, we propose: Proposition 3: Female entrepreneurs tend to use role-appropriate hard IM behaviors with female subordinates. Theoretical Contribution This conceptual paper attempts a few theoretical contributions. First, we extend Role Congruity Theory (Eagly & Karau, 2002) and Impression Management Theory (Goffman, 1959) by integrating them with high power-distance cultural contexts, such as India (Hofstede, 2009). Second, we explore entrepreneurs in startups as a unique context for exploring IM behaviours. Third, we focus on the less studied aspect of differences in IM based on target gender, particularly by a female actor. By highlighting these aspects, we provide a nuanced understanding of the intersection between gender, hierarchy, and entrepreneurial IM behaviours in high power-distance cultural contexts. Practical Implications These insights are valuable for female entrepreneurs /managers in high power-distance cultural contexts. Understanding the different expectations and potential reactions of male and female subordinates can help female leaders choose their IM behaviours effectively to enhance workplace harmony and productivity. Conclusion This paper contributes to the theoretical understanding of female entrepreneurs' IM behaviours with male and female subordinates in high power-distance cultures. Highlighting the gender-specific expectations and potential backlash from subordinates provides a nuanced view of female entrepreneurs' behavioural challenges. Future researchers could empirically test these propositions and explore these dynamics in different cultural contexts to validate them and contribute to further theory building.

568

Submission Number: **568**	Track: **CIIE**

Paper Title: Unveiling the evolutionary dynamics: Nurturing deep-tech startups within entrepreneurial ecosystems

Authors: Radhika Agarwal

Abstract: Entrepreneurial ecosystems have gained the attention of many scholars due to their contribution to innovation and economic growth. I propose a new theoretical perspective in which the evolution of entrepreneurial ecosystems can be understood in-depth by linking it to the emergence of deep-tech entrepreneurship. The dynamic entrepreneurial ecosystems can adapt to the requirements of new startups that possess different characteristics from those of traditional startups. Thus, I employ an adaptive lifecycle approach to explain the mechanisms that lead to the ecosystem's transition. Through qualitative research, I show that the entrepreneurial ecosystem for deep-tech entrepreneurship in India is in the emergent phase with specific areas of improvement. The study offers significant policy implications, suggesting policymakers can enhance their effectiveness by recognizing the ecosystem as an adaptive lifecycle system. This approach allows for strategic selection, targeting, and timing of interventions to match the unique nature of elements of the ecosystem.

595

Submission Number: **595**	Track: **CIIE**

Paper Title: Entrepreneurship Unleashed: Navigating Enablers, Overcoming Obstacles, and Scaling New Heights

Authors: Yamini Rani and Prof. Bindu Arora

Abstract: Entrepreneurship serves as a vital catalyst for innovation, economic growth, and job creation. By fostering a culture of creativity and risk-taking, entrepreneurs introduce new ideas and technologies that can revolutionize industries and improve efficiencies. This spirit of innovation not only stimulates competition but also drives economic development by opening new markets and expanding existing ones. Small businesses and startups, often spearheaded by entrepreneurs, play a crucial role in job creation, providing employment opportunities and contributing to the reduction of unemployment rates. Moreover, successful entrepreneurial ventures can attract investments, both domestic and international, further bolstering economic growth. Therefore, promoting entrepreneurship is essential for sustaining a dynamic and prosperous economy (OECD, 2020). An atmosphere that is supportive of entrepreneurship, a large network of mentors and advisors, and easy access to money are all important enablers. Since it allows business owners to scale their operations and invest in the resources they need, access to finance is essential. According to Gompers and Lerner (2001), crowdsourcing sites, venture capital, and angel investors have emerged as crucial funding sources for businesses. Entrepreneurial success is greatly impacted by a regulatory environment that is supportive and characterized by favorable regulations and ease of doing business. Moreover, a robust network of mentors and advisors offers crucial direction and assistance, assisting entrepreneurs in overcoming obstacles and coming to wise conclusions (Stuart & Sorenson, 2007). Entrepreneurship plays a crucial role in economic development and innovation. Access to various forms of capital, such as venture capital, angel investment, and crowdfunding, is essential for startup growth. Studies have shown that financial support enables startups to develop products, enter markets, and scale operations (Gompers & Lerner, 2001). Supportive ecosystem comprising incubators, accelerators, and co-working spaces foster entrepreneurship by providing resources, mentorship, and networking opportunities (Isenberg, 2010). Favorable government polices, including tax incentives, grants, and ease of business regulations, significantly impact entrepreneurial activity (Shane, 2009). Despite available funding sources, many startups face challenges in securing sufficient capital. High-interest rates, stringent lending criteria, and lack of investor confidence are common barriers (Kerr & Nanda, 2011). Intense market competition poses a significant challenge, especially for startups trying to establish themselves against well-established players (Porter, 1980). Complex and inconsistent regulations can hinder startup growth, especially in sectors like healthcare and finance, where compliance costs are high (Baumol, 1990). To address the gap, this study employs a mixed-methods approach. It includes a comprehensive review of existing literature on entrepreneurship, startup growth, and scaling strategies. Additionally, in-depth qualitative interviews with successful entrepreneurs has been conducted to gain insights into their experiences and strategies. The study has also analyzed case studies of startups that have successfully scaled up to identify common patterns and effective practices. Furthermore, surveys has been conducted to a broader sample of entrepreneurs to quantify the prevalence of identified facilitators and hurdles. This multi-faceted approach aims to provide a thorough understanding of the entrepreneurial landscape and the factors influencing startup success. Understanding the facilitators and hurdles in entrepreneurship is vital for several reasons. Startups significantly contribute to job creation and economic growth, playing a pivotal role in the economic landscape. Entrepreneurs are key drivers of innovation, introducing new products and services that can transform industries and improve quality of life. Additionally, insights from studying these facilitators and hurdles can inform policies and programs

designed to support entrepreneurship, helping to create a more conducive environment for startup success. Finally, aspiring entrepreneurs can greatly benefit from this knowledge, gaining practical guidance on navigating common challenges and implementing effective strategies for growth, ultimately enhancing their chances of success in the competitive business world. Entrepreneurship is a complex yet rewarding journey that significantly impacts economic development and innovation. By identifying key facilitators, overcoming common hurdles, and adopting effective scaling strategies, entrepreneurs can enhance their chances of success. This study provides valuable insights for entrepreneurs, policymakers, and stakeholders to create a more supportive environment for startups, fostering sustained economic growth and innovation.

606

Submission Number: **606**	Track: **CIIE**
Paper Title: Effect of Innovativeness Narrative on Entrepreneurial Fundraising through Equity Crowdfunding	
Authors: Dhruven Zala, Swanand Deodhar and Adrija Majumdar	
Abstract: The impact of entrepreneurial storytelling on fundraising is well-established in the entrepreneurship literature. However, our comprehension of narratives emphasizing innovation and their influence on funding behavior is limited. Using signaling theory, we introduce the "innovativeness narrative" and understand its implications on fundraising. This narrative may evoke originality but also holds the risk of appearing embellished to investors. To empirically investigate this, we use data from a UK-based equity crowdfunding platform alongside natural language processing techniques. Additionally, we explore the role of the geographical location of the venture in complementing this narrative. Our findings show that high innovativeness in narratives reduces funding, but providing the venture's location mitigates this negative effect, calling for location-aware innovativeness narrative strategies.	

766

Submission Number: **766**	Track: **CIIE**
Paper Title: SME Dealing Cross National Distance: Synthetizing the Current Literature and Future Agendas.	
Authors: Rupali Singh, Shreya Mishra and Arvind V Shukla	
Abstract: Estimates indicate small and medium enterprises make up more than 95% of all firms worldwide, however, in their growth journey often SME's internationalize. Major challenge of internationalization is to reduce the cross national distances that have various dimensions including psychic, culture, institutional etc. As the literature on cross national distances is expanding there is a need to comprehensively amalgamate the nuances of the said phenomenon. This will identify the various themes in the extant literature and extract future research directions. This article reviews the way in which various cross national distances have been considered in studies on SME internationalization by a bibliographic coupling analysis with support of clustering algorithms. We supplement bibliometric analysis with a review of literature examine 186 articles identified from Scopus database published until March 23, 2024 in leading journals of international business, entrepreneurship, strategy and international marketing. The paper provides insights on five themes representing conceptual structure and future research directions in the concerning field.	

845

Submission Number: **845**	Track: **CIIE**
Paper Title: Seeing Obstacles or Opportunities: The Influence of Entrepreneurial Intentions on Perceived Opportunities	
Authors: Vipasha Gaur, Adithya N., Sowmiyaa Subramaniam and Madhur Kishor Oza	
Abstract: Introduction In the world of entrepreneurship, the journey from an idea to execution is as challenging as it is rewarding. At the center of this vibrant ecosystem are entrepreneurs whose aspirations are shaped by intrinsic motives and the external environment. This leads to a pressing question: What drives individuals to pursue entrepreneurship? A thriving	

entrepreneurial environment is promising for an economy, garnering the attention of researchers and policymakers alike. The extant research on this phenomenon has identified drivers that can be broadly classified as macro-level factors (such as macroeconomic environment and sociocultural environment) and individual-level factors (such as psychological attributes and behavioral aspects). On one hand, the dominant ideology in entrepreneurship literature suggests that a positive perception of opportunities is a prerequisite for entrepreneurial intentions and actions (Esfandiar et al., 2019; Hassan et al., 2020). On the other hand, entrepreneurship literature also emphasizes the role of attitudes, subjective norms, and perceived behavioral control in shaping entrepreneurial intentions (Ajzen, 1991; Krueger & Dickinson, 1994). However, empirical research has primarily investigated the influence of perceived opportunity on entrepreneurial intention. The current study attempts to identify how the individual-level factors are associated with the perception of macro-level factors. We investigate this association in the context of perceived capability. More specifically, we investigate the role of entrepreneurial intentions on perceived opportunities. We argue that entrepreneurial intentions significantly influence individuals' perceived opportunities. Individuals with stronger entrepreneurial intent will perceive greater entrepreneurial opportunity than those with weaker entrepreneurial intent (Sweezy, 1943). The paper contributes to the literature by providing empirical evidence of the influence of entrepreneurial intent on perceived opportunity. The insight from this study significantly enhances our understanding of entrepreneurial opportunity, which remains a focal construct in the entrepreneurship narrative. Theoretical Framework Our theoretical framework is underpinned by two key ideas challenging the existing paradigm. It provides empirical evidence for the concept of the "Inevitable Entrepreneur" proposed by Fitzsimmons and Douglas (2011) and the "Theory of Planned Behavior" put forward by Ajzen (1991). The idea of the "Inevitable Entrepreneur" suggests that an individual's entrepreneurial drive has a greater influence on his decision to pursue entrepreneurship than his perception of the feasibility of entrepreneurial pursuit. The perspective above prioritizes motivation and intention over externalities, enabling the individual(s) to search for opportunities even when they are not present vividly. At a deeper level, the "Theory of Planned Behavior" has established the linkage between attitude, intention, and behavior. Based on the above two ideas, we hypothesize that: H1: Entrepreneurial Intention is positively associated with Perceived Opportunity. Although various factors influence entrepreneurial intentions, perceived capability has been established as one of the most crucial factors affecting intentions (Naktiyok et al., 2010; Walker et al., 2013). When individuals believe in their capabilities, it amplifies their ability to search for entrepreneurial opportunities (Tsai et al., 2016). Therefore, the capability acts as a bridge between the intentions and the entrepreneurial opportunities, leading to the following hypothesis: H2: Perceived capabilities mediate the relationship between entrepreneurial intentions and entrepreneurial opportunities The initial analysis reveals nuanced insights into how perceived capabilities not only influence the formation of entrepreneurial intentions but also enhance the ability of entrepreneurs to recognize and seize even minimal opportunities. This finding is instrumental in understanding how internal capabilities can offset the lack of external opportunities. Methodology The study uses data from the Global Entrepreneurship Monitor (GEM) database, which is widely used to study entrepreneurial phenomena at a market level (Álvarez et al., 2014) and the World Bank Database. The paper employs a panel data analysis method to test the hypotheses. The granularity of the data is at a country-year level, and the timeline of the analysis ranges from 2001 to 2022, albeit in the form of staggered panel data. We employ fixed effects modeling with robust standard errors while preserving the heterogeneity associated with every geographical taxonomy to assess the relationship between entrepreneurial intention and opportunities, along with the mediation of perceived capabilities, controlling for external factors such as culture, economic situation, and environment. Findings Our initial findings indicate a statistically significant relationship between entrepreneurial intentions and perceived opportunities across different models and controls. Surprisingly, the persistence of the primary relationship is also observed in markets where perceived opportunities are low. Furthermore, the capabilities indeed significantly mediate the relationship between intentions and opportunities, which is marked by the significance of the perceived capabilities (mediator). Conclusion The study contributes to the entrepreneurial literature by highlighting the existence of entrepreneurs who are motivated internally and, therefore, overcome external adversities to spot opportunities. The traditional notion of the optimal external environment influencing entrepreneurs as the key driver of opportunities is challenged in the paper and a new theoretical lens is used to view entrepreneurs. The paper advocates the need for a holistic approach to assess entrepreneurial opportunities, which includes increasing the focus on the entrepreneur as emphasized in the view of the "inevitable entrepreneur." The insights from the study have implications for practitioners, academicians, and policymakers working towards developing vibrant ecosystems that support entrepreneurs, even in less favorable conditions.

921

Submission Number: **921**	Track: **CIIE**
Paper Title: Everything Changes So Fast- Using Sensemaking for Addressing Challenges in Understanding Culture in Indian Startups	

Authors: Deepashri Galgali

Abstract: The Indian startup ecosystem has evolved and matured over the last decade. According to a 2023 report by BCG, a confluence of factors has led to an unprecedented growth of a new breed of organizations also referred to as 'Startups'. Increased digital adoption, rise in the middle class, driving force of age demographics, and boost due to relevant policies all have contributed to the growth of these organizations. In fact 110 unicorns exist in India as of now, most of which were not existing in 2015. While we look at various stages, milestones, components, and layers of ecosystems, it is interesting that the commonality that the startup organization thrives off the environment, has to battle the uncertainty and complexity of varied nature and ensure that stakeholders find the venture capable of providing funding. These startups face day-to-day challenges in survival and have to pivot their strategy several times. This indicates that such organizations face internal and external flux continuously. With such flux occurring, the culture of startups gets altered very frequently. This poses 4 key challenges for the researcher, while assessing, documenting and understanding culture namely - Rapid changing culture, unintentionality of culture creation, gap between branded and lived culture and tacit processes of cultural understanding, for such startups.In this paper, I synthesize diverse literature from varied streams in order to coherently merge the sensemaking perspective with that of organizational culture contextualizing the same to Indian startups, their perceived maturity as well as current realities. I theorize an overarching framework that can serve as a foundation for doing sensemaking of culture in any Indian Startup organization. This framework comprises levels of sensemaking and "cue-sites" that have been utilized in the process of sensemaking. I explain in detail how this framework helps in resolving the challenges(enumerated above) in assessing, documenting and understanding culture.

1041

Submission Number: **1041**
Track: **CIIE**

Paper Title: The Primacy of Equity Compensation: Employee Ownership vs. Investor Equity in Early-Stage Startup Success

Authors: Kislay Singh

Abstract: This study investigates how equity distribution strategies in early-stage startups affect company performance. We examine the hypothesis that startups benefit from a balanced approach: offering substantial equity to employees while carefully managing investor equity. Our research method involves a thorough review of 87 scholarly articles, industry reports, and expert opinions on startup equity practices. The findings indicate several positive outcomes associated with employee equity ownership. These include improved company growth, higher productivity, and better employee retention. Startups that offer significant equity to their early employees seem more successful in attracting skilled workers and creating a sense of ownership among staff. However, our review also reveals conflicts between giving equity to employees and to investors, especially as startups seek more funding. While the evidence generally supports a balanced equity approach, we found a lack of detailed, internal data from startups. This gap suggests a need for more in-depth, long-term studies across different global markets. In conclusion, we suggest that startup founders should think carefully about how they distribute equity. Using employee equity can help build a strong company culture, while being selective about investor equity can help maintain control. Finding the right balance between employee and investor equity appears to be crucial for startup success. This research contributes to our understanding of equity strategies in startups, but also highlights areas where more study is needed. Future research should focus on gathering more detailed data from startups to better understand the long-term effects of different equity distribution approaches.

1043

Submission Number: **1043**
Track: **CIIE**

Paper Title: Determinants of Entrepreneurial Readiness and the Role of Gender-A Study with Reference to Students of Higher Education Institutions in India

Authors: Manisha Singh and Fatima Qasim Hasan

Abstract: Entrepreneurship has played a pivotal role as a key driver for innovation, economic growth and job creation. India in recent years has taken initiatives to build entrepreneurial skills among the youth by imparting entrepreneurial education in business schools. According to the UN world population prospects 2022, more than half of India's population is under 30. Entrepreneurial education plays an important factor to motivate Gen Z to become potential innovators. Numerous studies have investigated the entrepreneurial aspects, but studies on the determinants of entrepreneurial readiness among

undergraduate students of a country like India are scarce to find. Also, India's patriarchal society makes it difficult for people of all genders to pursue their entrepreneurial journey. This study aims at examining the role of need for Achievement, family background and risk taking ability on entrepreneurial ability considering gender as a moderating variable. The study uses a questionnaire to validate theoretical assertions. Thereafter, PLS-SEM framework is used to test the hypotheses and analyze how the three independent variables, viz. need for achievement, family background and risk-taking behaviour explain entrepreneurial readiness and whether gender plays a moderating role in these relationships. The study finds risk-taking as the most important determinant of entrepreneurial readiness and a nuanced impact of gender as a moderating variable.

1176

Submission Number: **1176**	Track: **CIIE**

Paper Title: Unpacking E-commerce Start-up Success in India: A Qualitative Investigation of External Environmental Factors

Authors: Akshita Dwivedi, Vibhuti Tripathi and Aviral Satyanisth

Abstract: 1. Introduction Startups are essential to nation-building by addressing market needs with innovative products, services, processes, or platforms. Blank (2010) highlights that startups seek scalable business models to drive market expansion, demonstrating the long-term economic benefits of their innovations and technology. These innovations are crucial for maintaining competitiveness and ensuring survival. The "dot com" era showcased the internet's potential for creating new business opportunities. Since then, advancements in Information & Computer Technology (ICT), internet infrastructure, and wireless data networks have accelerated the rise of e-commerce startups in India. Today, digital technologies are key in enhancing stakeholder engagement and boosting the popularity of social commerce platforms among Indian consumers. Machine Learning (ML) and Artificial Intelligence (AI)-powered personalization techniques further refine customer experiences and build loyalty. Recently, concepts like "e-entrepreneurship" and "Digital Entrepreneurship" have gained prominence in academia, highlighting their increasing significance in the contemporary business landscape. The Indian startup ecosystem is a dynamic network of entrepreneurs, investors, mentors, and stakeholders dedicated to fostering innovation. As of August 2023, India is among the fastest-growing startup ecosystems globally, boasting over 100 unicorns and solidifying its position as the third-largest globally. This growth is driven by a vibrant entrepreneurial culture, particularly among millennials, and has shown remarkable resilience during economic downturns and global crises. The COVID-19 pandemic (2020-2022) further accelerated digital technology adoption, benefiting startups across sectors such as ed-tech, healthcare, and e-commerce. Several factors underpin the success of India's startup ecosystem. Despite the vibrant opportunities within India's startup ecosystem, challenges such as ideation, market demand generation, and financing remain. Understanding the impact of these government initiatives is essential for advancing entrepreneurial growth in India. This study investigates how external factors, including funding accessibility and market potential, market intermediaries, competition affect e-commerce startups in India. It evaluates the effectiveness of policies such as Digital India and Startup India in supporting these ventures. While entrepreneurial motivations remain steady (Baumol, 1990), the impact of policies can vary, potentially leading to both positive and adverse economic outcomes (Baumol, 1990; Bowen and De Clercq, 2008). 2. Research Gap and Problem Statement While extensive research has examined start-up impact on economic development, there is limited focus on the interplay between government policies and startup success, particularly in emerging economies like India. Previous studies often emphasize personal traits and conventional support mechanisms, overlooking the crucial role of external environmental factors and government interventions. This study aims to fill this gap by investigating how government policies and other external factors influence the success of e-commerce startups in India. Consequently, this study addresses the following research questions: RQ1: What external environmental factors influence the success of e-commerce startups in India? RQ2: How do e-commerce startup founders perceive and navigate these factors? RQ3: What impact do government policies, such as Digital India and Startup India, have on the success of e-commerce startups? 3. Objectives of the Study Understanding the factors that drive the success and growth of startups, particularly in emerging economies like India, is crucial. The study aims to identify, examine, and analyze the role of external environmental factors in the performance of e-commerce ventures in India while providing insights into leveraging these factors for future startups. Specifically, it seeks to: Identify and analyze external environmental factors affecting e-commerce startup success in India. Examine the experiences of e-commerce startup founders to understand the role of these factors. Provide insights and recommendations to entrepreneurs for building successful e-commerce businesses, highlighting success factors, challenges, and strategic approaches. Evaluate the impact of government policies like Digital India and Startup India on the e-commerce startup landscape. 4. Methodology This research employed a qualitative, interpretive approach using semi-structured interviews to gain insights into the perceptions and experiences of e-commerce startup founders. The methodology included three phases: (1) a literature review to identify key themes, (2) expert interviews to validate these themes, and (3) in-depth personal interviews to explore them further. A non-probability, convenience sampling method was used, focusing on e-

commerce startups founded between 2013 and 2023, ensuring relevance and diversity. In-depth interviews were conducted with 19 founders from January to July 2024. Data was collected through face-to-face, telephone, or online interviews (Google Meet), recorded with consent, transcribed, and analyzed using NVivo 12 software. To ensure credibility and authenticity, informed consent was obtained, and data was cross-checked with secondary sources. Results were shared with participants for validation, and additional interviews were conducted as needed. The research team also consulted with experts to validate findings and explore policy implications. 5. Data Analysis & Findings The study is still is data analysis phase Transcripts were analyzed using NVivo 12 (Farinloye et al., 2019) and Braun and Clarke's (2006) phases of analysis. Figure 1 outlines our data analysis procedures, adapted from Mogaji et al. (2021). Data is coded inductively with line-by-line and segment-by-segment methods, establishing analytical codes for each interview. The coding summary report is prepared with codes grouped into six categories based on the literature. Figure 1 : Graphical illustration of Data Analysis Procedures (Adapted from Mogaji et al. (2021) 6. Implications for Stakeholders The findings offer valuable insights for various stakeholders in India's e-commerce sector. Theoretically, they highlight the importance of financial management, consumer behavior shifts, and business resilience, suggesting areas for further research in entrepreneurship, consumer studies, and organizational studies. For managers, key takeaways include focusing on a solid business foundation, streamlining financial processes, and crafting compelling pitches to secure funding. The rapid digital shift necessitates a strong online presence, while building customer trust through reliable services and quality control is essential. Outsourcing non-core functions and understanding evolving consumer needs can drive innovation and market expansion. Patience and persistence are crucial for establishing long-term credibility. For policymakers, the study suggests enhancing support through mentorship programs, simplifying funding access, and incentivizing sustainability practices. Strengthening connections between startups and banks, improving regulatory processes, and promoting entrepreneurial education can foster a more supportive startup ecosystem.

IIMA

विद्याविनियोगाद्विकासः

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

Track 02: Management in Health Services

Track 02: Management in Health Services

31

Submission Number: **31**	Track: **CMHS**
Paper Title: Patient Safety Culture impact on Patient Satisfaction using the Kano model in a Multi-Specialty Hospital	
Authors: Saranya M and Priya K N	
Abstract: Patient safety culture significantly impacts patient care, outcomes, and satisfaction. Understanding its influence is vital for enhancing patient experiences. Utilizing the Kano model, the study identifies influential attributes in patient satisfaction through the Service Quality (SERVQUAL) dimensions. The Agency for Healthcare Research and Quality questionnaire was the tool for evaluating patient safety culture in nurses and the patient satisfaction questionnaire from patient attendees in the pediatric department. However, the regression analysis indicates that patient safety culture minimally impacts patient satisfaction, as evidenced by the low R-square values (0.000 to 0.027). Thus, the study does not strongly support a significant impact between these two factors. Further research is necessary to explore other elements influencing patient satisfaction in healthcare settings. Understanding these factors is crucial for enhancing overall patient experiences.	

85

Submission Number: **85**	Track: **CMHS**
Paper Title: Socio-cultural Dimensions of Healthcare Access: Addressing Heterogeneity amongst Tribal communities	
Authors: Sonal Mobar Roy	
Abstract: Introduction The healthcare system in India involves both public and private sectors, with significant disparities in access and quality across regions. Urban areas typically have better medical facilities, while rural areas struggle with inadequate infrastructure, a shortage of healthcare professionals, and limited medical supplies. This disparity is even more severe in tribal regions, where geographic isolation, economic constraints, and cultural barriers hinder access. Rural healthcare facilities often lack essential amenities like clean water, sanitation, and reliable electricity, leading to poorer health outcomes. Consequently, rural populations face higher rates of maternal and infant mortality, malnutrition, and infectious diseases due to limited preventive and curative services. Tribal Healthcare Landscape India is home to approximately 104 million tribal people, constituting 8.6% of the total population, scattered across various states in geographically isolated regions (Census, 2011). Heterogeneity in healthcare refers to the diversity within a population regarding health needs, behaviors, and responses to interventions. This diversity spans geographic location, socio-economic status, cultural background, language, and demographics. Among tribal populations, heterogeneity highlights unique cultural practices, health beliefs, and access challenges. Understanding this variability is essential for designing effective and equitable healthcare policies. The interplay of socio-cultural dimensions and heterogeneity significantly influences healthcare access and outcomes, particularly among marginalized groups like tribal communities. Geographic isolation limits access to healthcare facilities, with many tribal villages in remote areas with poor transportation networks leading to delayed medical care, exacerbating health issues that could have been managed or prevented with timely intervention. This isolation delays access to medical care and deters healthcare professionals from working in these areas due to challenging living conditions and inadequate facilities. Moreover, economic factors also play a crucial role. People in tribal communities generally belong to lower socio-economic strata, with higher poverty rates, limited educational opportunities, and poor living conditions. Economic constraints further impede access, as many tribal individuals cannot afford out-of-pocket healthcare expenses or indirect costs associated with seeking care, such as transportation and lost wages. These factors contribute to poorer health outcomes, higher disease prevalence, and lower life expectancy than the national average. Amongst all, malnutrition remains a critical issue among tribal women and children, leading to anemia, stunted growth, and increased susceptibility to infections. Cultural barriers and mistrust of modern medical systems further hinder healthcare utilization among tribal populations, along with a lack of awareness about government interventions to draw benefits. Many tribes have their Indigenous systems of medicine and rely heavily on traditional healers for healthcare needs. These traditional practices are deeply ingrained and often preferred over modern medical treatments. Mistrust of contemporary healthcare systems, language barriers, and the perceived cultural insensitivity of healthcare providers further discourage tribes from seeking medical care from conventional healthcare facilities. Low education and health literacy levels among tribal populations hinder their ability to understand and utilize healthcare services effectively. Systemic issues within the healthcare system, including inadequate	

funding, workforce shortages, and poor implementation of health policies, are pervasive challenges. Poshan Abhiyan and Tribal Healthcare Challenges Specific schemes like Poshan Abhiyan focus on improving nutritional outcomes for children, pregnant women, and lactating mothers. However, these efforts face inadequate funding, systemic inefficiencies, and leakages, impeding effective service delivery. Additionally, the top-down approach of many initiatives often fails to engage local communities fully, leading to mismatches between healthcare services and the actual needs of tribal populations. Objective of the Study To explore socio-cultural factors affecting healthcare access and understand the heterogeneity among tribal health systems. Methodology This study uses the core-periphery theoretical framework to understand the disparities in healthcare access among tribal populations. Core and Periphery Theoretical Framework in Healthcare Access The core-periphery framework helps understand a society's power dynamics and resource distribution. In healthcare, the core represents urban/privileged centers with better access to resources, infrastructure, and political influence. Conversely, the periphery includes marginalized regions like rural and tribal areas, which face significant challenges in accessing healthcare due to geographic isolation, inadequate infrastructure, economic constraints, and cultural barriers. Case of Burgula Panchayat Burgula is a village in Telangana with a population of 5,993, dominated by the Lambada tribe. Mapping of assets in Burgula Panchayat revealed that most benefits from government programs were confined to the main Panchayat area, inhabited mainly by well-off people. The tribal hamlets (Tandas) on the fringes, such as Raikal Tanda and Kundalkunta Tanda, often lacked such benefits. These Tandas lack accessible roads, electricity, and water connections, specifically Primary Schools and Aanganwadi Centres, highlighting the core-periphery disparity. Despite government measures, these areas lag on many development indicators. Micro-level studies and mapping help identify such nuances crucial for effective development planning. Case of Mahbubnagar A comparative ethnographic study of Aanganwadi Centres (AWCs) revealed disparities based on the beneficiary community. AWCs for the Lambada community had better infrastructure and resources than those for the Chenchu and Koya communities, which were poorly maintained and less accessible. This disparity underscores the need for tailored interventions to address the specific needs of different tribal groups. Barriers Rooted in Heterogeneity Socio-cultural dimensions like education, income, social support networks, and cultural beliefs and practices impact health access. Language barriers can hinder effective communication between healthcare providers and tribal patients. The heterogeneity among tribal groups necessitates tailored healthcare approaches that address each group's specific needs. Recognizing the unique health profiles and cultural practices of different tribes allows for more targeted and responsive healthcare interventions. ASHA, ANM, and AWW play a crucial role here. Conclusion Understanding and addressing the socio-cultural dimensions and heterogeneity within tribal populations are essential for enhancing healthcare access and outcomes. This requires culturally sensitive policies, effective communication strategies, and tailored interventions that respect and integrate these communities' diverse cultural practices and health needs. The role of community health workers like ASHA (Accredited Social Health Activist), ANM (Auxiliary Nurse Midwife), and AWW (Anganwadi Worker) is crucial in bridging these gaps and improving healthcare delivery in tribal areas. Addressing these disparities requires a multi-faceted approach that includes strengthening healthcare infrastructure, enhancing workforce capacity, ensuring economic and social development, and incorporating culturally sensitive practices.

150

Submission Number: **150**	Track: **CMHS**

Paper Title: AI in Digital Health: Enhancing Patient Engagement and Outcomes through Personalized Care and Predictive Analytics

Authors: Rahul Chauhan, Bhoomi Chauhan and Na Na

Abstract: This research investigates the impact of artificial intelligence (AI) on patient engagement metrics and outcomes in digital health platforms and online health services. Utilizing regression analysis, the study evaluates the influence of AI-driven personalization and predictive analytics on patient engagement levels and outcomes with 546 samples from India. The findings reveal significant positive associations between AI-driven interventions and both patient engagement and outcomes, supporting the hypothesis that AI-driven personalization enhances patient engagement levels. Additionally, the study identifies a positive correlation between the use of AI-based predictive analytics and improved patient outcomes in online health services. These results underscore the transformative potential of AI in healthcare delivery, emphasizing its role in optimizing patient care and outcomes. Furthermore, the research highlights avenues for future inquiry, including the exploration of underlying mechanisms and ethical considerations associated with AI implementation in healthcare.

153

Submission Number: **153**	Track: **CMHS**

Paper Title: Evaluating the Impact of Public Policy Interventions on Social Equity: A Multidimensional Analysis of Income Equality, Health Disparities, and Affordable Housing Access

Authors: Rahul Chauhan, Salim Shamsher and Bhoomi Chauhan

Abstract: This study examines the relationships between socioeconomic factors and three key social outcomes: income equality, health disparities, and access to affordable housing. Through regression analyses of data collected from a diverse sample, including 742 samples collected from villages in India, we found significant associations between various predictors and the outcomes of interest. Specifically, government spending on education, healthcare expenditure, and funding for affordable housing projects emerged as crucial determinants of income equality, health disparities, and access to affordable housing, respectively. The findings underscore the importance of addressing structural determinants of social inequality and highlight the potential impact of targeted policy interventions on promoting social equity and improving public health outcomes. Future research should explore longitudinal designs and qualitative methodologies to further elucidate these complex relationships.

560

Submission Number: **560**	Track: **CMHS**

Paper Title: Application Of Healthcare Failure Mode And Effects Analysis (HFMEA) In The Proactive Risk Assessment Of The Administration Of Chemotherapy

Authors: Lisha Crasto and Feroz Ikbal

Abstract: In the context of healthcare, patient safety is of utmost importance. Risk management refers to the systematic use of procedures to detect, prevent, and efficiently handle dangers. It encompasses a broad range of administrative and clinical procedures, protocols, and assessments designed to detect, track, evaluate, minimize, and avoid hazards. Examples of risk management include comprehensive risk assessments, incident reporting methods, quality improvement initiatives, compliance guidelines, and staff training programs. One such tool used in risk management is Healthcare Failure Mode and Effects Analysis (HFMEA). Originally developed by the US military to minimize failures in munitions production, this approach is now widely used to prevent process and design failures in healthcare. It was adapted for healthcare settings to proactively identify potential pitfalls in patient safety and prevent their occurrence. Studies worldwide have tested the use of HFMEA, including its role in JCI accreditation, which requires regular FMEA studies on high-risk procedures. However, its application in Indian hospitals has been limited. This study aims to focus on a high-risk procedure, namely chemotherapy administration, and conduct a risk assessment. The study was conducted at a 116-bed super-specialty oncology hospital located in a tier-1 city in India. The hospital had previously reported incidents such as hazardous drug spillage, dosing errors, patient reactions post-administration, and IV site extravasation, making it a suitable environment for this study. A multidisciplinary team of 10 stakeholders conducted a thorough examination, identifying 136 failure modes. This study provides significant insights into enhancing patient safety and care quality in the handling and administration of chemotherapy drugs. Critical failure modes were identified using the HFMEA rating system, Pareto analysis, and decision tree techniques. This approach enabled targeted interventions to mitigate risks and prevent potential adverse events affecting patient safety. Additional insights were gathered from focus group discussions and semi-structured interviews to help identify failure modes. The results highlighted several issues, such as handling errors due to high patient volume, drug mixing problems due to the unavailability of clinical pharmacists, and potential failures when physicians rely on verbal communication instead of written instructions. The observations were immediately addressed by the hospital, and a strategy was implemented to tackle high-impact failures affecting patient safety. Looking ahead, this study emphasizes the importance of proactive risk assessment methodologies like HFMEA in healthcare, particularly for complex procedures such as chemotherapy administration. By systematically identifying and addressing potential failure modes, healthcare institutions can improve their ability to deliver safe and effective care, ultimately enhancing patient outcomes and fostering a culture of continuous quality improvement. As healthcare evolves, integrating robust risk assessment strategies into routine practice will be essential for sustaining improvements in patient care and safety.

578

Submission Number: **578**	Track: **CMHS**

Paper Title: What is most effective in overcoming barriers to the uptake of pre-paid healthcare subscription: Use of Influencer, customer testimonial, or credit provision?

Authors: Madhur Mohan, Vedha Ponnappan, Prakash Satyavageeswaran and Raghunath Rao

Abstract: Out-of-pocket expenditure (OOPE) on healthcare exacerbates the vulnerability of low-income populations, particularly during periods of distress. In 2019, OOPE led to the impoverishment of over 4.9% of the global population (UN 2023). Due to its importance, the United Nations has incorporated health financing within the SDG framework as Goal 03 (UN 2023). Prepayment mechanisms such as subscription or insurance are viable options to eliminate the price barrier during emergencies, and to provide a predictable payment schedule for uncertain circumstances (Cherla et al. 2021). This research seeks to understand marketing mechanisms that can promote the uptake of pre-paid services for unsought goods such as healthcare. Preliminary field study uncovered two key challenges that act as barriers in the uptake of subscription cards: (1) preference related, viz., uncertainties around future usage, provider credibility, and service delivery, and (2) constraint related, mainly in terms of liquidity crunch. We examine the impact of three marketing levers – use of influencer, customer testimonial, and credit provision, variously - on the adoption and valuation of subscription services and the efficacy of these levers relative to mere information provision (control) using two randomized controlled field experiments in India, partnering with a not-for-profit primary healthcare service provider. The studies are incentive compatible, where customers pay for the subscription during the study. In the first study, we consider the effects of message from an influencer versus (interest-free) credit provision (against the control group - information provision) on adoption and willingness to pay (WTP) to understand which is more efficacious. We find that microfinance significantly increases adoption and valuation relative to the control arm, signaling the importance of credit provision in such contexts. While the local influencers greatly enhanced the valuation of the service, surprisingly they did not boost adoption relative to the control arm, potentially signaling their role as information provider and not as persuader in healthcare context. Prior usage of service provider's facility by respondents led to greater adoption, potentially by alleviating uncertainties and reinforcing the preference. In general, the higher adoption rate of microfinance arm relative to the influencer arm highlights the importance of liquidity constraint removal relative to uncertainties removal in inducing adoption. The results of Study 1 raise important nuanced questions – (1) given that prior usage improved adoption but not local influencers, would messaging by local influencers who have themselves adopted the subscription and discuss that aspect in their messaging make a difference? (2) Would a customer testimonial also perform an equivalent function? (3) Is the interest-free microfinance option being used for trial rather than to solve a liquidity problem? In addition, we had designed Study 1 to understand the relative efficacy of messaging by local influencer versus provision of microfinance, and in doing so had forced the two arms to be orthogonal to address the two barriers of uncertainty attenuating preference and liquidity constraints impacting adoption. However, people may experience both barriers simultaneously and hence removing this orthogonality was also necessary in the subsequent study. Study 2 nuances the findings from the first study by addressing the above questions. We allocate participants randomly to messaging by influencer, customer testimonial, and information provision arms. Further, we distinguish between influencers who had themselves adopted the subscription service and those who did not. We similarly distinguish between testimonials provided by customers who have adopted the subscription and those who are general customers of the service provider. Across all the five arms of the study, we provide the respondents with a choice of purchasing the card by cash or by microfinance, but with a declared commensurate interest amount. The interest component is waived off at the time of repayment, but respondents believe they need to pay an interest at the time of making their choice between cash and microfinance. We hypothesized that the 'costlier' option of microfinance would be taken by people only if they face liquidity constraints. The results, consistent with study 1, find that customers who have not used the service themselves generate lower interest in uptake, but influencers did not fare any better than the information provision control. The adoption through microfinance arm is four times that of through cash. Household liquidity status, measured in terms of lower income, lower cash available, greater number of loans outstanding, acts as a major reason for adoption of microfinance at a higher cost. Our research contributes to the theory and practice by extending the conversation on the causal effect of influencers and credit provision on the adoption and valuation of a subscription service where future usage is uncertain. The research presents evidence that nano influencers may be acting more as information provider, rather than persuaders, in the healthcare context, where like in Zhang et. al (2021) the product is difficult to understand. We also highlight the need for uncertainty reduction and liquidity enhancement through credible message and credit provision to improve adoption and the importance of constraint removal relative to preference enhancement.

590

Submission Number: **590** | Track: **CMHS**

Paper Title: Novel Generative AI Powered Platform for Precision Oncology Applications

Authors: Santosh Dixit, Akshay Chitlangia and Viswanath Pingali

Abstract: The global burden of cancer is rising. WHO has projected 28.4 million new cases with nine million deaths by 2040. Despite research advancements, Clinical Oncology management involves delayed detection, high mortality rate, chemoresistance and 'one-size-fits-all' treatment. Hence, Precision Oncology paradigm is now recommended in which personalized cancer treatment is delivered based on unique multi-modal characteristics of patients and their cancer with imaging, genetic and molecular tests, . However, this approach has inherent challenges associated with lack of expertise to manage multimodal datasets, interobserver variability, complex data analytics, and slow turnaround times. To overcome these challenges, we have created a GenAI powered Precision Oncology platform designed to function as an assistive tool for Oncology professionals by combined use of Large language models (LLMs) and Large Multi-modal models (LMMs). As a smart assistive tool for Oncology stakeholders, our platform has the potential to revolutionize cancer care by accelerating diagnosis , improving clinical decisions, enhancing treatment outcomes ,thus, saving lives of countless cancer patients.

880

Submission Number: **880** | Track: **CMHS**

Paper Title: Evaluating the impact of for-profit organizations in care delivery within the PPSA framework on TB medications and patients' outcomes: A mixed methods approach

Authors: Ashish Sachdeva and Samriddhi S Gupte

Abstract: Background: Tuberculosis (TB) remains a significant global health challenge, causing 1.6 million deaths in 2021, with India contributing to 28% of global cases. The National Strategic Plan (NSP) aims to significantly reduce India's TB burden by 2025. While the public sector provides standard TB care, many patients initially seek treatment in the private sector, highlighting a critical need for better engagement with private healthcare providers. The Patient Provider Support Agency (PPSA) model has been instrumental in enhancing TB care standards in the private sector, increasing TB detection and diagnosis, and improving treatment outcomes. However, challenges such as limited uptake of Fixed-Dose Combination (FDC) drugs persist, impacting patient adherence and overall treatment effectiveness. The Joint Effort for Elimination of Tuberculosis (JEET) initiative, supported by the Global Fund, aims to address these gaps by engaging private healthcare providers in TB care. A pilot under JEET was implemented in Gujarat's Surat and Ahmedabad (Jul'20 – Jun'22), where a for-profit organization facilitated doorstep delivery of TB medication, augmenting standard PPSA services. Patients could upload prescriptions, receive home delivery of government Fixed-Dose Combination (FDC) drugs, and benefit from reminder calls for timely refills. The objective of the study is to evaluate the impact of additional services under the PPSA model on the quality and quantity of TB care, focusing on the uptake of FDC drugs. This evaluation seeks to determine how these initiatives can improve treatment adherence and outcomes, thereby contributing to India's broader TB control efforts. Method: Employing a sequential explanatory mixed-method study design, we assessed the pilot's impact on the quality and scale of TB care. Quantitative data from January 2019 to June 2022 included key variables like CBNAAT tests, government FDC prescriptions, days without medication, counseling, and treatment outcomes. The difference-in-difference technique identified the impact attributable to the pilot. Qualitatively, a multiple case study approach with 88 in-depth interviews across patients, providers, public health (JEET) staff, and for-profit staff was conducted. The data was analysed using thematic analysis to understand underlying reasons behind the impact. Results: The pilot significantly increased FDC uptake by 8%, and medication refill cycle data showed a 32 percent point increase in patients completing six 28-day FDC cycles, indicating improved adherence. However, this metric only covered patients receiving free FDCs. The pilot, offering advantages like regular reminders, doorstep delivery, and e-prescriptions, reduced cost barriers and enhanced privacy. Qualitative insights underscored additional care from treatment coordinators positively impacting patient outcomes, suggesting the pilot improved TB treatment adherence through enhanced convenience and support. Conclusion: A collaborative approach where PPSA provided standard services and for-profit organisation added specialised service such as doorstep medication delivery coupled with reminder calls, shows promise. While part of success can be attributed to PPSA staff efforts in building relationships with patients and providers, doorstep delivery increased patient convenience. Considering India's high TB burden, further exploration and refinement of collaborative approaches involving both for-profit and non-profit entities is crucial for effective patient management.

923

Submission Number: **923**	Track: **CMHS**

Paper Title: Reaching the unreached: Access to maternal healthcare in vulnerable population

Authors: Swati Sisodia

Abstract: Vulnerable population is a primary target of a more significant number of social impact programs, whether led by governments, corporations, or civil society organizations (Mertens, 2021; Seyedsayamdost & Vanderwal, 2020). This has steered attention toward conducting research within these settings. Scholars have discussed and defined the concept of vulnerability across various fields like sociology, public health, and disaster studies. However, it's crucial to recognize that vulnerability is a multidimensional and evolving notion, subject to interpretation based on context and discipline. For instance, Rogers (1997) defined "vulnerability" as susceptibility to health issues or harm from a perceived threat level. They are subgroups sharing social attributes that place them at higher risks of encountering various hazards with increased susceptibility to adverse health outcomes compared to others. India's tribal population, is recognized as vulnerable groups facing significant health disparities. In India, these indigenous communities, which account for approximately 9% of the population, encompass over 700 sub-tribes dispersed geographically. Despite the substantial literature on the challenges these populations face (Mollard, Hatton-Bowers, Tippens, 2020), social development organizations have emerged as crucial healthcare providers (Rath, 2019; Utuk et al, 2014). They fill gaps where government infrastructure is weak or non-existent (Perry et al., 2021). Using qualitative research, the primary objective of this research is to assess the challenges of NGOs working in remote areas in improving accessibility to maternal health

949

Submission Number: **949**	Track: **CMHS**

Paper Title: Quality of Reporting of Maternal and Child Health Indicators in India: An Assessment of Health Information Management System (HMIS) Data

Authors: Nibras K. Thodika, Althaf Shajahan and Muhammed Shafi K

Abstract: Background: India is one of the leading contributors to the global maternal and child mortality incidents. It continues to face challenges in improving the quality of maternal and child care in the country. Various programmatic endeavors aim to attain the maternal and child health indicators in line with the sustainable development goals. Reliable and timely information is critical for the management of such efforts. The World Health Organization (WHO) identifies health information systems as one of the six critical building blocks of its health system framework (WHO, 2007). Health Management Information Systems (HMIS) are designed to provide health managers at multiple levels of the health system with relevant information for action. Study Objectives: Despite its centrality in the management of health care services, HMIS systems have been riddled with concerns of data quality issues. Numerous data quality issues have been reported, including those related to the completeness, timeliness, and accuracy. To our understanding, there is no systematic and comprehensive assessment of the data quality of Indian HMIS at the national level. The aim of the study is to undertake the quality assessment of India's HMIS-generated data at the sub-district level using the data quality framework provided by WHO. Data: Data for the study was downloaded from the HMIS web portal of the Government of India. The standard performance reports (yearly) for the sub district level were downloaded for the available period (from 2012-13 to 2019-20). The data included reports from around 8000 facilities across all the states and union territories in India. The study also uses the National Family Health Survey (NFHS-5) data to assess the external consistency. Indicators pertaining to the following components of the maternal and child care in the HMIS reports were considered for data quality assessment: antenatal care registrations, completion of 4 antenatal care visits, deliveries in a health facility, coverage of postnatal care, and uptake of diphtheria-pertussis-tetanus (DPT) 1 & 3 vaccines. Methods: The current study uses the WHO's guidelines on routine data quality review (DQR) for country Health Management Information Systems for data quality assessment. The DQR guidelines' module on desk review provides multiple dimensions of data quality. We consider the following three dimensions of data quality for review: (1) completeness (2) internal consistency of reported data; (3) external consistency. The dimension of completeness of indicator data was measured as the percentage of values that are not missing values for the indicators in consideration. At the subnational and national level, we also calculate and report the number of facilities that have complete reporting based on the specified threshold levels. Internal consistency is measured using (a) consistency over time, (b) the existence of outliers, and (c) consistency between related indicators. To check for consistency over time, we check whether the reported values of specific

indicators are consistent with the mean value of the same indicator for the previous 3 years combined. A threshold of 33% was considered, and reports were marked consistent or inconsistent based on the same. Outliers were specified as values that are at least 2 standard deviations from the average value of the indicator for a given subnational unit. Extreme outliers are those that are at least 3 standard deviations away from the average values. To measure internal consistency between related indicators, consistency between total antenatal care registrations and 4 antenatal care visits and between DPT 1 and DPT 3 vaccination coverage were considered, since these indicators are expected to track one another. A 5% threshold level was set to identify inconsistent reporting. External consistency was measured by comparing the reported ratios of antenatal care service coverage, immunization coverage, and institutional deliveries with the survey-based estimates from the NFHS-5 at the district level. Results: The study found that while the facility reporting has improved, the completeness of indicator data has deteriorated over time. The percentage of outlier values across the facilities has remained constant at around 4-5% across the years. Overall, there is a declining trend in consistency over time over the years. Inconsistency is higher for immunization and postnatal care indicators. While consistency between ANC indicators remained constant across years, there exists wide variation in consistency between DPT1-DPT3, where it has deteriorated over time. When compared with survey-based estimates from NFHS-5 for external validity, indicators on antenatal care and postnatal care coverage tend to be underreported; all other indicators are over reported in varying magnitudes. DPT and ANC indicators have the highest variation, and infant mortality rates have the least variation when the NFHS survey estimates are taken as the standard. In terms of subnational variations, the underreporting and over reporting seem to be consistent across the regions of the country. Though the magnitudes varied, the underlying trends remained the same across the indicators. Among the regions, the southern and central regions showed higher deviations, while the north-eastern region has the lowest deviations. Conclusion: The study assessed the quality of reporting in India's HMIS for its national trends and subnational variations. It identified substantial quality issues in the HMIS data across various dimensions of data quality that were considered. However, in many cases, the quality issues are consistent across the years and regions. This points to the systemic issues in HMIS data reporting and practices. Further studies need to unpack these mysteries using more in-depth analysis and qualitative explorations.

1083

Submission Number: **1083**	Track: **CMHS**

Paper Title: Evaluating Healthcare Quality in NCR: International Patient Experiences in Medical Value Travel

Authors: Nabanita Choudhury

Abstract: This study investigates the satisfaction levels derived from the quality of care received by international patients seeking treatment in the National Capital Region (NCR) hospitals, considering the demographic patterns of international patients in India's National Capital Region (NCR). Based on a comprehensive survey conducted in three phases from 1st October 2023 to April 31, 2024, the survey encompassed 2292 patients from a variety of hospitals and healthcare facilities, including Max Gurugram, Fortis Gurugram, Artemis Gurugram, Apollo Indraprastha, AIIMS New Delhi, Yashoda Super Specialty Hospitals, Shinon Health Care, and Dania Medicare. Focus group discussions and in-depth interviews were conducted with eleven such organisations' hospital staff and healthcare officials. From this sample, 106 international patients were interviewed in April 2024 about several dimensions of the quality of care, including medical treatments, administrative procedures, financial transparency, and staff engagement. A questionnaire based on a five-point Likert scale was used to score the satisfaction levels of the quality of care received, followed by Factor Analysis. The primary survey findings emphasize the urgent need to enhance communication between international patients and physicians, primarily due to language barriers. Safety and quality assurance are paramount, necessitating hospitals to maintain high standards and seek international accreditations. Improving logistical efficiency, financial transparency, and cultural sensitivity are also critical to elevate the overall patient experience and uphold India's standing in the medical value travel sector. The insights from this study are gainful for all stakeholders, especially healthcare providers and policymakers. in their efforts to improve the quality of care and enhance the overall international patients 'experience. Future research could address the limitations of this attempt by exploring additional factors influencing patient satisfaction and including a more comprehensive data set.

1088

Submission Number: **1088**	Track: **CMHS**

Paper Title: Trust and Technology: Analyzing Health Portal Use During the Pandemic

Authors: Dr. Vibhu Teraiya and Ms. Mamta Rani
Abstract: The burgeoning field of health communication has seen the rise of Health Information Portals, integrating medical structural equation modeling in AMOS with the qualitative tool QCA to pinpoint crucial factors influencing users' willingness to adopt these platforms. Trust and self-efficacy have been identified as pivotal in shaping behavioral intentions. Notably, while technology anxiety negatively impacts trust, it does not directly affect portal acceptance. Instead, both technology anxiety and self-efficacy exert indirect influence on behavioral intentions through their effect on trust.

1167

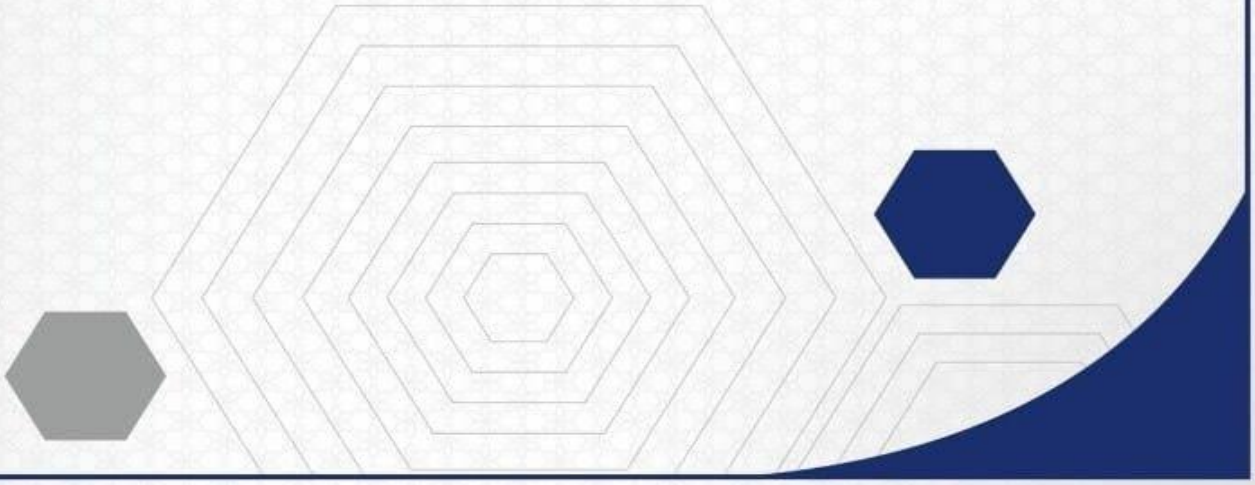
Submission Number: **1167**	Track: **CMHS**
Paper Title: Impact of Electronic Health Records, Telemedicine and Mobile Health Interventions in Community and Health Settings	
Authors: Amartya Krishnaditya and Dr. Dhananjay D. Mankar	
Abstract: The evolution of digital health tools has brought about a paradigm shift as one of the key aspects of enhancing healthcare accessibility, particularly in underserved regions. The research investigates the impact of Electronic Health Records (EHR), telemedicine, and Mobile Health (mHealth) interventions on disease management outcomes within community and healthcare settings in India. The study's main aim is to provide a comprehensive evaluation of these digital health tools focusing on their effectiveness in improving healthcare delivery and patient outcomes. The methodology employed in this study involved a dual-study design across 10 cities, incorporating both community members and healthcare professionals. Data collection was done through structured questionnaires and semi-structured interviews, keeping in view a diverse group of participants to gather insights on their experiences and perceptions regarding digital health tools. A total of 40 healthcare professionals and a representative sample of community members participated in the study, ensuring a robust analysis of the impact of these technologies. The workflow of research utilized a systematic literature review to identify knowledge gaps and inform the development of research instruments tailored to the specific context of digital health research in India. The results of the study reveal significant insights into the perceptions and experiences of both stakeholders. For community members, the integration of telemedicine and mHealth has been associated with improved access to healthcare services, particularly in remote areas. Participants reported enhanced convenience and reduced travel time for consultations, leading to increased satisfaction with healthcare delivery. The use of EHRs was noted to facilitate better continuity of care, allowing for more informed decision-making by healthcare providers.Healthcare professionals expressed a generally positive perception of EHRs, telemedicine, and mHealth, highlighting their potential to improve work outcomes. The analysis indicated a correlation between working hours and the perception of EHR effectiveness, with professionals working longer hours reporting a more favourable view of EHRs' impact on their workflow. Telemedicine was particularly praised for its role in expanding patient reach and enabling timely interventions, while mHealth applications were recognized for their ability to empower patients through self-management tools. Key findings from the community survey indicated that 75% of participants found telemedicine to be a valuable resource for accessing healthcare, while 68% reported satisfaction with mHealth applications for managing their health. In contrast, healthcare professionals noted challenges in the implementation of these technologies, including concerns about data privacy and the need for adequate training to maximize their benefits. Despite these challenges, the overall sentiment among healthcare providers was one of optimism regarding the future of digital health in enhancing healthcare accessibility. To Sum Up, the study underscores the transformative potential of digital health tools in improving healthcare accessibility and outcomes. The findings suggest that while there are challenges to be addressed, the integration of EHRs, telemedicine, and mHealth can significantly enhance the healthcare experience for both community members and healthcare professionals. As India continues to advance its digital health ecosystem, the insights from this research can inform policy decisions and strategic initiatives aimed at fostering equitable healthcare access for all. The collective opinion of stakeholders highlights the necessity for ongoing investment in digital health infrastructure and training, ensuring that these technologies can be effectively leveraged to meet the diverse needs of the population.	

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

Track 03: Gold & Precious Metals: Business and Economic Policies



Track 03: Gold & Precious Metals: Business and Economic Policies

67

Submission Number: **67**	Track: **IGPC**

Paper Title: Reforms in Gold Exploration & Mining in India: Challenges & Opportunities.

Authors: Prabhakar Sangoormath

Abstract: Amongst all metals found in the earth's crust, Gold is the most precious one. Gold not only symbolizes individual's prosperity, but also represents the strength of a Nation. Gold Mining involves identifying and extracting gold resources hidden in the earth, which are of no value unless extracted. Thus, mining creates primary value out of nothing and further leads to value-addition through mineral beneficiation. In the process, huge employment is generated, which leads to improvement in the socio- economic status of the communities and inclusive growth in the economy. The Government's key objectives for reforms in the minerals sector are accelerating the growth of mining industry to support India's goal of achieving a $5 trillion economy; increasing mine production and pace of exploration, transparency in allocation of mineral concessions, generation of large-scale employment; enhancing private investments in the mineral sector and reducing imports and contain outgo of foreign exchange. Gold occurs in a variety of geological settings. About 95 tonnes of gold metal is categorized as reserves (economically mineable) and resources of gold is about 470 tonnes of gold metal identified by GSI, MECL, HGML and other private agencies. These reserves and resources exist in deposits and prospects spread over 11 different States of the country. India is characterized by many small gold occurrences; However, these resources await up gradation by substantial deep diamond drilling, exploratory mining and feasibility studies before they reach the status of mineable reserves Mining for gold in Karnataka existed in pre and post Ashokan times. Rediscovery of various gold fields took place after the reopening of the Kolar Gold Fields in 1880.The Bharat Gold Mines Ltd (BGML) from KGF of Karnataka has a continuous glorious gold production almost 120 years, has produced about 800 tonnes of gold and ranked as giant gold field of world class. Considering the deep mining (3km deep), economics, administrative problems, BGML was closed its operations from March 2001.Presently, the primary gold production comes essentially from Karnataka i.e Hutti Gold Mines Co Ltd. (HGML) (A Govt of Karnataka Enterprise),which produce nearly 1.7 tonnes of gold per annum. The Hutti Underground Gold Mine is the oldest metal mine in the world amongst the existing mines. HGML has produced about 92.78 tonnes of gold from 1947 to 2022. HGML has gold reserves of around 18.87 millon tonnes @ 4.10 g/t in its mining lease hold areas. The present depth of Hutti underground gold mine is 960 meters and it can be mined up to 3 km depth as per geo-physical exploration. HGML is active in Exploration, Mining & Metallurgy of Gold/Copper/Sand deposits of Karnataka. HGML is built upon for long term vision and clear mission. It is one of the most vibrant, self-reliant, a financially viable, growth oriented and humane organization. Apart from these primary sources of gold, gold in small quantities is also produced as a by- product during the refining of copper by Hindustan Copper Ltd (HCL) (A Govt. of India Enterprise). The demand for Gold in India is not only the highest in the world but also one of the fastest growing market. It is projected, that the gold consumption in India may reach about 1200 tonnes. The domestic mine supply is around 1.7 tonnes/year. It is estimated that Indian households has about 25,000 tonnes of gold possession with them. India imported about 930 tonnes of gold. During 1894, the production of gold in Karnataka was 5.3 tonnes, when the sale price of gold was Rs. 2.50 per gram. The production was stepped up and reached a peak production of 14.7 tonnes in the year 1906. The present production is around 1.8 tonnes per year. The best opportune time for significantly stepping up the research, exploration and production is now for the fact that gold is enjoying an all-time high market. Incentives, simplified permitting, ambition needs to be stirred in smart expert businesses to reach out boldly and tirelessly, towards success awaiting enterprising Geologists/Mining Engineers/Metallurgists and Investors. It is wrong to stand still and stagnate when large opportunities are present for making immense progress through new discoveries and massive gold ore productions.

137

Submission Number: **137**	Track: **IGPC**

Paper Title: Enhancing Efficiency in India's Petroleum Industry: Insights from Window DEA Analysis of Leading Companies

Authors: Manoj Shukla

Abstract: Purpose The petroleum industry's performance is closely linked to the broader economic growth of domestic markets and the nations to which its products and services are exported. Within India, the petroleum sector is critical, playing a significant role in the country's economy. Therefore, it is essential to continuously monitor and improve the performance of individual petroleum companies and establish benchmarks for those that may need to be more efficient. These efforts are crucial for ensuring the sustainable growth of these enterprises. By monitoring and benchmarking their performance, companies can enhance their efficiency levels, thereby contributing to the overall advancement of the petroleum industry. This article analyzes the efficiency levels among different petroleum companies to set benchmarks for those underperforming. To achieve this, the study utilizes Data Envelopment Analysis (DEA) to assess individual petroleum companies' technical and scale efficiencies. The approach employs window analysis in DEA, allowing for a comprehensive evaluation over time to determine how efficiently each company utilizes its resources and scales its operations. This methodological framework enables a nuanced understanding of where improvements can be made, thereby guiding efforts to enhance overall industry performance. Design/ Methodology /Approach- This article centers on analyzing six prominent oil and gas companies in India, utilizing data from Prowess and companies' yearly statements, spanning 35 years from 1989 to 2023. The study employs the window analysis DEA approach to assess efficiency, incorporating both cross-sectional and time-varying dimensions in the datasets. By comparing each Decision Making Unit (DMU) against itself and others across different periods, the analysis aims to reveal valuable insights into efficiency trends. This method enables a comprehensive evaluation of how these companies have performed relative to each other and over time. The study focuses on three input variables: crude oil price, total assets, and total capital, alongside one output variable, profit after tax. Finding and implications A descriptive analysis was conducted on input and output variables, revealing that standard deviations exceed averages among input variables, indicating diverse company sizes. Despite all companies being in the same business, diversity supports using data envelopment analysis (DEA) to measure relative performance. A 5-year time window, as calculated by Charnes' formula, was employed for the output-oriented window DEA model. The assessment of PTE is crucial for identifying areas where operational efficiency can be enhanced, while OTE reflects the organization's ability to maximize output, given input and technology. The window DEA model maintains the DEA's discriminatory power. Empirical results indicate that ONGC achieved the highest scores for Overall Technical Efficiency (OTE), Pure Technical Efficiency (PTE), and Scale Efficiency (SE), while BPCL scored the lowest. None of the companies operate at the Most Productive Scale Size (MPSS). Inefficiencies are attributed to managerial inefficiencies and suboptimal scale choices. Returns to scale were constructed for companies; Inefficient companies are benchmarked against efficient peers to guide improvement strategies. BPCL, with an OTE score of 0.523, needs a 26.4% radial improvement in output to reach the efficient frontier while removing output slacks. Year-wise efficiency scores varied significantly across companies. Most of the companies operate under Decreasing Returns to Scale (DRS), suggesting potential efficiency gains by reducing their scale size to match optimal levels. This analysis underscores the importance of efficiency metrics like OTE and PTE in identifying opportunities for enhancing company performance, particularly through managerial improvements and scale adjustments. Limitations The study highlights the importance of having sufficient Decision-Making Units (DMUs) relative to the total number of input and output variables for practical Data Envelopment Analysis (DEA). With six companies included, meeting the requirement of three to four times the sum of variables, applying the window DEA approach enhanced discriminatory power. However, expanding the number of DMUs could further enrich the study's utility by providing a broader basis for benchmarking and performance evaluation across a more diverse set of companies in the same industry.

168

Submission Number: **168**	Track: **IGPC**

Paper Title: Impact of Ukraine-Russia War on Diamond City of India

Authors: Geeta Sharma and Priyanka Gandhi

Abstract: Surat, which began as a port city at the beginning of the Tapi river, became known as the "Diamond City of India" in the years between the 1960s and the 1970s. Surat is a diamond trimming and polishing center. It is known as "Diamond City" because it polishes around 90% of the world's diamonds. Surat is well-known for its diamond business, while it is also noted for its silk fabric and cotton mills. Every day, traders in Surat's congested marketplaces, such as Mahidharpura, openly exchange diamonds worth millions of dollars on the streets, carrying the priceless jewels loose in paper wrappings. During the Covid-19 crisis, the business had already lost roughly 30000 crores. Surat's diamond polishing business was protected from the negative effects of the Russia-Ukraine war until the beginning of 2022 since there was no sanctions on transactions with Russian raw diamond mining company Alrosa, and demand for polished diamond in major worldwide markets remained untouched. Russian mining behemoths like Alrosa once supplied more than a third of India's raw diamonds, but supply has ceased due to Western sanctions in early 2022. The persistent conflict between Ukraine and Russia has continued to send shockwaves across global industries, extending its reach far beyond the immediate region. This study delves into the consequences of the Ukraine-Russia conflict on the thriving diamond trade in Surat, India, a city renowned as the "Diamond City." Surat is a pivotal diamond processing and trading center deeply rooted in international diamond supply networks. This research scrutinizes both direct and indirect repercussions of the conflict, in Surat's diamond sector. It investigates disruptions within the supply chain, shifts in market dynamics, fluctuations in diamond valuations, and socio-economic impacts on the workforce and enterprises. By shedding light on the interplay between geopolitical turmoil and global industries, this study offers valuable insights for policymakers, industry players, and researchers to strengthen resilience and navigate uncertainties in the diamond trade landscape. It also discusses the various alternatives to reform the supply chain to control the price of diamonds and remove the dependency of India on one particular country. The overall impact of the Ukraine-Russia war on the diamond industry in Surat has been severe. The industry is facing a shortage of supply, a decline in demand, and job losses. It is unclear how long the war will last, but it is likely to have a lasting impact on the diamond industry in Surat. The war has disrupted the supply of rough diamonds to Surat, leading to job losses and economic hardship for thousands of diamond workers. The war has also harmed the demand for diamonds, as consumers are spending less amidst the global economic uncertainty. The overall impact of the war on the diamond industry in Surat has been severe, and it is likely to have a lasting impact. The diamond industry in Surat hopes the war will end soon and the supply of rough diamonds will resume. However, the war has also served as a wake-up call for the industry, to look at ways to diversify its supply chain and reduce its dependence on Russia. Following are some of the steps that the diamond industry in Surat can take to mitigate the impact of the war and build a more resilient future: Diversify the supply chain by sourcing rough diamonds from multiple countries. Invest in new technologies to improve the efficiency of diamond production. Develop new markets for diamonds, such as China and India. Focus on sustainable and ethical diamond production.

203

Submission Number: **203**	Track: **IGPC**

Paper Title: Leveraging Blockchain in the Merchandising of Luxury Fashion Items: Implications for Gold and Precious Metals

Authors: Sadurya G and Dr.J.Kavitha Selvaranee

Abstract: Objectives The luxury fashion industry, renowned for its exclusivity and high value, confronts significant challenges related to authenticity, transparency, and traceability across its intricate supply chain. These issues have become increasingly salient as consumers demand greater visibility into the provenance and production processes of the high-end apparel, accessories, and jewellery they purchase. Blockchain technology, with its inherent capabilities to enhance supply chain transparency, secure transactions, and provide tamper-proof record-keeping, presents a promising solution to address these pressing concerns. This research paper aims to conduct a comprehensive exploration of the opportunities and far-reaching implications of leveraging blockchain technology in the merchandising and distribution of luxury fashion items, particularly in the context of gold and precious metals, which share a similar need for robust supply chain integrity and consumer trust. Methodology Desk research reviewed literature on blockchain applications in the fashion industry, focusing on the traceability and authenticity of luxury items. This was extended to the gold and precious metals sector, noting synergies in high-value products and the need for supply chain transparency. The study analyzed how luxury brands use blockchain to track product provenance, enhancing transparency and authenticity verification for consumers. Similar benefits were examined for the gold sector, emphasizing ethical sourcing and responsible production. The findings showed growing interest in using blockchain to improve supply chain visibility and combat counterfeiting, trends applicable to both luxury fashion and precious metals. Methodology included: 1. Literature review: Examined academic and industry publications on blockchain in fashion for traceability and authenticity. 2.Case studies: Analyzed how luxury brands use blockchain for supply chain transparency, revealing benefits in verifying authenticity and optimizing supply chains. 3.Meta-analysis: Synthesized industry reports to assess the challenges and impacts of blockchain solutions. 4.Content analysis: Gauged perceptions of blockchain in luxury fashion, showing positive sentiment towards its use for traceability and authenticity. The research suggested that block chain's success in luxury fashion could extend to gold and precious metals, highlighting the importance of provenance and ethical sourcing. Future research should explore the broader societal and environmental impacts of blockchain, including responsible sourcing and sustainability. Research Questions The research questions for this study are: 1. How have luxury fashion brands leveraged blockchain technology to enhance the traceability and authenticity of their products, from raw materials to final sale? 2.What are the potential benefits and operational impacts of implementing blockchain-based solutions in the luxury fashion industry, and how could these translate to the gold and precious metals sector? 3. What are the broader societal and environmental implications of increased supply chain transparency and accountability enabled by blockchain technology in the luxury goods and gold/precious metals industries? 4.What are the specific technological and operational requirements for deploying blockchain-based solutions across the gold and precious metals value chain, and what are the potential financial and operational impacts? Contribution to the Field of Knowledge This research explores block chain's potential to tackle challenges in the luxury fashion industry, extending insights to the gold and precious metals sectors. Using case studies, secondary data, and industry perceptions, it highlights block chain's role in enhancing product traceability, authenticity, and supply chain transparency. The successful application of blockchain in luxury fashion suggests similar benefits for gold and precious metals, focusing on provenance and ethical sourcing. The study also examines block chain's societal and environmental impacts, promoting responsible and sustainable business practices. It identifies technological and operational requirements for blockchain in the gold and precious metals value chain and assesses financial and operational impacts, offering strategic insights for decision-making and future research.

368

Submission Number: **368** | Track: **IGPC**

Paper Title: Advanced Time Series Forecasting of Indian Gold Prices with Bidirectional GRU RNN Model: An Economic Perspective

Authors: Affan Ali

Abstract: This research paper presents a comprehensive analysis of historical gold prices in India from 1964 to 2023 and provides predictions for the next decade (2024-2033) using advanced time series forecasting techniques. The study employs a Bidirectional Gated Recurrent Unit (GRU) model, leveraging its ability to capture temporal dependencies in both forward and backward directions. Exploratory Data Analysis (EDA) was conducted to understand the characteristics and trends in the historical data. Key observations include a steady increase in gold prices from 1964 to the early 1970s, a sharp rise during the mid to late 1970s, and continued growth with fluctuations from the 1980s to the 2000s. A notable spike was observed post the 2009 financial crisis, reflecting economic uncertainties. Descriptive statistics provide deeper insights into the gold price trends and volatility over the years. The Bidirectional GRU model was developed and trained using normalized historical data, with early stopping techniques to prevent overfitting. The model's performance was evaluated using Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE). The results demonstrate the model's accuracy and reliability, with low testing errors indicating good generalization to unseen data. The predictions for the next decade show a continued upward trend in gold prices, with significant implications for investors and economic planners. This study highlights the effectiveness of Bidirectional GRU models in time series forecasting and provides valuable insights for future research and practical applications in financial markets.

411

Submission Number: **411** | Track: **IGPC**

Paper Title: Measures & Determinants of Success: The Role of Product Life Cycle in Commodity Futures

Authors: Yashmin Khatun and Dushyant Ashok Mahadik

Abstract: Our study introduces a new approach to evaluate the success of commodity futures through the lens of the product life cycle (PLC). Our primary contribution lies in constructing a PLC for commodity futures and rigorously examining how various success measures and their determinants perform across the introduction, growth, and maturity stages. This is the first study to apply the PLC concept to commodity futures, offering a novel perspective on the dynamics of success measures throughout different life cycle stages. We employ a comprehensive dataset comprising 107 commodity futures, including agricultural, bullion, base metals and energy, from six exchanges across China, India, and the USA. It also studies the role of financialization as a determinant of commodity futures success. Through logistic fixed effects regression, we observed that both volume and open interest are significantly lower during the introduction stage and higher in the maturity stage. Additionally, fixed effects regression with clustered standard errors underscores financialization as a crucial determinant of success, evidenced by a marked increase in the model's R-squared upon incorporating financialization into the already established model of futures' market determinants. Lastly, we compare the determinants of success in developed and emerging economies. To ensure the robustness of our results, we utilize both weekly and monthly data, reinforcing the validity of the results and offering a comprehensive view of the dynamics influencing commodity futures success.

415

Submission Number: **415** | Track: **IGPC**

Paper Title: Examining the Nonlinear Dynamics Between Gold Prices, Geopolitical Risk, and Climate Policy Uncertainty

Authors: Dr. Nayanjyoti Bhattacharjee and Mr. Amit Kumar Narzary

Abstract: Gold is widely recognized as a “safe haven” asset during periods of market uncertainty and risk (Beckmann et al., 2015; Banerjee & Pradhan, 2021; Cui et al., 2023). Climate policy uncertainty pertains to the unpredictability associated with the formulation, scope, and enforcement of climate regulations, as well as potential future policy shifts (Gavriilidis, 2021). Additionally, geopolitical risk encompasses the potential for economic, political, or social instability resulting from geopolitical events or international tensions (Caldara & Iacoviello, 2021). This study utilizes the Nonlinear Autoregressive Distributed Lag (NARDL) model to investigate the nonlinear dynamics among gold prices, climate policy uncertainty (Gavriilidis, 2021), and geopolitical risk (Caldara & Iacoviello, 2021). The analysis also controls for Brent crude oil prices (Salisu et al., 2021) and US Economic Policy Uncertainty (Baker et al., 2013). Monthly data from April, 1987 to June , 2024 are employed, based on data availability. The data sources include policyuncertainty.com for the Climate Policy Uncertainty Index, Geopolitical Risk Index, and US Economic Policy Uncertainty Index; gold.org for gold prices; and fred.stlouisfed.org for Brent Crude Oil Prices. The NARDL model is particularly suited for this analysis due to its ability to handle non-stationary data, multicollinearity, and endogeneity (Sarker, 2024; Shin et al., 2014). Its flexibility allows for the examination of asymmetric effects of positive and negative changes in explanatory variables on gold prices, thereby providing insights into the intricate short- and long-term dynamics between climate risk, geopolitical risk, and gold prices. The results of this study reveal significant asymmetric long-run relationships between geopolitical risk and gold prices, aligning with the findings of prior research by Baur and Smales (2018), Gozgor et al. (2019), Wu et al. (2019), Gkillas et al. (2020), Asai et al. (2020), and Li et al. (2021). Specifically, the analysis shows that an increase in positive geopolitical risk has a statistically significant impact on gold prices. This result highlights the critical role that geopolitical factors play in influencing gold market dynamics. For policymakers, this insight is valuable as it provides a clearer understanding of how geopolitical events can affect gold prices, enabling them to anticipate potential market reactions to geopolitical developments. For investors, the significant effect of geopolitical risk suggests the importance of incorporating geopolitical risk assessments into investment strategies, particularly during periods of heightened geopolitical tensions, to make more informed investment decisions. In contrast, the study finds no significant impact of climate policy uncertainty—whether positive or negative—on gold prices (Raza and Khan , 2024 , Karim et. al., 2023 , Luqman et. al. ,2023). The lack of significance indicates that, compared to geopolitical risks, climate policy uncertainties might not exert as immediate or substantial an effect on gold prices. Consequently, this finding implies that investors might prioritize geopolitical risks over climate policy uncertainties when evaluating their investment strategies in the gold market. Furthermore, the study incorporates diagnostic tests, including the CUSUM (Cumulative Sum) and CUSUM of squares tests, to assess the stability of the model. This study significantly advances the literature by elucidating the distinct influences of climate policy uncertainty and geopolitical risks on gold prices, thereby offering crucial insights for policymakers, investors, and market participants in navigating financial risks and crafting investment strategies. By accounting for these additional variables, the study ensures that the observed effects of geopolitical risk and climate policy uncertainty on gold prices are not confounded by other significant economic factors. Policymakers can leverage these insights to better anticipate and mitigate the economic effects of geopolitical developments, while investors can refine their strategies by integrating geopolitical risk assessments and focusing on factors with a more substantial impact on gold prices.

422

Submission Number: **422** | Track: **IGPC**

Paper Title: Impact of implementing blockchain on the gold supply chain

Authors: Swathi Arun

Abstract: Gold is the most common precious metal with a significant role in Indian tradition and culture. Procurement of gold jewellery has become a fashionable and effective method of investment. Moreover, the exclusive characteristics of gold lead to many applications in the electronic and medical industries. Currently, the path of gold from the mines to the customer or gold supply chain is inefficient because of the lack of transparency. No one can estimate the percentage of gold which is ethically mined and used in day-to-day life. One of the solutions to increase transparency is implementing blockchain technology in the supply chain. Blockchain is the fundamental technology behind cryptocurrencies. Blockchain is a decentralised electronic ledger system used to record data sequentially. The data stored on the blockchain are immutable, permanent, and protected by cryptography and time stamps. Initially, blockchain is used for cryptocurrencies, but it can be used in many fields where transparency and decentralisation of data are required. The first player in the gold supply chain is the government of the nation where the gold is found. Each country has their policies to ensure ethical mining by considering social, environmental, safety and political frameworks. After the miners mine the gold, traders ship it for smelting and refining. The purified gold may later transported to the manufacturers. Manufacturing consists of different steps which vary for each product. The common manufacturing processes involve 3D modelling, 3D printing, casting, polishing, optional diamond setting and finishing. Considering recycling of gold from products like smartphones leads to efficiency of the supply chain. One gram of gold can be recycled from around 35-40 smartphones which is equivalent to a tonne of low-grade ore. The first step to implementing blockchain is understanding the purpose of blockchain, its benefits and limitations. The next step is identifying the important players in the supply chain and their roles. Since blockchain is an immutable ledger system, there should be a clear idea of what data should be stored. There are several consensus mechanisms like proof of work and proof of stake, from these, the developer should choose a proper one. Cryptocurrencies are currently based on public blockchains in which anyone can send or receive it and mine a new block. In a public blockchain, everyone can see the information on the blockchain and record the new data. On the other hand, to join a private blockchain permission is required. Even though private blockchain contradicts the concept of decentralization, it offers greater privacy and control over the network. The developer of the blockchain should choose the proper type of blockchain concerning the objectives. The common platforms to build blockchain are Ethereum, Hyperledger Fabric, Corda, Quorum and EOS. The developer should choose a proper platform along with programming language and developing framework. Each of them has their advantages and limitations. After developing and deploying the efficiency of the blockchain should be tested to identify its response over different scenarios and conditions. If the testing is successful, the blockchain can be launched. One of the difficult parts that will arise during implementation is tokenisation or the process of representing and storing physical gold on the blockchain. Tokens are digital assets created and managed on a blockchain which represent various assets. Fungible items are replaceable by another identical item, whereas non-fungible items are unique and irreplaceable. The fungible nature of gold makes it difficult to differentiate between each piece of gold. However, if it can be converted to non-fungible it can be stored on the blockchain. Each piece of gold is different in its physical properties like weight, dimension, purity etc… which can be represented as an alphanumeric value. Even if two pieces have almost similar physical properties their microstructure can be different. By using imaging technologies like X-ray Diffraction (XRD), Scanning Electron Microscopy(SEM) etc… gives detailed structural and surface data. These output images can be stored on the blockchain using the technique of Non-Fungile Token(NFT), which is an emerging application of Blockchain. The process of converting an image to its corresponding alphanumeric value is called minting. These data along with other important information like the ownership, and origin are combined to generate a unique digital signature for each piece of gold using hashing algorithms like SHA256. A cryptographic hash function takes an input of any length and returns a fixed-size alphanumeric number called a hash value. It is a one way function unlike encryption and decryption so input data can't be found from the hash. The hash which is generated in such a way is deterministic and collision resistant. They are characterised by the avalanche effect means that a small input change will yield a new, completely different hash. Implementing blockchain technology in the gold supply chain benefits all the stakeholders who have a role in it. When compared with the physical data, the data stored in a blockchain is protected by cryptography and time stamps. By timestamping everyone one can know when each step is achieved. Since everybody works with the same system, paperwork and data input redundancy would be reduced. The immutable nature of blockchain incentivises to input of more accurate data resulting in increasing trust in partners. Since the data is recorded from the mine itself, there will be full unbroken origin of assets throughout the supply chain and a verifiable chain of custody to detect and reveal any gaps. Since historical data is stored permanently, it can be valuable over time. The most important benefit is that it will increase the transparency of the supply chain. By using Smart Contracts, the intervention of humans in different intermediate processes like manual payment can be reduced. To put it briefly, the efficiency of the current gold supply chain can be improved by appropriately integrating with blockchain technology.

431

Submission Number: **431**	Track: **IGPC**

Paper Title: Multi-Factor Silver Price Prediction: A Machine Learning Approach Integrating Economic, Market, and Industry Indicators in the Post-COVID Era
Authors: Ritik Agarwal
Abstract: This study presents a novel approach to predicting silver prices using advanced machine learning techniques, treating the problem as a regression task rather than a time series analysis. In the present work, a wide range of economic and market indicators, together with industry indicators, are covered to understand changing dynamics from 2020 to 2023, given the complex market dynamics during and after the COVID-19 pandemic. Silver is a very industrially and investively consumptive precious metal, and its pricing drivers are very varied. We will consider a full set of features in our analysis to establish a robust predictive model, which we will examine in more detail below. The additional variables will be the Gold Price, the S&P 500 Close, the USD to EUR Exchange Rate, the Oil Price, the Interest Rate US, the Inflation Rate US, the GDP Growth Rate US, the PHLX Semiconductor Index, the Bloomberg Commodity Index, the US Treasury Yield, and VIX, or Volatility Index. Specifically, this research tries to test the effectiveness of regression-based machine learning algorithms with regard to the prediction of silver prices in the context of global economic changes fore-grounded by the COVID-19 pandemic. We try to explain the extent to which certain economic indicators bear a relationship with, and thus possibly might forecast, silver prices in the post-COVID landscape. This would enable us to deliver very valuable insight into new dynamics reigning in the market of precious metals. Our methodology is performed through the latest machine learning algorithms for regression tasks, including Random Forest, XGBoost, Support Vector Regression, and Artificial Neural Networks. In this paper, we will use daily data starting from January 2020 so that it may be possible to observe the behavior of the market since the start of the pandemic, the ensuing economic turmoil, and the recovery phase. Following are the steps involved in the research: 1. Extensive data preprocessing: This enables uniform quality and consistency in data across all features. 2. Feature engineering: This will be done to catch complex relationships between various economic indicators with silver price. 3. Development and comparison of different regression-based machine learning models for an appropriate approach toward silver price prediction. 4. Rigorous cross-validation methods are applied for ensuring model robustness and generalization. This research contributes to the available literature and practical applications in commodity price forecasting by developing a comprehensive data-driven approach to understanding and predicting silver price movements as a regression problem. The results bring with them some potential implications for investors, policymakers, and industry players trying to navigate the post-pandemic economic environment. Comparing the relative feature importance across different models provides nuanced insights into the economic factors that would be most influential in today's silver market. Here, we give further attention to gaining a deeper understanding of silver price dynamics and real-world implications for an investor, trader, and policymaker in a post-COVID economic environment. In conclusion, this paper presents a holistic examination of silver price prediction using regression-based machine learning techniques, emphasizing the unique economic conditions of the post-COVID era. Our approach not only aims to enhance the accuracy of silver price forecasting but also seeks to provide a deeper understanding of the interconnectedness of various global economic factors in influencing precious metal prices, treated as a regression problem rather than a time series analysis.

468

Submission Number: **468**	Track: **IGPC**
Paper Title: Role of gold ETF for different investor styles: Does sustainability matters?	
Authors: Dr.Sruthy Madhavan and Dr. Dhaya Alex	
Abstract: 1 Introduction Gold is an attractive avenue for investment as it has the ability to compensate the investors from the losses in financial market during distress period. There are different gold backed assets that serves this purposes. Among them, Gold Exchange Traded Funds (ETF) has become a very popular instrument for the investment community. Though the share of gold ETF is marginal, it has the potential to bring the idle gold to the economy and plays a vital role in liquidity, transparency and diversification. Sustainability is an emerging area in the gold investment and like all other investments, gold is also establishing a shift towards sustainable investing. As a step towards this, the world's first sustainable gold ETF was introduced in August 2022. Though it is liquidated in November 2023, it is essential to examine whether sustainable gold ETF plays a different investment role than conventional gold ETF against various investor styles. In other words, the study attempts to identify the role of gold ETF against conventional, sustainable and islamic equity investments and examined whether sustainability considerations have any impact in their investment decisions. 2. Literature review The literature on the role of bullion gold is voluminous whereas researchers have paid little attention to other gold backed instruments. The studies on Gold backed ETF is emerging in nature. Mukul et al. (2012) found that gold ETF is negatively correlated with equities and therefore can hedge against risk. Cheng et al. (2020) reported that gold ETF is a strong safe haven against extreme	

fall in leading or lagged stock market and against exchange rate risk, similar to the characteristics of gold. Panagiotou (2021) also provide evidence that Gold ETF serves as risk reduction tool for the investors. Hence, from the literature, it was found that though there are literature on gold backed ETF, the empirical evidences on role of sustainable gold ETF and comparing it with conventional gold ETF are scarce. Also, most of the studies identified the role of conventional gold backed ETF against conventional equities and paid less attention other investor styles like sustainable investing and islamic investing. Again, literature identified the role of gold ETF against conventional equities using Threshold Regression analysis which is not dynamic. Hence in order to capture the day-to-day changes in correlation, there is a need for identifying relationship using dynamic models. 3. Data and methodology 3.1 Data The study period is from August 2022 to December 2023. As the sustainable gold ETF was liquidated in November 2023, the data of all the variables were restricted to December 2023. The daily closing price of conventional Gold ETF proxied by SPDR gold share and sustainable ETF proxied by Sprott ESG Gold ETF were taken for the analysis. The daily index of S&P 500 (conventional equity), Dow Jones Sustainability World Index (Sustainable Equity) and Dow Jones Islamic World Index (Islamic Equity) were taken as proxies for stock market. The data were collected from Yahoo finance, Nasdaq official website, S&P Global etc. 3.2 Methodology Floolowing the literature of Baur and Lucey (2010), Baur and Mcdermott (2010) and Dimithrio (2021), the role of gold ETF is defined as follows. A hedge asset is an asset that is negatively correlated with stock on average. A market follower is an asset that is positively correlated with other asset on average. A safe haven is an asset that is negatively correlated with stock during crisis period and a contagious asset is an asset that is positively correlated with stock market during crisis periods. The present study initially estimated the time-varying conditional correlation using the DCC GARCH model, and the role of gold and gold-backed instruments is tested using quantile regression model. 4. Major findings It was found that Gold ETF plays the role of a weak market follower during normal market conditions irrespective of investment styles. It is evident that gold ETF increases return while reducing the risk in financial investments during normal market conditions. Similarly, the role of gold ETF is a weak safe haven during crisis periods, but as the severity increases, the role is shifted to weak contagious asset for all the investor styles. This is due to the destruction of safe haven property of gold during extreme severe crisis. There is no difference in role of gold for conventional and sustainable gold ETF. Investors of different styles have similar perception t0wards both ETFs. 5. Conclusion The present study aims to analyse whether there is difference in role of conventional and sustainable gold ETF against different investor style. The study employed a combination of DCC-GARCH model and quantile regression model to achieve the objective. It was concluded from the analysis that sustainability is not a matter of consideration while investing in gold ETF by different investor styles. The study has implications and suggestions to investors and policymakers.

604

Submission Number: **604**	Track: **IGPC**

Paper Title: Astrological and Numerological Influences on Gemstone Purchases: Consumer Behavior Insights

Authors: Sidhharrth S Kumaar

Abstract: Gemstones and crystals have enthralled and respected people during various civilizations and historical periods. From the jade items of ancient China to the amulets of ancient Egypt, these stones have been loaded with varied symbolic and metaphysical meanings. Apart from their beauty and rarity, these objects were valued historically for their supposed spiritual and therapeutic properties. This multifaceted relevance has persisted into the current day, when more people—especially those entrenched in astrological and numerological traditions—are turning to gemstones and crystals for their alleged benefits. Astrology assigns certain gemstones to zodiac signs; the study of the motions and relative positions of celestial bodies said to affect human affairs and the natural world. These projects are based on the idea that specific stones can enhance good traits or reduce astrological sign-related issues. For example, amethyst is occasionally connected with Aquarius and said to support mental clarity and protection. Likewise, numerology—the belief in the magical meaning of numbers—assigns characteristics to gemstones depending on their numerical correlations. For instance, the number 7, often associated with meditation and spirituality, points to stones such as amethyst or labradorite to fit these traits. Especially in contemporary consumer markets, gemstones and crystals have become very trendy. Mostly driven by growing consciousness of spirituality, holistic well-being, and alternative therapeutic approaches is this trend. Customers are increasingly looking for these stones for their purported metaphysical properties in order to enhance their own development, emotional healing, and spiritual alignment. For businesses in this sector as well as for marketers, this new interest presents both opportunities and challenges. Learning the causes behind consumer gemstone and crystal buying requires study of both historical settings and contemporary concepts. It also calls for careful investigation on how these concepts influence customer behavior and decision-making procedures. Regarding marketing, the consequences are major since businesses have to negotiate the confluence of present consumerism, belief, and legacy to properly reach and communicate with their target markets. Often considered as symbols of strength, protection, and spiritual insight, gemstones and crystals have played significant roles throughout history and across civilizations. Amulets and talismans made from stones such as lapis lazuli and carnelian were supposed to guard ancient Egypt and provide good fortune. Likewise, jade was valued in ancient China not only for its beauty but also for its alleged ability to protect the wearer and extend lifetime. In Indian Vedic systems, which used them in astrology (Jyotish) to offset planetary influences, gemstones were also rather significant. Astrology assigns specific gemstones to every zodiac sign based on the theory that these stones can balance the energy linked with the planets regulating the signs. Aries, for instance, is associated with red gemstones like ruby and garnet, meant to increase confidence and vitality. Sometimes Taurus is associated with emerald and rose quartz, stones supposed to inspire love and abundance. Numerology gives numbers and their vibrations considerable weight. Every number between 1 and 9 is supposed to have distinct resonance with various energies and qualities; these connections also apply to gemstones. For example, number 1, which stands for leadership and freedom, is associated with stones like ruby and garnet meant to boost confidence and power. Number 7, related with introspection and spirituality, speaks to stones like amethyst and labradorite, meant to help in meditation and inner development. Studies on consumer behavior show that usually the purchase of gemstones and crystals results from a wish for spiritual development and personal transformation. Studies reveal that individuals are buying the supposed benefits and energies these stones reflect in addition to physical objects. This habit is founded on a greater society change toward wellness and holistic health in which people try to balance their bodily, emotional, and spiritual needs. Because they often seek knowledge about the metaphysical properties of gemstones by consulting social media and influencer endorsements, millennials and Gen Z consumers are especially drawn into buying gemstones and crystals, thereby offering a fantastic opportunity for digital marketing techniques. Growing public interest in spiritual wellbeing and alternative treatment modalities has greatly enlarged the market for gemstones and crystals. Since well-known individuals in the wellness and spirituality sectors advocate specific stones and businesses, influencer marketing has also become rather significant. This company uses effective marketing strategies including in-depth knowledge on the astrological and numerological relevance of gemstones and crystals presented through blogs, videos, and social media posts, thereby building client trust and involvement. Dealing with astrologians, numerologists, and holistic health professionals helps businesses target a particular market and build confidence inside the local community. Customizing gemstone recommendations depending on astrological signs or numerological profiles enhances the shopping experience and strengthens the client-bond. Consumer behavior study applied a mixed-methods strategy combining qualitative and quantitative data collection techniques. The survey sought a sample size of 10,000 people selected to represent a range of the population aged 18–40 years. To reach a broad audience, data was obtained using social media, email lists, online survey tools, and ties with wellness and spiritual leaders. Using statistical software, quantitative data was looked for patterns and associations; qualitative data from open-ended questions was investigated for recurrent themes and insights. The quantitative and qualitative results of the consumer behavior study provided comprehensive knowledge of the motives, beliefs, and purchase habits of Indian consumers aged 18 to 40 years who purchase crystals and gemstones. Knowing these objectives and preferences helps businesses design targeted marketing campaigns that satisfy Indian consumers' complete wellness demands as well as their spiritual ones. Future research should look at the long-term trends in this market and prospective changes in marketing plans and product offers to sustain customer involvement and interest.

779

Submission Number: **779**	Track: **IGPC**

Paper Title: Systematic Review on Technological Advancements in Handcrafted Artisan Production for the Preservation and Sustainability of Cultural Heritage in Metal Craft

Authors: Basu Vansit and Dr. Monika Sheoran

Abstract: Metal Craft has promotes country's heritage by 74 tilizing indigenous materials. It has preserves traditional knowledge and talents and is given out on a daily basis. It employs a large number of artisans in rural and semi-urban areas and generates significant monetary exchange for the country while preserving its cultural heritage. The key opportunities lies in embracing technology to modernize production processes, enhance efficiency, and expand market reach. Integrating digital tools such as 3D printing and CAD/CAM can revolutionize design creation, prototyping, and production. Artisans can leverage these technologies to streamline their workflow, improve product quality, and cater to evolving customer demands. Additionally, e-commerce platforms and digital marketplaces provide a global storefront, enabling artisans to access a broader customer base and establish direct connections with buyers from around the world. The focus of this study is the find possibility in the metal craft industry to increase the metal craft artisan profitability. Therefore, the current development in the metal craft requires both external internal transformation and innovation of the sector.

780

Submission Number: **780**	Track: **IGPC**

Paper Title: QUANTILE REGRESSION MODELING OF GOLD PRICE DETERMINANTS IN INDIA

Authors: Parnvi Niganiya and Garima Dohar

Abstract: Purpose of the study: This study investigates the relationship between the price of gold and key economic indicators, namely the exchange rate, inflation, Nifty 50, and interest rate, over the past five years. The primary focus is to understand how these variables influence the gold price across different quantiles, particularly in the presence of heteroskedasticity. Research objectives: this research focuses on analyzing the impact of the exchange rate, inflation, Nifty 50, and interest rate on the gold price, and to determine how these relationships vary across different quantiles of the gold price distribution. Research design: This analytical research examines factors influencing Indian gold prices from 2019-2020 to 2023-2024 using longitudinal data. Data is sourced from government reports, websites, and research papers. Employing quantile regression, the study investigates the impact of the Nifty 50, inflation, interest rates, and exchange rates on gold prices. Findings: Exchange Rate and Interest Rate Across all quantiles, the exchange rate has a positive significant impact, and the interest rate has a negative significant impact on the gold price. Nifty 50 and Inflation do not significantly affect the gold price, as indicated by their P-values being higher than the significance level across all quantiles. Limitations: The study is limited by its focus on the Indian market and the specific economic indicators chosen. The findings might not be generalizable to other markets or periods. Keywords: Gold price, exchange rate, interest rate, nifty 50, and inflation.

853

Submission Number: **853**	Track: **IGPC**

Paper Title: Gold's Dual Impact: Analyzing Import Effects on India's Fiscal Deficit and Strategies for Domestic Gold Mobilization

Authors: Dr. Rajitha Ramachandran, Prof Rama Narayanaswam and Dr. Sreevas Vtk

Abstract: Introduction Gold has long held a significant place in India's economy and culture, playing a dual role as both a cherished commodity and a substantial import item. This study delves into the complex relationship between gold imports and India's fiscal deficit, while also exploring strategies to harness gold's potential for economic growth through increased domestic supply and recycling initiatives. As India continues to be one of the world's largest consumers of gold, understanding these dynamics is crucial for policymakers, economists, and stakeholders in the gold industry. The interplay between gold imports and fiscal deficit is a critical area of concern for India's economic stability. Gold imports contribute significantly to the country's current account deficit, which in turn influences the fiscal deficit. This relationship has far-reaching implications for monetary policy, exchange rates, and overall economic health. Simultaneously, there is growing recognition of the untapped potential within India's domestic gold reserves, particularly in terms of recycling and mobilization of idle gold. This study aims to bridge the gap between these two aspects of gold's role in the Indian economy, providing a comprehensive analysis that can inform future policy decisions and economic strategies. Statement of Problem India's persistent demand for gold, driven by cultural, religious, and investment factors, has led to substantial gold imports over the years. These imports have often been cited as a major contributor to the country's current account deficit and, by extension, its fiscal deficit. The problem is multifaceted High gold imports strain foreign exchange reserves and contribute to currency depreciation, which results in widening of the current account deficit can lead to increased government borrowing to finance the deficit, potentially exacerbating the fiscal deficit. Efforts to curb gold imports through policy measures have had mixed results and can lead to unintended consequences such as increased smuggling. Despite being one of the largest consumers of gold, India's domestic gold recycling and mobilization efforts remain underdeveloped, representing a missed opportunity for reducing import dependence. This complex scenario necessitates a thorough investigation into the exact nature of the relationship between gold imports and fiscal deficit, as well as an exploration of viable strategies to increase domestic gold supply and utilization. Need for the Study By quantifying the relationship between gold imports and fiscal deficit, policymakers can make more informed decisions regarding import regulations, taxation, and monetary policy. It will also help in striking a balance between meeting cultural gold demand and maintaining economic stability. Exploring strategies to increase domestic gold supply through recycling and other means can potentially reduce import dependence and its associated economic pressures.

The findings will be valuable for the gold industry, financial institutions, and investors in formulating strategies and making informed decisions. This study will contribute to the academic body of knowledge on the economic impacts of commodity imports and strategies for resource mobilization in developing economies. Objectives of the Study • To quantify the relationship between gold imports and fiscal deficit expansion in India.To evaluate the potential economic benefits of increasing domestic gold supply through recycling and other forms in India, including its impact on reducing import dependence and easing pressure on the fiscal deficit. To analyze the effectiveness of a framework for incentivizing increased domestic supply of gold through recycling and other forms. Data Methodology and Major Findings The study will employ a mixed-methods approach, utilizing both quantitative and qualitative analyses. The quantitative analysis will be conducted using econometric software such as Stata or R, employing the following methodologies: Quantitative Analysis The ARIMA model reveals a statistically significant positive relationship between gold imports and fiscal deficit in India stating an increase in gold imports is associated with a increase in the fiscal defecit as a percentage of GDP. The Granger causality tests suggest a unidirectional causal relationship from gold imports to fiscal deficit. Changes in gold imports appear to precede changes in fiscal deficit, but not vice versa. The significance of multiple lags in the Granger causality test indicates that the impact of gold imports on fiscal deficit may be distributed over several months. Qualitative Analysis : The Gold Monetization Scheme (GMS) in Tamil Nadu, initiated in 2015, demonstrated the effectiveness of combining government policy with local incentives. The collaboration between local banks and jewelers, supplemented by extra state-level interest, led to an increase in gold deposits from 2.5 tonnes in the initial year to 7 tonnes per year by 2020, with a significant 30% contribution from rural sectors. Despite its success, the scheme encountered obstacles such as initial skepticism and logistical complications in rural evaluations. In Mumbai, Tanishq's "Old for New" program demonstrated the private sector's role in encouraging gold recycling. Offering a 5% premium over market rates and ensuring transparency in assessment, the program collected 500 kg of old gold in six months, increased store footfall by 40%, and reduced reliance on imported gold by 10% for new production. The initiative grappled with peak-time rushes and consistent valuation training. A fintech startup in Rajasthan leveraged technology to create a digital gold trading platform, allowing online buying, selling, and recycling of gold. This innovative approach attracted 100,000 users in its first year, recycled 200 kg of gold, and notably engaged younger generations, with 30% of users under 30. The platform faced challenges in building trust and ensuring security in digital transactions. While each initiative showed varying degrees of success in reducing gold imports and mobilizing domestic resources, they all faced the common challenge of changing long-held attitudes towards gold ownership and establishing trust in new systems. Conclusion The analysis concludes by demonstrating the intricate relationship between India's fiscal deficit and gold imports and emphasising the necessity of balanced economic policy. The examination of diverse gold recycling and mobilisation endeavours indicates the possibility of diminishing reliance on imports by means of inventive methodologies.

857

Submission Number: **857**	Track: **IGPC**

Paper Title: Fostering Tech-Based Inclusion Leveraging Entrepreneurial Ecosystems for Growth

Authors: Ipseeta Nanda and Vivek Kumar

Abstract: The gold and precious metals sector is currently experiencing a substantial shift due to the swift progress in technology, namely the incorporation of Artificial Intelligence (AI) and Machine Learning (ML). These technologies are fundamentally transforming crucial elements of the sector, including as exploration, extraction, processing, market trading, and supply chain management. AI and ML are enhancing the sector by offering new efficiencies and capabilities, leading to increased innovation and inclusivity.AI and ML are transforming conventional approaches to mineral prospecting by significantly improving the precision and effectiveness of exploration and finding. Predictive analytics and data mining methods are being used to examine enormous quantities of geological data, satellite photos, and historical records. These technologies facilitate the identification of possible new mining locations with enhanced accuracy, thus maximizing exploration efforts and mitigating associated hazards. GoldSpot Discoveries uses AI-driven algorithms to enhance exploration programs, increasing the probability of successful mineral discoveries while reducing the expenses linked to conventional research techniques. AI utilizes advanced algorithms to analyze intricate datasets, enabling geologists to identify intricate patterns and trends that may go unnoticed using traditional methods. This leads to the development of more focused and efficient exploration tactics. AI and ML technologies are improving operational efficiency and safety during the extraction and processing phases. Machine learning algorithms are used to control the automation of mining equipment, such as driverless trucks and drilling machines. These algorithms maximize the performance of the equipment and minimize human error. Companies such as Rio Tinto have used autonomous haulage systems that utilize artificial intelligence (AI) to oversee and guide mining trucks, leading to improved accuracy and efficiency in their operations. This technological innovation not only enhances efficiency but also mitigates the likelihood of accidents and operational interruptions. Moreover, ore sorting

systems that utilize artificial intelligence are utilized to evaluate the ore's quality in real-time, resulting in more precise processing and reduced waste. Tomra Sorting Solutions employs artificial intelligence (AI) to optimize the separation of valuable ore from rubbish, thereby enhancing the efficiency of metal extraction and minimizing environmental consequences. The influence of artificial intelligence (AI) and machine learning (ML) goes beyond the operational elements of mining and into market trading and risk management in the gold and precious metals industry. AI algorithms are employed to examine vast amounts of market data, past pricing patterns, and external economic variables to predict future price fluctuations. This predictive capacity aids traders and investors in making more well-informed selections. Goldman Sachs and other financial organizations have implemented AI-powered trading platforms that enhance trading tactics and effectively handle investment risks. These platforms utilize advanced algorithms to process large amounts of data in real time, enabling the identification of profitable trading opportunities while minimizing potential dangers. Furthermore, machine learning models are utilized to evaluate and control risks related to market volatility, geopolitical events, and other uncertainties. AI assists players in understanding intricate market dynamics and making strategic decisions by offering practical insights and predictive analytics. This solution mitigates issues regarding fraud and unethical sourcing methods by guaranteeing transparency and traceability throughout the whole supply chain. This amalgamation of technology not only enhances clarity but also promotes ethical sourcing procedures and aids in addressing problems such as conflict minerals. Blockchain technology promotes trust and accountability in the supply chain by offering a transparent and verifiable record of every transaction. The incorporation of AI and ML technologies is vital in solving the critical environmental and safety concerns associated with mining operations. Artificial intelligence models are utilized to forecast and oversee the ecological consequences of mining operations, aiding corporations in adopting superior methodologies and adhering to legal mandates. Organizations such as Ecovadis have created tools that utilize artificial intelligence (AI) to evaluate and enhance the environmental efficiency of mining activities. These tools utilize data analysis to evaluate emissions, waste management, and resource usage to offer practical suggestions for minimizing environmental effects. In addition, safety systems powered by artificial intelligence (AI) oversee the well-being of workers and the condition of equipment by evaluating data collected from sensors and cameras. These systems can forecast possible malfunctions and mishaps, thereby diminishing the likelihood of occurrences, and augmenting the overall level of safety. Hexagon Mining and similar companies provide artificial intelligence (AI) solutions that enable real-time monitoring and predictive maintenance, enhancing the safety and dependability of mining operations. The incorporation of Artificial Intelligence (AI) and Machine Learning (ML) also fosters enhanced inclusiveness throughout the sector. By providing equal access to sophisticated tools and resources, these technologies allow a wider spectrum of entrepreneurs and organizations to engage in the sector. For example, smaller enterprises and startups are increasingly able to access and utilize AI-driven platforms and services, enabling them to compete more fairly. Incubators and accelerators that assist technology-driven businesses frequently utilize AI and ML to offer customized support and resources to entrepreneurs from various backgrounds. This inclusivity promotes a more dynamic and inventive sector by actively encouraging the involvement of persons and groups that may otherwise be marginalized or left out. Incorporating AI and ML into the gold and precious metals business is leading to substantial improvements and advancements. These technologies are strengthening operational efficiency, promoting transparency, and mitigating environmental and safety risks. AI and ML are altering the future of the industry by encouraging innovation and supporting inclusion. They are providing new prospects for growth and advancement. As the industry progresses, the utilization of AI and ML will play a vital role in revolutionizing its operations and promoting a more sustainable and inclusive future. The continuous improvement in these technologies is expected to have a significant impact on shaping the future of the gold and precious metals business, facilitating further advancements and innovation.

875

Submission Number: **875**	Track: **IGPC**

Paper Title: Market Orientation in India's Evolving Gold Jewellery Industry: Implications for Marketing and Policy

Authors: Priya Narayanan

Abstract: Gold jewellery enjoys ubiquitous presence in India with widespread consumption for both adornment and investment. The market for gold jewellery has undergone several changes in the past decade and continues to do so, with greater interest among consumers for lightweight, fashionable and studded jewellery (vs. heavy, plain wedding jewellery); rise of online distribution channels; growth of organized jeweller chain stores (vs. standalone local stores); and rise in regulations for quality control and monetization. These changes evoke a variety of responses from jewellers and impact various jewellers differently. Our research examines this major transition in the gold jewellery market using the highly influential theoretical lens of market orientation. We analyse marketing strategies of gold jewellers using two studies: analysis of industry news and events, and interviews with jewellers and policymakers. This work extends research on market

orientation by incorporating nuances specific to a large market in the world’s most populous nation, and provides policy implications for regulating and supporting gold jewellers.

1095

Submission Number: **1095**	Track: **IGPC**

Paper Title: Impact of Central Bank Speech Tone on Precious Market Volatility

Authors: Amar Jyoti and Pramod Kumar Naik

Abstract: We empirically investigate how the sentiment of the central bank speeches impact the volatility in the precious market, with focus on Gold and Silver. We have used a novel method of sentiment calculation which accounts for valence shifters. Our study is among the firsts to examine the impact of speeches as a medium of central bank communication and found that the sentiment conveyed by ECB and BoE does impact volatility in the precious metal market. While, the sentiment conveyed by the Reserve Bank of India does not impact the volatility in the precious metal market. We have controlled for the relevant speech and macro factors in our model. Our research has policy implications.

1102

Submission Number: **1102**	Track: **IGPC**

Paper Title: ICT-Enabled Strategies for Enhancing Sustainability and Ethical Standards in the Jewellery making Industry: A Case Study of Loharpura’ s Jewellery Precision Tool Makers

Authors: Rajkhush Kumar, Kashmira Ganji and Suvendu Naskar

Abstract: Context of Loharpura: Loharpura is located in Nagaur District, Rajasthan, India. It has about five hundred artisan families engaged in making precision tools for the jewellery industry, their efforts are indispensable in crafting tools essential to delicate goldsmithing. However, the nature of the work of tool makers has several challenges, which lead to unsustainable manufacturing practices and negative health outcomes on the artisans. This research examines these issues and explore the use of Information and Communication Technology (ICT) based innovations as an intervention that can improve sustainability as well as ethical standards within jewellery manufacturing supply chains. Importance of Loharpura Artisans to the Jewellery Industry: The artisans at Loharpura manufacture precision tools necessary for jewellers to make high-quality jewellery products; hence they are crucial players in the industry. Therefore, due consideration must be given to these artisans as part of the ethical supply chain network in the jewellery-making industry. These tool-making artisans often find themselves compelled by market forces that demand cheaper tools, which makes them compromise on quality, ultimately resulting in making the lower quality tools in larger numbers (since the lower quality tools have an early breakdown, leading to more reorders). This leads to excess material consumption, and wastage after breakdown, also the artisans have to toil longer hours to meet the excess demand which affects their physical health. Inclusion of Artisan Communities along with the mining sector in ESG Performance parameter of the jewellery industry: Artisan communities must be included in Environmental, Social, and Governance (ESG) metrics within the jewellery sector for holistic sustainability. Ethical sourcing has been promoted in the jewellery industry through programs like Fairtrade and FairMined certifications which seek to ensure responsible practices in raw materials extraction besides paying fair wages to miners. However, Fairtrade and Fairmined certifications focus on the initial stages of the supply chain while ethical sourcing principles should be spread across all its stages of manufacturing including the toolmakers. In other words, companies must employ consistent ethical standards throughout their entire supply chains to maintain both integrity and reputation among investors & customers. Worker Safety and Ethical Practices in Manufacturing: Artisans in Loharpura often work under unsafe conditions such as poorly ventilated rooms with a lack of protective gear for instance. These conditions not only expose them to health hazards but also limit their ability to create efficient tools, also artisans have a constant pressure to lower market costs by any means possible, hence it becomes very important to consider them in the ESG performance parameter in this industry. Apart from extended producer’s responsibility which holds industries responsible for the end-of-life consequence of the goods they sell, in hindsight ‘as tool users’, extended consumer/user responsibility can be introduced for the industry as a model to pay fair prices to the tool makers, which ultimately curtails wastage and promote healthy working conditions for the tool makers. ICT-Based interventions for enabling Sustainable Practices: As for the recommendations of ICT-based interventions, this research identifies three measures that can assist tool makers in dealing with the encountered issues by increasing transparency as well as improving the efficiency and ethicality of the supply chain. 1.Tool Manufacturer Identifier and

Supplier Identification: As for the increased traceability and accountability in the sourcing it is proposed that tool manufacturers and sellers should be assigned unique identification numbers. Through this system, the details of the origin of the tools as well as whether they conform to ethical labour standards are retained. 2.IoT-Based Gadgets: The real-time reporting of very important environmental aspects such as quality of air, temperature, and opening-closing hours among other factors of the workshops reported directly to the jewellery company and regulators using Internet of Things (IoT) devices could enhance a safer working environment. 3.Ethical Sourcing Website: Authorization and labelling of ethical principles in the manufacturing of tools by tool makers, calls for the establishment of an online portal that will establish a direct link between the jewellery businessmen and the tools suppliers of ethical tools through which orders can be transacted at fair and open prices as per the jewellery businessmen. Besides, it can act as the platform where industries and companies like (Tanishq, and PCJ Jewellers) can extend healthcare benefits like health insurance, checkups, etc directly to verified and ethical tool makers and suppliers. Research Methodology and Future Research Directions: This research uses exploratory and descriptive research with a focus on semi-structured interviews with the artisans, participant observation, and analysis of the market conditions. Future studies will involve the case applications to deploy the provided ICT solutions and assess the effects of these solutions on the artisans' business prospects and the overall ESG performance of the industry. Moreover, future research works will examine the generalizability on other subcategories of luxury businesses.

1121

Submission Number: **1121**	Track: **IGPC**

Paper Title: Analyzing the Gold price conundrum Is all that glitters gold or gold-owning ETFs?

Authors: Arunava Bandyopadhyay and Prabina Rajib

Abstract: Gold has always been considered an effective hedge against inflation, currency risks, equity market risks or more appropriately as a safe-haven asset. While gold prices have been stable for decades before 2005 (refer Figure 1), the recent surge in gold prices post-pandemic has raised the question whether gold prices are going to remain elevated and what's leading the gold price flight? Historically, high real gold prices often indicate future unattractive real gold returns and diminished hedge effectiveness. Will Gold be able to retain its safe haven properties?Due to its safe haven properties, gold has been held by Central Banks as a store of value since their inception. Further, as evident from Figure 2, post-2005 physical gold holdings by exchange-traded funds (ETFs) started increasing across all major countries and continents. While ETFs in North America, Europe and Australia followed a sharp trajectory post-2005 till 2010-12, gold ETFs in India followed the same path since 2015 and the rest of Asia (mainly China, Thailand etc.) accelerated post-pandemic 2020. In this study, we have explored the relationship between gold ETF holdings and the long-term impact on gold prices. The world gold price data in USD and major gold ETF holdings around the world, measured in Troy ounce, has been collected from World Gold Council database. The methodology uses a stepwise model to explore the relationship. We have used Antonakakis et al. (2020), Time Varying Parameter -VAR Connectedness model to first explore the relationship between ETF holdings across major nations in continents such as North America, Europe, Australia, Rest Asia and their relationship with India. The pairwise connectedness and dynamic connectedness of physical gold holding has been explored to identify the variations across different time period. The change in ETF gold holdings spillovers to others results are presented in Figure 3. It can be observed that gold holdings in ETFs of North American countries (USA, Canada etc.) are the highest contributor, while India and other Asian countries (China, Thailand, Singapore etc.) major receivers of this spillover. The spillover FROM others results presented in Figure 4, suggests that India has been the most receiver of this phenomenon since pandemic.The network connectedness graph, presented in Figure 5, shows the spillover structure in an unified manner. As evidenced, North America, Europe and Australia form a strong interconnected triangular network while India and rest of Asia are net receivers.Further, the dynamic connectedness results, in figure 6, highlights that ETF holdings connectedness has increased drastically post-pandemic, thereby highlighting higher level of interconnectedness of gold holding amongst ETFs.Finally, we explored the relationship between dynamic connectedness of physical gold holdings by ETFs and the change in price of gold by exploring the causal relationship in quantiles and Cointegration framework amongst them. The results suggest that high dynamic connectedness has significant causal relationship at both higher and lower quantiles of gold price changes, thereby suggesting that gold ETFs has causal impact in increasing the price of gold in recent times. Further, the results suggest long-term cointegrating relationship between dynamic connectedness and price change of gold, thereby highlighting the long-term impact of gold ETFs in leading the gold prices to an elevated price trajectory. Understanding the role of gold backed ETF's in influencing gold price is important for market participants as high inflation-adjusted gold prices would result in unattractive real gold returns and diminishing hedge effectiveness. The economic policies by different sovereigns should be monitored to bring back the inflation-hedging shine of gold. Only if market participants value gold, not as any general financial asset but as

a store of value and inflation hedge, then only gold prices will be dealt with by supply-demand fundamentals and not based on competitive holdings of gold-backed ETFs.

IIMA

विद्याविनियोगाद्विकास:

IMRC 2024

India Management Research Conference

IIM Ahmedabad

TRACK 04A: FINANCE, ACCOUNTING, AND ECONOMICS

59

Submission Number: **59**	Track: **FAE**
Paper Title: Impact of Increased Board Oversight on Related Party Transactions	
Authors: Sumeet Rajput	

Abstract: The Related Party Transactions (RPT) are characterized by both agency conflicts and potential contracting efficiencies. Objective of this paper is to assess whether increased board oversight over RPTs is beneficial. Specifically, I examine whether increased board oversight reduces firm's cost of debt. Using Section 188 of the Companies Act of 2013, which mandates stronger board oversight on RPT and introduces enhanced monitoring incentives, I find sharp decline in yield spreads among firms with material RPT transactions post regulation. Notably, this reduction in the cost of debt is pronounced in firms with better board monitoring quality. Importantly, post enhanced board oversight over RPTs, the quality of RPT improved which explains reduction in cost of debt. Overall, this study contributes to the literature by shedding light on the economic implications of enhanced board monitoring on RPTs, suggesting that improved oversight can effectively alleviate agency concerns surrounding RPTs and lead to increased contracting efficiency.

93

Submission Number: **93**	Track: **FAE**
Paper Title: Reliance on Part-time Labor and Operating Efficiency: The Moderating Role of Task Complexity	
Authors: Joanna Golden, Raj Mashruwala and Mikhail Pevzner	

Abstract: Organizations frequently employ part-time workers to facilitate agility in responding to changing demand patterns. However, this operational strategy introduces coordination costs, particularly in scenarios involving complex tasks. In this study, we posit that the employment of part-time labor incurs coordination costs, especially in situations characterized by high task complexity. Conversely, in contexts of low task complexity, such costs are diminished. Consequently, the overall effect of part-time labor on firm efficiency remains ambiguous in equilibrium. To address this gap, we investigate the influence of part-time labor on firm efficiency and examine whether this impact is contingent on the complexity of tasks undertaken by firms. Our findings reveal a negative average correlation between firms' utilization of part-time labor and operating efficiency, implying that, on average, any potential efficiency gains derived from employing part-time workers are counteracted by increased coordination costs. Furthermore, our analysis indicates that this adverse relationship is amplified for firms dealing with higher levels of task complexity. These results underscore the nuanced interplay between part-time labor, task complexity, and firm efficiency, providing valuable insights for organizational decision-making and resource allocation strategies.

166

Submission Number: **166**	Track: **FAE**
Paper Title: Does Exclusive Relationship with Government Banks Matter during Climate Shocks?	
Authors: Harish Kamal, Samit Paul and Avijit Bansal	

Abstract: Theoretically, it is unclear whether firms' exclusive relationship with government banks (GOBs) ameliorates or exacerbates the effect of climate-related shocks. Using Indian firms' exposure to unanticipated abnormal rainfall shocks and their banking relationship during such times, we find that firms with exclusive banking relationships with GOBs (GOB firms) have a 7.2 pp higher leverage ratio than other firms during abnormal rainfall shocks. We do not find such effects for firms that either maintain exclusive relationships with banks other than GOBs or maintain multiple transactional relationships. Furthermore, the GOB relationship is particularly beneficial for firms that are more vulnerable to rainfall shocks and have had long-term relationships with GOBs compared to other firms. This allows GOB firms to invest more and perform better during abnormal rainfall shocks. Our results are not driven by politically motivated lending or banks' sub-standard lending to distressed, risky, opaque, and zombie firms; rather, funds flow towards healthier GOB firms. Overall, our results highlight the advantages of GOB relationships for firms during climate shocks.

178

Submission Number: **178**	Track: **FAE**
Paper Title: Factors Affecting Trade in Manufactures at Various Technology Levels Between India and ASEAN: A Panel Gravity Model Approach	
Authors: Nikhat Khalid	
Abstract: This study examines the determinants of trade in manufactured goods between India and ASEAN countries using a panel gravity model approach. Covering the period from 1992 to 2020, the analysis used five models, focusing on various technological levels of manufactured goods, including total trade in manufactures, resource-based manufactures, low technology manufactures, medium technology manufactures and high technology manufactures. The research quantifies the effects of GDP per capita, bilateral distance, research and development (R&D) expenditure, the manufacturing sector's GDP contribution, trade openness, tariffs, regional trade agreements (RTAs), and historical colonial ties on bilateral trade flows. Key factors found significant across the models include GDP per capita, trade openness, manufacturing GDP percentage, and the India-ASEAN FTA, while distance did not significantly lower trade flows. Research and development in India notably expanded bilateral trade in several categories. The study highlights significant untapped trade potential, urging the use of trade promotion techniques and addressing areas with currently low potential to enhance overall trade relationships.	

187

Submission Number: **187**	Track: **FAE**
Paper Title: Do Fiscal Incentives for Innovation Lower Output Prices? Evidence from R&D Tax Credits	
Authors: Rahul Singh and Tanya Jain	
Abstract: This article examines the causal effect of R&D tax credits on output prices. Exploiting the staggered introduction of weighted tax credits for R&D spending across industries in the manufacturing sector in India, we find that R&D tax credits increase R&D spending and induce a decline in prices in the industries targeted by the reform. The relative increase in R&D spending in treated industries is driven by the eligible firms, while there is no significant effect on the ineligible firms, and these effects are stronger for the financially constrained firms. Further, the policy also leads to a significant decline in prices for both eligible and ineligible firms and is primarily driven by a decline in markup, conditional on cost, as opposed to the passthrough of cost savings to prices. The policy also results in increased physical efficiency and a lower marginal cost for both the eligible and the ineligible firms. Interestingly, there is no significant effect on the markup of firms as the competitive effect on markup attenuates any increase in markup due to incomplete passthrough of costs to prices. We provide compelling evidence that our results are not biased due to preexisting linear trends, omitted variables, and heterogeneous treatment effects in staggered settings. Our results suggest that R&D tax credits can increase competition between firms.	

217

Submission Number: **217**	Track: **FAE**
Paper Title: GLOBAL VALUE CHAINS, A DEVELOPMENT PARADIGM? EVIDENCE FROM THE INDIAN EXPERIENCE	
Authors: Priya David	
Abstract: Global Value Chains (GVCs) have gained prominence amongst policymakers as a means for developing countries to transition into industrial hubs. This study seeks to evaluate how participating in GVCs impacts Indian firms and whether this will eventually result in the emergence of a strong manufacturing sector. Unlike most extant empirical GVC literature which is at the country level, this study opts for firms as the primary unit of analysis. Using a rich firm level panel dataset of Indian manufacturing firms, we aim to explore the impact of GVC participation on three important categories of firm level outcomes:	

i) productivity, ii) exports and imports, and iii) in-house innovation activity. These outcomes give us a clearer understanding about whether mere participation in a GVC automatically translates into a robust manufacturing sector. The panel dataset helps us eliminate concerns of unobserved heterogeneity at the firm level. Furthermore, to correct self-selection bias, we employ propensity score matching (PSM) which allows a 'like – for like' comparison. Robust to alternate specifications and subsamples, our estimates indicate that there exists a positive impact of GVC participation on productivity of firms. However, the impact on domestic innovation and importing behaviour of the firm is varied. Notably, lack of a significant impact on technology transfer, coupled with a decline in domestic innovation efforts indicate a challenge to sustained manufacturing growth. By focussing on GVC engagement at the firm level, this study contributes to the firm level GVC literature and the literature on the role of GVCs in overall industrial development. These findings have great relevance for policymakers as they provide a finer understanding of both the firm level and the broader sectoral impact resulting due to firms integrating in the global economy. These insights can aid in policy formulation that will encourage not only greater participation of local firms in the international market but also design suitable intervention to mitigate the adverse consequences.

318

Submission Number: **318**	Track: **FAE**
Paper Title: The impact of mega mergers on depositors: Evidence from Indian commercial banks	
Authors: Sakshi Narula	
Abstract: This paper investigates whether a bank uses the change in the interest spread to signal depositors of the bank risk after mega-bank mergers. I demonstrate that the bank communicates its risk profile to depositors using an interest rate signalling model. However, signalling becomes effective only when the bank treats the depositors differently based on their deposits with the bank. The empirical section, in support of the theory, examines the effect of the 2019 Indian commercial bank mega merger on depositors from 2000 to 2023. The study leverages the cross-sectional heterogeneity in banks to address two empirical questions: (i) Did the 2019 mega-merger have an impact on Indian depositors? (ii) Do depositors align with the interest spread (net interest ratio) following a merger? Mega mergers have a positive impact on average depositors. The study finds that average depositors are positively associated with interest spread post-merger, in contrast to highvalue depositors. The private benefits given to high-value depositors outweigh the public information given to average depositors.	

350

Submission Number: **350**	Track: **FAE**
Paper Title: Foreign Ownership and Corporate Risk Taking: Evidence from India	
Authors: Dr.Souvik Banerjee	
Abstract: The study examines the effect of foreign institutional investor (FII) ownership on the corporate risk-taking of Indian firms. The paper studies the impact of FII ownership on 174 non-financial firms' willingness to take on risk between 2001 and 2023. Panel threshold regression analysis is employed to understand whether FII ownership influences corporate risk-taking beyond a threshold point. The results demonstrate that FII ownership mitigates corporate risk-taking beyond a threshold point. However, FII ownership has no significant influence on corporate risk-taking below the threshold point. The findings suggest that market regulators must encourage FII ownership in domestic firms, as its impact is positive for managing the volatility of a firm's earnings. The findings are significant, especially in the context of emerging economies like India.	

356

Submission Number: **356**	Track: **FAE**
Paper Title: Passive Ownership and Investment Efficiency	
Authors: M Mareeswaran	
Abstract: Current literature provides competing evidence on the impact of passive ownership on price efficiency. This paper empirically assesses whether passive owners hinder or enhance managers in learning private information from stock prices when making investment decisions. The results show that passive owners negatively affect corporate investment decisions,	

such that firms with higher passive ownership have lower investment-price sensitivity. Passive owners are negatively associated with the revelatory efficiency of stock prices and are negatively related to capex adjustments through feedback channels. Further analysis provides evidence on the effect of passive owners' characteristics, such as their industry exposure and portfolio turnover ratio (PTR), on managerial learning. This weaker managerial learning due to increased passive ownership increases the likelihood of under-investment and has an impact on the firm's operating performance. Also, the results suggest that a nonlinear relationship exists between passive ownership and investment-price sensitivity. The paper addresses identification through Russell 1000/2000 index switching and instrumental variables.

395

Submission Number: **395**	Track: **FAE**
Paper Title: Does Audit Partner-Client Proximity Enhance Audit Efficiency? Evidence from COVID-19 Lockdowns	
Authors: Siddharth Purohit, Naman Desai and Gopal Krishnan	
Abstract: Using the COVID-19 lockdowns in India as an exogenous shock, we examine the relation between audit partner-client proximity and audit report lag (ARL), a key indicator of audit efficiency. The results of our difference-in-differences analysis show that the proximity of the audit partner from the client location is negatively related to ARL. We also find that the gains in efficiency were stronger for “essential” industries, which were exempt from the lockdown restrictions. Our results also indicate the audit partners within an audit firm were able to assist each other during the pandemic. Furthermore, the baseline results related to efficiency gains are stronger in cases with higher audit firm tenure, higher client importance, and higher industry experience of the audit partner. Additionally, Big 4 firms and audit firms with multiple offices were relatively more immune to the COVID-19 shock, implying better within-firm networks and working technologies. We find no evidence of dilution in the audit quality for local partners during the pandemic. Our baseline results are robust to the inclusion of fixed effects for audit partners, pincodes, and client firms, suggesting that they are not driven by potential selection bias of audit partners or clients or the specific features of one or more pincode locations.	

443

Submission Number: **443**	Track: **FAE**
Paper Title: Finding the needle in the (hay)stack of equity return-determinants	
Authors: Srinath Mitragotri	
Abstract: Over the last five decades, business academics have identified more than three hundred and thirty firm level return-determinants that potentially influence stock returns (Green, Hand and Zhang, 2014). However, we still do not know if all return-determinants are equally important, or whether a smaller set of return-determinants has a disproportionately larger influence on stock returns. To answer that, a study needs to include all return-determinants of interest in the same study. However, asset pricing research so far has heavily relied on linear regression to study the relationship between stock returns and return determinants. And one of the main constraints with linear regression as a method is its inability to include more than a few potential return-determinants in a single study (Goyal, 2012). The preference of linear regression and its limitation on the number of factors that can be included in a single study is one of the reasons why asset pricing research so far has not been able to ascertain the relative influence of return-determinants on stock returns. In recent times, ‘association rule’ mining has been successfully applied to gain powerful insights in multidimensional phenomenon like understanding consumer behavior in a retail store or accurate and early diagnosis of a serious illness. The research problem on hand about the relative influence of return-determinants on stock returns is also multi-dimensional in nature and association rule mining can be used as a new set of lens to explore it. ‘Association rule mining’ allows us to place all potential ‘return-determinants’ along with equity returns in a single frame to mine association rules between return-determinants and index beating returns. This has helped to uncover strong association rules between a parsimonious set of return determinants and index beating stock returns. This parsimonious set of ‘key’ return-determinants strongly associated with index beating returns exhibit a disproportionately larger influence on stock returns compared to the other return-determinants included in this study.	

Portfolio managers looking to invest using the 'factor investing' strategy can benefit from these association rules in multiple ways: Portfolio managers can directly apply the association rules mined in this study to construct portfolios that yield index-beating returns for holding periods ranging from one year to fifteen years. Alternatively, portfolio managers can use the set of five 'key return-determinants' identified in this study as factors around which they can develop their factor investment strategies. For investment managers looking for techniques to reduce a large, unconventional factor pool to a smaller set, this study provides a new technique of ‘association rule mining’ to reduce the factor set from a large one to a more impactful subset of factors to achieve index-beating portfolio returns. Multiple out-of-sample portfolios created from these association rules have portfolio ‘beta’ less than one and provide returns that beat the market returns by a significant margin for all holding periods.

477

Submission Number: **477**	Track: **FAE**

Paper Title: Institutional Investor Price Support and Stock Price Crash Risk: Evidence from Indian Pledging Firms

Authors: R Shruti, M Thenmozhi and Chinmoy Ghosh

Abstract: Using a sample of Indian pledging firms, where margin call risk destabilizes the controlling shareholder’s equity holdings leading to stock price crashes, we show that institutional investor price support mitigates crash risk by reducing margin call pressure. However, we find that institutional monitoring is ineffective in mitigating crash risk. Our findings are robust to endogeneity concerns and alternate measurements of key variables. Thus, we confirm the existence of a “price support channel” for crash risk. Additional tests reveal that institutional price support is an external mechanism driven by domestic institutional investors and is effective only in standalone pledging firms, where internal price support from business group affiliation is absent. Further, institutional investor price support has shielded pledging firms from stock price crashes induced by margin call pressure not only in the aftermath of the passage of the Insolvency and Bankruptcy Code but also during periods of systemic crisis in the business environment. Therefore, we conclude that crash risk can be caused by factors other than “bad news hoarding” and in such instances, bad news hoarding deterrents may not be an effective crash risk mitigating mechanism.

495

Submission Number: **495**	Track: **FAE**

Paper Title: Global Supply Chain Vulnerabilities: Assessing Firm Risk, Environmental Commitments, and Information Channels in the wake of COVID-19

Authors: Huzaifa Shamsi

Abstract: This study investigates the profound impact of the COVID-19 pandemic on firm risk, focusing on supply chain disruptions and their spillover effects on environmental commitments. The research highlights the crucial role of information channels in mitigating these challenges. Employing a Difference-in-Differences (DiD) regression design, the findings reveal a significant increase in default probability among US-incorporated firms with heightened foreign relationships post-COVID-19, particularly those connected to Chinese supply chains. Additionally, firms with foreign relationships show a decline in environmental commitments, suggesting prioritization of survival during adversity. Notably, companies with robust information channels with industry peers exhibit resilience against supply chain disruptions. These results underscore the importance of strategic resilience and diversification in navigating the complexities of the modern global economic landscape.

514

Submission Number: **514**	Track: **FAE**

Paper Title: Assessing the impact of Financial Extension services on Intrahousehold resource allocation: Evidence from Rural India

Authors: Abhishek Tripathy, Abhiman Das, Vivek Pandey and Hari Nagarajan

Abstract: Women empowerment has been identified as a crucial enabler of economic development. However, women in rural areas continue to have low access to financial resources. Several policies have been implemented to incentivize account ownership among women in a bid to increase their bargaining power and command a larger share of intrahousehold resources. In this paper, we examine the impact of one such policy related to the expansion of financial extension services through the Business Correspondents (BCs) in rural India. Charged with the responsibility of providing branchless banking services to rural households, BCs are expected to differentially lower transactions costs of account ownership for women in comparison to men. Using an expanding panel of rural households in Uttar Pradesh, we leverage quasi-exogenous variation in the district level supply of BCs to show that the proliferation of BCs led to an increase in the likelihood of account ownership among women. Further, women residing in villages covered by BCs enjoy higher resource shares in comparison to their male counterparts. Our analysis suggests that the impact of BC proliferation on resource shares runs exclusively through the channel of account ownership, and independent of the impact of other policies – such as the PMJDY.

518

Submission Number: **518**	Track: **FAE**
Paper Title: Venture Capital Syndicate Centrality and IPOs: Information and Investor Attention	
Authors: Samhitha Kasibhatta and Sudhakara Reddy Syamala	
Abstract: We study the impact of how well connected the Venture Capital syndicate investing in a particular IPO firm is to the entire Venture Capital network, on voluntary and aftermarket underpricing, investor attention, valuation and initial day performance of the IPO. We follow social networks literature and develop a measure for cumulative centrality of VC syndicates. The Indian setting offers us the advantage of transparency, thus enabling us to examine investor attention by category, and also the actual underpricing voluntarily carried out by the underwriter. We find that centrality, in fact, causes higher underpricing which is voluntarily carried out by the underwriter and though institutional investor attention is positively impacted, retail investor attention and initial day returns reduce in increasing centrality of the backing syndicate. Secondary market valuation is positively impacted by VC network centrality. Results are robust to different definitions of centrality and other explanations.	

699

Submission Number: **699**	Track: **FAE**
Paper Title: Can ESG Moderate The Relationship Between Oil Shocks and Capital Structure?	
Authors: Purba Bhattacherjee and Prof. Sibanjan Mishra	
Abstract: This study examines the impact of oil-shocks on capital structure and the moderating role of Environmental, Social, and Governance (ESG) performance. Despite extensive research on the adverse effects of oil-shocks, there remains a lack of clarity on mitigating these impacts, particularly concerning different types of oil shocks—demand (ODS), supply (OSS), and risk (ORS). The study fills this gap by employing a sample of 9198 firms across 91 countries, summing up to 82782 firm year observations. The sample period of the study is 2015-2023. We use trade-off and real options theory to examine how oil shocks affects capital structure. We find that ODS and ORS (OSS) negatively (positively) impact leverage. The analysis reveals that high ESG performance moderates the negative impacts of ODS and ORS while enhancing the positive effects of OSS on leverage. Strong ESG-oriented firms benefit from reduced information asymmetry, high creditworthiness and superior access to finance like sustainable funds, which buffers against oil-shocks. The study highlights significant differences in moderating effects of ESG on oil shock-leverage nexus, across firms with varying leverage levels, sizes, and market competition intensities. The study provides policy implication based on its critical findings.	

752

Submission Number: **752**	Track: **FAE**
Paper Title: Informed Trading and ESG-Evidence from NYSE	
Authors: Meera Davi Chalissery and Aravind Sampath	

Abstract: Does public information disclosure reduce informed trading? Using tick by tick data of NYSE securities, we estimate daily informed trading measures and study the relationship between ESG scores and informed trading. Using robust analysis, we document ESG scores to be positively associated with informed trading. Contrary to popular belief, we find that public disclosures enhance informed trading, as individuals are imperfect processors of information, and they add value to every piece of information only by combining other pieces of information.

767

Submission Number: **767**	Track: **FAE**

Paper Title: Green Bonds and Crude Oil Prices: Exploring Dynamic Linkages and Implications for Climate Financing

Authors: Haseen Ahmed, Rajbeer Kaur and Silky Vigg Kushwah

Abstract: In the wake of climate change-driven business and financial models, there is a rapid growth of green bonds. In this context, this paper studies the relationship between crude oil prices and the green bond index S&P. The study applies the ADF test to check the stationary of time series on time series data ranging from January 2013 to February 2024. Further, the Study applies the Dynamic Johansen co-integration, DCC-GARCH, and wavelet coherency technique to check the dynamic linkages among the oil prices and the green bonds. The results of wavelet coherency indicate the higher co-movement during the COVID-19 pandemic and the Ukraine–Russia conflict. Further, the Dynamic Johansen Co integration found a long-term relationship between the variables. However, as per the DCC-GARCH, volatility spillover between the variables is not significant. The study has potential implications for the investors and policymakers working around climate financing.

775

Submission Number: **775**	Track: **FAE**

Paper Title: Political Uncertainty and Initial Public Offerings: The Mediating Role of Political Connections

Authors: Purvi Jhawar and Jayanta Kumar Seal

Abstract: The negative impact of political uncertainties on a firm's decision-making has been widely researched in the past. In contrast, surprisingly very little attention has been paid to the impact of political uncertainties on investors' decision-making. This study attempts to fill the void in the literature by empirically examining the impact of political uncertainty on investors' initial returns and participation decisions in initial public offerings of Indian firms. Motivated by the recent research on the benefits of political connections of the firm, we also examine whether these connections of IPO firms reduce the adverse effects of uncertainties on investor participation decisions and underpricing. Unlike previous studies centered on nations with single or dual-party systems such as China or the US, this paper delves into the Indian context where a multi-party system prevails, thus offering a unique perspective on political uncertainty and its impact on public offerings. Data of 381 IPOs listed on BSE and NSE from 2008 to 2023 were taken. Using general elections as a proxy for political uncertainty, this study conducts a weighted least-square regression to analyze the impact of elections on IPO underpricing and investor participation. Our findings provide evidence that IPOs exhibit greater underpricing during the election years with investors showing reduced participation in these offerings. We also found out that politically connected firms show less underpricing and higher investor participation even during periods of political uncertainty.

824

Submission Number: **824**	Track: **FAE**

Paper Title: Spatial Data-Driven Approach to Crop Insurance Rate Making

Authors: Bhaktideepa Sahu and Dushyant Ashok Mahadik

Abstract: The agricultural sector in India contributes approximately 18.0% to the GDP and employs 52% of the total workforce. This sector drives a structural transformation process, shifting resources from low-productivity to higher-productivity sectors, fostering holistic and inclusive growth. The changing climate and technological advancements impact crop yields, often resulting in nonstationary losses, impoverishment, and indebtedness, particularly among small and marginal farmers. The Government of India's commitment to farmers' welfare is reflected in the substantial budget allocation, which has surpassed 125 crores for the financial year 2023-24. Given the substantial resources dedicated to various schemes,

accurate rating of insurance contracts is critical for both government and private insurers. As crop insurance schemes become a cornerstone of Indian agricultural policy, accurately modeling crop yield distributions by incorporating relevant loss information is essential for effective risk management for stakeholders, including farmers, insurers, and governments. This study presents multiple distribution models and introduces a flexible, data-driven spatial model designed to smooth across spatial units, thereby effectively capturing the distributed data. Our findings show that significant information can be gained from spatial data, and such methodological improvements can greatly enhance the accuracy of rate estimation, ultimately benefiting the stakeholders across the agricultural sector.

828

Submission Number: **828**	Track: **FAE**

Paper Title: CFO Compensation and Corporate Governance: Evidence from India

Authors: Anil Kumar and Sudhir Jaiswall

Abstract: We analyzed CFO compensation in an emerging market setting, India. We found that CFO compensation is associated with the firm's economic characteristics, such as ROA, firm size, and market-to-book ratio, as well as with the board and ownership characteristics, such as board size, proportion of independent directors in the board, equity holding by financial institutions, and affiliation with the business groups. Moreover, we found that the portion of CFO compensation associated with the ownership characteristics reflects efficient contracting practices rather than rent extraction, contrary to findings observed in developed market settings. Our results suggest that in emerging markets, CFO compensation is influenced by governance mechanisms aimed at aligning the interests of executives with those of shareholders and mitigating agency conflicts.

854

Submission Number: **854**	Track: **FAE**

Paper Title: Operational creditor rights and trade credit- Evidence from policy interventions

Authors: Shreyansh Chaurasiya

Abstract: When contract enforcement is ineffective and costly, it is difficult to induce lenders to enforce debt contracts. We examine the impact of an exogenous increase in suppliers' creditor rights through a general and a targeted legal intervention [Insolvency and Bankruptcy Code (IBC) and Micro, Small, and Medium Enterprises Development Act (MSMED), respectively] on trade credit extended by micro/small firms. The findings indicate a vital role of bargaining power, which creates a heterogeneous impact of creditor rights on the supply and demand of trade credit. The micro/small suppliers experience a reduction in their collection period owing to the threat of economic penalties for delayed payments under the MSMED Act. When the rights of all suppliers are increased through IBC, the erstwhile beneficiaries of the MSMED Act are forced to supply higher trade credit with a longer collection period due to their low bargaining power. Additional credit flow post-IBC is channeled towards financially unconstrained firms.

877

Submission Number: **877**	Track: **FAE**

Paper Title: The Impact of Investor Trading on Mutual Fund Performance in India: A Detailed Analysis of Return Gaps

Authors: Shreya Sil, Reshma Ramesh and Prashant Mushtagi

Abstract: This study examines the relationship between fund flows and performance in the Indian equity mutual fund market, with respect to return gaps as the comparative metric. Using a comprehensive dataset of Indian mutual funds, we analyze flow patterns and return gaps across different market capitalization categories. Our sample constitutes of all the open-ended funds in India, and we have conducted our analysis through the usage of fund flow data from the Bloomberg terminal. We find that investor trading activities have a statistically significant impact on the return gaps of mutual funds and that there exists significant disparities in fund flows and return gaps across different market capitalization categories.

897

Submission Number: **897**	Track: **FAE**
Paper Title: The Political Economy of Bank Supervision	
Authors: Pranav Garg	
Abstract: This paper studies the impact of political forces on bank supervision and capital allocation. Studying the 2015-16 reform in bank supervision in India aimed at lowering loan delinquencies, I find that state-owned Indian banks tend to sustain politically favorable lending to both state-owned firms and zombie firms, particularly during election years, despite these loans featuring lower credit quality. Such political interference with supervision creates systemic risk in India since state-owned banks originate more than half of all corporate loans, hold a majority of delinquent loans, and are the sole beneficiaries of large-scale government recapitalization in times of distress. As a result, state-owned banks finance capital misallocation with the credit supplied by government bailouts. State-affiliated capital allocation also squeezes out credit supply to private firms, resulting in a decline in private investment. These findings carry lessons for implementation of bank supervision in similarly placed large emerging economies, where state-owned banks play a central role.	

912

Submission Number: **912**	Track: **FAE**
Paper Title: The ESG Paradigm: Exploring the Relationship between Disclosure and Corporate Performance	
Authors: Smruti Ranjan Sahu and Divya Choudhary	
Abstract: The present paper investigates the linkage of ESG disclosures with firm performance in the Indian market. We examined the linkage between firm performance, as measured by Tobin's Q, and ESG scores using information culled from the Bloomberg database for Indian enterprises between the years 2014 and 2022. Higher ESG disclosure scores, particularly for the dimensions of environmental and social, are related to stronger firm performance, while firm age and size are negatively related to ESG disclosure and performance. The paper will help investors and regulators understand ESG practices in the emerging market and how they will impact corporate value.	

916

Submission Number: **916**	Track: **FAE**
Paper Title: Impact of the Twitter Tone about FOMC on Intraday S&P 500 Index Returns	
Authors: Sakshi Jain and Varadraj Bapat	
Abstract: We examine whether financial markets price the public sentiment surrounding US monetary policies following their announcements. We quantify the tone of Twitter discussions related to the Federal Open Market Committee (FOMC) on announcement days and explore their impact on the returns of the S&P 500 index. Our analysis demonstrates that the tone of Tweets significantly correlates with real-time market returns, serving as a potential indicator of the direction of index returns. This relationship holds only for the tone of tweets reacting to the announcements, not for those expressing anticipation or expectations. After controlling for the FOMC shock, the readability and tone of the FOMC statement, variations in macroeconomic conditions, and isolating tweets specifically related to FOMC rather than Fed chairs, we find robust evidence that Twitter sentiment provides valuable insights into market behaviour. Overall, our results suggest that public sentiment on social media plays a crucial role in influencing immediate financial market reactions to monetary policy announcements.	

991

Submission Number: **991**	Track: **FAE**
Paper Title: Is the trading pattern of Foreign Institutional Investors prior to IPOs indicative of their interest in the IPO stocks ?	

Authors: Somak Mukherjee, Arnab Bhattacharya and Ashok Banerjee

Abstract: We propose a proxy to measure the interest of Foreign Institutional Investors (FIIs) in Initial Public Offering (IPO) stocks based on their pre-IPO trading patterns. Depending upon their assessment of an upcoming IPO vis-a-vis their broad equity market outlook, FIIs can either bring in fresh funds or rebalance their portfolios to finance their investments during the IPO bidding phase and post listing trading. We find evidence that when FIIs' interest in an IPO stock is not driven primarily on the basis of the overall equity market performance, the propensity of the FIIs to flip IPO stocks and execute round-trip sell trades on the day of IPO listing is lower. Our proxy also helps us explain the differences in the immediate post listing liquidity of the IPO stock. Additionally, our results show that based upon the FIIs' interest in an IPO stock, there is a significant difference in the post-listing performance of the stocks, indicating that FIIs can distinguish between the bad IPO stocks and the good IPO stocks stocks ex-ante.

993

Submission Number: **993**	Track: **FAE**

Paper Title: Digital vs. Traditional: Does the Mode of Financial Inclusion Influence Financial Resilience? Evidence from Emerging Markets

Authors: Rahul Verma and Devlina Chatterjee

Abstract: Financial inclusion provides access to financial services and products. In recent times, digital financial inclusion (DFI) has provided financial services even amongst the unbanked. In this study, we aim to understand the extent to which DFI impacts financial resilience (FR) compared to FI. We used the Global Findex Database for 12 emerging economies, from two waves of the survey, viz. 2014 and 2021. For our study, we included three indicators related to traditional financial inclusion (FI), viz., having a bank account and using that bank account for saving and borrowing. For DFI we included five Indicators of digital financial inclusion, viz., owing a debit card, owing a credit card, borrowing through a credit card, making, and receiving digital payments. Using pooled regression models with country fixed and year fixed effects, we find that formal savings had the highest effect on self-reported FR, followed by bank account ownership, credit card ownership and making digital payments. To address endogeneity issues, we built biprobit models with instrumental variables. The effect sizes for each of these variables increased by around 2.5 to 3 times indicating the causal impact of FI and DFI on FR. Country fixed effects indicate that individuals from Russia and China report the highest levels of FR and individuals from Thailand, Brazil and South Africa report the lowest levels. This study analyses for the first time the relative impact of FI and DFI on FR across a cross-section of emerging market economies at two different time periods. The importance of both FI and DFI have policy implications for increasing financial resilience to future shocks.

998

Submission Number: **998**	Track: **FAE**

Paper Title: Do behavioural factors explain the liquidity beta anomaly in India?

Authors: Ankita Tilak, Rajesh Shaoo and Preeti Roy

Abstract: This study unravels the realistic path by which local market illiquidity is systematically priced (known as the liquidity beta anomaly) in India. The study explains the potential shortcomings of the traditional justification for pricing illiquidity risk by explaining behavioral theories that relate market liquidity risk to expected return sensitivity. We carefully examine how adverse market conditions affect the illiquidity risk concerns by comparing the effects via two crisis periods, i.e., the Global Financial Crisis (GFC) and the COVID-19 pandemic. By constructing quintile portfolios on liquidity beta, mispricing signal, arbitrage risk, sentiment, lottery-like preferences and performing the fixed-effects regression, we support that low liquidity beta anomaly holds in India. Lottery-like preferences and sentiments could explain the anomaly. While in the market adverse states, the anomaly tends to weaken and the arbitrage risk of mispricing becomes dominant behavioral trait, offering fresh explanations for the liquidity beta anomaly in India.

1010

Submission Number: **1010** | Track: **FAE**

Paper Title: Unveiling Inequality: Evidence from an Unconditional Cash Transfer in Indian Agriculture

Authors: Neeraj Katewa and Debdatta Pal

Abstract: Governments worldwide implement farm support policies to assist farmers, yet the universalization of such measures may lead to inefficient resource allocation. Our study examines the impact of an acreage-linked (unconditional) cash transfer program in India, designed to support landowning farmers in their initial farming investments. Utilizing difference-in-differences framework with National Sample Survey data, we observe an overall positive impact on agricultural performance. However, the program's effects are heterogeneous, revealing a 25% increase in crop productivity for medium and large farmers compared to an 11% increase for small and marginal farmers. This disparity is attributed to transfer amounts based on landholding size, shaping investment decisions to cater to diverse agricultural needs. Medium and large farmers allocate more funds towards agricultural ma- chinery and equipment upgrades, enhancing productivity, while smaller transfers to marginal and small farmers primarily address household consumption needs. We validate our results through an alternate identification strategy (triple difference estimation based on rural bank branch penetration) and various robustness checks. The study suggests that cash transfers can enhance agricultural performance but that tailoring them to address specific needs and resource limitations of different farmer segments could lead to more equitable outcomes.

1062

Submission Number: **1062** | Track: **FAE**

Paper Title: Prevalence of REM practices in India: Value Enhancing or Opportunistic

Authors: Srishty Mehra and Surender Rao Komera

Abstract: The paper investigates the prevalence of real earnings management (REM) practices and their impact on the subsequent performance of the sample firms in India. Using the 31,235 firm-year observations of non-financial companies from the year 2005 to 2021, we find that firms do engage in REM practices and these activities lead to the enhanced future performance of the sample firms. While controlling for various firm-specific attributes, the study also examines whether firms' life cycle stage condition the magnitude of their REM activities. The impact of life cycle stage is observed to be more pronounced for the firms in introduction and decline stages, implying increased requirement of such firms in making changes to the real operations for achieving earnings benchmarks. The study also evaluates the influence of active governance mechanisms, including the effective board monitoring on sample firms' REM activities. The findings will potentially add to the understanding of participants in financial markets.

1144

Submission Number: **1144** | Track: **FAE**

Paper Title: Fiscal-Monetary Interaction and Sovereign Bond Yields: Evidence from Speeches of Central Banks and Finance Ministries

Authors: Kunal Biswas, Srinivasan Murali, Abhinav Anand and Jalaj Pathak

Abstract: The effect of fiscal-monetary interaction on macro variables has generated considerable interest for a long time. We present an empirical measure of fiscal and monetary interaction across six developed economies. Analysing the speeches of the central bank and finance ministry authorities, we construct a time-varying estimate of linkages between fiscal and monetary authorities across the different countries. Using topic analysis, the paper identifies the heterogeneous measurement of the interaction of different types of speeches. Incorporating our measure of fiscal-monetary interaction into a panel VAR setup, we find that increased interaction between fiscal and monetary authorities is interpreted as a signal towards price stability. Increased fiscal-monetary interaction in contrasting periods of inflation or business cycles results in a similar rise in sovereign bond yields. In contrast, an equal increase in interaction leads to a decline in interest rates in a counterfactual environment with restricted interaction between fiscal and monetary authorities.

1199

Submission Number: **1199**	Track: **FAE**

Paper Title: Are Two Chiefs Better Than One? Financial Executives and Layoffs

Authors: Vishal Baloria

Abstract: I examine the real effects of firms delegating financial accounting duties to a Chief Accounting Officer (CAO), thereby allowing the Chief Financial Officer (CFO) to allocate attention to operational duties. I find CAO usage is associated with a significant reduction in the likelihood of a layoff. This negative association is stronger among firms reporting an accounting loss, which serves as a powerful trigger to divest employees, and firms with longer Chief Executive Officer (CEO) tenure, who develop prosocial preferences for employees over time. The collective evidence suggests that placing distance between CFOs and financial accounting, through use of a CAO, can discourage layoffs, in line with the hypothesis that managerial attention on financial accounting rules that treat employee costs as expenses and liabilities drive firm layoff decisions.

IMRC 2024

India Management Research Conference

IIM Ahmedabad

TRACK 04B: REAL ESTATE

Track 04B: Real Estate

87

Submission Number: **87**	Track: **RE**

Paper Title: Relationship between sustainable real estate assets and other asset classes: Implications for portfolio diversification strategies

Authors: Ritesh Patel

Abstract: Relationship between sustainable real estate assets and other asset classes: Implications for portfolio diversification strategies This study examines the connectedness between three sustainable real estate assets, that is, Dow Jones Global Select ESG RESI index, Green Building Index, GBLD ETF, four traditional investment assets, namely, Equity, bond, crude oil and gold, and 2 real estate cryptocurrencies, that is Propy and LATOKEN. I used Weekly data from May 1, 2021 to June 9, 2024. The objective of the study is to measure the connectedness between sustainable real estate assets and other assets. This study also aims to measure the portfolio diversification benefits for the other assets with the inclusion of the sustainable real estate assets in the investment portfolio. Except ESG RESI, GBLD ETF and LATOKEN all the assets show positive returns. sustainable real estate assets and other assets holds partial connected falling in a range between -0.011to 0.502, indicating the existence of the portfolio diversification opportunity. I applied R2 Model-free connectedness measures as suggested by Gabauer et al. (2023). The Total Dynamic connectedness as reported in figure 3, remain fluctuated during the entire period. The Net Total Directional connectedness, as shown in figure 4, indicates that the ESG RESI and Green Building are net transmitter of shock whereas Propy and Latoken are the net receiver of shock. GBLD ETF, BSE, Bond, Crude oil and gold plays both the transmitter and receiver roles. Network Plot reveals that the only BSE remain connected with ESG RESI and Green Building. We find that on average the TCI is equal to 29.07%, indicating low level of connectedness. We measured the portfolio diversification benefits using three different strategies. The results of Minimum variance portfolio revealed that the sustainable real estate assets hold only 17% weightage in the assets allocation. In Minimum correlation portfolio approach, the sustainable real estate assets hold 24% weightage in the investment portfolio. The Minimum connectedness portfolio has investment from all the assets, where the sustainable real estate assets hold 39% weightage in the asset allocation. The Sharpe ratio remain fluctuated over time with upward trend. Among all three strategies, minimum correlation portfolio gives the highest Sharpe ratio. Out study provides important implications for the investors, portfolio managers and policy makers.

113

Submission Number: **113**	Track: **RE**

Paper Title: Assessing the Stigma Impact on Real Estate/ Property Value: A Study of Select Indian Cities

Authors: Ramakrishna Nallathiga, Snehil Bindal, Ajay Chaurasia and Mayur Talodhikar

Abstract: Valuation of real properties usually follows the standard approach towards assessing the transactional value of property unit while considering the physical, economic and financial factors associated with it. However, there are other factors that influence property value in the real world, such as information, knowledge, belief, lack of trust and psychological/ behavioural factors. 'Stigma' refers to one such psychological/ behavioural factor attached to the property unit that affects its value; there may be different types of stigma may be associated with properties. The current study reports an attempt to assess the impact of 'stigma' on property value in terms of 'value depreciation'. Based on the primary survey of property brokers located in the sample Indian cities using a questionnaire, the paper evaluates the 'stigma' impact on property value through linear regression analysis. The study results imply that any 'stigma' associated with real property affects its value adversely; in particular, the categories of 'Phenomenon Stigma' and 'Murder/Suicide Stigma' have a statistically significant negative impact on the real property value in Indian cities.

249

Submission Number: **249**	Track: **RE**

Paper Title: Chronology of thermal comfort research – Key contributions and shifts in understanding.

Authors: Shivani Senthilkumar and Poulomee Ghosh

Abstract: Climate change, heat waves, greenhouse emissions, and global warming have become a never-ending cycle, contributing to the degradation of the environment and causing discomfort to humans and living beings. To deal with climate change, research and studies have been focused on and evolved from 1946 to date on the thermal comfort of buildings, using passive and active thermal comfort strategies. This paper aids in establishing the progression and principles of thermal comfort research. The narrative literature review method has been adopted to understand the progress of thermal comfort research. With the help of 122 selected articles, the concepts of thermal comfort, models, architectural perspectives, standards, and policies of thermal comfort were examined. The sequence of thermal comfort research includes innovation in thermal comfort models, simulation, prediction, and challenges. Thus, this study will help the forthcoming researchers, developers, and other stakeholders in the built environment to fill the gaps and connect the past with the future.

328

Submission Number: **328**	Track: **RE**

Paper Title: Evolution of REIT Corporate Structures and Governance: An Empirical Study to Identify Responsive REIT Governance Best Practices for Indian REITs

Authors: Manish Srivastava

Abstract: While well established in the United States of America, REITs are still an emerging capital markets phenomenon across various world markets. REITs are capital markets and regulatory responses to a range of unique market conditions and failures. This research paper shall document and evaluate the emergence of various REIT structures worldwide, with their unique tax and legal contexts, and consequent differentiated corporate governance practices in these markets. The paper will perform a critical analysis of REIT corporate governance practices, identify best practices and the reasons for their emergence, and also highlight their challenges. In Asia, REITs have existed in Japan, South Korea, Hong Kong, Australia, and Singapore for a few decades. However, REITs are being considered as alternative investment vehicles in various emerging Asian markets with sizable real estate asset base, particularly in the large markets of China and India. The consequent emergence of differentiated REIT regulations offers a rich pasture for investigation of market constraints, legal contours, corporate structures, and the evolution of corporate governance practices that are unique to markets. This paper will study structural constraints on real estate markets, market failures, steps designed to avoid these failures through the design of corporate governance best practices for REITs. The paper will focus on the emergence of new REIT regulations especially for the small and medium- sized REITs in India and on the need for responsive corporate governance formulations to be considered by market regulators with the objective of ensuring success of the REIT markets and through these the overall success of capital market eco-system.

353

Submission Number: **353**	Track: **RE**

Paper Title: The Appraisal Gap: Disparity in Collateral Assessment

Authors: Abhiman Das, Nirupama Kulkarni and Niranjan Kumar

Abstract: This paper documents “appraisal gaps" that result in lenders valuing the housing collateral of minority borrowers lower than that of non-minority borrowers. Using pan-India data on mortgages with detailed information on minority status, we show that mortgage collateral for minority borrowers is appraised 17% lower than collateral of non-minority borrowers. Nearly 32% of this disparity is attributable to between-neighbourhood variation and the remaining to within-neighbourhood variation. Mechanisms include greater asymmetric information about collateral values and ambiguous property titles of minority-owned properties. Disparity does not arise from differences in the "black money" component of property prices or differences in the creditworthiness of borrowers. Regulation can narrow appraisal gaps, as two policies show. First, the staggered adoption across states of the 2016 Real Estate Regulatory Act improved developer transparency and accountability and reduced asymmetric information about collateral values, improving appraisal gaps. Second, strengthening the property rights of minority borrowers narrowed the appraisal gap.

367

<table>
<tr><td>Submission Number: 367</td><td>Track: RE</td></tr>
<tr><td colspan="2">Paper Title: Collateral Type and CMBS Deal Structure: A perspective from 1999 to 2022</td></tr>
<tr><td colspan="2">Authors: Karan Bhanot</td></tr>
<tr><td colspan="2">Abstract: Using panel data on all CMBS deals compiled by Trepp from 1999 to 2022, we document how the nature of the underlying collateral (i.e., Agency, Conduit, CLO, Single Asset, Family Rental, Large-Loan) is related to the structure of a CMBS deal. We find that the underlying collateral type explains a significant variation in the subordination structure, complexity of the offering (number/type of tranches), maturity structure of securities, and rating of deals. These results are especially apparent in the post-2017 period after implementing the Dodd-Frank Act with stricter capital requirements. We explain the observations' economic underpinnings and highlight the extent to which the extant collateral classification is key to understanding the determinants of deal structure.</td></tr>
</table>

417

<table>
<tr><td>Submission Number: 417</td><td>Track: RE</td></tr>
<tr><td colspan="2">Paper Title: Sustainable investing strategies and their impact on the decarbonisation of real estate</td></tr>
<tr><td colspan="2">Authors: Parag Cameron-Rastogi and Chris Pyke</td></tr>
<tr><td colspan="2">Abstract: The built environment forms an important part of any reasonable global plan to limit the global rise in temperatures to 1.5 degrees in this century [1]. This will mean transforming and decarbonising buildings that already exist and constructing new ones to be energy and carbon efficient from the start, at an unprecedented scale. Delivered properly, decarbonisation should result in “(1) cost savings and revenue streams associated with more efficient, flexible, grid-integrated buildings, (2) asset de-risking against future carbon and energy regulation, and (3) achievement of in-house climate commitments and financed emissions targets.”[3] The activities that decarbonise building operations, when carried out as part of thoughtful renovation and construction practices, improve the overall desirability of the building for users, lenders, investors, and fund managers. Decarbonising the operations of existing high-carbon buildings is challenging anywhere, but is greater in countries such as India, where the grid still emits high levels of GHG and other pollutants per unit of electricity produced due to the dominance of fossil fuels [2]. This leaves investors looking to create “green” portfolios with two options: renovate brown assets or shed them and buy green ones. As we examine funds/entities that invest in buildings, we find that those sustainable investment strategies that prioritise the acquisition of already-green buildings, while shedding carbon intensive (“brown”) ones, do not efficiently allocate capital toward the goal of a decarbonised global real estate sector. In this paper, we will show that investment strategies based on improving poor performing buildings in a portfolio generally deliver substantially better carbon savings than those based on changing the composition of portfolios through selling brown assets and buying already-green ones. In addition, as a strategy, improving poor performing buildings also outperforms optimising already high performers in a portfolio. We demonstrate these different investment greening strategies through experiments on the real-world data collected by GRESB over the past five years. Our data comprises anonymised representations of real buildings composed into several synthetic portfolios, representing a broad swath of ownership and valuations. Drawing on our past experience with preparing large-scale renovation engineering plans, we abstract the interventions into ‘renovation packages’ that can deliver a certain improvement in operational energy consumption. We find that a strategy of improving under-performing buildings reduces >30 times more energy than making already-green assets greener. This result has low variance to portfolio selection, i.e., sensitivity to randomisation in the creation of the synthetic portfolios. The results are similar across all regions and building types. We visualise the different strategies and the concurrent effect of the grid getting cleaner through a simple ex-post attribution analysis of reduction in carbon from one year to the next. We also run a parametric analysis of different decision variables to compare the relative impacts of strategies based on each combination of decisions: comparing aggressive renovation plans vs relaxed ones, the impact of grid decarbonisation and its interaction with increasing efficiency, strategies designed to comply with CRREM [5] only In other words, we find that capital flowing to brown portfolios in any region would have a much larger impact than a comparable investment in already-green assets. Institutional investors increasingly recognize that sustainable buildings are high quality investments, as evidenced by the year-on-year increasing participation in and appetite for the GRESB benchmark. The IEA estimates that buildings will require investments of about $600bn per annum globally from now to 2050 for existing stock [4]. Efficiently allocating that capital means prioritising investment in energy- and carbon-intensive assets, especially those in locations with carbon-intensive grids.</td></tr>
</table>

432

Submission Number: **432** | Track: **RE**

Paper Title: Examining housing satisfaction in Japan through Sen's 'capability theory'

Authors: Piyush Tiwari and Jyoti Shukla

Abstract: Access to a house through ownership and rent creates many valuable functions for a household, although its multidimensional role is less understood. Sen's 'capability theory ' can offer new explanations for the role of housing in people's wellbeing. This research makes a theoretical and empirical contribution to the housing satisfaction literature by applying 'capability theory' in examining two critical questions: What are the indicators of housing-related-functionings, and their impact on housing satisfaction for homeowners and renters? How does an experience of disaster and vulnerability to disaster influence the housing satisfaction of homeowners and renters? Firstly, this research defines housing satisfaction using the theoretical framework of the 'capability theory'; secondly, it identifies the determinants of housing satisfaction in terms of 'functionings'. Drawing on evidence from Japan, we empirically estimate these indicators' contribution to housing satisfaction using the household panel survey (JHPS) data. Emphasis is on examining the impact of disaster vulnerability on housing satisfaction. Key findings suggest that housing creates many valuable functions which influence housing satisfaction. Such as the ability to seismically retrofit the house and prepare for disasters; enhance familial wellbeing through 'generational contract'; and financial strength and empowerment for women homeowners. These findings are helpful for policymakers concerned with improving housing conditions and mainly designing a comprehensive policy for housing restitution post-disaster.

536

Submission Number: **536** | Track: **RE**

Paper Title: Agency Cost of Choosing Green

Authors: Cayman Seagraves, Mariya Letdin, Chongyu Wang and Tingyu Zhou

Abstract: While previous research focuses on the desirability of green buildings to landlords and investors, this paper is among the first to investigate the green building premium from the tenants' perspective. Specifically, we consider whether shareholder value is maximized by corporate socially responsible choices such as green building headquarters. We test our hypothesis by assessing whether firms headquartered in green buildings experienced superior performance during the past two decades. To address our question, we rely on corporate headquarters relocation data available from annual 10-K reports, corporate valuation data obtained from CRSP and Compustat in the WRDS data sets, and green building data available from the U.S. Green Building Council (USGBC) and Energy Star for LEED-certifications and Energy Star-certifications, respectively. Our analysis suggests that in line with agency theory, the decision to relocate corporate headquarters to a green building serves as indirect compensation to management rather than a justifiable expense for shareholders.

557

Submission Number: **557** | Track: **RE**

Paper Title: Mortgage Market & Its Impact on Housing Prices in India: Role of AI

Authors: Mrinalini Mrinalini and Dr. Rajni Kant Rajhans

Abstract: The Indian real estate market has experienced significant growth in recent years, driven by urbanization, rising incomes, and a growing middle class (Kumar et al., 2023). However, the mortgage credit market in India has faced challenges in accurately assessing the creditworthiness of potential borrowers, particularly those with undocumented or informal incomes (Asher et al., 2024). The efficiency of the mortgage credit market significantly impacts housing prices in India (Kumar & Gupta, 2023; Maple et al., 2023). Improving the mortgage credit market in India presents a unique opportunity to enhance

the accessibility and affordability of housing (Kumar & Gupta, 2023). The Indian real estate market is characterized by a significant untapped demand for housing, particularly among low-income and middle-income households (Sen, 2021). Accurate assessment of creditworthiness is crucial in this context, as it can enable more individuals to access mortgage financing and, in turn, drive the demand for housing (Mou, 2019). Enhancing the mortgage credit market is a critical area of research, as it can have far-reaching implications for the Indian housing market. Improved tools can help lenders accurately assess the creditworthiness of borrowers, even those with undocumented or informal incomes, thereby increasing access to mortgage credit. This, in turn, influences housing prices by increasing the demand for housing and potentially driving up prices. A study by Aavas, a specialized housing finance company in India, has highlighted the potential of data analytics in assessing the creditworthiness of households with undocumented and documented incomes (Mou, 2019). However, this study focuses on a specific company and does not provide a comprehensive analysis of the broader implications for the Indian housing market. Another study on the impact of technology on the Indian banking sector has examined the advantages, disadvantages, and challenges of implementation but does not delve into the specific applications in the mortgage credit market (Mallesha, 2019). While the impact of technology on the banking sector in India has been explored in existing literature(Kodipalli & Hussain, 2023; Kumar & Gupta, 2023; Inyang, 2022; Mahadevan et al., 2022), there is limited research on the specific application in the mortgage credit market and its subsequent impact on housing prices. Therefore, this research paper aims to fill the gap in the literature which exists, by exploring the improvements in the mortgage credit market and its impact on housing prices in India. The study gives insights into the potential benefits and challenges of utilizing enhanced tools in the mortgage credit market, as well as its implications for the broader housing market. Improvements in the mortgage credit market in India are transforming the landscape of housing finance and influencing housing prices significantly. These technologies enhance the efficiency of credit assessment by utilizing alternative data sources, such as online behavior and transaction histories, to evaluate the creditworthiness of borrowers who traditionally lacked access to credit (Johnson et al., 2023; Alhajeri & Alhashem, 2023). This shift promotes financial inclusion, enabling a broader segment of the population to secure mortgage loans, thus increasing demand for housing. As improved platforms streamline the loan approval process, they reduce operational costs and time, making mortgages more accessible and affordable. The expected growth of India's digital lending market, projected to reach $515 billion by 2030, underscores the potential to reshape financial services and housing dynamics (Kumar & Gupta, 2023). Furthermore, the ability to analyze market trends and predict price fluctuations allows lenders and investors to make informed decisions (Maple et al., 2023; Artificial Intelligence, Machine Learning and Big Data in Finance, 2021), potentially stabilizing or increasing property values in response to enhanced credit availability. However, the widespread adoption of technology also raises concerns regarding data privacy, algorithmic bias, and regulatory compliance, necessitating a balanced approach to harness its benefits while safeguarding consumer interests. Overall, improvements in the mortgage credit market are poised to have a profound impact on housing prices in India, fostering a more inclusive and dynamic housing market. The study employs a mixed-method approach, combining quantitative and qualitative analysis. The quantitative analysis involves the use of econometric models to assess the impact of mortgage credit assessment on housing prices in India, drawing on data from various sources, such as real estate market indicators and mortgage lending data. The qualitative analysis involves interviews with industry experts, including mortgage lenders, real estate developers, and policymakers, to gain a deeper understanding of the opportunities and challenges associated with the integration of improved tools in the mortgage credit market. The study finds that enhancements in the mortgage credit market can have a significant impact on housing prices in India. Improved tools can help lenders accurately assess the creditworthiness of borrowers, leading to increased access to mortgage credit. This, in turn, drives up housing demand and prices, particularly in urban areas. The study has limitations in terms of data availability and the complexity of the Indian housing market, which can be influenced by various factors, such as government policies, demographic changes, and economic conditions. Additionally, the long-term impact of these improvements on the mortgage credit market and housing prices may not be fully captured within the scope of the study.

573

Submission Number: **573**	Track: **RE**

Paper Title: Short-Term Spillovers and Long-Term Stability: A Study of Lodging REITs Amid Financial Market Turbulence

Authors: Apostolos Ampountolas

Abstract: This study explores the impact of the March 2020 crash on the performance of stock market financial indices, focusing specifically on lodging REITs. While most studies address financial markets, this research focuses on the lodging REIT index and its correlation with seven major financial market indices in the US and Europe. Using financial risk-adjusted performance indicators and two-stage multivariate volatility EGARCH models, the study finds that the lodging REIT index is sensitive to recession-related shocks but resilient to changes in market confidence. The index exhibits short-term return

spillovers, indicating low systematic risk and pre-pandemic solid returns. Volatility analysis reveals significant growth in conditional volatility following positive news, with a more robust response to negative shocks. A multivariate DCC-EGARCH model captures time-varying correlations, showing persistent correlation dynamics and a faster adjustment towards long-term averages. The positive correlation between stock market indices and the lodging REIT index influences their joint response to shocks.

575

Submission Number: **575**	Track: **RE**

Paper Title: The Impact of ASC 842 on REITS

Authors: Cayman Seagraves, Nottely Seagraves and Philip Seagraves

Abstract: This study aims to understand how the accounting regulation change ASC 842 impacted Real Estate Investment Trusts (REITs). ASC 842 introduced significant changes in how leases are accounted for. Using a detailed dataset of REITs from several years before and after ASC 842’s implementation, we examine key financial metrics such as funds from operations (FFO), adjusted funds from operations (AFFO), net asset value (NAV), debt-to-equity ratios, and occupancy rates. We also analyze the effects on dividend payout ratios and stock performance, with a focus on stock price volatility and total shareholder return. This study provides a clear understanding of how ASC 842 affects REIT financial statements and market perceptions.

579

Submission Number: **579**	Track: **RE**

Paper Title: It's All in the Detail: Individual ESG Factors and Firm Value

Authors: Ramya R Aroul, Julia Freybote and Riette Carstens

Abstract: We disaggregate ESG into its individual factors (E, S and G) and investigate their impact on firm value using publicly listed equity real estate investment trusts (REITs) as a laboratory over the period of 2009 to 2021. The unique features of the REIT industry, including homogeneous investment structures, a dividend payout requirement and high institutional ownership, allow us to eliminate agency problems as a possible explanation for a positive relationship of ESG and firm value. We find that the environmental factor (E) and governance factor (G) positively predict firm value while the social factor (S) negatively predicts it. Our results are robust to firm size, institutional ownership, and different measures of firm value. Further analysis into antecedents of firm value suggests that our results are driven by 1) E reducing cost of debt and increasing financial flexibility, operating efficiency, and performance, 2) S leading to a higher cost of debt as well as lower financial flexibility and operating performance, and 3) G increasing operating efficiency. Our findings emphasize the importance of disaggregating ESG factors in the empirical analysis of the impact of ESG on firm value. We also find evidence for time-variations in the relationships of E, S and G with firm value and its determinants.

584

Submission Number: **584**	Track: **RE**

Paper Title: The Numbers Game: Effects of Listing and Counteroffer Pricing Format in Housing Bargaining

Authors: Haaris Mateen, Franklin Qian, Ye Zhang and Tianxiang Zheng

Abstract: Using confidential offer-level data from the US housing market, this paper analyzes the impact of various listing and counteroffer pricing strategies on the housing bilateral bargaining process. We observe that sellers tend to cluster their listing prices around ``charm'' numbers (e.g. 349,999) while buyers' counteroffers mainly cluster around round numbers (i.e.,

350,000). Through the repeated sales approach, we explore the benefits and costs of these pricing strategies. Compared to listings with precise prices, listings with special prices (i.e., either round prices or charm prices) tend to sell faster but at lower prices than those with more precise prices. Although this indicates ``cheap talk'' signaling benefits, charm prices systematically dominate round prices. Charm listing prices typically lead to a higher likelihood of sale, achieving higher sales prices, and quicker transactions compared to round listing prices. With respect to the effects of buyer counteroffer pricing strategies, our analysis reveals that round counteroffer prices frequently result in lower sales prices and faster deals, albeit at an increased risk of negotiation breakdown. Furthermore, we identify a ``mimicry effect'': buyers mirroring the precision level of sellers' charm or precise listing prices significantly lower the risk of impasse, even though it may lead to higher sales prices and longer negotiation periods. Overall, our findings offer novel insights into the strategic effectiveness of different pricing formats in the housing market bargaining process.

613

Submission Number: **613**	Track: **RE**

Paper Title: Development of Linear and Multiple Regression Model for the Optimal Allocation of Infrastructure: A Case Study of Pune Municipal Corporation

Authors: Komal Handore

Abstract: 1. Introduction Previous research concentrated on the application of regression models in urban planning basically for the projection of infrastructure demands from demographic and economic data. Linear regression is widely used because of its simplicity and interpretability, but multiple regression is more frequently applied since it admits several affecting variables simultaneously. It has been inferred from various studies that the socio-economic attributes of an area, such as population density, income level, and education, do play a very vital role in infrastructure needs. Previous research in this area has limited application of linear and regression models in urban planning, mostly for making projections of demands of infrastructure from demographic and economic data. In many instances, linear regression is used because of its simplicity and ease of interpretation, but multiple regression enables a number of affecting variables to be considered at one time. According to existing research, population density, income levels, and education do form important determinants of infrastructure needs. This study contributes to the present literature by applying those models in a particular urban situation, thereby increasing its utility for municipal governance. 2. Need for the study The need to conduct this research on the development of linear and multiple regression models for the optimal allocation of infrastructure in the Pune Municipal Corporation (PMC) is driven by several critical factors: a) Effective and efficient urban infrastructure planning is needed to meet the needs of population growth due to in-migration in PMC. b) To prioritize and allocate limited urban infrastructure to the areas with the most pressing infrastructural needs. c)To predict future infrastructure requirements based on empirical data, enabling more informed and strategic planning. d)To identify disparities in infrastructure provision by analyzing how factors like income, population density, and educational levels correlate with the availability of services, which can help in more equitable distribution of infrastructure. e)To provide a quantitative foundation for setting priorities and allocating budgets. 3. Methodology The study employs a mixed-methods approach, integrating quantitative data analysis with qualitative feedback from important stakeholders. The data is derived from the records of the Pune Municipal Corporation and contains population demographics, economic statistics, and distribution of existing infrastructure. More specifically, this dataset includes population growth rate, household income, educational level, health facilities, road network, and availability of public transit. 3.1.Data Collection and Pre-processing Secondary data was gathered by extracting relevant data from PMC databases and government papers. Additionally, primary data was also collected using household questionnaires from each and every ward of PMC. Cleaning, normalization, and preparation of data for analysis were conducted. Reconstruction of missing values was done with the right imputation techniques, after which discovery and handling of outliers were performed. 3.2.Model Development: A series of linear and multiple regression models were developed, including: a)Income – savings – expenditure models b)Demographic models c)Housing models d)Water supply infrastructure models e)Sewerage system infrastructure models f)Stormwater drainage system infrastructure models g)Solid waste management infrastructure models h)Electricity infrastructure models i)Transportation aspects and infrastructure models j)Routine cooking fuel used – monthly expenditure on cooking fuel While developing these models, monthly household income was one of the major factors for evaluation. 3.3.Model Validation and Testing The models were validated using a portion of the data set aside for testing purposes. The performance was assessed based on metrics such as R-squared, adjusted R-squared, P-value, and mean absolute error (MAE). The models' predictive accuracy was further evaluated by comparing predicted infrastructure allocations with actual allocations. 4. Results and Discussion The linear and multiple regression models revealed significant correlations between individual socio-economic variables and specific infrastructure needs. For instance, a)A strong positive correlation between monthly household income and monthly household expenditure on food, education, recreation, house

rent, loan repayment, water and electricity bills, petrol/diesel, transportation, and internal/mobile bills. b)A strong positive correlation between monthly household income and demographic parameters like household size, number of children less than 19 years, and working members. c)A strong positive correlation was found between monthly household income and various housing parameters such as topology, and number of habitable rooms. Structure, physical conditions, age, and ownership. d)A strong positive correlation between monthly household income and water supply and infrastructure parameters. e)A strong positive correlation between infrastructure (sewerage, stormwater, solid waste, transportation, and electricity) parameters –infrastructure rating by residents (neighborhood level). f)A strong positive correlation between monthly transportation expenditure and transportation aspects and infrastructure parameters. These models highlighted the effect of income on the affordability of infrastructural services. 5. Discussion Results provide relevant, practice-based insights into how the Pune Municipal Corporation can optimize infrastructure allocation. The models would facilitate policymakers in deciding on the prioritization of investments based on objective criteria. For example, underserved areas in health care infrastructure can be targeted for new hospital projects, while areas having robust demand for public transportation are appropriate for metro or bus rapid transit systems. The study also underlined the need to take a holistic approach to urban design, considering the interactions of several socio-economic factors. In this way, adopting a data-driven methodology will allow PMC to introduce transparency and efficiency into the processes of infrastructure planning, hence improving the quality of life and service delivery for the citizens of Pune. 6. Conclusion The present paper uses the case study of the Pune Municipal Corporation to establish the utility of linear and multiple regression models in urban infrastructure planning. These created models provided a framework for appraisal and forecasting of infrastructure demands, grounded on variables from socioeconomic and demographic factors. The findings underline the fact that the use of quantitative data analyses has to be integrated into urban planning so that it becomes more informed and unbiased. Such a framework in future research could be applied to other urban areas, including other variables like environmental considerations and technological improvements to fine-tune infrastructure allocation tactics.

634

Submission Number: **634**	Track: **RE**
Paper Title: Spatial Modelling of Residential Real Estate Prices in Bengaluru, India	
Authors: Kapil Gupta, Soudeep Deb and Venkatesh Panchapagesan	
Abstract: Recent statistical research in real estate markets has increasingly focused on understanding the dynamic patterns of property prices across different locations. In this study, we contribute to this growing body of work by providing robust evidence of spatial dependencies in real estate prices. We introduce an innovative statistical model designed to efficiently capture these complex spatial dependencies. Our model utilizes a Gaussian spatial process, integrating an additive mean structure with a random error component. We implement this model within a Bayesian framework, which offers both flexibility and computational advantages over other methods. As a practical application, we analyze granular-level transaction data from Bengaluru, covering 165 micromarkets and a total of 1,327 society projects from January 2017 to June 2023. Residual diagnostics confirm that our model successfully captures the spatial dependence in the data.	

646

Submission Number: **646**	Track: **RE**
Paper Title: Jointness versus Independence in House Purchase Decisions of Indian Households: Head of Household or Family matters?	
Authors: Biswajit Patra, Babli Rani Gupta and Anu K Jose	
Abstract: Purpose The study delves into the intricacies of house purchase choices which can be influenced by a confluence of socio-economic and macroeconomic variables, to determine whether household purchase decisions are independently influenced by household-head characteristics or if it is a joint decision-making process impacted by whole family members' group-characteristics. Further, how macroeconomic variables influence the house purchases are explored. Design/methodology/approach The study uses unit-level household data based on Consumer Pyramids Household Survey (CPHS) over waves 22 to 30, which covers the period from January 2021 to December 2023. Generalized Least Square Logistic Regression model has been utilized in estimation of the prominent factors including socio-economic, demographic and macroeconomic factors that influence willingness towards a new house purchase. Findings Household-specific characteristics such as age, gender, education and occupation groupings had a significant impact on house purchase decisions	

while the influence of individual-specific (Household head) attributes were observed to a relatively less degree. Moreover, macroeconomic characteristics like economic growth rate, housing price inflation, interest rate and real estate sentiments were prominent in house purchase decisions. Research implications House purchase decisions of Indian households are more like a family-driven decision which in turn implies that the real estate suppliers/dealers should take this fact into consideration along with other macroeconomic parameters to boost house asset demand without creating much losses/wastage. Taking advantage of foreign remittances during times of currency depreciation for raising demand in housing sector is also a direct economic implication of the study. Originality/value The study is first of its kind to have explored the underlying household-specific and individual specific (Household-head) socio-economic and demographic characteristics using Indian household level data in house purchase decisions. The inclusion of macro-economic variables along with unit level socio-economic characteristics is another value-addition to the real-estate literature. The exploration of attitudinal dimensions in house purchase based on an understanding of divergence in the past and present financial positions also provides novelty to the study.

770

Submission Number: **770**	Track: **RE**

Paper Title: Market for Transferable Development Rights: Factors affecting demand

Authors: Astha Agarwalla, Prashant Das, Komal Mimani and Garima Manuja

Abstract: This paper estimates developers' demand for Transferable Development Rights (TDRs) in Ahmedabad, one of few ongoing TDR programs in India. We model the TDR purchase decision by developers as a function of location and project specific variables. We use binary logit to model the buying decision. We find support for location specific variables impacting the decision, such as road width and the official floor rate for TDR transactions. We further estimate the impact of various determinants on the quantity of TDRs purchased (in square meters), using linear regression. We find that the quantity depends on the project specific variables, such as number of units in the project, and unit size. These variables determine the profitability of the project. Our findings suggest that the current TDR policy framework is causing built density to shift to outer areas and resulting in sprawl of the city.

793

Submission Number: **793**	Track: **RE**

Paper Title: Stakeholder View: Zero-Carbon Strategies for Real Estate Markets in India

Authors: Ashish Gupta and Graeme Newell

Abstract: To achieve Paris Agreement goals, the building sector must achieve net zero carbon (NZC) emissions by 2050. The 2022 Global Status Report for Buildings and Construction shows that the sector is off track to its target and needs to make deep systematic changes. Post-pandemic, in 2021 the CO2 emission from buildings has reached an all-time high with an increase of 2% from the previous high of 2019 and a 5% increase from 2020 (UNEP, 2022). Buildings and building construction alone consume 35% of global energy and contribute 38% of CO2 emissions. More than 100 countries have either announced, committed or are discussing NZC emission strategies. Transition to NZC is a priority of various property stakeholders like occupants, tenants, developers, investors and governments. Recent studies have discussed the significance of ESG and NZC for real estate investments. This study evaluates the current state of the adoption of NZC for the building and the real estate sector in India, identifies key barriers and will provide strategies to achieve the NZC target. The research methodology employed a combination of both primary and secondary sources of information. The study aims to decipher the current strategies/status for NZC adoption and challenges through stakeholder (listed/international developers, fund managers, REITs, International Property Consultants and portfolio owners) consultation and interviews. Existing knowledge is assimilated from the key global literature including annual reports, ESG/NZC reports, policy documents and academic papers. In addition, case studies of NZC projects/portfolios are to be evaluated; to develop strategies for India and emerging Asia to achieve the NZC targets.

919

Submission Number: **919**	Track: **RE**

Paper Title: Creating Equitable Cities: Spatial Justice in Land Value Capture for Sustainable Transit Financing

Authors: Sagar Verma

Abstract: Cities serve as the growth engines for the economy of the nations. It not only serves as a major center of economic activities but also as a center of education, health, and culture. For this reason, the population and economic activities are increasingly being concentrated in cities. At this moment, more than half of the world's population lives in cities, and it is projected that by 2050, around 70% of the world's population will reside in urban areas (Bianchi et al., 2023). Out of this growth, it is estimated that 90% of the growth will occur in Asia and Africa alone (Bianchi et al., 2023). Over the last few decades, emerging economies like Asia and Oceania have experienced massive urbanization, and in coming decades, they are expected to lead in urban population growth after Africa (Our world in Data, 2024; United Nations, 2023). The increasing concentration of population in cities of emerging economies poses significant pressure on the city's limited resources. As more and more people live in the cities, there will be more and more need for travel for employment, recreation, education and many other activities. This increase in travel demand will create a huge demand for urban passenger transport. Such growth in urban passenger transport demand in coming decades is expected to increase because people will expand their access to various opportunities due to the growing economy (Bianchi et al., 2023). However, with this increase in opportunity, the burden of climate change also comes if the current urban passenger transport demand is not managed properly. Cities around the world contribute nearly 70% of carbon emissions, and the transport sector (mainly car and delivery vehicles running on fossil fuels) is the largest contributor to it (Bianchi et al., 2023). Cities in the emerging economies of lower- and middle-income countries (LMIC) need to integrate climate action plans to decarbonize their transport sector to mitigate not only carbon emissions but also to minimize the effects of air pollution exposure due to such emissions on their population. Thus, cities of emerging economies of LMICs not only have to fulfill the growing mobility need of their population but also reduce the emissions due to it (Bianchi et al., 2023). Due to the continuous increase in travel demand in growing economies like India, providing urban public transportation to meet the travel needs of the city's residents has always been a challenge. However, investment in such infrastructure is necessary to shift people from private car uses and low occupancy vehicles to these public transit to decrease carbon emissions. However, to finance large urban transit projects such as metro or rapid urban railways, the state requires huge capital. Given the budgetary limitations in these economies, financing these projects through land-value capture (LVC) could be a viable and sustainable alternative (Mathur, 2019; Sinha, 2021) The basic idea of land value capture is that the value of the land in the proximity of new transit investment will increase (for example, in terms of property price and rent), and the government can capture part of this increase in valuation to finance the transit project. This increase in land value may come due to a variety of reasons, such as increased accessibility near transit, which may attract real estate developers to develop near transit (Mathur, 2019; Sinha, 2021). LVC has been defined as "a set of mechanisms used to monetize increases in land values that arise in the catchment areas of transport projects" (Li & Love, 2019). Prior studies on LVC have identified a favorable role of LVC in land value uplift and increased willingness of people to pay for increased property prices in catchment areas of transport projects (Li et al., 2022; Li & Love, 2022; Sharma & Newman, 2018b, 2018a). The literature on LVC emphasizes how efficiently, through LVC, public authorities can optimally use the land and generate revenues from it for funding large public transportation infrastructure; this efficiency-based view of land value ignores the justice-related implications, spatial justice, to be more specific (Fainstein, 2011). As defined by urban theorist and geographer Edward W. Soja "spatial (in)justice refers to an intentional and focused emphasis on the spatial or geographical aspects of justice and injustice. As a starting point, this involves the fair and equitable distribution in space of socially valued resources and the opportunities to use them" (Soja, 2016). According to Henri Lefebvre's concept of the "right to the city" and spatial justice, city space is a collective creation, so urban land should benefit all inhabitants and no one should be worse off in the developmental process (Fainstein, 2011). Neil Smith's work on urban gentrification explains how a "rent gap" develops when the potential value of a property exceeds its current use value, leading to gentrification and displacement (Fainstein, 2011; Smith, 1982). In the context of Land Value Capitalization (LVC), I argue that the increase in land value in transit catchment areas leads to a concentration of wealthy residents and businesses in transit-proximity areas due to their high accessibility. This, in turn, pushes low-income residents to more distant and less desirable areas, thereby decreasing their accessibility. Hence, it creates an inequitable opportunity for vulnerable groups of residents (Fainstein, 2011). Thus, LVC, as a land use efficiency measure, may have systematic spatial justice implications. But, in the existing literature, there is a lack of conceptualization and theoretical and empirical investigation on the spatial justice aspect of LVC. Therefore, this study aims to theoretically conceptualize the concept of spatial justice within the framework of LVC and suggests potential propositions relevant to this context. This study also aims to conduct theoretical investigations into how such spatially unjust process could lead to inaccessibility for those displaced during the LVC process and explore potential policy solutions to address this challenge. The study may have implications for opening a new dialogue in the context of LVC policy design and implementation, as well as sustainable transportation planning and investment.

Submission Number: **1217**	Track: **RE**

Paper Title: Performance Evaluation and Investment Strategies in REITs in India

Authors: Anil Kashyap, Shruti Vaishampayan, Shivatej N, Vijay Narayanan K, Mahesh Dhinakaran and Harsha E

Abstract: INTRODUCTION: The Indian Real Estate Investment Trusts (REIT) market, though still emerging, shows significant growth potential, driven by factors like urbanization and rising incomes (Das & Thomas, 2016). Major players, including Embassy Office Parks REIT and Mindspace Business Parks focus on commercial properties, providing steady income through dividends. Despite the increasing popularity of REITs in India, there is limited research on investment strategies specific to this market. This study addresses this gap by analyzing the Indian REIT market, comparing key commercial REITs, examining the regulatory framework, and identifying challenges investors face. Furthermore, this study provides recommendations for the optimization of investments in REIT, in a rapidly growing sector that allows investors to diversify their portfolios by investing in income-generating real estate. (Business Opportunities in India: Investment Ideas, Industry Research, Reports | IBEF, n.d.) The objectives of the study are noted below: Conduct a comprehensive review of the Indian REIT market, including its regulatory framework, market participants, historical performance and review investment strategies employed in Indian REITs. Conduct a comparative performance evaluation of Indian Commercial REITs against domestic and international real estate indices, comparing risk-adjusted returns, volatility, and other performance metrics. Provide policy recommendations and guidelines to stakeholders, including investors, regulators, and fund managers, to foster a conducive environment for Indian REIT investments. METHODOLOGY: A mixed-method approach, combining quantitative and qualitative data, is adopted to gain a comprehensive understanding of the Indian REIT market and develop optimization strategies. The quantitative analysis included secondary financial data and performance metrics of three listed Indian REITs, namely Brookfield, Embassy and Mindspace, collected from their official websites including the annual reports, and stock exchange databases with information on revenue from operations, market cap, operating expenses, debt, EBIDTA, and distribution of dividends. Industry reports from IPC and various industry associations were analyzed to understand market trends, regulations, and future growth prospects of the Indian REIT sector. Further to substantiate the quantitative data, four semi-structured interviews were conducted with industry experts, including REIT fund managers, analysts, and investment advisors. The interviews focused on qualitative data including their insights into investment strategies, risk assessment frameworks, and factors influencing REIT performance. Further an investor was interviewed through a structured questionnaire survey to understand their investment preferences, risk tolerance, and knowledge of REITs. This data provided valuable insights into investor behaviour and decision- making processes. The qualitative date comprising interview transcripts and questionnaire response were subjected to thematic analysis to extract key themes, recurring patterns, and diverse perspectives on optimizing REIT investments. RESULTS AND DISCUSSION The comparative analysis for all three REITs in from Q4 FY2023 to Q3 FY 2024 showed that Embassy REIT displayed higher revenue and operating income than others (Colliers, 2023). An upward trend for all REITs was observed in Net Operating Income (NOI) per sq ft, with highest growth in Brookfield REIT. Operating Expenses per sq ft reduced for Embassy REIT and increased for Brookfield due to higher G&A. Embassy REIT showed highest dividends while Brookfield REIT showed highest growth. With respect to Financial Leverage, Debt to EBITDA was highest for Brookfield REIT and lowest for Embassy REIT. Debt to Market Cap was overall highest for Brookfield while that of Embassy REIT was higher in Q1 FY24. Leverage was observed highest for Brookfield REIT and lowest for Embassy REIT. G&A Expenses per sq ft for Brookfield REIT was significantly higher than others. Overall comparative analysis showed that Embassy REIT generally outperformed in revenue, NOI, and expense control. The interviewees further provided insights strengthening the quantitative analysis. The interviewees noted the following: - Regulatory changes such as reduced lot size and minimum investment by SEBI have made REITs more accessible, increasing liquidity and retail participation. Increased retail participation is viewed as beneficial, leading to more domestic involvement and improved liquidity, despite challenges such as market restrictions and the need for regulatory adjustments to fully optimize benefits. (Deloitte, 2019) - The hybrid classification of REITs is debated. While it offers stability, equity classification may be preferred to improve access to passive investments and lower tax burdens. - Allowing banks to lend directly to REITs is seen as a positive step that could unlock debt capital, increase liquidity, and expand REIT operations. Listing REITs in public funds like mutual, pension, and provident funds could enhance investment and liquidity. - Denotification allowing conversion to non-SEZ areas is seen as a positive development for REITs and real estate growth. - While there's potential for MSM REITs targeting Grade B & C assets, concerns about their practical viability and clarity on investment potential remain until they are tested in the market. - Asset diversification is vital for REITs, with potential asset classes including hospitality, residential, and office spaces in Tier 2 cities. The feasibility of certain assets, like prison REITs, remains uncertain. - REITs offer diversified asset holdings, while fractional ownership focuses on single assets. SM REITs are seen as a potential alternative, offering similar benefits with better regulation. - COVID-19, work-from-home trends, SEZ regulations, and macroeconomic factors pose challenges to REIT performance (Walia et al., 2023). CONCLUSIONS AND RECOMMENDATIONS: It is recommended to

consider revising the hybrid model of REITs to potentially equity model to enhance clarity and attract broader investment, while also addressing the regulatory framework to ensure compliance and manage potential impacts. A wider retail participation by providing tax incentives and promotion is encouraged. Banks, mutual funds and pension funds may be enabled to lend directly to REITs, unlock debt capital, and improve liquidity to support REIT expansion and operations, while addressing regulatory hurdles. Traditional developers may be consulted to understand their reasons for not forming REITs and address potential concerns. Further opportunities for diversification may be explored by including residential assets, Tier 2 city office spaces, and potentially other asset classes like hospitality in REIT portfolios. REIT market in India is in its nascent stage as compared to its global counterparts. Building investor confidence and participation is crucial for long-term growth, with existing regulations aligning with international standards.

IIMA

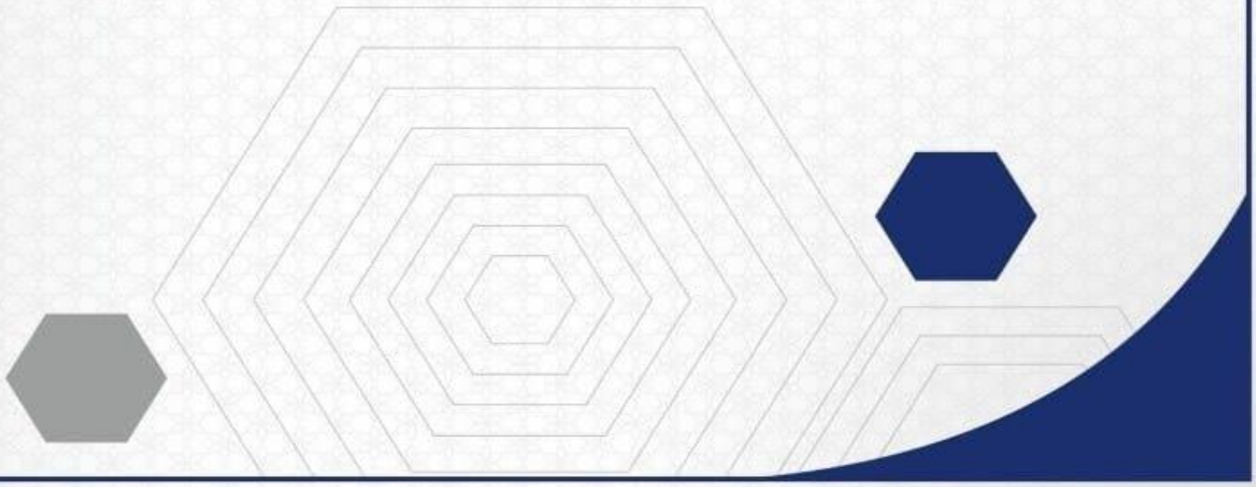
विद्याविनियोगाद्विकास:

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

TRACK 05: BEHAVIORAL SCIENCE IN MANAGEMENT



Track 05: Behavioral Science in Management

90

Submission Number: **90**	Track: **BSIM (NSE-CBS)**

Paper Title: Serial Mediation: Place Identity and Place Attachment in the Relationship between Perception of the Residents and Willingness to Participate in Rural Tourism

Authors: Dr. Sonia Bhatt

Abstract: Rural tourism is a revolutionary change in the tourism industry. Success of the rural tourism is majorly depends on support of residents of the rural areas. The paper works on to determine the perception of the residents about the impact of rural tourism. Rural tourism provide number of benefits to the residents of the rural areas but still the rate of participation of locals in rural tourism is low (Lu Chong, et al., 2018), which generate the need for the study. Assessing individuals' perspectives on rural tourism can provide valuable information regarding possible impediments or difficulties that could impede their participation, thereby enabling the formulation of efficacious approaches to resolve these concerns. Economic, Socio-cultural and environmental effects represents perception of the residents. Impact of Sense of Place is also considered for determining the willingness of the residents to participate in rural tourism. Place identity and Place attachment are the dimensions of the sense of place. The research framework was developed with the help of previous literature on the basis of Hierarchy of effects and Social representation theory. There are studies available which used social representation theory for determining the willingness of the residents in supporting rural tourism (Li, B., Mi, Z., & Zhang, Z., 2020). The purpose of the paper is to determine the relationship of perception of the residents of the rural areas and willingness to participate in rural tourism. Impact of sense of place on the relationship of the perception of the residents and willingness to participate is also considered in the paper. Sample size of this study is 190 and data is collected from the district kushinagar, and Sitapur, Uttar Pradesh, India. The respondents of this study are owner of home stay, home room provided through Airbnb, owner of ashram which are provided stay in their ashram. Questionnaire is prepared and items are adapted from previous studies. The questionnaire has statements related to six constructs. All statements of the construct were taken from established scale of previous studies. Statements are modified to correlate it in the context of rural tourism. Seven point Likert scale is utilized for collecting responses for the study where 1 is considered as strongly disagree and 7 is considered as strongly agree. Both mode such as “face to face” (offline mode) and Google form (online mode) are utilized for collecting responses. Commencement of survey was started on January 2024 and it took 2 months in complete collection of the data. Google form was shared to the respondents whose contact details available over web or online portal. Questionnaire was distributed to kushinagar and villages mentioned above. Only 94 responses were collected from google form and 109 responses were collected through face to face interaction. Total 203 responses were collected and out of that 13 responses had not filled completely so 13 responses were removed. The sample size of this study is 190. For accurate sample size determination, G* power version 3.1.9.7 is used. G* power point out that sample size for this study should be 132. The sample size of this study is 190 which are more than 132 which fulfill the basic requirement suggested by G* power software. Data analysis was done with the help of smart PLS 4 version. Variance based structural equation modeling was utilized for determining the relationship between the variables (Hair et al. 2019). PLS-SEM incorporates greater versatility and facilitates predictive power of the target variable, like willingness to participate in rural tourism in this study (Hair et al. 2014). The results indicated that perception of the residents were significantly crucial for determining the development of the rural tourism. This paper also identifies serial mediation through dimensions of SOP on the relationship of perception of the residents and willingness to participate. Place identity and place attachment are the significant mediators in the relationship between perception of the residents and willingness to participate. If rural tourism is sustainable for a residents of the rural areas, and give better opportunities in terms of job creation and elevating the standard of living then residents will also show their supports towards the development of rural tourism. This study determined the residents’ perception about the impact of rural tourism on willingness to participate in rural tourism and also incorporate the effect of Sense of place (SoP) on willingness of the residents to participate in rural tourism. There are previous studies available which concentrate on SoP, but this study also found the mediating role of place identity (PI) in perception of the residents and willingness to participate, and mediating role of place attachment (PA) in perception of the residents and willingness to participate. This study also determined and validates the mediating role of place attachment (PA) in place identity (PI) and willingness to participate. The result also indicates the serial mediation where place identity and place attachment acted as mediators and significantly mediates the relationship between perception of the residents of impact of rural tourism and willingness to participate. The

findings of this study give the direction to the tourism service provider and helps in forming strategies for strengthening the development of rural tourism by incorporating the support of residents.

296

Submission Number: **296**	Track: **BSIM (NSE-CBS)**
Paper Title: Who Consumes Fake news? A Game of Misinformation and Consumer Attributes	
Authors: Rishab Lodh and Oindrila Dey	
Abstract: The paper explores how individualistic traits may drive misinformation consumption. Varying the degree of individualistic attributes like awareness, ideological sensitivity and dividing the population into categories, we obtain that fake news propagates as consumers cannot segregate signals from true and fake news, leading to pooling equilibrium. Using Spence's (1978) framework, we also explore how other attributes, like informational utility and fear of missing out (FOMO), influence the spread of fake news. Unlike the extant literature, we find a unique awareness threshold, beyond which stringency in pooling equilibrium through increased awareness may ease with the rise in FOMO.	

317

Submission Number: **317**	Track: **BSIM (NSE-CBS)**
Paper Title: Do Emotions Influence One's Perception of Risk? A Cumulative Prospect Theory Experiment	
Authors: Arz Taneja, Sakshi Singh and Avantika Rajaram	
Abstract: Emotions have played a pivotal role throughout human evolution and have significant effects on the decision making process. Our study investigates the impact of emotions on risk and loss aversion by employing cumulative prospect theory (CPT) through a lottery game. We elicit risk and loss aversion parameters for undergraduate students and adults in India, examining the effects of both positive (happiness) and negative (sadness) emotions in students, while focusing solely on negative (sadness) emotions in adults. Our findings reveal that sadness amplifies risk aversion, with higher intensity augmenting this effect. However, as individuals mature and age, this effect tends to diminish. Furthermore, happiness is also observed to be correlated with increased risk aversion. This is instrumental in the field of marketing as it aids tailoring of strategies that align with the emotional states of specific target audiences, thereby enhancing engagement and effectiveness. This study also explores various demographic variables to provide a comprehensive understanding of the characteristics that influence decision-making processes. In both students and adults, females, for instance, are found to be more risk-averse than their male counterparts. Additionally, we assess the influence of monetary compensation on students' risk and loss aversion behaviours. Providing actual, as opposed to hypothetical, monetary incentives increased risk aversion in students but had no impact on loss aversion.	

383

Submission Number: **383**	Track: **BSIM (NSE-CBS)**
Paper Title: Employee Silence or Everyday Sadism: Understanding voice behavior in organizations	
Authors: Pranjal Tripathi and Anindo Bhattacharjee	
Abstract: Everyday sadists, who feed on other's pain, are the evil masters of the dark personality kingdom. They can be among us! a troller, a mocker, a bully, a cruel commentator. They are eager to hurt you! They want you to suffer for their pleasure! Their realm of predation is not limited to personal or social spaces; it also extends to the workplace, where their prey suffer for their pleasure. They are smarter, callous, vicious, manipulative. Can their incivility silence other employees in the workplace? This paper aims to understand this factor, although existing literature suggests an indirect relation between everyday sadism and employee silence. Kathy Charmaz's Constructivist Grounded Theory is employed to develop empirical understanding. Participants are selected from the service sector, and semi-structured interviews were conducted to get thick	

primary data. Triangulation method enhances credibility, reliability, and transferability of research. Memo writing maintains reflexivity, collectively ensuring robustness of the research.

412

Submission Number: **412**	Track: **BSIM (NSE-CBS)**
Paper Title: Subliminal Faces and Consumer Decisions: Analysing the Impact of subliminally presented human and animal faces on Consumers' Willingness to Pay and Decision-Making Time.	
Authors: Rabia Abhay and Sibin Mathew Nesin	

Abstract: Introduction: In Today's era, Consumerism is something that has spread its arms across the world and is strengthening its influence on a daily basis. Marketing is one of the pivotal tools which helps consumerism grow. Marketing can be summarized as the activities undertaken to direct the flow of goods from its producers to potential customers. The main motive behind any iteration of marketing is to influence the consumer decision-making process in Favour of the marketed product. Many strategies are utilized by marketers to achieve this goal. Advertising is one such strategy. It is used in marketing campaigns to enhance the efficiency of the communication process through which the potential customer is introduced to the targeted product for sale. The usage of animals in the field of marketing, particularly in print advertisements goes back over a century. Humans owing to their long association with animals are bonded cognitively to them in inseparable ways and their minds are unconsciously wired to react in certain ways in relation to animals. 'Biophilia Hypothesis' states that human beings fulfil their biological need to relate to the wild by associating themselves with animals. 95% of all decision-making process is considered to be unconscious and automatic. Owing to this change in trend, Subliminal marketing is one of the emerging fields of marketing. The phenomenon of the 'mere-exposure effect' is often used to explain the influence of unconscious stimulus on consumer behaviour. It states that repeated or single exposure to a stimulus even in the absence of awareness results in the formation of a positive affective reaction to the stimulus. Faces are an important factor that influences human social interactions as they act as a universally understandable mode of conveying emotions. Humans start developing below-conscious level face perception as early as 12-15 months of their development. Another study done by Jessen & Grossmann (2015) sets this limit further down to 7 months as the time when babies can discriminate fearful faces even if it is presented subliminally. Aim: The present study attempts to study the influence of subliminally presented human and animal faces on a consumer's willingness to pay (WTP) for a product and the time taken for them to form decisions. MATERIALS AND METHODS Participants Potential participants were screened for any underlying ailments such as ADHD or uncorrected vision problems which may compromise the effectiveness of the study. A total of 150 participants took part in the study (39 male) with a mean age of 24.93 years. Tools The tasks were prepared in 'OpenSesame'. It is a graphical experiment builder for the social sciences. OpenSesame is free, open-source, and cross-platform which has been used for similar studies. Stimuli Products The products which were used in the study were gender-neutral in nature (Not have societal/cognitive inclinations towards male or female stereotypes e.g., lipstick).14 gender neutral projects were selected in order for the participants to assess how much they will be willing to pay for buying them. Subliminal stimuli Two types of subliminal stimuli were chosen. The smiling faces of a human and a puppy were chosen to be subliminally presented to the participants before they decided on what price range where they were willing to pay in order to buy the shown product. Experimental design The study adopted a 2 (Human face Vs Puppy Face) X 2 (Willingness to pay Vs Decision making time) between-subjects design. The participants were divided into 3 groups (2 experimental (Human Vs Puppy) and 1 control group) comprising 50 participants each. Procedure Participants were divided equally (50 each) into three groups. Groups 1 and 2 were the experimental groups and Group 3 acted as the control group. Participants in group 1 were subjected to a computerised task created in 'Opensesame' platform. Participants were informed that they will be shown an object for a limited amount of time (2 seconds) and then they would have to select the range of prices which they were willing to pay in order to buy the shown product. Unbeknownst to them, they were subliminally exposed to a smiling human face before they were shown the product. The task began with a fixation dot shown in the centre of the screen for 250ms. It was followed by the subliminal stimulus of a smiling human face for the duration of 16ms. The subliminal stimulus was masked between a forward and backward mask of 150ms each. After that came the product which had to be evaluated by the participant and it was shown for the duration of 2 seconds. Post that, a slide containing multiple price ranges was shown. The participants had to select a suitable price range amongst the list, which they were willing to pay in order to buy the earlier shown product. the selected price range and the amount of time taken to select the price range were recorded. The same procedure was followed for the participants in group 2, with one change. In the case of Group 2, participants were subliminally exposed to a smiling puppy face instead of a human face keeping the rest of the process the same as in Group 1. Group 3 acted as the control group wherein the participants were not exposed subliminally to any stimulus. Results: Significant differences were seen in

decision-making time (P=0.024 (Human face Vs control) and P =0.010 (Puppy face Vs control)) and willingness to pay (P =0.004) in products 9 and 1 respectively.

424

Submission Number: **424**	Track: **BSIM (NSE-CBS)**
Paper Title: Financial Somatics: A Multidisciplinary Approach to Understanding Financial Decision-Making Through the Lens of Dance Movement Therapy (Explores the theoretical underpinnings of DMT and finance)	
Authors: Swetha N and Rajiv Kalebar	

Abstract: The interplay between financial decision-making and bodily experiences has gained attention as traditional economic models increasingly recognize the impact of emotions and physiological states. This paper explores "financial somatics," a multidisciplinary concept integrating body awareness and financial behaviors through Dance Movement Therapy (DMT). The research investigates how DMT, with its focus on embodied experience and emotional regulation, can influence financial decision-making. Using a mixed-methods approach, the study evaluates the effects of an eight-week DMT intervention on body awareness, stress, and financial decision-making among 30 participants. Quantitative results reveal significant improvements in body awareness and stress reduction post-intervention, while the impact on financial decision-making was not statistically significant in this sample. Regression analysis indicates a strong association between increased body awareness and improved financial decision-making skills. These findings suggest that while DMT shows promise in enhancing body awareness and managing stress, its direct effect on financial decision-making warrants further investigation. This study contributes to the emerging field of financial somatics by highlighting the potential of DMT in promoting holistic financial well-being.

428

Submission Number: **428**	Track: **BSIM (NSE-CBS)**
Paper Title: Pigeons, Pigs, Peacocks, and the Post Office: A Multimodal Economic History Discourse Analysis of Small Savings Ads as Nudges in British India (1860-1947)	
Authors: Tanya Ahuja	

Abstract: The Second Industrial Revolution (1870-1914), ensuing from technological and scientific transformations, is believed to have led to ‘shrinking of distances,’ paving a way for the ‘Communications Revolution.’ The objective of this interdisciplinary study is to answer the question: How did the British government use ‘nudges’ through small savings advertisements to align individual economic behaviour with its larger macro-economic public policy? This study, set in the socio-politico-economic and technological context of British India (1860-1947), explores the confluence of Behavioural Economics and Economic History. It reconciles them through the relatively novel theorisation of ‘nudges’ and libertarian paternalism, to argue that nudges were, in practicality, used as public policy instruments much before the modern western economic movement or New Public Management realisations. Moored around an interdisciplinary conceptual framework of Public Service Advertisements (PSAs), small saving schemes and Post Office Savings Banks (POSB), it highlights the evolution and role of the Post Office not only in facilitating communication (pigeon) but also in service provision as a financial institution (piggy-bank) and a promoter of financial inclusion (peacock). Using a multimodal discourse analysis methodology and the Grammar of Visual Design (GVD) framework, the study analyses archival data between 1860 and 1947, viz. Post Office small savings schemes’ display advertisements from ProQuest Times of India newspaper database. The findings of the study thematically elaborate the subtle semiotic and semantic elements of the advertisements, and the social norms around middle-class lifestyles that affect financial decisions. The study points future research towards further exploring the implications of technological multimodality for public policy advertisements through spatial and temporal comparisons. The study makes a theoretical contribution by proposing a novel methodological theorisation which the author calls the “Nine-Cs Approach” (NCA) to analysing multimodal economic discourses.

452

Submission Number: **452**	Track: **BSIM (NSE-CBS)**

Paper Title: AI-Generated Greenwashing: How Gen-AI Content Negatively Impacts Green Influencers

Authors: Priya Narayanan

Abstract: Green influencers – social media influencers who share content related to pro-environmental topics – are rising in popularity due to growth in consumers' sustainability concerns. Concurrently, there is rapid rise in the use of generative artificial intelligence (gen-AI) for content creation by influencers. This research posits and examines the potential negative impact of use of gen-AI on green influencers. Across two scenario-based experiments in the context of green influencers on Instagram, we show that green influencers' use of AI-generated (vs. real) content results in higher greenwashing perceptions; this effect arises because of green influencers who use gen-AI are perceived as using less effort, being less sincere, and worthy of lower levels of green trust. We also highlight the negative downstream consequences of greenwashing perceptions on consumers liking and sharing the post, and continuing to follow the influencer. This research contributes to better understanding of how consumers respond to use of AI for content generation, particularly in a green context, with implications for green influencers and green marketing.

510

Submission Number: **510**	Track: **BSIM (NSE-CBS)**

Paper Title: Invisible walls: gender identity in online and offline learning environments Online versus offline classes: When does identity threat hit worse?

Authors: Arindra Nath Mishra and Shayani Sengupta

Abstract: In this study, we explored withdrawal behavior as a consequence of gender identity threat in the context of management education. Borrowing from the informational model of learned helplessness, we propose learned helplessness as a mediator in the above association. We identified the need for affiliation and mattering as moderators in the association between identity threat and withdrawal behavior. We tested our model on a sample of 81 students in a time-lagged design. The results indicated that learned helplessness mediates the relationship between identity threat and withdrawal behavior. We found support for the moderating role of mattering but did not find support for the moderating impact of need for affiliation. We have discussed the implications, contributions and limitations of the study.

545

Submission Number: **545**	Track: **BSIM (NSE-CBS)**

Paper Title: Salience of 'us versus them' in coloured jersey - ODI cricket as a natural experiment

Authors: Subrato Banerjee, Vipra Jain and Priyanka Kothari

Abstract: We examine if the salience of 'us-versus-them' affects cricket players' performance using the One Day International (ODI) cricket matches. Before 1979, ODI matches were exclusively played in white jerseys - each player would wear a white jersey to the game regardless of the team he represented. After 2000 it was decided that each team would be represented by a unique coloured jersey - each player would wear a coloured jersey according to the team he represented. Thus, in the intervening period of 1979-2000, ODI matches were played in both white and coloured jerseys, which makes ODI cricket the only team-sport suitable to address our research question. We look at each player who played in this period (in both the 'coloured' and 'white' jerseys) and show that players performed differently when their opponents resembled themselves (when they wore the same white jersey), than they did if their opponents looked different (when they wore a jersey of a different colour). We observe that bowlers become more aggressive and batters become more cautious when opponents are represented by different colours. We see this as a departure from rationality because players should give their best regardless of what jersey colour the opponents wear.

567

Submission Number: **567** | Track: **BSIM (NSE-CBS)**

Paper Title: WHEN DOES SUSTAINABLE PACKAGING NOT WORK? CONSUMER INFERENCES FOR CORE AND PERIPHERAL CUES

Authors: Kashish Gupta

Abstract: Businesses make considerable use of sustainable packaging to attract customers. Numerous businesses have benefited from this form of packaging over the years. This study examined the effect of packaging claims on brand image, purchase intention and brand happiness. A 2 (Packaging: Sustainable and non-sustainable) by 3 (cue: core v/s peripheral v/s both)by 2 (product: hedonic v/s utilitarian) factorial experimental study was conducted to test the hypotheses. On the other hand, are sustainable packaging strategies effective across all product categories? The current study indicates that sustainable packaging is not always successful and is most effective when specific cues (core vs peripheral vs core plus peripheral) and product categories (hedonic vs utilitarian) are employed. The current study employed an experimental research design to investigate the research questions. Finally, implications for theory and management are discussed.

594

Submission Number: **594** | Track: **BSIM (NSE-CBS)**

Paper Title: Impact of HR analytics implementation on firm performance in the retail sector: The mediating effect of organisational agility, customer satisfaction, and customer agility

Authors: Rubvita Chadha Rajput and Rakesh Naik Vadithe

Abstract: The retail industry is undergoing a significant transformation driven by technologicaladvancements. This leads to a growing need for retailers to identify the key skills essential for future growth and assess the readiness of their workforce to tackle forthcoming challenges. While it is acknowledged that human resource (HR) analytics as a technology can automate various activities within the retail sector. There is a critical imperative to scrutinise the roles within the store environment and evaluate their contribution towards organisational value. However, the relationship between HR analytics implementation and firm performance in the retail sector remains unclear. This study explores how HR analytics implementation in Indian retail impacts firm performance, by investigating the mediating roles of organisational agility, customer satisfaction, and customer agility.Drawing upon the dynamic capability view (DCV), data was collected from 360 retail sector managers in India. Partial least squares structural equation modeling (PLS-SEM) was analyzed to test the proposed model and hypotheses. Results reveal a significant direct relationship between HR analytics implementation and organisational agility, customer satisfaction, customer agility, and firm performance. Additionally, organizational agility, customer satisfaction, and customer agility were identified as partial mediators in the relationship between HR analytics implementation and firm performance. These findings emphasise the strategic value of HR analytics in boosting organisational effectiveness and competitive advantage for the Indian retail sector. The study contributes to both theory and practice, informing decision makers and organisational leaders on how to leverage HR analytics to drive performance in the retail sector.

627

Submission Number: **627** | Track: **BSIM (NSE-CBS)**

Paper Title: Impact of Concurrent Competitions on Participant Efforts in Crowdsourcing Platforms

Authors: Dhruven Zala, Swanand Deodhar and Samrat Gupta

Abstract: Crowdsourcing platforms host numerous simultaneous contests, offering participants a diverse range of problems to solve. This variety is expected to attract more contestants, following traditional network effect logic. However, a concern arises with this abundance of choices: contestants' resources get "spread thin," due to the resource allocation process, potentially leading to decreased participation in individual contests. Therefore, we investigate how contestant efforts are influenced by concurrent contests on crowdsourcing platforms. In doing so, we extend the literature on crowdsourcing contests and effort allocation in crowd-based platforms, focusing on concurrent contests and their implications for the platform, participants, and solution seekers. To empirically examine this, we utilize a panel dataset from Kaggle competitions, revealing that such concurrency reduces contestant efforts across all contests. However, the effect varies based on the design

elements of rewards and the information richness of the contest description. Prior studies have presented conflicting views on the effects of these factors, suggesting both positive and negative impacts. Consequently, we empirically examine these factors and offer recommendations for contest organizers and platform designers. These findings are highly relevant for the crowdsourcing literature, platform organizers, and solution seekers aiming to enhance engagement in online contests.

656

Submission Number: **656**	Track: **BSIM (NSE-CBS)**
Paper Title: Setting fixed deposit rates just right: Evidence from cognitive sciences	
Authors: Anshul Punia and Manish Kumar Singh	
Abstract: The `Fixed deposit' (FD) is a financial instrument where a person can deposit a lump-sum amount of money for a fixed period at a predetermined interest rate. It is the most important financial asset class in Indian household portfolios (around 30% of total financial assets) and the most significant component of commercial banks' liabilities (roughly 50%). Since FDs are also the most significant component of banks' expenditures, with an average maturity of less than three years, banks must keep the cost under control while elongating the average maturity of FDs. In this paper, using evidence from cognitive sciences, we try to understand how a bank can move its existing depositors to a higher maturity while maintaining their FD rates around the same level. Since cognitive sciences tell us how we perceive the magnitude and differences between two numbers, we use round numbers, distance, and left-digit effect. In an experimental setup with simplified FD rate quotes, we show that banks can move depositors to higher maturities with the right mix of distance, round numbers and left digits in their FD rate quotes. We also build the framework to compare and contrast various banks' current FD rate quotes and check their effectiveness in elongating maturities.	

801

Submission Number: **801**	Track: **BSIM (NSE-CBS)**
Paper Title: Using Entertainment to Change Norms: Educating Mothers-in-Law in India on the X&Y Chromosomes	
Authors: Pallavi Vyas and Aditi Upadhyay	
Abstract: We attempt to change beliefs and attitudes that hold women responsible for giving birth to a son. In this randomized control trial study We educate mothers-in-law using films about the X&Y chromosomes in the city of Ahmedabad in India. The two treatment groups see an explanation of the X\&Y chromosomes but the control arm sees the film without the educational content. We find as a result of our intervention 33% more women in the treatment groups know about the science that determines the sex of the child. As a result of the knowledge, we find treatment groups more likely to use scientific theory in the explanation of their beliefs. Also, fewer women of both treatment groups believed that consulting a religious priest or engaging in practices after pregnancy was necessary in order to give birth to a son. In addition, mothers-in-law of the treatment groups were more likely to think that the daughter-in-law was justified in exercising agency to pursue her career and protest and less likely to think they should engage in housework just after pregnancy. Our results therefore indicate a change in mindset regarding bargaining power and intra-household allocation of labor with respect to the daughters-in-law.	

913

Submission Number: **913**	Track: **BSIM (NSE-CBS)**
Paper Title: Monopoly Pricing under Heterogeneous Social Concerns and Network Externality: The Case of Vaccines	
Authors: Sumana Kundu	
Abstract: This paper analyzes implications of individuals' social concern, in the presence of network externality, on monopolist's optimal strategy in vaccine markets. It shows that, if the vaccine effectiveness is more (less) than a critical level, the equilibrium vaccine coverage is higher (lower) in a society having higher social concern on an average. However, if individuals sufficiently care about their personal benefit, higher degree of heterogeneity in terms of social concern results in	

lower vaccine coverage. Interestingly, stronger externality effect need not necessarily results in a lower vaccine coverage. The socially optimal vaccine-subsidy depends on the distribution of individual's social concern.

934

Submission Number: **934**	Track: **BSIM (NSE-CBS)**

Paper Title: Leveraging Influencers to Counteract Cancel Culture: A Comprehensive Framework for Brand Crisis Management

Authors: Divya Mishra and Dr. Nidhi Maheshwari

Abstract: In the digital age, the role of influencers in managing brand crises has become increasingly significant, particularly within the context of cancel culture. This research introduces and validates the Influencer Selection and Emotional Alignment Grid (ISEAG) framework, which categorizes influencers based on their emotional distance from neutrality and alignment with brand values. Using a mixed-methods approach, the study combines quantitative survey data from 150 marketing professionals and qualitative insights from 20 industry experts to evaluate the effectiveness of the ISEAG framework. The findings reveal that influencers with low emotional distance and high trait alignment are most effective in mitigating negative public sentiment and restoring brand reputation during crises. The study also provides empirical evidence supporting the importance of emotional neutrality and value alignment in influencer selection. Practical implications for brands include the prioritization of influencers who exhibit these characteristics, particularly in high-stakes scenarios such as cancel culture. The research contributes to the theoretical understanding of emotional alignment and influencer marketing, offering a novel framework for crisis management. However, the study acknowledges limitations related to sample size and the cross-sectional nature of the research, suggesting avenues for future exploration.

970

Submission Number: **970**	Track: **BSIM (NSE-CBS)**

Paper Title: Human vs AI-designed advertisement: Which is preferred?

Authors: Manvi Jain, Yash Chakarvarty and Arvind Sahay

Abstract: Introduction: In the rapidly evolving landscape of creating human-centric design/adverts, the debate between human creativity and Artificial Intelligence (AI), has sparked interest these days. With the growing integration of AI in the applied field, it's essential to explore the capabilities and limitations of print adverts generated by Humans & AI. The two advert categories are envisaged based on the differences in outcomes, processes, and experiences. Prior research studies suggest that AI plays a major role in revolutionizing the marketing industry. Several articles indicate why and how AI can be employed in marketing (Deveau et al., 2023; Dunarea de Jos; Ford et al., 2023) with due ethical concerns. Researchers are interested in how consumers perceive AI-generated content (Arango et al., 2023; Jeon & Lee, 2020). A similar query is the theme of the present study based on a survey and neural methods to study how consumers evaluate human-generated and AI-generated advertisements differently. Methods: Behavioral Study: The AI-design adverts are created by the experimenter using AI Large Language Models. The process involves converting static ads extracted from the digital pages into text using an AI Image-to-text tool fed to a Text-to-Image tool. The Independent Variable used in this study were AI & Human designed Ads and the Dependent Variable was Preference in the first block and Identification in the second study block. The behavioral survey was performed in two blocks, which starts with Preference block (PB) and then Identification block (IB) in a sequential pattern for all the participants. The study was conducted between three groups for different priming conditions: No-priming (N=68): "task instructions did not mention the designer of the ads" First-priming (N=49): "task instructions showed a human ad labeled 'Made by AI'" Second-priming (N=51): "task instructions showed an AI ad labeled 'Made by Human'" EEG-ERP Study (N=19): This part of the study uses Electroencephalography (EEG) to measure neural correlates of evaluation of each ad type. The EEG-ERP study is a within-subject study design that includes the presentation of a total of 96 advertisements (24 AI + 24 Human) with a designer label 'AI' or 'Human' for 2s each. On the next screen, participants responded whether they liked or disliked the ad. This screen appears for 5s until response, followed by 0.5s blank screen. Results: The Behavioral study results showed that the AI-designed ads were more preferred than human-designed ads in all the three conditions viz. No-priming, First-priming, and Second-priming. The EEG-ERP study results show that human-designed ads are preferred (component N2) over AI-designed ads (Telpaz, et al., 2015, Goto, et al., 2017). This is observed when the human-designed ad is labeled as AI-designed and compared with AI ads labeled as both AI-designed and human-designed. In another instance, human-designed ads labeled as human-designed are preferred over AI ads labeled as human-designed. This indicates that there is an automatic preference for human-designed ads because of underlying features of the design unaffected by the label.

However, another ERP component which is an indicator of Affect (Late positive potential) (Goto et al., 2019) is found to be significantly more positive for human ads labeled as AI-designed than human ads labeled as human-designed. This shows the effect on the emotions elicited by human-designed ads as affected by the label 'AI', indicating a possible bias towards AI in consumer's minds. Therefore, the results of this study support the idea of AI capable of generating human-centric designs/adverts.

1002

Submission Number: **1002**	Track: **BSIM (NSE-CBS)**

Paper Title: A STUDY OF TEMPORAL ORIENTATION OF INDIAN FIRMS

Authors: Sridhar Y V and Dhirendra Mani Shukla

Abstract: Short-termism has been an active topic of debate over the last 2 decades, especially in the wake of the Great Recession and Banking Failures. While most studies have tried to find explanations for short-term temporal orientations of managers or firms, we attempt to establish that short-termism is more fundamental and inherent to how humans and firms are inclined to behave, and therefore, an ability to assess or measure their tendency for short-termism in relation to their environment would help firms consciously build the desired systems and frameworks to proactively mitigate risk from suboptimal temporal orientations of their strategic priorities. We have leveraged Implied Discount Rate (IDR) as a comparative measure for temporal orientation of a firm vis-à-vis those of other firms and of itself over time. We studied IDR's of publicly listed Indian firms over a 20 year time period, and provided evidence of influence of firm ownership and size on temporal orientation of firms as captured by IDR.

1072

Submission Number: **1072**	Track: **BSIM (NSE-CBS)**

Paper Title: Breaking the Bias : Assessing Nudge Effectiveness in Overcoming Decision Making prejudices

Authors: Pillai Rjs Arun, Rabia Abhay, Sibin Mathew Nesin and Sangeeta Mehrolia

Abstract: The rise of E-commerce represents a pivotal shift in the way organizations operate and sees it as a channel to boost sales and increase market visibility, Hence, understanding and influencing their consumer's decision-making processes in digital environments is paramount. The Nudge Theory, a concept rooted in behavioral economics, has been previously used by marketers to subtly guide user's choices without limiting freedom. This research work explores the application of nudging to e-commerce or any digital environment involving consumer choices, investigating its efficacy in mitigating cognitive biases that affect online purchasing decisions. We employed a 2 (nudge vs. control) x 2 (product choice vs. response time) within-group experimental design to examine how different types of nudges influence e-commerce choice outcomes. Our findings reveal that certain nudges, particularly those addressing status quo bias, can exert a stronger influence on decision-making than central tendency bias in online shopping contexts. These results have significant implications for digital marketing strategies, suggesting that carefully designed nudges can effectively guide consumer choices on e-commerce platforms by overcoming ingrained decision-making prejudices. This research also provides practical insights for marketers seeking to optimize their influence on consumer behavior through subtle interventions in e-commerce settings.

1142

Submission Number: **1142**	Track: **BSIM (NSE-CBS)**

Paper Title: Playful Work Design Leads to In-role Performance : A Diary Study

Authors: Sree Charan M and Murugan Pattusamy

Abstract: Introduction In modern work environments, employees frequently want to enhance the level of interest and satisfaction in their work without making fundamental changes to the basic framework of their positions. Playful Work Design (PWD) encompasses the proactive conduct of employees who deliberately create settings in their daily activities to increase enjoyment and provide difficulties. Unlike conventional methods of job redesign, which usually entail hierarchical alterations, PWD is driven by employees and centers on improving the work experience rather than the job itself. PWD is based on Flow

Theory, a psychological paradigm that explains a state of profound engagement where individuals are completely immersed in an activity, encountering a combination of difficulty and competence that leads to intrinsic motivation. Flow, as defined by Mihaly Csikszentmihalyi, is characterized by a sense of pleasure in work, complete immersion in the task, and internal drive. These aspects are believed to be heightened on days when employees participate in playful work design. This study examines the correlation between Playful Work Design and intrinsic motivation. It also evaluates the impact of this correlation on daily in-role performance, specifically in connection to creativity. The study also investigates how Perceived Organizational Support (POS), which refers to employees&#39; beliefs of how much their employer values their contributions and cares about their well-being, influences the connection between PWD and intrinsic motivation. Flow theory offers a persuasive perspective for comprehending the impact of PWD on employees&#39; day-to-day work encounters. Flow is commonly linked to elevated levels of engagement, motivation, and satisfaction. When employees achieve a flow state, they become completely absorbed in their tasks, often losing awareness of time and feeling a profound sense of satisfaction. This state fosters creativity and high-level performance by blending the pleasure of work with the cognitive involvement needed for intricate problem-solving. PWD aims to enhance productivity by incorporating elements of play into the work process, hence increasing the enjoyment and level of challenge in jobs. This lighthearted approach to work does not involve avoiding duties, but rather involves envisioning activities in a manner that enhances their level of interest. For example, an employee could establish a time-bound challenge to accomplish a regular assignment or incorporate an innovative variation into a typical method. These voluntary adjustments can assist in preserving or even improving motivation, resulting in superior performance within one&#39;s assigned responsibilities. The study postulates that POS plays a pivotal role in this dynamic. Employees who sense a significant amount of support from their organization are more likely to feel empowered and confident in participating in PWD, as they know that their organization values and supports these activities. On the other hand, employees who have low levels of perceived organizational support (POS) may be less inclined to participate in playful work design (PWD) because they are afraid of facing negative consequences or because they do not receive enough encouragement. This might diminish the good impact of PWD on their intrinsic motivation and performance. Methodology In order to examine these hypotheses, a daily diary study was undertaken, which included 64 participants who completed both baseline and daily questionnaires for five consecutive working days. The baseline questionnaire collected demographic data and evaluated overall inclinations towards flow and PWD. The daily surveys recorded changes in PWD, flow experiences, POS, and in-role performance, with a specific emphasis on creativity. The daily diary technique was selected due to its ability to analyze fluctuations among individuals over time, offering a detailed comprehension of how PWD affects daily work experiences and results. The data were evaluated using multilevel analysis, a statistical technique that considers the hierarchical structure of diary data (days nested within individuals). This approach allows the researchers to separate the effects at the daily level from the effects between individuals. Discussion The results of this study carry significant consequences both in terms of theory and practical application. The study expands upon flow theory by showing that PWD might act as a trigger for flow experiences in the workplace. By intentionally incorporating play into their job duties, individuals can establish an environment that promotes profound involvement and innate drive, resulting in enhanced performance. This highlights the importance of analyzing work design from a perspective that prioritizes the requirements and preferences of employees. The focus is on how individuals can modify their work experiences to better align with their need for satisfaction and stimulation. The study also emphasizes the crucial.

1173

Submission Number: **1173**	Track: **BSIM (NSE-CBS)**
Paper Title: An experimental study of bidder and creditor behavior in Bankruptcy Auctions	
Authors: Rajesh Kumar Acha	

Abstract: In the Indian bankruptcy resolution framework, insolvent firms are auctioned as a going concern. The bidders submit resolution plans which includes the bid as well as indicate how the bid is to be distributed amongst the claimants. The creditors' committee decides which resolution plan should be approved through a voting process. Conflicts of interest arise between financial creditors and operational creditors because only the financial creditors are included in the creditors' committee while the operational creditors do not have any say in the resolution process. The financial creditors assume the position of de facto auctioneer. The bidders may allocate entire bid to the financial creditors. This can lead to efficiency and fairness concerns for the policymakers and other stakeholders. In this study, we investigate the behavior of bidders and creditors in the resolution process through a laboratory experiment. We also investigate if the bidding behavior changes if the creditors could distribute the winning bid among them instead of the bidder allocating the bid between the creditors. Insolvency resolution problem can be thought of as a game between financial creditors, operational creditors and potential bidders who participate in the auction. We designed the experimental setting as a first-price sealed bid cash auction, considering one financial creditor and one operational creditor, and two bidders, a stylized game emulating the insolvency resolution process in India. We implemented the experimental game in a control group and two extended and modified versions in two treatment groups. The laboratory experiment was conducted at XLRI-Xavier School of Management, Jamshedpur, India. A total of 360 subjects participated, of which 161 were female. Potential subjects were sent email invitations to participate (voluntarily). Subjects were paid a show-up fee of INR 400 for participating in the experiment. In the game, the subjects earned an average of INR 393 (in addition to the show-up fee). The minimum and maximum earnings in the game were 0 and INR 1600. We find that the bidding behavior gets affected if the creditors could distribute the winning bid among them through bargaining, instead of the bidder allocating the bid between the creditors. Our experiment results show that self-interested financial creditors may accept a lower total bid if their claim recovery is higher. Bidders' concern for intention-based reciprocity by the operational creditors neither significantly affected the allocation for them nor affect the bid-to- value ratio in our experiment. Separation of the auction process from the claim distribution process affected the bidding behavior. This decoupling of the two processes makes the auction mechanism efficient As policymakers seek to continuously improve the law under IBC, our study makes a significant contribution by providing fresh insights into loopholes in the current design. The current mechanism is not only unfair to the operational creditors, but it might be inadequate to maximize claim recovery. We highlight the agency problem in the mechanism and have shown experimental evidence in support of the idea of separating asset deployment and asset distribution problems while resolving insolvency.

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

TRACK 06: TRANSPORTATION AND LOGISTICS

Track 06: Transportation and Logistics

41

Submission Number: **41**	Track: **CTL**
Paper Title: Performance Evaluation of Integrated Transportation System	
Authors: Anjum Mirza	
Abstract: The connection of more than one mode to a line haul in an urban area defines the city's multimodal transportation system. This study examines the performance of an integrated transportation system in Ahmedabad city of Gujarat, focusing on the metro as the primary means of public transit. In present times, the city has main 3 transit services i.e. AMTS, BRTS and Metro rail. The aim of this study is to identify and understand the present level of integration in the city and commuters' perception towards it. The study is divided into two phases. In the first phase, secondary data was collected such as acquisition of geographic data, route details etc. of Metro, AMTS & BRTS and spatial analysis was done using ArcGIS. A representative commuter survey, with 189 respondents, is drawn on the platform of various metro stations with the help of questionnaire in the second phase. The performance is evaluated based on travel time components (access, egress, transfer, waiting and main haul time) to calculate various performance indicators i.e., Passengers Waiting Index (PWI), Total Travel Ratio (TTR) and Interconnectivity Ratio (IR). The findings can be applied to public transportation catchment area planning. To improve efficiency and modal share, transportation systems should prioritize access, transfer, waiting, and egress times. Access and egress (together with waiting and transfer times) appear to be elements that have a greater impact on the effectiveness and performance of a multimodal transportation system, as inadequate distances are likely to diminish ridership.	

54

Submission Number: **54**	Track: **CTL**
Paper Title: Channel Choice and Impact of Platform's Valued Added Services on the Electric Vehicle Rental Market	
Authors: Sanchari Guha Niyogi, Srikanth Krishnaprasad and Arqum Mateen	
Abstract: In this study, we analyze the channel choice decisions of electric and gasoline vehicle (EV and GV) manufacturers in the on-demand vehicle rental industry. Although many rental platforms provide certain value-added services (VAS) to consumers such as roadside assistance, replacement vehicles, and free parking lots, some EV manufacturers tend to prefer a direct rental approach in the presence of GV manufacturers. This motivated us to understand the role of VAS in the channel selection strategy of a vehicle manufacturer. We use a game-theoretic model comprising a profit-maximizing platform, EV and GV manufacturers, and a population of utility-maximizing consumers to determine the channel selection strategy. We model the scenario as a three-stage game and our findings demonstrate that the platform is most profitable when it offers both EVs and GVs for rentals; while it is relatively better off when it offers EV (GV) rentals when the consumers' green sensitivity is high (low). We also find that there exists a win-win-win outcome when both manufacturers join a platform when the market comprises green-sensitive consumers (with or without range anxiety). However, when the market is only range anxious, we find a win-win-win outcome when the GV manufacturer partners with a platform and the EV manufacturer opts for direct rentals. We also show that direct rentals can never present a win-win-win outcome under any situation since it renders the platform worse off. We demonstrate that a platform may not necessarily allocate VAS towards range anxiety alleviation when the market is devoid of green sensitivity.	

96

Submission Number: **96**	Track: **CTL**
Paper Title: Low Carbon Green Supply Chain Routes for Sustainable Construction: A Case Study of Mumbai Region	
Authors: Rajshri Patil, and Priti Pandey	

Abstract: This study develops and analyzes a low-carbon green supply chain model for the construction industry in Mumbai, focusing on integrating sustainable construction techniques and materials to reduce the carbon footprint significantly. Using a mix of quantitative and qualitative data collection methods, including structured questionnaires, we gathered responses from 260 professionals within the Mumbai construction industry. The data analysis, performed with SPSS software, employed exploratory and confirmatory factor analysis to validate constructs and ensure the reliability of our findings. The study identifies key barriers to adopting green supply chain practices, including high initial costs of green technologies, a lack of awareness among stakeholders, and insufficient government incentives. Despite these challenges, the potential benefits such as lower long-term operational costs, enhanced compliance with global sustainability standards, and improved corporate image were also highlighted. Most respondents acknowledged the importance of sustainable practices but called for more supportive policies and financial incentives from the government. Practically, this research provides a detailed framework for implementing a low-carbon green supply chain in the construction sector, recommending strategies like adopting fuel-efficient vehicles, using renewable materials and optimizing logistics planning to minimize carbon emissions. Theoretically, it extends existing green supply chain management literature by contextualizing it within the Mumbai construction industry and testing supply chain theories in a real-world sustainability context, thus offering empirical evidence of these theories' effectiveness.

102

Submission Number: **102**	Track: **CTL**
Paper Title: Reverse Logistics as a lucrative Supply Chain Strategy	
Authors: Dr. Shaan R S	

Abstract: Concurrent manufacturing firms are in an apprehensive state due to two ardent factors, changing technologies coupled with cogent ideas, and effervescent demands by the customers. Efficacious actions needed to solve this disparaging situation to avoid doom in market share and mounting distress. Manufacturing firms are in search of astounding strategies which can eliminate waste in production without compromise in quality of the product. The idea of agile manufacturing and green concepts are getting momentum from the past two decades mainly because of sustainability reasons and increased corporate social responsibility. Exalted brands and their manufacturing philosophies were remanufactured for pretty better production concepts, which is equally beneficial to the respective organization and to the society. Inexorable run to capitalize in their respective business areas, firms are in an indefatigable run and for them insurmountable winning philosophy is incisive. The impuissant traditional supply chain, known as forward supply chain and its limitations were identified by major companies and brainy ideas were implemented to make it as resilient and more lucrative. Ubiquitous transformation is happening in this field, paying resilient attention to the reverse flow of activities to recuperate the value of used products is a striking business option, praised and accepted by the organizations universally. The new area of research which is highly profitable, the ‘Automotive Reverse Logistics’, and it is substantial in all respects because of abiding cognation with organizational benefits, sustainability initiatives and the creation of green environment. The automotive secondary market and consumers’ perception of used cars, have strong impact in today’s world because of the hefty importance of mobility sector. In this research work, it is attempted to find out the role of Reverse Logistics in the automotive industry and consumers perception towards used cars in Kerala. The relationship among variables such as Automotive Reverse Logistics, Consumers perception towards used cars and the moderating effect of Source of information were also studied. This propelled to frame a theoretical model to establish the role of Reverse Logistics in molding Consumers perception and purchase decision of used cars. This proposed model is tested using Structural Equation Modeling (SEM) using primary data. Research Gap: The competitions among the automotive players are incisive and brainy strategies are implemented to conquer buyers mind. Used car segment offer illimitable opportunities for automotive manufacturers, dealers and independent traders and they are aware of this unambiguous fact that Kerala’s used car market is raving in nature, lucid understanding of consumers’ mind will bring resilient results. The major dilemma in this segment exists here is to understand consumers’ judgment towards selecting a used car, role and source of information and its influence, and the purchase decision process. Objectives: To study the relationship between and Buyer Behaviour and Purchase Decision, To explore the positive relationship between Customer Satisfaction and Purchase Decision, To analyze the drivers and barriers in the used car segment in Kerala and to study the perceived quality traits among customers regarding used vehicles in Kerala. Research Design: The quality of research solely depends on the research design, which clearly states the set of methods, procedures used in data collection, measurement and analysis of data carried out to specify the research problem. The fixed structure design is theory driven in nature and the major purpose of this present study is to identify the role of automotive reverse logistics and consumers’ perception towards the selection of used cars in Kerala. The relationship among the selected variables such as, Consumers attitude towards used cars, quality information, customer satisfaction and purchase decision will be studied in this research work. The relationship between the listed variables will be presented with the help of a model and the study follows descriptive research mode.

Findings: There is relationship between and Buyer Behaviour and Purchase Decision. There is relationship between Customer Satisfaction and Purchase Decision There is significant positive relationship between Quality Information and Purchase Decision, Relationship between Buyer Behaviour and Purchase Decision is strengthening if the Source of Information is highly relevant and weakening if the relevance of Source of Information is very low. Hence SI's act as a moderator in the relationship between Purchase Decision and Buyer Behaviour. Limitations: The onerous process to conduct research may hit with some limitations and to overhaul the entire process of study the following difficulties were experienced by the researcher: This study manifest clearly on the business process at main stream automotive manufacturers outlets and consumers who opted purchase from these selected outlets were included in this study.

Key words: Supply Chain Strategy, Reverse Logistics, Automotive Reverse Logistics, Innovation, Consumers Perception, Used Cars.

198

Submission Number: **198**	Track: **CTL**

Paper Title: Optimizing Logistics Efficiency: A Comprehensive Approach through Milk Run Enhancement with FMEA and Intralogistics Precision using Kanban Cards

Authors: Aman Hadap

Abstract: This paper explores key strategies for enhancing logistics management in the fields of Milk Run operations and the optimization of Intralogistics Execution Systems. Leveraging methodologies such as Failure Modes and Effects Analysis (FMEA), this study addresses operational challenges and proposes innovative solutions to improve the efficiency, reliability, and adaptability of logistics processes within the supply chain. The first focus area involves the application of FMEA to analyze and optimize Milk Run operations. By identifying potential failure modes, assessing their impact on routing, resource utilization, and communication, the paper strategically prioritizes corrective actions. This initiative aims to streamline Milk Run processes, mitigate risks, and enhance overall reliability within the supply chain. The next segment of the paper centers on the implementation of an Intralogistics Execution System. Through the creation of Kanban Cards and a 2-bin System for Supermarket Inventory, the study aims to revolutionize material handling within confined operational spaces. By addressing challenges related to workflow design, integration, visibility, and resource utilization, the paper contributes to a more responsive and efficient material handling system. The findings and recommendations from each of these initiatives provide valuable insights into strategic approaches for overcoming challenges in logistics management. The comprehensive nature of the paper offers a holistic perspective on enhancing the agility and adaptability of logistics systems. As logistics management continues to evolve, the outcomes of this study serve as a foundation for future research and practical implementations in the pursuit of excellence in logistics operations.

201

Submission Number: **201**	Track: **CTL**

Paper Title: Designing a New Sustainable Product and Government Subsidies: The Role of Social Learning

Authors: Ranit Saha and Sumanta Basu

Abstract: Transportation and electric power sectors jointly account for more than 50% of the greenhouse gas emissions and petroleum consumption in the U.S. In this context, green technology products (for example, electric vehicles or EVs, solar panels) might offer a sustainable solution as they reduce harmful emissions and dependency on oil supplies. However, as these products are new and innovative, consumers may be a priori uncertain about product quality and its fit with their needs. In the case of EV adoption, consumers' apprehensions over the battery range, charging speed, and the availability of charging facilities emerge as crucial concerns. Depending on the terrain type, outdoor temperature, number of passengers, driver behavior, and speed, an EV driver may realize a different range from the published one, typically measured by a standard test procedure. Thus, a consumer reveals the actual range only after the usage. Similarly, in the case of solar panels, consumers are concerned about the impacts on the roof, product durability, and performance, which hinges on the latitude and weather conditions of a place as well. Due to the experiential nature of these new products, consumers resort to social learning, which may happen through online product reviews and word-of-mouth communications, and accordingly update their prior belief about the product quality, which, in turn, affects the adoption of these sustainable products. The government also boosts the adoption by providing financial incentives in the form of purchase subsidies to consumers or R&D subsidies to the manufacturer. Purchase subsidies make product purchases easier and boost post-consumption net utility as consumers pay a lower price. This, in turn, increases the number of early purchases in the market and the number of positive reviews and endorsements by consumers who purchase the product at an early stage. However, termination of such subsidies may lead to a steep fall in demand if the developed product quality and fit do not meet consumers' expectations. On the other hand, R&D subsidies help the manufacturer design and develop a superior-quality product, leading to more positive experiences and endorsements by early purchasers. Motivated by these policies, we seek to understand the following: (i) What is the impact of social learning on product quality and manufacturer's profit? (ii) What is the impact of different subsidy policies on product quality in the presence of social learning? (iii) How should the government design the subsidy policy to incentivize the adoption of sustainable products in the presence of social learning? We consider a stylized game-theoretic model where the government announces the subsidy policy (purchase or R&D subsidy and its amount), and the manufacturer invests in R&D to develop a new sustainable product before the first period. Consumers buy the product in both periods. In the first period, early adopters consider purchasing based on their prior belief about the product quality and, after purchase and use, communicate the quality based on their experiences. In the second period, followers learn the product quality through a rational Bayesian belief updating process and make the purchasing decision accordingly. Compared to the case where the product quality is known to all consumers, our analysis shows that in the presence of social learning, the manufacturer develops a product of superior quality only when the product price and its fit with consumers' needs and the prior belief about the product quality are high, and the R&D cost is low; otherwise, the developed product is of inferior quality. Moreover, the manufacturer invests more in R&D to develop a product of higher quality as the prior belief about the product quality increases up to a certain threshold and does not find it optimal to improve the quality further, even if consumers have a higher prior belief about the product quality. Interestingly, we find that a purchase subsidy policy can influence the quality decision of the manufacturer and improve it in the presence of consumers' social learning behavior. This is because of the manufacturer's incentive to invest more in R&D to convey a signal of superior product quality to the followers as the purchase subsidies boost early adoption. We find that a government aiming at maximizing the adoption might offer R&D subsidies when its budget is very low and purchase subsidies when the budget is high. However, for a moderate level of budget, R&D subsidies are more effective if the prior belief of the quality is high; otherwise, the government may opt for a purchase subsidy policy. Counter to intuition, we find that the government should offer R&D subsidies when the R&D cost is low and provide purchase subsidies otherwise. This implies that the government should only support the R&D programs of a firm with high R&D capabilities and know-how. Interestingly, we also find that, for a moderate budget, R&D subsidies facilitate more adoption when followers' market size is large. This is because a superior quality developed by a higher investment in R&D might be more effective in conveying a better signal to the followers.

205

Submission Number: **205**	Track: **CTL**

Paper Title: Network Revenue Management with Pooling

Authors: Sumit Kunnumkal, Asrar Ahmed and Milind Sohoni

Abstract: We consider a novel variant of the booking limit policy for network revenue management. In the traditional booking limit policy, the firm partitions its resource capacities by allocating a fixed amount of capacity to each product to limit its sale. We consider a setting where in addition to the partitioned limits, the firm keeps aside some capacity that is common to all the products. The firm's decision problem is to determine the optimal booking limits. We model the problem as a dynamic program and describe conditions under which a pure partitioned (where all capacity is dedicated) and a pure pooled (where all capacity is common) strategy are optimal. While the optimal pure partitioned strategy is easy to compute, the optimal hybrid allocation with partitioned and pooled capacities is computationally difficult due to the large state space of the dynamic program. To address this, we develop a new Lagrangian relaxation-based solution wherein we decompose the network problem by both product and resource. We then provide an efficient algorithm to compute the optimal partitioned and pooled capacities. We compare our Lagrangian relaxation method with the well-known deterministic linear program and find that the Lagrangian relaxation provides a tighter upper bound on the optimal revenue. Finally, we evaluate our solution method on synthetic and real-world data sets and benchmark its performance against commonly used heuristics.

207

Submission Number: **207**	Track: **CTL**

Paper Title: A framework to compare real-world contracts between suppliers and long-distance logistics service providers in a cold-chain context
Authors: Vinay Reddy Venumuddala
Abstract: This study offers a framework to compare real-world contracts between suppliers and long-distance logistics service providers (LSPs) in a cold-chain context. It is a bi-level optimization problem formulated based on the penalty clauses around temperature deviation presented in real-world contracts. We solve this problem using a combination of optimal control and numerical methods and subsequently present insights of managerial significance.

211

Submission Number: **211**	Track: **CTL**
Paper Title: Assessing Drivers' Switching and Continued Usage Intention: The Transition to Electric Autorickshaws in Public Transport	
Authors: Pushpam T Davis and T Chandrasekar	
Abstract: Purpose- This study examines drivers' intentions to adopt electric autorickshaws and their continued usage in public transport, addressing a pivotal shift in sustainable transportation. It aims to explore the influences of push, pull and mooring factors on switching intentions, with a focus on the mediating role of switching intention toward continued usage intention. Design/methodology/approach- Using a mixed-methods approach, this research integrates qualitative insights with quantitative analysis. Qualitative data from interviews with autorickshaw drivers informed the development of hypotheses based on the Push-Pull-Mooring (PPM) framework. These hypotheses were tested through a quantitative questionnaire survey. Findings- The study reveals substantial associations between push, pull, and mooring factors and drivers' intentions to switch to electric autorickshaws. Additionally, it identifies that switching intentions mediate the relationship with continued usage intentions, enhancing our comprehension of sustainable transport adoption dynamics. Originality/value- This study innovatively integrates the Push-Pull-Mooring (PPM) framework with Extended Expectancy Confirmation Theory in the context of electric autorickshaws. It provides fresh insights into drivers' decision-making processes regarding sustainable transport adoption, offering valuable guidance for industry stakeholders and policymakers alike.	

280

Submission Number: **280**	Track: **CTL**
Paper Title: On-demand ride services using dual capacities: competing under non-discriminatory regulations	
Authors: Srikanth Krishnaprasad	
Abstract: Ridehailing platforms increasingly provide on-demand services using a mix of service providers - independent contractors and those associated with its own subsidiaries. Unlike independents who choose when to work, those associated with its own subsidiaries are bound by strict contractual terms. They also lease vehicles from the subsidiaries. Such dual-capacity platforms (DP), operating a mix of independent drivers (ID) and leased drivers (LD), face a distinct legal challenge. They could be prosecuted under the antitrust law if they prioritise LD over ID in their operations. The threat of prosecution poses a significant challenge to DP's managers while competing in the market. This study examines the impact of competing using non-discriminatory operating policies (NDOP) on DP's performance. Our study gains significance in the backdrop of several antitrust proceedings initiated against prominent firms like Grab, Kakao, and Ola. Using a two-stage game, we analyse a market consisting of two DPs. Our analysis shows that DPs can sustain profits using NDOP under certain conditions. Using NDOP, however, shrinks the operational flexibility of DPs. Our analysis further shows that the shrinkage is lowest when the competition is intense. Our results demonstrate that DPs need not necessarily incur losses using NDOP. It motivates DP managers to switch to NDOP under the identified conditions. Switching to NDOP can also provide a competitive edge over rivals. Further, our study highlights the conditions when managers can sustain operational flexibility. We also provide an estimate to the managers on the maximum shrinkage in operational flexibility a DP can experience under NDOP.	

282

Submission Number: **282** | Track: **CTL**

Paper Title: Order mixing and routing strategies for human-robot collaborative warehouses

Authors: Rashika Gupta and Debjit Roy

Abstract: Introduction Amid the digital revolution, rapid expansion of omnichannel retail necessitates the operators to continually innovate and streamline their fulfilment processes and maintain a competitive edge. Specifically, their objective is two-fold: 1) to enhance order fulfilment capacity, and 2) reduce order fulfilment times by reducing the overall processing time from the time an order is placed till its delivery. Towards this objective, several warehouses are introducing autonomous mobile robots (AMRs) that can assist human pickers in picking order items. In such systems, human pickers are paired with robots where they visit the pick locations and fulfill an order pick. Pickers receiving assistance from robots can improve throughput capacity with minimal infrastructure investment costs. The operations of such fulfilment centers are complex and good control protocols can enhance the system performance. Earlier studies showed that zoning of warehouses could enhance throughput with small order size (Azadeh et al., 2023). To reduce the order makespan, researchers also attempted to optimize the matching of human pickers with robots and reduce matching delays. Typical optimization studies in human-robot collaborative warehouses were performed in a deterministic environment where the travel times, pick times, and unloading times are considered constant (Löffler et al., 2023). We note that pickers vary in their skill levels, and they also exhibit variability in the walking and handling speed. Further, order sizes could vary between e-commerce and retail store order channels. Hence, stochasticity in order sizes, picker travel times, and robot handling times can affect the distribution of resources in the system thereby affecting the pairing times, pick throughput times, and capacity. Varying order sizes could affect the workload in a pick zone. For example, small orders sizes could require more picks within a zone whereas large order sizes could require picks from all zones. Lumpiness of orders necessitating order pick from a specific zone could result in workload imbalances. Such imbalance in the workload among the zones can lead to long coordination delays among the robots and the pickers. Hence, appropriate order mixing (resequencing orders and releasing in a sequence that differs from their arrival pattern) strategies can mitigate zone workload imbalances. Further, fixed robot routing could result in unnecessary waits at the zone interfaces. For example, even though a robot is approaching a pick zone, existing congestion within the zone could increase the robot wait times to access a picker. In this case, strategic rerouting of a robot to another zone and forcing a zone revisit may result in overall decrease of order fulfilment times. We conjecture that appropriate order mixing and routing of robots can result in balanced zone workloads and overall lower fulfilment times. Design To evaluate the effects of mixing and routing strategies, we partition the warehouse into multiple picking zones such that every picker is assigned to a specific zone and is tasked with fetching products only from that zone. Picking operation entails the pairing of a robot with a picker located in the required zone where items of that order are stored. After picking all items from that specific zone, if needed, the robot proceeds to the next zone based on a predetermined routing scheme while the picker stays in their dedicated zone. We develop a closed queuing network model to examine three routing strategies: random routing, deterministic (sequential) routing, and Probabilistic Shortest Queue (PSQ) routing. In random routing, the robot randomly enters any zone that stores the required product(s) and collects all the items within that zone with the help of a picker. Subsequently, it progresses on to the other two zones randomly if all items comprising the order have not been collected yet. In sequential routing, the robot first visits Zone 1, followed by Zone 2 and finally Zone n to collect the items and then unload them at the depot. In PSQ routing, the robot is directed to that zone first which has the least queue length with the highest probability and once it picks all the items from that zone, it routes to another zone using the same criteria. This routing will tend to minimize the wait time for pairing with a picker at the cost of additional travel time by directing the robot to the zone with least queue to access a picker. The orders can be broadly classified into two categories based on the number of pick zones - small, and large. Small orders can be characterised as orders which can be picked within a single zone, whereas large orders pick span across all zones in the system. Methodology For controlling the order mix in the system, we embed the queuing network in a Markov decision process (MDP) framework. Using the MDP model, we evaluate the joint effect of order mixing and routing strategies on overall system performance. In the first stage, the right order is selected for release. Once that decision is made, the next stage decision examines the zone where the robot will be routed first based on the selected routing scheme and order type. The actions of a two-stage decision model include the optimal mix of orders and thereafter, the routing of robots to the required zones. Contribution to research Our research contributes to effectively managing the operations of human-robot collaborative systems. To maximize the throughput of the picking operation, we contend that the most effective routing strategy among the three mentioned will change with the variations in the order sizes. The best routing among the three is dependent on the number of items per order, the ratio of pickers to robots, dwell point of robot and picker, and storage policy. Likewise, it is possible that with optimal order mixing strategy, the value of a routing strategy may diminish. While the existing literature often neglects the human element in the study, we attempt to enhance the throughput

with a focus on picker travel times. Our study will inform the omnichannel operators to speed up the entire process, ensuring faster and more efficient service to their customers.

387

Submission Number: **387**	Track: **CTL**

Paper Title: Analyses of Business Models Pertaining to the Electric Vehicle Industry

Authors: Tridib Guha and Avijit Raychaudhuri

Abstract: Research Problem: Electric vehicles (EVs) have emerged as a promising environmentally friendly alternative to conventional vehicles (Avci et al. 2015). A crucial barrier to the adoption of EVs is the high upfront cost of EV in comparison to the conventional vehicle. IEA (2021) estimated that the average EV price is 25% more than the conventional vehicle price. The reason behind the high upfront cost of EVs is the high price of the battery. The cost of EV batteries accounts for around 30–40% of the vehicle's price, which increases the price of EVs (Deloitte 2017). Manufacturers of EVs have introduced battery leasing and subscription business models to make the price of EVs comparable to price of the conventional vehicles, thereby making EVs more affordable. Under these business models, manufacturers sell EVs at a price comparable to the price of conventional vehicles while retaining ownership and responsibility for maintaining the battery. In 2019, Proterra, introduced a battery lease scheme. Under this scheme, Proterra sells electric buses to the customers and lease the battery for a monthly fixed fee. Renault introduced the Z.E. program for electric cars. Renault Z.E. offers two types of subscription programs: Flex and Relax. Customer who subscribes to Renault Z.E. program pay based on their monthly driving. "Z.E. Relax" offers customers unlimited miles for a monthly fixed fee, whereas "Z.E. Flex" operates on the pay-as-you-drive concept (Autoblog 2016). We explore the lease business model, where customers pay a fixed price for unlimited monthly driving, in contrast to the subscription model, where customers pay based on the distance they drive each month. EV manufacturer provides batteries based on leasing and subscription business models and incurs manufacturing and maintenance costs. We compare lease and subscription with the purchase business model. Government subsidy is an essential aspect of the EV industry. The government offers subsidies for the EV owners. To boost demand for EVs, the Indian government has introduced the FAME-II direct incentive program. Electric four-wheelers have a direct incentive of Rs 10,000 per kWh battery capacity up to Rs 1.5 lakh. Customers will not receive the subsidy if they choose battery leasing or subscription services since the manufacturer owns the battery. We are also exploring the impact of government subsidies on the lease and subscription business models. We aim to address the following research questions: i) How do battery leasing, subscription, and purchasing impact the driving strategy of the customer? ii) What will be the optimal pricing strategies for battery leasing, subscription, and purchasing business models? iii) How do government subsidies affect the adoption rate of EVs in the lease and subscription business models? Methodology: We model a single-period sequential game between the customer and the EV manufacturer. A profit-maximizing EV manufacturer offers battery lease, subscription and purchase business models and maximizes profits by setting the prices for each business model. Customers get value by driving EVs each month. We assume the value curve as concave, i.e., value increases with the number of miles driven but decreases beyond a certain threshold. We define this threshold as the customer's satiation level. Customers derive more value from higher driving but with decreasing returns. A customer's vehicle driving can be divided into two components: planned driving and unplanned driving (Avci et al. 2015). Planned driving represents the average monthly distance a customer expects or intends to drive. Unplanned driving accounts for their anticipated monthly driving beyond the planned distance. Customers are heterogeneous, and the heterogeneity in the customer population by allowing heterogeneity in their expected satiation level. The manufacturing cost and purchasing cost of the battery is normalized to a monthly equivalent (Agrawal et al. 2022). We are assuming the unplanned usage and customer satiation follow uniform distribution. Sequence of the timeline The sequence of the timeline is as follows. 1. The manufacturer sets the price of lease, subscription, and purchase business models. 2. The manufacturer offers customers to choose between the lease, subscription, and purchase business models. 3. The customer chooses one of the business models and decides the associated planned driving. 4. The unplanned driving component is realized. Result: We find that introducing non-ownership business models alongside the conventional purchasing model has a positive effect on overall EV adoption rates. If the upper limit of satiation and unplanned driving of the customer changes, the manufacturer's optimal profit and customer adoption of the business models will be influenced in the same direction. Changes in maintenance costs will have a consistent impact on optimal customer adoption and manufacturer profits in the ownership model. However, in the non-ownership models, the effect on optimal customer adoption and manufacturer profits will move in opposite directions with changes in maintenance costs. We show that as the customer satiation levels rise, there is a greater inclination towards the lease business model as opposed to traditional purchasing. Additionally, we've identified that the subscription business model is especially beneficial for customers with limited planned usage of EVs. Our analysis reveals that in scenarios where customers experience an increase in unplanned driving needs, manufacturers tend to lower subscription prices while

potentially raising lease prices. We also find that when the manufacturer is getting government subsidies, i.e., for the non-ownership business models, if the government increases the subsidy, the manufacturer increases the subscription prices and influences customers to choose lease business model rather than subscription. This indicates that subsidy doesn't help customers with lower satiation.

444

Submission Number: **444**	Track: **CTL**

Paper Title: IMPROVING OPERATIONAL EFFICIENCY OF PUBLIC TRANSIT SYSTEMS

Authors: Prateek Agarwal, Tarun Rambha, Prashanth Kokkonda and
Mohammad Anas Jamil

Abstract: Summary: A significant challenge in the public transit domain is integrating passenger route choice and vehicle scheduling, as they are interdependent: passengers choose routes based on transit supply, while transit operators design timetables based on ridership. Existing studies often address these problems separately, fixing one set of variables. Our research jointly solves these issues. We first develop an agent-, and schedule-based Public Transit Assignment (PTA) framework that incorporates explicit capacity constraints. Our framework can simulate heterogeneous agents and fleets, handling millions of door-to-door queries within hours in real-world mega-cities such as those in developing economies such as India, significantly outperforming state-of-the-art solvers while maintaining accuracy. We then create an integrated local search framework that addresses the Heterogeneous Multi-Depot Vehicle Scheduling Problem (HMDVSP) with PTA embedded in its operators. Our extension allows us to assess various real-world policies (described below), which are typically done on an ad-hoc basis. Introduction: Transit operators continuously work to enhance service quality and make transit more appealing. A key effort involves aligning bus capacity with passenger demand along various routes, known as the HMDVSP. The success of these improvements relies on understanding the complex behaviors of users, influenced by available options. Predicting travelers' route choices based on schedules and capacity constraints is known as PTA. This research addresses both HMDVSP and PTA along with their interaction, a topic not fully examined in the literature. Our methodological contributions are: PTA Framework: Guided by the two hypotheses: (1) Prediction inaccuracies increase as data is aggregated into larger groups (a common practice in the literate), and (2) Conventional choice set generation methods fall short of capturing real-world traveler behavior, we introduce a new agent-based PTA framework with explicit capacity constraints and supply-side convergence. Our framework scales to highly-populated cities with several transit options, such as Bangalore, without aggregating demand and can accurately replicate real-life journeys. Local Search Framework for HMDVSP: Few studies have considered how passenger flow varies with supply in HMDVSP. Most directly assume a fixed demand and a known cost objective. Contrary to this, our heuristic framework captures the user sensitivity to supply perturbations while minimizing the operational costs, which include crew salaries, fuel expenses, and revenue from ticket sales. The revenue depends on user responsiveness, measured through PTA. We explore several real-world issues such as (1) How to assign trips to a heterogeneous fleet of buses while considering user preferences? (2) What is the effect on passenger ridership and revenue as the fleet shifts from homogeneous to heterogeneous? (3) What buses should be acquired to meet future demand, given budget constraints? Method: PTA Framework: The simulation begins by initializing each passenger with key attributes: origin, destination, departure time, latest arrival time, choice parameters, and maximum transfer limit. For each passenger, the preferred journey is determined using the Generate Choices and Select Choice functions. Accurately replicating real-life journeys is crucial in PTA. Exact methods, often based on generalized cost expressions and variations of Dijkstra's algorithm, offer precise solutions but are computationally demanding in large networks. Conversely, heuristic algorithms, such as k-shortest path and link elimination, may miss real-world complexities. Despite the variety of these methods, discrepancies remain. Journeys planned with platforms like Google Maps often differ from those suggested by traditional methods. Modern routing engines focus on Pareto-optimal solutions that consider factors like time and transfers. Our choices reflect the options individuals encounter during their journeys. Next, the selected journey is combined with progress so far; for instance, if a passenger traveling from stop A to C is denied boarding at B, their journey will be updated to include segments A-B and B-C (after rerouting). Passengers are simulated using the Load Agents function. If an agent is denied boarding due to overcrowding, their attributes (e.g., origin, departure time) are updated. This process repeats until every passenger has either failed or reached their destination. A passenger fails if their departure time exceeds the intended latest arrival time or if no journey is available. After simulating all passengers, the framework updates the timetable and continues this process until convergence. Each iteration imitates a day-to-day process. Convergence can be gauged either from a demand or supply perspective. The former assumes that the agents learn from a collective shared mental map that stores past experiences. While attractive, the learning functions are generally hard to calibrate. To address this, we propose a dwell-time-based gap with a guiding principle that the operators adjust their timetable to minimize the deviations between planned and actual operations. HMDVSP Framework: We use a heuristic algorithm, concurrent scheduler, followed by an

integer program and PTA to get an initial solution. Next, we run the local search for a fixed time budget. Broadly speaking, we have two categories of operators. Rotation and Capacity based. The first set of operators (Trips Exchange/Shift) improves the objective function by modifying the bus rotations. Exchanging or shifting trips between buses with the same capacity is straightforward, requiring only compatibility checks. However, altering trips between buses with different capacities necessitates running PTA to assess the impact on passenger choice. The second class of operators (Capacity Down/Up) optimizes the usage of buses by adjusting capacities. Changing the capacity of buses affects not only the revenue (due to change in ridership) but also fuel costs (higher-capacity buses have lesser mileage). An adaptive block-size strategy is implemented to control the magnitude of capacity adjustments. Results: For PTA, we validated the predicted flows using the London TfL Dataset. Separate case studies to analyze the scalability and effect of aggregation on key performance indicators like ridership and fleet utilization were also conducted using dense transit networks such as Bangalore, India. Applying the HMDVSP framework to transit networks like Surat, India, resulted in up to 10% savings in operational costs when transitioning from a homogeneous to a heterogeneous fleet.

446

Submission Number: **446**	Track: **CTL**
Paper Title: Risk Management for Road Projects in Mountainous Terrain – A Case study of learnings from the Himalayan Belt	
Authors: Modish Kumar and Hemant Manuj	
Abstract: Infrastructure projects, especially in emerging market countries, are critical to the economic and social development of the countries. The identification of key risk factors and their efficient management are critical to the success of such projects. The risk factors are often special in nature in a mountainous terrain. To investigate the same, we have studied the road highway projects in the Indian state of Himachal Pradesh, which is contiguous to the Himalayan mountains. This is a strategically as well as ecologically sensitive area, where the highway infrastructure needs to be developed with a sense of balance and appropriate risk management measures. Our in-depth study, using primary and qualitative research methods, has brought out several key risk factors, including those specific to mountainous terrain. We have used a comprehensive set of data sources including interviews of stakeholders, documents relating to the projects, and project images at the sites. We believe that our study on the road projects in the Himalayan belt is amongst the few major study focussed on the intersection of the risks in a large mountainous terrain and the demands of a fast-developing economy like India. Using our findings, we have made several specific and actionable recommendations to improve the risk management and bankability of the highway projects, especially in the large mountainous terrain and in emerging economies. Our study will inform policymakers, stakeholders, and investors, enhancing risk management and outcomes.	

473

Submission Number: **473**	Track: **CTL**
Paper Title: Benchmarking the Historic Efficiencies of the Indian Railways: Some Policy Perspectives	
Authors: Ila Garg and Dr. Sabyasachi Roy	
Abstract: Title: Benchmarking the Historic Efficiencies of the Indian Railways: Some Policy Perspectives Introduction: Unlike the Railway systems the world-over that have been corporatized, Indian Railways is strictly managed by the Government directly through a separate Ministry, and constitutes the World's largest Government owned Railway network. Annually carrying passengers exceeding the global population, the Railway services in India remain stretched and popularly perceived as not too efficient, although there is a dearth of any scientific literature on the subject. This paper attempts to measure the historic efficiencies of Indian Railways for a period, from 2002-03 to 2021-22, i.e., a 20-year period by virtue of 6 Data Envelopment Analysis based Models that account for indicators like Operating Expenditures, Staff Employed, Passengers carried, Freight Carried, Rail Network length, and Revenues generated. The Results of the various Models such as the Efficiencies, the Returns to Scale, and the notional loss due to the muted inefficiencies are discussed in the context of policy issues that are specific to the Indian Railway services, and suggestions made to improve the sector performances. Objectives: The primary objectives of this study are: 1.Has there been a positive evolution of Efficiencies over time? 2. Are the efficiencies of Indian Railways increasing or decreasing over time? 3.What kind of the returns to scale do these historic efficiencies exhibit? 4.What was the possible quantum of savings that were possible if best practices were followed? 5. What are the policy implications particularly with respect to manpower (Staff) and modernization of Indian Railways?	

Methodology: The current study employed a non-parametric approach (DEA) to benchmark the historic performances of Indian Railways and suggest some policy perspectives. Within the family of the DEA models, the one initially proposed by Charnes, Cooper and Rhodes (CCR), is the model which points out differences among Decision making units in the most critical way. Therefore, in this study, analysis is done with the CCR model to compute the relative total Efficiencies. For the Input Orientation Models, the aim was to minimize the Inputs while obtaining a fixed level of services. Thus, 2 Inputs were sought to be minimized the Operating Expenditure (OPEX) (Model A), and the level of Manpower or the Staff deployed (Model B). Four Outputs were thought to be adequately representing the model formulation. The quantum of Passengers and Freight carried, the extent of service coverage i.e. the Route Length and the Numbers of stations, formed the 4 Outputs. For the Output Orientation Models, the aim was to maximize the Output services while keeping the Inputs at a fixed level. Thus, Revenue in Models C and D, and the quantum of Passenger Originating and Freight Carried formed Outputs in Models E and F. The Inputs in the Output Orientation Models were the Number of Stations and the Route Lengths in combination with either OPEX or the Staff employed alternatively. Findings: The analysis reveals significant variations in efficiency across different parameters of Indian Railways. Some parameters demonstrate exemplary performance, achieving high output levels with minimal input, while others lag due to infrastructural constraints, outdated technology, and management inefficiencies. The study identifies several critical factors impacting efficiency, including: 1. Electrification and Technology Adoption: Zones that have embraced electrification and modern signalling systems exhibit higher operational efficiency. The transition from diesel to electric locomotives not only reduces operational costs but also enhances service reliability. 2.Infrastructure Development: The paper highlights the importance of ongoing infrastructure investments, such as track renewals and gauge conversions, in improving capacity and reducing delays. Zones with well-maintained tracks and modern facilities report better performance metrics. 3. Organizational Restructuring: The need for a more agile organizational structure is emphasized, with recommendations for decentralizing decision-making and enhancing accountability at various levels of management. 4. Revenue Mobilization Strategies: The study discusses the potential for revenue enhancement through fare rationalization, privatization of certain services, and partnerships with private players to bring in capital and expertise. Discussion: The findings underscore the necessity for Indian Railways to adopt a multi-faceted approach to enhance efficiency. While technical improvements are essential, the paper argues that organizational and managerial reforms are equally critical. The integration of private sector practices, such as performance benchmarking and customer-centric service delivery, can significantly contribute to operational improvements. Moreover, the study highlights the importance of sustainability in railway operations. As Indian Railways aims to reduce its carbon footprint, the transition to electric locomotives and the adoption of renewable energy sources are discussed as vital steps towards achieving environmental goals. Policy Implications: The research provides several policy recommendations aimed at enhancing the efficiency of Indian Railways: 1.Investment in Technology: Prioritizing investments in modern technologies, such as automated signalling and real-time tracking systems, can lead to significant efficiency gains. 2.Capacity Building: Training programs for railway personnel focused on modern management practices and customer service can improve overall service quality. 3.Public-Private Partnerships (PPP): Encouraging PPP models for station redevelopment and service operations can leverage private sector efficiency and innovation. 4. Regular Performance Audits: Implementing a framework for regular performance assessments and benchmarking against global best practices can help maintain accountability and drive continuous improvement. Conclusion: The benchmarking of historic efficiencies within the Indian Railways reveals both challenges and opportunities. While certain parameters exhibit commendable performance, systemic issues persist that hinder overall efficiency. By embracing a holistic approach that combines technological advancements, infrastructural investments, and organizational reforms, Indian Railways can enhance its service delivery and sustain its critical role in India's economic development. The findings of this study serve as a foundation for future research and policy formulation aimed at transforming Indian Railways into a more efficient and sustainable transportation network. Keywords: Indian Railways, historic efficiencies, Data Envelopment Analysis, Policy issues, sector performances.

502

Submission Number: **502**	Track: **CTL**

Paper Title: Eye on Logistics and Engagement: How Shopping Goals Influence Livestream Selling

Authors: Faizul Haque, Sumanta Basu, Vishal Bansal and Peeyush Mehta

Abstract: Summary: Competing livestream sellers use information cues to influence consumers' interest and purchasing behavior. Logistics service level and consumer engagement are important factors for livestream sellers in emerging business models. This study explores how these factors affect consumers' choice of competing livestream platforms and subsequent purchase behavior. The study also examines how these effects change based on consumers' shopping goals. Grounded on the dynamic attention and shopping goals theory, we conduct an eye-tracking study to explore the individual and interaction effects of logistics service level and consumer engagement on livestream sellers at different levels of consumer goal specificity. The findings have important implications for retail platforms when making livestream decisions. Motivation: The practice of livestream selling has gained popularity and has been embraced by e-commerce retailers such as Amazon, Taobao, Tmall, and Myntra and content-based platforms like TikTok, Instagram, Whoppl, and Trell. Compared to traditional commerce, livestream selling is where a streamer sells products through real-time consumer interactions. According to eMarketer, livestream sales have surged to an estimated $50 billion in the United States and are forecasted to grow by 36% in 2026, while livestream sales in China reached nearly five trillion yuan. Moreover, in an emerging economy like India, livestream selling is expected to reach $4-5 billion, based on a Redseer report. This unprecedented growth underscores the immense potential and opportunities in the livestream selling mode. Because of the attractiveness and growth potential of livestream selling, two prominent business models have emerged: (i) E-commerce retailers opening their livestream channel (e.g., Amazon Live), and (ii) Content-based social platforms foraying into warehousing and logistics (e.g., TikTok Shop). While the former business model thrives on consumer trust and delivery logistics networks, the latter benefits with higher consumer engagement and influencer networks. Thus, the platforms competing in livestream selling use various cues to attract consumers. This study focuses on two widely used cues by these competing platforms: consumer trust in delivery logistics (e.g., delivery service levels) and consumer engagement (e.g., convenience and ease of participation). Apart from purchasing a product, consumers often participate in livestreams for entertainment, to discover new products, and to keep up with trends, among other reasons. Thus, during the livestream, it becomes evident that consumers' shopping objectives evolve from abstract to more specific. Although consumers often desire logistics trust and engagement during livestream shopping, their preferences and information processing on logistics trust and engagement also change because of their shopping goals. For instance, prior research has shown that when consumers start browsing for a product online, they are more receptive to and quicker to process information about platforms and product desirability (L. Lee & Ariely, 2006; Liu, 2008; Yi et al., 2023). On the other hand, consumers become more specific about their target platform and product over time. Hence, the roles of various information cues, such as logistics trust and consumer engagement, may vary based on the mindset of consumers during different stages of the shopping process. Moreover, as consumers interpret these information cues in the limited duration of livestreams, these cues may interact differently with consumer shopping behavior. Objective: The different livestream platforms use their strengths to influence consumers' choices of livestream platforms and purchasing behavior. Thus, it becomes essential for platforms to understand how these information cues (i.e., logistics service level and consumer engagement) interact with consumers' shopping goals. To address both theoretical and practical needs, we investigate how consumer trust in logistics and consumer engagement affects their platform choice and purchase decisions with varying shopping goals. Methodology: Grounded in the dynamic attention and shopping goals theory, we theorize the impacts of consumer logistics trust and consumer engagement on consumers' platform choice and purchase decision and their dependence on shopping goals and attention. We adopt a multi-method approach to study the impact of consumer logistics trust and consumer engagement on consumers. First, we conduct case studies at two livestream platforms engaged in the above-discussed business models. We observed various information cues from both platforms as the consumers resorted to choosing the platform and subsequently purchasing the product. Next, we conducted an eye-tracking study that captured consumers' click and purchase-related behavior, in addition to consumers' platform evaluation and eye-tracking data. The study employs a pretest-posttest measure design experiment for a single group in an environment that mirrors the essential characteristics of two livestream platforms. Along with eye tracking, we incorporate process tracing techniques, namely, retrospective VPA, to provide additional rigor on eye-tracking data (Niranjan et al., 2022). Contributions: Our study has several theoretical and practical implications. First, our methodological advancement in the behavioral OM literature allows us to understand the consumer decision-making process better. Second, we provide a theoretical understanding of logistics service level and engagement effects based on consumers' mindset changes during livestream shopping. Third, our findings provide valuable suggestions to livestream sellers regarding when to deploy logistics-engagement information cues and how consumer shopping goals interact with these cues.

541

Submission Number: **541**	Track: **CTL**

Paper Title: Are vehicle scrappage policies effective? An evidence from India

Authors: Ankit Sharma

Abstract: Vehicle scrappage programs have gained significant attention as a policy tool to address the environmental and economic challenges posed by aging and polluting vehicles. This study aims to evaluate the effectiveness of the vehicle scrappage policy, launched in India in late 2021, and its associated claims in the policy document. The study focuses on three key aspects namely the automotive carbon footprints, new automobile sales, and, the introduction of recycled material back into the automotive supply chain as government's push towards a circular economy. To assess the impact of the vehicle scrappage policy (VSP), firstly, a comprehensive data analysis is conducted to explore the current state of the scrappage facilities in the country through various sources, including government reports, industry statistics, and news articles. A literature review of the academic journal articles is carried out to understand the impact of scrappage schemes adopted by various nations in the past. The study employs systems thinking and a system dynamics approach and deploys a triple bottom-line framework to develop the mental model and the resulting structure of the problem. Subsequently, a stock-flow diagram is built to simulate various scenarios to generate workable policy alternatives. The model measures the reduction in carbon emissions resulting from the scrappage of old vehicles and the subsequent adoption of newer, cleaner vehicles. Additionally, an investigation of changes in sales data is carried out to gauge whether there has been a noticeable boost in new vehicle sales following the implementation of the policy. Furthermore, the study examines the extent to which the vehicle scrappage policy contributes to the integration of recycled materials back into the vehicle supply chain. The analysis considers the availability, feasibility, and adoption of recycled materials within the automotive industry.

544

Submission Number: **544**	Track: **CTL**

Paper Title: Swarm Versus System-Directed. Analysis of Human-Robot Collaborative Policies in Order Pick Systems

Authors: Mahdi Ghorashi Khalilabadi, Debjit Roy and René De Koster

Abstract: Autonomous Mobile Robots (AMRs) collaborate with humans in order-picking and can increase order-picking efficiency by reducing walking. AMRs can operate under two policies: Swarm or System-Directed. In a system-directed policy, a picker works with one AMR throughout the entire order, leading to a potentially skewed picker distribution and longer fulfillment times, but it could still excel under certain conditions. Conversely, under the swarm policy pickers switch between AMRs as they move between pick locations. Given the stochastic nature of picker travel times and the varying speeds of both human pickers and robots, effective operational strategies are crucial to minimize coordination delays. This study models the Swarm policy using a closed queuing model to determine system throughput capacity. The queuing model matches pickers and AMRs via a synchronization station. We derive closed-form expressions for the steady-state distribution of pickers and AMRs in the network and use these to calculate order throughput capacity. The impact of various factors is analyzed, such as order profiles, matching policies (closest or random), AMR and picker speeds, warehouse size, product-to-storage assignment methods, and the ratio of AMRs to pickers. Furthermore, we compare the order throughput of the swarm with the system-directed policy. Our findings indicate that the swarm policy generally outperforms the system-directed policy, boosting throughput by up to 40%. However, the system-directed approach is advantageous when picker and robot speeds are similar, order sizes are large, AMR-to-picker ratios are low, or the number of pickers is limited. Key findings highlight that the AMR-to-picker speed ratio is crucial, with higher ratios favoring the swarm policy, especially with smaller order sizes. Practical implications suggest adopting a hybrid strategy in omnichannel warehouses, employing the swarm policy for small orders and the system-directed policy for larger orders, to maximize efficiency. Gradual AMR integration can help managers scale operations as benefits become evident. Furthermore, this research compares the operational costs per order under the swarm, system-directed, and manual picking policies through a discrete-event simulation. The manual picking proves more cost-effective only under certain conditions: equal AMR and picker speeds, large orders, small warehouses, and single work shifts. In other scenarios, AMR-assisted systems are more economical.

610

Submission Number: **610**	Track: **CTL**

Paper Title: Hygiene Factor for Reducing Operational Logistics Cost in Distribution - Case of Cement Industry in India

Authors: Bhavya Maloo and Vidya G Mohan

Abstract: Logistics plays an important role in the cement industry as 35% of the overall cost of the cement industry is spent on transport costs. This cost can be reduced by identifying the problems in the distribution mechanism and bringing in hygiene factors in the value chain. This study attempts to identify the issues in the distribution mechanism by analyzing the data from one of the major players in the cement Industry which is causing financial losses for the organization. The objective of this study is to examine primary and secondary lead deviations to optimize cement distribution in the Eastern states of India. The study is done at taluka level for three states in Eastern India to identify the hygiene factors that are required for the reduction of the operational logistics cost. The study utilizes GPS and SIM tracking data to identify discrepancies between planned and actual delivery routes, leading to increased freight costs. It also identifies taluka with low cement use but are paid high freight costs. A cost-benefit analysis is conducted at taluka level to evaluate the impact of warehouse locations on transportation costs. The study contributes to efficient logistics strategies for the cement industry, in turn improving profitability of cement distribution.

622

Submission Number: **622**	Track: **CTL**

Paper Title: Solving the capacity optimization problem in the semiconductor industry: the implementation dilemma

Authors: Shantanu Bagchi, Jaimini Bhattacharyya and Shiva Esturi

Abstract: 1. Introduction: In the semiconductor industry, the capacity planning Optimization problem decides the optimal allocation of production capacity for product groups given their next few months' demand forecast (Sweat et. al, 2006). This decision involves budgetary decisions for acquiring machines, tools, and human resources. The capacity planning problem in the semiconductor industry is significantly different from other industries due to complex manufacturing processes, rapid technological changes, uncertain demand, and high cost of capacity changes (Geng and Jiang, 2009). Semiconductor manufacturing comprises our basic steps: wafer fabrication, wafer probe, assembly, and final test. The first two phases are called front-end (FE) production and the last two are called back-end (BE). A semiconductor company needs to keep innovating to survive the rapidly changing market. However, volatile demand for wafers and long lead time for capacity increment necessitates an efficient supply chain to maintain an adequate service level. In this article, we model the capacity planning process for BE production of a semiconductor company. The BE capacity optimization problem involves five stages, each corresponding to a sub-problem as follows: S1: Flexible Capacity problem decides how much total manufacturing capacity is required at the global level at a significant time before execution. S2: The in-source vs out-source problem decides how much of the gigabits estimated in S1 should be reserved for in-house manufacturing. The rest will be subcontracted. This decision is also made at a significant time before actual production starts. S3: Site-level Capacity problem: allocates the global in-source capacity, decided in S2 across each key step of the manufacturing line (e.g., die attach, wire bonding. testers, test ovens, surface mount). S4: Site selection problem decides which product should be qualified at which manufacturing site. Site qualification for semiconductor products is a necessary process step before a product can be manufactured at any site or machine and the process takes several months of engineering effort. S5: Minimum Utilization problem finally decides which production strategy the factory should follow, should it maintain a smooth production rate or "chase" demand. 2. Objectives: Optimization theory will suggest solving the entire stages in a single pass to arrive at the global optimal solution. Existing literature solves various combinations of the above sub-problems (Uribe et al, 2003; Hwang, 2022; Shao, 2021). However, in practice, it is difficult to implement such a solution due to multiple stakeholders with respective functional goals. We address this issue in this discussion and thereby solve it sequentially. Our objectives corresponding to each sub-problem mentioned previously, are: Q1. Decide the global capacity requirement in S1 given the history of sales figures and their corresponding demand forecast for the next quarter. Q2. How much capacity from Q1 should be outsourced to minimize production costs while accommodating demand variation over the months? Q3. Given that Q2 is answered, how much capacity is to be maintained at each manufacturing site? Q4. Find the best site qualification strategy that maximizes production flexibility with a minimum number of qualified sites. Q5. Find the best strategy to maintain an optimal utilization of internal sites while minimizing the production cost. This is the first investigation in the literature that considers all five problems of the strategic capacity planning process, modelling them sequentially while maintaining their interdependence. We provide a practitioner's perspective on the capacity planning domain rather than methodological novelty. 3. Methodology: We employ a Mixed Integer Linear Programming method, Discrete Event Simulation, and spreadsheet for modelling our sub-problems. To use the Newsvendor Problem (NVP) to decide the optimal service level, an input for S1, for each product group by trading off capacity investment cost versus product margin. We use the Monte-Carlo simulation model that mimics customer demand distribution in each demand scenario for S2. For S3, we use an analytical approach while S4 follows the 2-stage stochastic optimization model with recourse developed by Liao et al. (2017). Finally, S5 involves a trade-off between the cost of under-utilization and the cost of overproduction by Monte-Carlo simulation. 4. Conclusion: We propose a strategy for the entire capacity optimization problem. This model provides a seamless business process and saves substantial dollar value for the company. We see a lot of stakeholders from different functional organizations involved in various steps of our problem. These functional organizations have their strategy that often are at loggerheads with each other. Aligning these stakeholders is quite challenging to aim for the global optimal solution. Moreover, estimated strategic parameter values often have wide confidence intervals which makes it unwise to aim for a sophisticated solution. Therefore, we find our sequential optimizations to be

useful and the suboptimal solution, we might have got in this process, proved to be the optimal one given the business constraints.

630

Submission Number: **630**	Track: **CTL**
Paper Title: Parking Infrastructure and Challenges in Indian Cities: Insights from Twitter Data Analysis	
Authors: Sagar Verma	

Abstract: Over the past few decades, urban planning experts have been paying more attention to the significance of parking in cities (Mingardo et al., 2015; Shoup, 2021). This increased interest is driven by the rising number of cars on the road and the challenges posed by limited urban space (Evangelinos et al., 2018). Recognizing the crucial role that parking plays in urban development and transportation, there has been a notable shift in focus towards parking infrastructure and management strategies. However, despite the growing importance of parking, scholarly discussions on this topic have mainly relied on informal sources, with limited empirical research in the field of transportation studies (Mingardo et al., 2015). Early supporters, particularly economists, have highlighted the interconnected nature of parking and the wider transportation system, yet comprehensive studies in this area remain scarce (Mingardo et al., 2015; Mo et al., 2021). In contrast to other developed nations and some developing countries like China, where rapid urbanization and motorization have prompted discussions on parking policies and practices, there is a noticeable scarcity of data and analysis on parking challenges in the developing world and South Asian cities (Johansson et al., 2017; Mingardo et al., 2015; Mo et al., 2021; Shoup, 2021; Wang & Yuan, 2013). This gap in information and research impedes the formulation of effective strategies to address parking issues in these regions, hindering the potential for sustainable urban development and efficient transportation systems. Also, the lack of reliable data in these countries makes it difficult to address these issues effectively with policies and interventions. The rapid urbanization and economic growth in India have led to significant challenges in transportation and mobility, particularly in major cities like Delhi, Mumbai, and Bengaluru. As the economy expands and more individuals gain the means to afford private vehicles, there has been a substantial surge in the number of cars and two-wheelers on Indian roads (Bhagat, 2017; Miranti, 2019; Shaban et al., 2020; TomTom, 2022; M. Verma, 2015). This surge in private vehicle ownership has given rise to several associated challenges, including traffic congestion, air pollution, road accidents, and escalating carbon emissions (Aayog, 2021; Li et al., 2020; Vasudevan et al., 2021; A. Verma et al., 2021). The surge in private vehicle ownership has led to a growing demand for parking spaces, further exacerbating the existing challenges associated with urban transportation and mobility. As more individuals own vehicles, the competition for limited parking spaces in urban areas intensifies, leading to congestion and inefficient use of available infrastructure (Parmar et al., 2020). Additionally, the proliferation of cars and two-wheelers on Indian roads has led to increased traffic congestion, making it more difficult for commuters to navigate through urban centres (Aayog, 2021; Vasudevan et al., 2021; A. Verma et al., 2021). Moreover, the inadequate and poor quality of public transportation infrastructure in many Indian cities has further fuelled the migration towards private modes of transportation (A. Verma et al., 2021), exacerbating the demand for parking spaces. As public transportation fails to meet the needs of commuters, more individuals opt to use private vehicles, adding to the pressure on existing parking infrastructure. Against this backdrop, this study has aimed to explore the parking challenges commonly encountered by citizens in major Indian cities, leveraging Twitter data. The study has conducted temporal sentiment analysis to understand the evolving sentiments towards parking issues over time. Exploratory topic modeling has been employed to identify key themes and concerns related to parking in cities such as Delhi, Mumbai, and Bengaluru. Delhi, Mumbai, and Bengaluru have served as focal points for this study due to their status as major urban centers in India, each grappling with unique challenges related to urbanization, transportation, and infrastructure development. By focusing on these cities, this study has aimed to capture the diverse range of parking issues prevalent across different urban contexts, thereby providing insights that can inform targeted policy interventions and urban planning initiatives. To conduct this study, Twitter data related to parking in Delhi, Mumbai, and Bengaluru from March 25, 2019, to March 24, 2023, was collected using Sprinklr, a Twitter data collection platform, yielding 15,252 tweets from Bengaluru, 23,841 from Delhi, and 26,497 from Mumbai. Exploratory Data Analysis (EDA) employed word clouds and trigrams to visualize frequent terms and phrases. VADER sentiment analysis gauged public sentiment on parking, while Latent Dirichlet Allocation (LDA) topic modelling identified underlying themes, with topics selected based on coherence scores and parking literature. The data analysis plan included preprocessing, EDA using word clouds and n-grams, VADER sentiment analysis, and LDA-based topic modelling to provide insights into parking discourse in India during this period. Exploratory data analysis and sentiment analysis across Mumbai, Delhi, and Bengaluru revealed significant concerns about illegal parking, footpath encroachment, and unregulated parking prices. Sentiment analysis indicated a decrease in sentiment negativity from 2019 to 2021, likely due to reduced mobility during the COVID-19 pandemic, but a resurgence of negative sentiment post-2021 due to returning traffic congestion. LDA

topic modelling showed that Mumbai focused on traffic management and EV infrastructure, Delhi on illegal parking and smart solutions, and Bengaluru on rental property parking and technology-driven solutions for managing the parking challenges. From 2019 to 2022, discourse evolved towards technology adoption and innovative solutions, highlighting ongoing challenges in enforcement and infrastructure, and the need for comprehensive parking reforms and sustainable urban mobility solutions. Based on these findings, I proposed a framework for managing parking problems in India, drawing inspiration from the evolution of parking policy in European cities. By following this framework, Indian cities can adopt a phased approach to parking management, starting with basic regulations and evolving towards comprehensive strategies aligned with broader urban planning and environmental goals.

659

Submission Number: **659**	Track: **CTL**

Paper Title: AI-Enabled Logistic Nudging for Sustainable Consumption

Authors: Vinayak Vishwakarma and Nitu Mathuriya Mathuriya

Abstract: AI-Enabled Logistic Nudging for Sustainable Consumption Introduction Changing consumer behavior is vital for achieving sustainable development goals, but traditional policy approaches have had limited success. Behavioral economics research has shown that "nudging"—subtly altering the choice architecture to steer people towards desired behaviors—can effectively complement traditional policy tools. One promising nudging approach is logistic nudging, which leverages the S-shaped logistic function to shift behaviors gradually over time. However, implementing logistic nudging at scale poses significant challenges. Research Questions This research explores how artificial intelligence (AI) can enable insights and algorithms developed through logistic nudging to drive sustainable consumption behaviors on a societal scale. Specifically, we investigate the following questions: 1. What are the key principles and mechanics of logistic nudging for sustainable consumption? 2. How can AI-powered systems collect, analyze, and act on the massive data required to implement logistic nudging interventions across diverse populations and contexts? 3. What are the technical, ethical, and policy considerations in deploying AI-enabled logistic nudging platforms? Methodology The research takes a mixed-methods approach. First, we conduct an in-depth literature review to synthesize the theoretical foundations and empirical evidence for logistic nudging. Second, we develop agent-based simulations to model the dynamics of logistic nudging interventions and test the performance of different AI-powered implementation strategies. Third, we engage with key stakeholders through interviews and workshops to gather insights on the practical, ethical, and policy challenges. Findings Our research findings demonstrate how AI can significantly enhance the scalability, adaptability, and impact of logistic nudging for sustainable consumption. AI-powered systems can constantly monitor behavioral data, adjust nudging parameters in real-time, and coordinate multi-channel interventions tailored to individual and community needs. We identify key ethical principles and policy frameworks to ensure these systems are deployed responsibly and equitably. The simulations show that AI-enabled logistic nudging can drive significant and sustainable behavior shifts compared to traditional policy tools. Contributions and Implications This research makes several key contributions. Theoretically, it integrates logistic nudging with AI to develop a novel approach for scaling behavior change. Methodologically, it pioneers using agent-based modeling to study the dynamics of AI-powered nudging interventions. Practically, it provides a roadmap for deploying responsible AI systems to enable sustainable consumption at a societal scale. The findings have important implications for policymakers, behavioral scientists, and technology developers working to address the sustainability challenge.

677

Submission Number: **677**	Track: **CTL**

Paper Title: Charge Schedule Optimization for Solar-Integrated Electric Bus Transit Systems

Authors: Rito Brata Nath, Madhusudan Baldua, Vivek Vasudeva and Tarun Rambha

Abstract: The electrification of urban transit systems has gained significant impetus over the last decade, with electric buses (EBs) emerging as a critical component of sustainable public transportation solutions. Despite the environmental advantages of EBs, their widespread adoption is hindered by the limited energy density, short operational range, and extended recharging times. Mitigating range anxiety remains a significant challenge in the EV landscape, especially in scenarios where EBs operate throughout the day. Effective managing of EB fleets requires solving two main problems: the Electric Vehicle Scheduling Problem (EVSP) and the Charge Scheduling Problem (CSP). EVSP is an extension of the Multi-Depot Vehicle Scheduling

Problem (MDVSP), where the goal is to assign timetabled trips to vehicles to minimize fixed and operational costs without violating range restrictions. On the other hand, CSP determines a charging schedule for electric buses that minimizes the sum of contracted capacity costs and electricity consumption costs based on time-of-use (TOU) prices. As the usage of EBs continues to grow, integrating renewable energy sources (RES) is essential to make it fully sustainable. However, using energy from RES presents challenges due to its stochastic nature. It is susceptible to variations in climatic conditions throughout the day, month, and year. From a consumption standpoint, the energy requirements of EBs are significantly influenced by temperature variations. Keeping these aspects in mind, at a planning level, we need to decide how much grid capacity to design charging depots for, what the solar panel sizes should be, and how much battery energy storage system (BESS) capacity to have at the charging depots. At an operational level, depending on the scenario associated with the realization of Global Tilted Irradiance (GTI) and temperatures, short-term decisions on bus-to-trip assignments and charge schedules are optimized. This scenario-based approach helps us address the following fundamental question. How beneficial is it to optimally integrate RES while operating electric transit fleets? Furthermore, we analyse the importance of accounting for temperature-specific energy consumption in the CSP models and explore solution techniques that can be adopted to make the model computationally tractable for real-world networks. Although studies related to RES in the context of EVs are abundant, literature on EBs integrated with RES is scarce. The schedules of EVs requiring charging at a depot are challenging to predict. Hence, most studies that integrate EV operations with RES assume random arrivals of EVs at a charging station (Zhang et al., 2013; Yao et al., 2017). However, for EBs, the timetable is fixed by transit operators, and hence, it is possible to plan strategically and determine the exact itinerary for each bus. To the best of our knowledge, no study has tackled the charge scheduling problem combined with uncertain solar energy generation and variable bus-to-trip assignments for EBs. Our study bridges this gap by proposing a linear programming formulation, solved using Benders' decomposition. The objective function for the CSP consists of five terms. The first three terms give the cost of the solar-powered BESS capacity, the cost of contracted grid capacity, and the area of the installed solar panels, respectively. These decisions are related to the depot operator's long-term initial investments. The last two terms are expectations of scenario-specific terms, one for the energy taken from the grid and the other for the energy taken from the solar-powered BESS. The constraints include charging level consistencies of buses and batteries, the maximum and minimum threshold of charging levels of buses, and the maximum energy transferred to buses at every time-step. Because of the problem scale of real-world networks and owing to the block-diagonal structure of the constraints with non-overlapping blocks for each scenario, Benders' decomposition was used to solve the problem. We demonstrate the benefits of our model on two real-world bus transit networks: Durham Transit Network, Ontario, Canada, and Action Buses, Canberra, Australia. We used CPLEX's built-in Benders' decomposition implementation with our annotations for the variables and benchmarked it against CPLEX's (primal) LP solver. For small instances, primal simplex performs well. However, as the number of scenarios increases, Benders' decomposition starts doing better. Further, primal simplex could not solve Durham (with 52 scenarios) and Canberra (with 12 and 52 scenarios) in 24 hours. In addition, our model provides cost savings of 12.99% and 44.88% for the Durham and Canberra networks, respectively, on account of the integration of renewable resources.

681

Submission Number: **681**	Track: **CTL**
Paper Title: Electric Truck – Possible Future of Trucking Industry in India for Economic Efficiency	
Authors: Mahendra Parihar	
Abstract: Electric vehicles are considered as future for any economy in general and Indian Economy in particular because only through electric vehicles India can reduce greenhouse gases as well as reduce import bill with especial reference to crude oil since India is meeting 85% of its crude oil requirement via import from many countries. It is also observed that major share of India's import bill is of crude oil and whatever amount of crude oil is imported in form of petrol and diesel, the major part is being consumed by trucking industry i.e. Road Freight Transportation Industry as a part of logistic sector in our country. Today, there are more than 10.25 million trucks an Indian Roads and given growth in economic activities especially based on agricultural and industrial sector along with improvement in road infrastructure in India. The demand for trucks (various categories) also going up. The increased demand for trucks will also be supported by recent policy announcement by Government of India, i.e. vehicle scrap policy. Hence, it is important at this juncture to find out possible way to transform trucking industry and electric truck as one of the possible way's as future of trucking industry in India. Thus, current study attempt to find out economics of scale with reference to operation of trucking industry through electric truck.	

686

Submission Number: **686**	Track: **CTL**

Paper Title: Responsible Menu Choice Design to Reduce Food Waste and Improve Access for Low-Income Customers- A Step Towards Sustainable Food Supply Chains

Authors: Sagnik Sarkar, Debjit Roy and Tugce Martagan

Abstract: Effective menu design is central to both the customer food experience and the restaurant's profitability. Restaurants face the operations dilemma where a generous menu portion drives customer value but also contributes to a significant amount of food being left on the plates. According to a survey by the Food and Agricultural Organization (FAO, 2011), about one-third of the food produced for human consumption is lost or wasted yearly, amounting to about 1.3 billion tons of food wastage globally. The Food Waste Index Report of the United Nations (UNEP, 2021) revealed that India alone generates approximately 69 million tons of food waste annually, of which 12 million tons is generated from the food establishment industry. While the food establishment industry comprises restaurants, cafes, bars, fast food chains, and lounges, most of this waste is generated from restaurants alone. Hence, reducing food waste and leftover inventory in restaurants requires prompt and vigilant action. Restaurants operate with different business models to serve their customers. Two significant dine-in formats include QSR (Quick Service Restaurant) and the casual diner model. Online food deliveries fulfilled from remote cloud kitchens (or virtual restaurants) are also growing. Some restaurants cater to both dine-in and online food delivery orders from their dine-in kitchen. Each format caters to a different genre of customers; for instance, cloud kitchens are more focused on a few menu items but serve large portion sizes at affordable prices; on the other hand, QSRs offer quick meal preparation times and typically offer dishes with different portion sizes (small, medium, large) on the menu. For instance, Subway offers footlong or 6-inch wraps; likewise, McDonald's offers French Fries with varying portion sizes: Small Fries, Medium Fries and Large Fries. Casual dining typically focuses on enhanced experience with little focus on menu portion sizes. In this study, we consider restaurants that cater to both dine-in and online customer orders. The restaurant offers dishes with two portion sizes- standard and affordable. A standard portion is typically large and offers a more sophisticated dining experience, whereas an affordable portion refers to a smaller portion size with no such elevated experience attached. The restaurant server takes more time to prepare a standard menu item than an affordable menu dish, while an affordable menu dish requires significantly less inventory than a standard menu dish for preparation. Restaurant managers control the menu offerings dynamically, i.e., to offer affordable dishes on the menu or not at different time periods. Note that affordable dishes result in lower revenue for the restaurants as compared to standard menu dishes but can enhance both the customers' access to food and the utilisation of the inventory left after preparing standard menu dishes. What is challenging to a restaurant manager is the goal to simultaneously attain multiple objectives from the perspective of both customer and restaurant provider: 1) deciding when to turn on/turn off a particular menu type depending on the demand of orders and the workload of the restaurant, trying their best not to turn away a customer, and also not to keep a customer order waiting for a long duration, and 2) to have as minimum wastage (leftover inventory) as possible by the end of the planning horizon while utilising the restaurant's (server's) capacity to the best possible extent. The purpose of this study is thus to help restaurant managers make some crucial, interlinked decisions: 1) How much inventory to stock at the beginning of the planning horizon (typically, a day), and 2) When should a particular menu type be turned on/ made accessible or turned off/made inaccessible in order to effectively serve customers across diverse socio-economic backgrounds, including both high and low-income groups, while maximising restaurant profits and minimising daily food waste from leftover inventory. This study presents a decision-making (under uncertainty) framework for examining menu-offering choices for restaurant managers handling both physical restaurant operations and online sales channels. The restaurant manager observes the demand across various channels/customer segments and the utilised/unutilised capacity and inventory at the restaurant and decides to turn on/turn off a specific menu type for the forthcoming period, thereby affecting the restaurant's profits, reputation, capacity utilisation, lost sales and leftover inventory. It is essential to study these decisions since their consequences affect the corresponding choices for the next time period. The research questions specifically addressed by this study are: RQ1: Could we define an optimal strategy for turning on/off specific menu types across multiple time periods over a finite planning horizon? RQ2: To ensure minimal wastage, what is the optimal raw material inventory to be stocked at the beginning of the planning horizon? The paper addresses the problem of responsible menu design by formulating it as a finite-horizon discrete-time Markov Decision Process (Puterman, 1994) to characterise the optimal menu turning on/off strategy. At every decision epoch, the restaurant manager has two options: either to turn on (make accessible) or to turn off (make inaccessible) the affordable menu items to the customers. Each menu type has its own demand owing to its target customer segment. Switching on the affordable menu results in a spillover of demand from the standard menu. Any leftover inventory at the end of the planning horizon attracts a penalty for the restaurant. The total capacity of the restaurant server for each time interval remains the same. Any accepted yet unprocessed order(s) or unmet demand at the end of every period/cycle causes a significant goodwill loss for the restaurant. Keeping all these constraints in mind, our findings hint at an optimal policy for switching on/off menu types so that the net gains for the restaurant are maximised throughout. We contribute to research and practice as follows: 1) Our model helps restaurants improve their operational resilience and contribute to a more sustainable food supply chain

by effectively reducing food waste, ultimately setting a new standard for ethical and efficient order fulfilment. 2) We investigate several structural properties of the decision model and generate several managerial insights- for instance, the effect of periodically fluctuating demand and spillover rate on the optimal policy.

694

Submission Number: **694**	Track: **CTL**

Paper Title: Commute Distance and Residential Characteristics: Weathering the Storm

Authors: Nachiket Gosavi and Naga Siva Gayatri Dittakavi

Abstract: Commuting distances in developing countries have received little attention, creating a significant gap in research. This study aims to address the crucial gap by utilising the 76th NSSO round on 'Drinking water, sanitation, and housing conditions'—a nationally representative dataset for our analysis. Research conducted in developed countries has shown that residential self-selection (RSS) has a negligible role in determining commute distance. In the context of a fast-developing country like India, this article investigates whether this phenomenon holds true. Our primary focus is on understanding the explanatory power of location and physical characteristics of households. Our analysis reveals that over two-thirds of job-related trips in India cover a maximum distance of less than five kilometres, which holds true for both males and females. Additionally, when examining reasons for relocation, it becomes evident that relocation for employment-related reasons is rare, with the residence being the core focal point. The association of these variables with commute distances indicates a negligible to weak relation. Based on our results, we conclude that the inclusion of location and physical characteristics of households need not significantly contribute to the explanatory power of the model.

732

Submission Number: **732**	Track: **CTL**

Paper Title: AUTOMATED DECISION-MAKING FOR EITV CHARGING IN CONTAINER TERMINALS

Authors: Abhinav Tiwari, Aasheesh Dixit and Vijay Gupta

ABSTRACT- Internal Terminal Vehicles (ITVs) are vital for port operations, especially in loading and unloading vessels. This research introduces a Mixed-Integer Linear Programming (MILP) model to optimize Electric Internal Terminal Vehicles (EITVs) charging schedules, considering factors like charging station capacity, real-time charging/discharging rates, current EITV status, and overall port operations. The model maximizes EITV availability and operational efficiency by providing charge-in and charge-out recommendations every 30 minutes, ensuring EITVs are charged just enough to meet demands. Predictive analytics forecast Quay Crane (QC) requirements based on expected vessel arrivals, enabling proactive decision-making and efficient resource allocation. The MILP model's success in various container terminals highlights its scalability and adaptability, making it a versatile tool for port managers. By adopting this model, ports can achieve significant improvements in operational efficiency, digitalization, and economic performance, positioning them to leverage digital transformation effectively. 1.INTRODUCTION- The maritime industry is increasingly adopting smart port technologies to enhance operational efficiency. Ports, as critical nodes in global supply chains, rely heavily on Internal Terminal Vehicles (ITVs) for loading and unloading operations. Traditionally, diesel-powered ITVs have been the backbone of these activities, but their operational inefficiencies necessitate a shift towards Electric Internal Terminal Vehicles (EITVs). The transition to EITVs introduces operational challenges, particularly in managing regular charging intervals to maintain availability. The variability in battery usage rates, influenced by operational intensity and driving behavior, complicates EITV management. Ensuring their availability necessitates an optimal charging schedule, a complex task given the dynamic nature of port activities. The integrated movement of Quay Cranes (QCs) with Internal Terminal Vehicles (ITVs) is crucial for optimizing port operations. This synchronization ensures that the loading and unloading processes are seamless, reducing idle times and enhancing overall efficiency. By coordinating the movements of QCs and ITVs, ports can achieve a more streamlined workflow, where ITVs are always available to transport containers as soon as they are offloaded by the QCs. Transitioning to EITVs and implementing an automated decision-making tool for their charging schedules are pivotal steps towards achieving efficient port operations. The proposed MILP model offers a comprehensive solution to the challenges of EITV management, providing strategic decisions that enhance availability and improve operational efficiency. By embracing these innovations, ports can boost economic performance and contribute significantly to global digital transformation efforts. 2. METHODOLOGY-To address these challenges, an automated decision-making tool is essential. This tool must optimize EITV

charging schedules while coordinating with other critical port resources, such as Quay Cranes (QCs). Here, we have proposed a Mixed Integer Linear Programming (MILP) approach, which has taken Charging rate, discharge rate, Max station, charge frequency, maximum charge, minimum charging, initial charge, final charge and expected EITV's as per expected time of arrival of vessel are used as parameters. The proposed model objective is to maximize availability of EITV in each Container terminal. Constraints in the model are based on 1. EITV status (working /charging) at any time 2. Available charge of each EITV at any time 3. Condition for EITV utilization. 4. Minimum and Maximum EITV required at any time 5.Maximum EITVs could be charged at any time. 6. Condition for EITV charging 7. Maximum charging frequency in planning horizon. 8. Allocation of EITV as per Vessel (ships) movement. 3. RESULTS AND DISCUSSION: The implementation of the Mixed-Integer Linear Programming (MILP) model for optimizing Electric Internal Terminal Vehicles (EITVs) charging schedules has significantly enhanced port operations. The model strategically schedules charging periods every 30 minutes, ensuring EITV availability aligns with vessel movements within the port area. This real-time optimization feature maintains optimal performance and adaptability to changing conditions, effectively reducing minimal charge scenarios. The MILP model leverages real-time data sources to provide precise charge-in and charge-out recommendations for all terminals, ensuring EITVs are charged just enough to meet operational demands. This approach extends EITV working hours and enhances vehicle availability, contributing to increased operational efficiency. A key feature of the model is the result dashboard, which displays live EITV status. This real-time visibility aids in compliance and operational management within the port area. The integration of predictive analytics into the MILP model provides valuable insights for strategic planning, enabling proactive decision-making and efficient resource allocation based on expected vessel arrival times. 4. CONCLUSION AND MANAGERIAL INSIGHTS-Enhanced Operational Efficiency: The MILP model ensures optimal EITV availability, reducing downtime and increasing the efficiency of port operations. This leads to smoother and more reliable loading and unloading processes, which are critical for maintaining the flow of goods in global supply chains. 2.Sustainability and Environmental Impact: Transitioning to EITVs significantly reduces the carbon footprint of port operations. The model's ability to optimize charging schedules and predict QC requirements further minimizes CO2 emissions, aligning port operations with global sustainability goals and regulatory requirements. 3. Cost Savings: By reducing dependency on diesel ITVs and optimizing the use of EITVs, ports can achieve substantial cost savings in fuel and maintenance. The extended working hours of EITVs also contribute to higher productivity and lower operational costs. 4.Strategic Decision-Making: The integration of predictive analytics into the MILP model provides managers with valuable insights for strategic planning. By forecasting QC requirements and optimizing EITV schedules, managers can make informed decisions that enhance the overall performance of port operations. 5.Scalability and Adaptability: The success of the MILP model in various container terminals demonstrates its scalability and adaptability to different port environments. Managers can customize the model to suit specific operational needs and constraints, ensuring its effectiveness across diverse settings. 6.Innovation and Competitiveness: Embracing smart port technologies and digital transformation positions ports at the forefront of innovation. This not only enhances their competitiveness in the global market but also attracts investment and fosters economic growth.

739

Submission Number: **739**	Track: **CTL**

Paper Title: Resilient Transportation Systems for Older Adults: A Global Review with Policy Recommendations for India

Authors: Jayanth Kumar Narsim and Sandip Chakrabarti

Abstract: Introduction The global population is rapidly aging, with the proportion of older individuals (65 years of age or older) projected to increase from 10% in 2022 to 16% in 2050 (United Nations Department of Economic and Social Affairs, Population Division, 2022). Older adults are vulnerable to disruptions in transportation systems due to physical limitations, health conditions, and socioeconomic disparities. A resilient transportation system is essential for older adults to maintain their independence, access essential services, and participate fully in society. In India, these challenges are further amplified by rapid urbanization, inadequate age-friendly infrastructure, and the increasing frequency of extreme weather events. This review paper synthesizes global research on transportation resilience, healthy places, and age-friendly policies, with a specific focus on their implications for older adults in India. Review of Literature The increasing vulnerability of older adults and the growing threat of climate change has intensified the focus on transportation resilience globally (Lim, 2023). The concepts of "healthy places" and "ageing in place" has gained prominence (Kiyota, 2018). They emphasize the importance of environments that promote the physical, mental, and social well-being of all residents, including older adults. A healthy place encompasses various dimensions, such as access to healthcare, social services, and transportation options. For older adults, a healthy place also means an age-friendly environment that supports their independence, participation in community life, and overall quality of life (Forsyth, 2019; Aldrich & Kyota, 2017). While programs like the WHO's Age-Friendly Cities and Communities Initiative (AFCIs) have proliferated, with cities like Kochi joining the movement (Kochi-Age-Friendly World,

2024), there is a need for critical analysis of their outcome evaluations. The integration of transportation resilience into these initiatives requires further exploration and understanding (Forsyth & Lyu, 2023). Transportation plays a crucial role in creating healthy places for older adults. It enables them to access essential services like healthcare and essentials, maintain social connections with family and friends, participate in community activities, and remain active and engaged in their later years. A well-designed, resilient transportation system is a fundamental component of a healthy place, especially for older adults (Satariano et al., 2012; Guan & Forsyth, 2020; Xiao & Drucker, 2013). In India, challenges like the lack of adequate infrastructure supporting active travel, such as sidewalks, benches, and green spaces, make mobility difficult, especially in the face of increasing climate change impacts like heat waves (Lakhotia et al., 2019; Shakya & Khan, 2024). The vulnerability of older adults to transportation disruptions underscores the critical need for resilient transportation systems that can adapt to and recover from such challenges, ensuring access to essential services and social connections (Gonçalves & Ribeiro, 2020). However, the current urban planning and policymaking landscape in India falls short of integrating these health considerations into transportation infrastructure and services (Kurth et al., 2020; Chen et al., 2021). Lack of coordination between land use, transportation policies, and infrastructure investment has led to systems not conducive to the needs of an aging population (Yu et al., 2018; Warner & Zhang, 2019; Tonn et al., 2021; Larriva et al., 2024). This fragmentation results in inadequate provisions for active transportation, limited accessibility, and heightened vulnerability to disruptions, thus compromising the overall resilience of transportation systems. The traditional paradigm of transportation resilience, which is to heavily reliant on car-centric models, is undergoing a significant transformation in the context of older adults' mobility. This shift is driven by a growing recognition of the limitations and inequities inherent in car-dependent systems, particularly for an aging population with diverse needs (Engel-Yan & Passmore, 2013; Shirgaokar, 2018; Shergold, 2019). It recognizes the importance of a diverse range of transportation options, including public transit, active transportation like walking and cycling, and innovative solutions like ride-sharing and micro-transit (Bai et al., 2021; Rebok et al., 2023). The evolving paradigm necessitates a comprehensive reassessment of transportation resilience for older adults in India. It requires a deeper understanding of the nature of resilience, encompassing not only physical infrastructure but also social support networks and community engagement (Lowe, 2014; Fields et al., 2021; Lee et al., 2022; Aida et al., 2023). Research Objectives This review paper comprehensively analyzes the factors influencing transportation resilience for older adults. Synthesizing research on resilience, healthy places, and age-friendly policies, it examines their implications for older adults' mobility, health, and well-being. It critically evaluates international policy frameworks promoting equitable mobility for older adults, assessing their applicability to India. A key objective is to develop and assess innovative solutions leveraging technology, urban design, and community engagement to enhance transportation resilience and mobility in India. Through this analysis, the paper will formulate evidence-based policy recommendations for age-friendly, equitable, and sustainable transportation systems in India, and propose a framework to assess the long-term impact of urban development strategies on older adults' mobility, incorporating quantitative and qualitative measures of mobility, accessibility, and well-being. Research Gaps Despite the growing body of research on transportation and aging, several critical gaps remain, particularly in the Indian context. Existing research lacks sufficient empirical evidence on the specific transportation challenges faced by older adults, limiting our understanding of their needs and experiences. Additionally, the impact of social infrastructure and community engagement on transportation resilience for this demographic remains under-explored. A significant gap exists in the development of comprehensive policy frameworks and evaluation mechanisms to assess the effectiveness of age-friendly transportation interventions, hindering the ability to measure and improve their impact on older adults' mobility and well-being. Significance and Policy Recommendations By addressing identified research gaps, this review will significantly contribute to the field of transportation resilience for older adults in India. Insights from this analysis will inform evidence-based policy recommendations to enhance transportation systems, focusing on integrating age-friendly design principles, promoting active transportation and public transit use, leveraging technology and community engagement, and developing comprehensive policy frameworks and evaluation mechanisms. Ultimately, this research will empower policymakers and stakeholders to create more equitable, sustainable, and age-friendly transportation systems for the growing aging population.

747

Submission Number: **747**	Track: **CTL**

Paper Title: Retail Effort Paradox: Does More Effort Always Deter Supplier Encroachment?

Authors: Faizul Haque, Sumanta Basu, Vishal Bansal and Peeyush Mehta

Abstract: Summary: Retailers exert retail effort to deter supplier encroachment. However, the dynamicity of subsequent retail efforts could lead to a possible reference effect for consumers, thereby impacting retailers' decisions. In this paper, we study the impact of retail effort on supplier encroachment in the presence of reference effect. We adopt a two-period game-theoretic interaction between a supplier and a retailer. The results indicate that contrary to traditional beliefs, retail efforts

do not always help deter supplier encroachment. Further, insights from post hoc interviews in supplier and retailer firms suggest that firms often overlook the reference effect of retail effort, thereby hindering the retailers' strategies. Introduction: The practice of upstream suppliers directly selling their products to consumers is on the rise. Firms such as Nike, Hewlett-Packard, Apple, Ralph Lauren, and Samsung, which have traditionally been selling their products through retailers, have subsequently expanded their market by selling directly to consumers. In turn, retailers adopt several strategies, one among them being the exerting of retail effort. Retail effort consists of the retailer's demand-enhancing services, such as advertisement, promotions, attractive shelf displays, and customer support. Although retail effort is expected to help retailers counter supplier encroachment, the presence of reference effect of past retail efforts exerted by the retailer in different selling seasons might not help in effectively countering supplier encroachment, which would ultimately hamper retailers' strategy and decision-making. The reference effect defines the consumers' expectations, shaped by past retail efforts. To better understand this reference effect in the given context, we surveyed 170 consumers (to study the antecedents of this reference effect) and interviewed ten practitioners (supply chain and marketing managers in retailer and supplier firms) from a developing economy. The responses showed that past retail efforts exerted by retailers leave a transient effect of the retail effort in future selling seasons, and this transient effect is often overlooked by the retailers while assessing their strategies. This also corroborates with the monthly data collected for two leading retailers in India, where the monthly orders declined during subsequent retail efforts. Thus, this warrants further examination in the context of supplier encroachment, i.e., does retail effort always help retailers during supplier encroachment in the presence of reference effect? Moreover, as the retailer firms use retail efforts in different selling seasons, they carry extra inventory across the selling seasons. In practice, retailers often carry inventory for various operational reasons; however, carrying inventory purely due to strategic reasons has been on the rise. Our interviews also reflected the presence of strategic inventory that retailers use in subsequent selling seasons. As the retailer firms use retail effort in addition to strategic inventory to counter supplier encroachment, it becomes pertinent to study the impact of the reference effect on the retailer's deterrence of supplier encroachment. In doing so, we would be able to uncover the intricacies of the role of the reference effect when a retailer exerts retail effort to counter supplier encroachment. Thus, we address four research problems in this paper: (i) When should the supplier sell through its direct channel in the presence of the retailer's retail effort? (ii) How should the retailer use strategic inventory alongside retail effort to counter supplier encroachment? (iii) Does the supplier's restriction on the retailer's order quantity impact strategic inventory and subsequent encroachment decision? (iv) While facing competition, how does the supplier's encroachment decision change in the presence of the retailer's effort and strategic inventory? Method: To address our research problems, we consider a dyadic supply chain with a supplier and a retailer and formulate three analytical models. The supplier initially sells a product through the traditional wholesale channel via a retailer and can open its direct channel in the subsequent selling season. There are two periods (two selling seasons) in which the retailer purchases the product from the supplier and sells it to the consumers. We assume the products sold through traditional and direct channels are perfect substitutes. Further, we capture the transient effect of the retail effort using a simplified two-period version of the Arrow and Nerlove Goodwill model. We also conducted post hoc interviews with the practitioners, which allowed us to provide corroborating evidence for our analytical results. Results and Managerial Insights: The main findings of this study can be summarized as follows. First, we find that the retail effort exerted by the retailer does not always help in deterring supplier encroachment. This result contrasts with the practitioners' beliefs at the retailer firms. Second, the retailer withholding strategic inventory in the presence of retail effort helps to deter supplier encroachment only when the retailer carries partial inventory across the selling periods. Third, contrary to the current industry practice where the supplier restricts the order quantity to dissuade the retailer from carrying strategic inventory across the selling periods, we recommend an increase in the order capacity under certain conditions. Lastly, this study also shows that the retailer should carry less strategic inventory in upstream competition between suppliers than when only one supplier exists. With upstream competition, supplier encroachment is contingent on the competing products' substitutability and the transient effect of retail effort. Coupled with the post hoc interviews, our analytical results indicate that the reference effect of retail effort significantly impacts retailers' strategies in deterring supplier encroachment. Our findings have important managerial implications for retailers faced with supplier encroachment. Although it is widely observed that retailers exert several forms of retail effort in different selling seasons to attract consumers, little attention is paid to the suppliers' free-riding behavior and the presence of reference effect of retail effort (immediate and transient effect). Consequently, while putting in the retail effort, retailers need to appropriately estimate the transient effect of the retail effort as there could be a reference effect due to the dynamicity of the retail effort.

751

Submission Number: **751**	Track: **CTL**

Paper Title: Beyond Electric Vehicle Adoption: Should Government Support Battery Management System Development for Battery Lifecycle Management

Authors: Nandan Kumar Singh, Nishant Kumar Verma and Milan Kumar

Abstract: The paper examines the economic and environmental impact of government subsidies for Bat- tery Lifecycle Management (BLM) through the development of Battery Management Systems (BMS) in Electric Vehicles (EVs). Investment in BMS increases battery life, which in turn improves firm profits; however, BMS development is a costly affair. Governments are inclined to support investment in BLM, such as BMS development, if it has positive environmental implications. However, the environmental outcome of BMS-led improved battery age is not straightforward. Our equilibrium analysis of the interaction between the government and the firm reveals the conditions under which the government should support BMS development and the extent of that support and the condition under which it will lead to greater EV adoption and enhanced environment sustainability. The government offers either no support, partial support, or full support for BMS development. The decision depends on the BMS development cost and a nation's sustainability context. We find that the government's decision to offer a subsidy shifts from full support to no support as the battery's disposal and replacement processes (end-of-life practices) become increasingly sustainable compared to energy generation for powering EV batteries (in-life practices). Further, with the advancement of the BMS technology, the firm increases its BMS development effort, leading to higher firm profitability. However, when the end-of-life practices of a battery are highly sustainable compared to in-life practices, the environment and the government objective take a hit. In contrast, when the end-of-life practices are relatively unsustainable, the advancement of the BMS technology proves to be a win-win-win scenario for the firm, the government, and the environment. Lastly, when end-of-life practices are highly sustainable relative to in-life practice, a holistic government approach that equally emphasizes all stakeholders—consumers, firms, and the environment—creates a win-win scenario with increased consumer surplus and environmental benefits. Within electric mobility, governments are increasingly focusing on EV batteries. Our study serves as a starting point for future OM research in the BLM domain. The paper quantifies the environmental impact of batteries across their lifecycle, allowing for an assessment of government policies based on this quantification. The insights from our research can directly inform governments in formulating future EV policies

756

Submission Number: **756**	Track: **CTL**

Paper Title: Analyzing the impact of no-fly zone restriction on drone delivery

Authors: Shamik Pushkar and Elkafi Hassini

Abstract: In recent times drones have emerged as a promising solution for last-mile delivery logistics. However, governmental regulations have significantly inhibited the growth of drone-based delivery services. In this paper, we propose a hybrid delivery framework termed the Traveling Salesman Problem Drone (TSP-D), in which drones and trucks collaborate to perform last-mile deliveries. We integrate two critical regulations namely, restricted no-fly zones and the maximum allowed flight range, within our operational model and evaluate their impact on the overall efficacy of the system. Our research demonstrates that in environments characterized by minimal regulatory restrictions, the integrated truck and drone delivery system presents a compelling business opportunity.

806

Submission Number: **806**	Track: **CTL**

Paper Title: A Structural Analysis of Freight Delays in the Indian Railway Network

Authors: Himanshu Arha, Kashish Arora, Milind Sohoni and Raja Gopalakrishnan

Abstract: Despite being one of the most cost-effective and sustainable modes for transporting freight, railways globally have been rapidly losing market share in the inland freight transportation sector. One of the salient reasons for this is the slow speed of freight trains in many parts of the world. For example, in Indian Railways, the world's fourth-largest in size, the average freight train speed is only around 25 kmph and has remained constant for the past few decades. The slow pace of freight trains is because passenger trains, which share the same railway infrastructure, get prioritized in dispatch by railway traffic managers (also known as section controllers). In this paper, we empirically study freight delays in the Indian railway

setting by analyzing how section controllers make freight train stop and hold decisions while dispatching freight trains. Subsequently, we propose policies to reduce freight delays and, thus, increase trains' speeds through the network. We use detailed high-frequency network congestion data and estimate a structural model to estimate the key parameters underlying the controllers' decisions. The estimated parameters provide empirical evidence for (i) the priority accorded to passenger trains over freight trains, (ii) the push effects in the freight train queue, and (iii) the strategic behavior of section controllers in holding trains at larger stations. Using the estimated model, we conduct a set of counterfactual analyses to address the problem of slow freight train speeds. First, we evaluate the impact of constructing Freight Only Corridors (FOCs), high-capacity corridors reserved for freight transport. We find that the FOCs lead to about a 29% reduction in freight train delays and a 12% improvement in train speeds. Then, we also evaluate non capacity-investment-based alternatives to FOCs, like (i) threshold-based releases for freight trains dwelling longer than a specified time limit and (ii) freight capacity consolidation by using vertically stacked trains. Interestingly, we find that our non-capacity interventions can provide benefits similar to those of FOCs while being considerably cheaper. Specifically, a 45-minute threshold release policy leads to around 31% reduction in dwell times and 9% increase in speeds. Similarly, vertically consolidating freight capacity by about 25% leads to around a 10% increase in speed, comparable to the improvement achievable with the FOC. Our policy recommendations for improving freight speeds could enhance the overall efficiency of India's transportation infrastructure, benefiting the country's economic and social development.

838

<table>
<tr><td>Submission Number: 838</td><td>Track: CTL</td></tr>
<tr><td colspan="2">Paper Title: Value of Carbon Credit Markets to Farmers: Impact on Consumer and Social Welfare</td></tr>
<tr><td colspan="2">Authors: Lalbabu Nishad and Govind Kumawat</td></tr>
<tr><td colspan="2">Abstract: Carbon farming, also called regenerative agriculture, has the potential ability to mitigate currently glaring agricultural problems such as high fertiliser use and high GHG emissions induced by conventional farming. Carbon farming generally yields less than conventional farming, but it generates tradable carbon credits for lower GHG emissions. Since a farmer can receive tradable carbon credits for reduced GHG emissions under carbon farming, the role of the availability of the carbon credit markets and fertiliser subsidy becomes more prominent to the highly risk-averse farmers. In this paper, we investigate the following key questions: (i) What is the value of the carbon credit market for farmers, consumers, and governments? (ii) What are the impacts of the uncertainties in market potential and crop production on the welfare of farmers and society? We find that the farmers put more effort into carbon farming practices and benefit if the carbon price is above a threshold point. For a farmer, the availability of a carbon market doesn't always ensure higher profitability through carbon farming. The study's findings draw attention to the precautions needed for risk-averse farmers. The findings are beneficial for farmers and policymakers.</td></tr>
</table>

852

<table>
<tr><td>Submission Number: 852</td><td>Track: CTL</td></tr>
<tr><td colspan="2">Paper Title: Building Last-Mile Connectivity to Urban Public Transit Systems – Designing Optimal Fixed-Route Feeder Networks</td></tr>
<tr><td colspan="2">Authors: Murari Srinivasa, Rajluxmi V. Murthy and Reshma Chandrasekharan</td></tr>
<tr><td colspan="2">Abstract: Urban passenger transit is multimodal in nature, and connectivity at the last-mile with the dominant public transit system in a city is critical. The Last-Mile Problem (LMP) in this context is defined as the design and operation of services facilitating travel to/from a root public transportation node, such as a metro station, from/to a point which is conveniently close to the passenger's source/ destination. While transportation research has clearly highlighted poor access/ egress to/from metro rail systems as a key contributing factor to their under-utilization and low ridership, there has been clearly no robust approach to deploying last-mile services at metro stations in India. In this paper, we look at the problem of designing a last-mile fixed-route last-mile feeder network from the perspectives of the metro passenger and a potential last-mile service provider. We model this as a network optimization problem which minimizes an overall notion of turnaround time constrained by requirements ensuing from current passenger preferences and behaviour at the first/last mile. We solve the integer linear programming (ILP) formulation of the identified problem and demonstrate results on current data from Bengaluru Urban region and its metro infrastructure.</td></tr>
</table>

914

Submission Number: **914**	Track: **CTL**

Paper Title: Inventory Management of Deteriorating Complementary Goods with Demand Dependent on Price, Promotional Efforts and Trade Credit

Authors: Prakshal Jain and Arijit Goswami

Abstract: The integration of complementary product strategies with flexible credit policies represents a holistic approach to managing operations and relationships in the modern landscape. This paper presents a collaborative strategy for deteriorating inventory system with imperfect items and supplier credits. We will assume a demand function dependent on the price of the leading product and the effects of complementarity of the other products in the catalog. The supplier may look to further augment the demand by the use of promotional efforts. We will also incorporate trade credit policy at one level where supplier offers credit to retailer in case of complementary products to incentivize bundling.

950

Submission Number: **950**	Track: **CTL**

Paper Title: Identification and Resolution of Supply Chain Management Challenges in a Social Organization

Authors: Ravichandran N and Venkataramanaiah Saddikuti

Abstract: This paper elaborates on the supply chain management challenges and the resolutions that are adopted in the context of a large pilgrimage center (Tirumala Tirupati Devasthanam (TTD)) in the world. About 80,000 people visit this pilgrimage center on a daily basis. On special occasions this number can swing up by 30%. The revenue receipts of this organization are Rs 3000 crores. This is a heritage religious center with a documented history of over thousand years. It has a huge resource base in terms Cash, Gold, Silver and land. TDD is managed by a Board of Governors appointed by the government. The general administrative rules are governed by the appropriate Endowment Act, passed by the Andhra Pradesh government. The specific statistics and details related to TTD are appended. he central service managed by TDD is to provide an opportunity for the pilgrims to have a comfortable and enjoyable darshan. The ambiance created during the darshan and the experience is important. There are large number of other associated services that TTD has to organize and supervise to make sure that the experience is divine. The various components related to darshan (value chain) are depicted in a separate picture that is appended. Pilgrims (from different parts of India and outside India) reach Tirupati by different modes of transport (road, rail, airlines, and by foot). religious belief. On arrival to Tirupati, pilgrims reach Tirumala by public, private, own transport (four and two wheelers) or by footpath. Elaborate security arrangements are in place at all entry points. Vehicles and luggage/bags are scanned by TTD Security for prohibited items like tobacco products, liquor, non-vegetarian items, weapons, ammunition, etc. Multiple sevas are possible for a pilgrim. The website (www.tirumala.org) provides detail of various sevas and the time slot along with the applicable fee. Pilgrims can book (online) their sevas prior to their visit to Tirupati. On arrival to Tirumala, they (pilgrims) look for an accommodation (free/paid) and settle down. After they settle down, several things are possible for a pilgrim in multiple sequences. Some go to the Kalyanakatta to offer their hair to Balaji as a mark of respect. Some go to Pushkarini to take a bath. Some take rest and prepare for darshan. After the darshan is over, some go to Kalyanakatta to offer their hair and take a dip in the Pushkarini. The combination of darshan, visiting Kalyanakatta and Pushkarini can happen in whatever form that suits an individual's time and frame of mind. After the darshan is over, usually the pilgrims move to the Laddu distribution counters where they collect laddus as per their darshan ticket privileges. Depending on time available, pilgrims go around Tirumala to enjoy the surroundings and the divinity of the place. They walk around the temple. Some do religious shopping. Some eat in the commercial restaurants. Several go to the Annaprasadam complex to receive free meal served by TTD. A few visit the Museum and Art gallery. Figure 6 shows the possible flow paths at Tirumala from base camp. TTD is a large social organization with significant amount of revenue and expenditures. It has a huge brand, and therefore any mismanagement or pilgrim disappointment will be widely publicized. TTD is managed by a senior administrative officer and two middle level administrative officers of Andhra Pradesh cadre to ensure effectiveness and efficiency in the administration. TTD is running the largest tonsure center in the world (30000 per day), and it operates a large sweet making and distribution system (3.5 Lakhs per day). It runs a separate transport corporation (2200 trips per day) and it has got a huge public bathing facility (20,000 per day). It runs a large kitchen, feeding about 40,000 persons per meal. It also manages large lodging facility (7500 rooms) and handles significant amount (both in volume and variety) of cargo (31,000 per day). TTD is a huge facility management organization in terms of providing

sanitation, drinking water, housekeeping safety and security of the pilgrims. It deals with a complex high volume waiting line management. TTD has to manage multiple diverse activities each one of them is significant and has its own challenges. The sum total of the effective management of the components will provide a unique pilgrimage experience. In this paper, we discuss the content of each one of these components of the pilgrimage experiences and identify the logistics challenges and how TTD has managed to deal with this situation. At an abstract level, the pilgrims experience is the combination of how several of the components are managed. The managerial issues that need to be addressed include the structure, processes, automation, performance metrics, deployment of information technology, accountability and auditing and capacity creation. In TTD, the supply chain model is a nested arrangement of all elements of this complimentary supply chain. Some key challenges involved in managing TTD is the decisions related to, capacity creation and whether capacity deployment should be centralized, or decentralized, the level of automation, process simplification and pricing of the products and services, efficient waiting time management, eco-friendly measures and allocation of manpower and monitoring that performance. What is unique about this supply chain? This supply chain is embedded in the context of a social organization. It deals with a large number of customers both in volume and variety. The Supply chain has a number of sub-components whose management is extremely important. A customized solution for each one of the sub-components. The TTD supply chain provides an example of how a combination of several dependent supply chains would support the functioning of the organisation.

1005

Submission Number: **1005**	Track: **CTL**
Paper Title: Mapping Research Trends with Factorial Analysis in Adoption of Green Vehicles	
Authors: Paras Rajyaguru and Dr. Vaishali Dhingra	
Abstract: Clean sources of energy are a priority area for many organizations wherein primary cause of climate change is the use of fossil fuels by industries and transportation sector. The deployment of green vehicles may mitigate critical issues such as environmental pollution and dependence on non-renewable fuels. Due to the lower greenhouse gas (GHG) emissions and reliance on fossil fuels, green vehicles are paving the way for sustainable mobility.This study intends to analyse and visually map the body of academic literature connected to the significant aspects of Adoption of Green Vehicles from a bibliometric standpoint. It aims to identify trends and developments in scientific publications using 176 international journals in the Scopus database published between 2000 and 2024. The PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) framework was utilised for the selection of the articles. Factor Analysis, Lotka's Law, Bradford's Law, Tree map. Conceptual, social, and intellectual structures of bibliometric analysis are utilized for a better understanding of scientific publications related to adoption of green vehicles by systematically evaluating the impact and productivity of academic research in the field and identifying the most frequently associated topics.	

1025

Submission Number: **1025**	Track: **CTL**
Paper Title: OPTIMIZING SUPPLY CHAIN MANAGEMENT USING PROCESS MINING	
Authors: Shreya Saraf and Sudhanshu Shekhar	
Abstract: SCM means the management of a number of different business processes on procurement, production, logistics, and distribution. Process mining is a technique driven by data to extract insight from event logs in information systems. This paper discusses several potential ways process mining can help optimize these processes by providing an overall analysis of real business operations, uncovering inefficiencies, and improving general process transparency. In this research, a qualitative approach will be used by drawing case studies from some of the leading manufacturing companies. It will involve data extraction from ERP systems, process discovery using the Inductive Miner algorithm, and conformance checking with Align-ET-Conformance algorithm. The key performance indicators to guide the analysis include lead time, cycle time, and compliance rates. The study aims to use process mining in SCM, showing how it could improve the visibility of supply chain processes and make operations leaner toward driving a data-driven culture. The findings suggest such a strong tool toward achieving operational excellence in supply chain management.	

1091

Submission Number: **1091**	Track: **CTL**

Paper Title: Fairness and Equilibrium Pricing Strategies in the Online Food Delivery Market: A Game Theory and Mechanism Design Approach

Authors: Ashish Kumar and Suresh Jakhar

Abstract: Online food delivery has gained global popularity recently and is undergoing significant expansion. The Worldwide Online Food Delivery market will generate a revenue of US$1.20tn by 2024, with a CAGR of 9.04%; this growth will lead to a market value of US$1.85tn by 2029 (Worldwide Statista, 2024). According to the Worldwide Statista report for 2023, China and the USA have the most significant revenue, amounting to 397.4 and 287.9 billion USD (US $), respectively. India is to surpass South Korea and Japan to become the fourth-ranked country in terms of revenue, with a projected value of 43.78 billion USD (US$) in 2024. For restaurants, these applications have become an excellent method for increasing discoverability. However, many believe that this increased visibility comes with a significant expense. Many restaurants are experiencing difficulties due to exorbitant commission costs and are engaged in disputes with platforms, particularly in rising markets like China and India (Economic Times, 2016). In India, the commission rate ranges from 25-35 percent, depending on the specific restaurant. This has become a significant source of disagreement between restaurants and food delivery companies (Indian Express, 2024). The profitability of food services is already low, and restaurants perceive listing on Zomato and Swiggy as having both positive and negative consequences. If they are not on these apps, they may experience a decrease in customers ordering food for home delivery. However, if they do list on the apps, they give a significant portion of their earnings to these delivery companies. In addition to the delivery fee for all food orders, the service provider charges a platform logistic fee regardless of the customers enrolled in the loyalty program. This causes the total cost of online food delivery to increase even more. Grubhub charges restaurants in the US market an average commission of 25% and a $2 logistical service fee for each online order. Similarly, major food delivery services in India, such as Swiggy and Zomato, have increased their platform fees. As a result, the cost of an order has increased from Rs 5 to Rs 6, a 20% rise (Business Standard, 2024). According to Pletz (2019), restaurants view the cost of logistics services as an impediment used to manipulate their profit margin. There have been other cases in the recent past where the prices of products on these platforms appeared to be higher than those offered at the same restaurant offline. Over time, these occurrences cause individuals to become aware of the high cost of online delivery, which ultimately causes them to order less from the website (India Today 2022). This puts these platforms in a position where they must implement a cap on cost growth to benefit all parties involved. Previous research has predominantly concentrated on dual-channel concerns, particularly the offline and online channels facilitated by third-party ordering platforms. Scholars have suggested whether restaurants should adopt a dual-channel strategy and have analyzed the pricing policies and quantity decisions at equilibrium for this strategy. Multiple studies primarily focus on supplier/manufacturer encroachment, which refers to the situation where a manufacturer/suppliers builds its distribution route and competes directly with its retailer channel. Common studies, such as Li et al. (2015), and Wang et al. (2018), examine the potential for reducing conflicts between channels when suppliers or manufacturers encroach on each other's territory. Multiple studies have investigated whether suppliers/manufacturers in a chain-to-chain competition prefer channel diversification or consolidation. Examples of these studies include Wu et al. (2009), and Li et al. (2020). An increasing body of literature also focuses on sustainability analysis using competitive models. Choi and Chiu (2012) suggest using established indicators to assess the sustainability of supply chains, focusing on environmental sustainability as a crucial aspect. Choi and Chiu (2012) have undertaken multiple studies on integrating sustainability into the business and the environment. These studies have examined several issues, such as government regulations like taxation and environmental capital expenditure, as well as supply chain arrangements like procurement outsourcing. Some of these studies include Dong et al. (2016) and Niu et al. (2019). There is a lack of research on the issue of justice regarding pricing discrimination between online and offline channels in the context of online food delivery. This study aims to investigate the issue of fairness in consumer decision-making regarding whether to purchase from an online or offline channel or not to purchase at all when information is available, using game theory and mechanism design. The study also suggests the online delivery partners on equilibrium pricing strategy and selling quantity decisions. Additionally, it can provide valuable insights for managers working with restaurant owners to maintain the long-term viability of their businesses.

1187

Submission Number: **1187**	Track: **CTL**

Paper Title: Cardinality-based Disaggregated formulation and cutset inequalities for the Steiner Tree Problem

Authors: Md Shahrukh Anjum, Trilochan Sastry and Jitamitra Desai

Abstract: The Steiner Tree Problem (STP) seeks the optimal interconnection of a given subset of nodes, called terminal nodes, within a graph by possibly connecting extra nodes, known as steiner nodes. Despite its theoretical complexity, the problem finds applications across several real-world domains, especially within logistics and transportation. The STP serves the transportation infrastructure by offering a model to identify the best route for connecting a collection of important places (cities, distribution hubs, etc.) with the minimum overall road length. This in turn help urban planners reduce costs and improve traffic flow. However, due to their combinatorial character and expansive solution spaces, the STP presents substantial difficulties in its run time, owed to its NP-hard property, which enforces the development of specialized algorithms and formulation techniques to tackle these problems efficiently. In this research, we offer a powerful cardinality-based disaggregated Mixed-Integer Programming (MIP) multi flow formulation that can work with any size of STP network, assuring compliance with flow-balance constraints at each node. Our focus lies in the minimization of total fixed costs associated with networks of singular origin nodes but multiple destination nodes with uncapacitated arcs. Here, we consider the multicommodity flow formulation as the base model/formulation to represent the STP, where there are multiple commodities k∈K, which starts at the root node 1 and flows to the terminal nodes k∈{K=N\\{1}} with unit demand. In the cardinality-based disaggregated formulation for the STP, we associate new variables based on the cardinality of each arc, where arc-cardinality is defined as the maximum number of possible commodities that can flow along each arc in the network. This disaggregated formulation is proven to be stronger than its base formulation implemented in state of art solver-Gurobi. Given an undirected network G(V,A), where V and A represent the set of nodes and arcs, respectively, the multicommodity flow formulations for STP problems typically consist of two sets of decision variables: the first set being design variables, which dictate the selected (installed) arcs in the network; and the second set are the flow variables, which describe the routing of the commodities from the origin node to the terminal nodes {N} on the network links. Considering a set of commodities K, where for each k∈{K=N\\{1}} represent the terminal nodes for the corresponding commodities while one of the terminal nodes \{1} is treated as the origin node for each of these commodities. For each commodity k∈K, one unit of demand is required to flow along a path in G(V,A) from the origin to its terminal node. Moreover, if arc (i,j)∈A, lies on the flow path for a commodity, a fixed charge is incurred in return along that arc. The base formulation uses the following binary design variables: y_ij=1, if arc (i,j) is part of the network design, and 0 otherwise, for each (i,j)∈A; flow variables x_ij^k=1, if arc (i,j) is used to transport commodity k, and 0 otherwise, for each k∈K,(i,j)∈A to capture the flow balance and arc capacity constraints. This is then fed to the Gurobi solver to return the optimal solution. While formulating the disaggregated formulation, for each each arc (i,j)∈A, we introduce a parameter L_ij denoting the maximum number of commodities that can be traversed along arc (i,j). L_ij is determined by solving a single bin-packing problem: commodities sorted by increasing demand are added to a bin of arc capacity until full. Using L_ij, disaggregated formulation is formulated by separating each arc into its corresponding L_ij arc-cardinality combinations ranging from 1 to L_ij. Specifically, the following cardinalized binary variables are defined: y_ijl=1 if arc (i,j) with l number of commodities is part of the network design, and 0 otherwise, for each (i,j)∈A; z_ijl^k=1 if arc (i,j) is used to transport commodity k along with l-1 other commodities, and 0 otherwise, for each k∈K, (i,j)∈A. The disaggregated formulation, incorporating the flow balance, arc capacity and cardinality constraints, and relaxing the integer constraints, is now solved. Further, extended polyhedral structure of the disaggregated version is exploited to successfully create specialized valid inequalities/cuts that are unique to the extended formulation. To solve the separation problem for the cuts, we first solve the disaggregated formulation at the root node, and then add all these cuts. Whenever the LP optimal solution is still fractional and no further violated inequalities can be found, the problem is fed to the GUROBI solver, which employs Branch and Cut to return the optimum. Finally, the computational efficacy is measured and compared for the base version and disaggregated formulation. Even though the size of the new disaggregated formulation is larger than the size of the base formulation (in terms of both the number of variables and the number of constraints), we demonstrate that the underlying LP relaxation yields substantially tighter lower bounds at the root node for the benchmark instances. Strong evidence for the superiority of our suggested model comes from comparisons with other formulations and hierarchical path-based extensions. The formulation's fundamental strength includes the introduction of improvised cardinality-based cutset valid inequalities, which when added to the disaggregated formulation, yield a significant tighter lower bound. The model's scalability and practicality are demonstrated through rigorous benchmark testing conducted on Steinleib instances. It is noteworthy that more than 70% of cases show better lower bounds than path-based extensions, and a significant number of instances achieve 0% LP-IP gap in reasonable time. The improved lower bound at the root node promises substantial savings in the number of subproblems taken in a branch-and-bound process as well as computational time taken to determine the optimal solutions.

1197

Submission Number: **1197**	Track: **CTL**

Paper Title: Does telecommuting promote long-distance weekend travel?

Authors: M Muskan and Sandip Chakrabarti

Abstract: With advancement in technology, working away from office as a telecommuter has become increasingly popular all around the world. Telecommuting helps mitigate traffic congestion and vehicular emissions. Additionally, it offers other potential advantages such as increased productivity, cost savings on office space, better work-home balance, and reduced stress levels (Jin & Wu, 2011). According to the National Household Travel Survey, which has questions related to telecommuting, 8.6% of people were telecommuting in 2001, 12.3% in 2009, and 11.9% in 2017 (FHWA NHTS, 2018). Telecommuting, originally introduced as a travel management strategy to eliminate daily work commutes, is associated with reduced congestion and decreased peak-hour traffic. This is based on the pretext that it doesn't have any rebound effects, such as commute distance (Motte-Baumvol et al., 2024). However, it is noted that many telecommuters live in suburban areas, which are often significantly distanced from their workplaces (Caldarola & Sorrell, 2024). This geographical separation can lead to different commuting patterns and may still contribute to traffic congestion when telecommuters occasionally travel to their offices. This practice raises an important question: does telecommuting encourage long-distance travel? This paper seeks to investigate the effects of telecommuting on travel behaviour, focusing specifically on long-distance weekend travel. We use 2022 NHTS data to analyse long distance weekend travel as a rebound effect of telecommuting and test how sociodemographic factors such as vehicle ownership, household size, income, marital status and rural or urban location influence the same. We classify commuters into two categories: telecommuters and non-telecommuters, to examine the differences in travel behaviour between these groups. This classification allows us to analyse the influence of weekend travel among telecommuters as compared to non telecommuters. We do multiple regression analysis along with sociodemographic factors as interaction variables to test these effects. Significant interaction variables are interpreted to understand moderating influences. It is said that even if both telecommuters and non telecommuters have a stable travel budget over time, telecommuters have a higher travel budget than non telecommuters (Zhu, 2011). Also, the flexibility in work location and hours could allow telecommuters more opportunities for leisure travel. Additionally, the study aims to uncover specific demographic factors, such as vehicle ownership, higher income, household size, marital status and suburban residency, that might amplify these travel tendencies. Understanding these patterns could provide valuable insights for urban planning and transportation policy. Moreover, the research could reveal aspects of telecommuting's rebound effects, helping policymakers to create more sustainable telecommuting frameworks.

IIMA
विद्याविनियोगाद्विकासः

IMRC 2024

India Management Research Conference

IIM Ahmedabad

TRACK 07: DIGITAL TRANSFORMATION

Track 07: Digital Transformation

213

Submission Number: **213**	Track: **CDT**

Paper Title: Exports and Data-Related IT Outsourcing Expenditure in Emerging Economies: Evidence from India

Authors: Bibek Bhattacharya, Rajarshi Mukherjee and Adrija Mazumdar

Abstract: In recent years, the nuances of emerging economies have garnered global attention. This is not without reasons. Statistical reports show that the global merchandise export index has been the highest (Dallas,2024) for emerging economies, far ahead of the world export index and the export index of developed nations. While this is encouraging, what makes the phenomena intriguing is that emerging economies have been marred with institutional voids and weak institutional environments (Hoskisson et al.,2000;), inefficient capital and product markets(Gaur et al.,2014; Singh,2009), and uncertain and risky political and economic environments(Singh,2009). The question that arises in our minds is how the firms have managed to play so well in a resource-constrained environment(Gaur et al.,2014; Agnihotri&Bhattacharya,2015) arising out of these challenges. We argue that institutional environments play an important role in export operations. Emerging economies are characterized by weak institutions causing institutional voids(Khanna & Palepu,1997; Gao et al.,2017). The absence of institutions like venture capitalist firms, intermediary systems, regulatory bodies, and contract-enforcing agencies (Khanna & Palepu,1997) creates bottlenecks in implementing exporting mechanisms and globalization strategies. The problem is exacerbated by the fact that emerging firms face frequent shifts in the macroeconomic environment arising out of political instability and environmental shocks like violence and war(Khanna&Rivkin,2001; Gao et al.,2017). Investors in emerging economies are scared to invest because of the institutional voids and macroeconomic shifts, which creates a resource-constraint environment for firms in emerging economies(Khanna & Palepu,1997). Within a weak institutional environment, navigating the complexities of international trade poses significant challenges for the exporting firm in an emerging economy. We argue that these institutional voids in emerging market ecosystems make the business models riskier. Without strong institutions with control and enforcing mechanisms, the quality metrics of goods and services would naturally decline, and schedule slippages in exports could happen frequently. In such a situation, firms would resort to internal controls to boost their export performance. In this research, we enquire if exporting firms in emerging markets could invest in data-related activities like data entry, analytics, and processing to gather market intelligence, reduce transaction costs, and create sustained competitive advantage in global markets. Investment in data analytics and processing would help in multiple ways. Firstly, data-related investments would help firms de-risk their business models by gaining intelligence about foreign markets, thereby reducing the risk in business models. Extant literature shows that firms use data analytics and big data to renovate and improve their business models (Wiener et al.,2020). Data analytics can become an asset in creating strategic business models (Akter,2016) to create business value and sustained competitive advantage (Barney,1991; Wernerfelt, 1984) through decision-making, enriching products and services, and improving operations (Akter,2016; Shroeder, 2016). Second, transaction costs (Williamson,1989) and operational costs can be drastically reduced when firms invest in data and allied services. Data and information can create market intelligence(Hossain et al.,2022), reducing information search costs, bargaining and negotiation costs with foreign buyers, and enforcement costs. Data investments can create system-centric views, reducing human resources required for monitoring processes, improving the quality of goods and services produced for exports, improving operational metrics, and creating an end-to-end view, allowing firms in emerging markets to export better, faster, and cheaper. However, the reliance of export operations on data intelligence capabilities would change as the exports in the country improve. As the situation in the country evolves, improved institutions, reduced information asymmetry, and effective regulations would attenuate the firms' reliance on internal data intelligence capabilities. Thus, our main research question is, RQ: Do exporting firms in emerging markets invest more in data intelligence, and does this investment change as the home country's export environment evolves? The relevance of our study arises from nuances present in the export phenomena in emerging economy firms. When we look at systems and international business literature in combination, we observe that extant literature has gaps in explaining certain nuances of exports in specific contexts. Hence, we investigate the relationship between exports and data-related IT outsourcing expenditures of firms in India, examining how this relationship is moderated by the overall export growth of the firm's home country. Using data from the Prowess database covering 1989-2022, we find that exporting firms incur higher expenditures on outsourcing data-related IT work to external agencies. This positive relationship weakens as India's overall export growth increases. Our analysis, which includes 11,735 firm-year observations after excluding IT, software-related, and financial sector firms, employs linear panel regression with high-dimensional fixed effects and entropy balancing to address potential biases. The robustness of our findings is confirmed through sensitivity tests. A post-hoc analysis further indicates that exporting firms spend more on outsourcing software-related services, though the moderating effect of export growth on this expenditure is not statistically significant. Our findings indicate that despite the institutional voids and resource constraints in emerging economies, exporting firms can strategically leverage data intelligence investments to enhance their export performance. By investing in data analytics and processing, firms can gather critical market intelligence, reduce transaction costs, and create a sustained competitive advantage in global markets. This investment helps de-risk business models, improve operational efficiencies, and ensure timely delivery of goods and services, thus maintaining consistent demand. Our study shows that the positive relationship between data-related IT expenditures and export performance weakens as the home country's overall export environment improves. This suggests that the reliance on internal data capabilities diminishes as institutional environments become more supportive. We contribute to the extant literature by highlighting the crucial role of data intelligence in supporting export operations for firms in emerging markets. This topic has been largely overlooked in existing literature. We demonstrate that as a country's institutional environment improves, the reliance on data-related investments for export success decreases, indirectly highlighting the presence of institutional voids. We conclude that exports in emerging economies are nuanced by the dynamic interplay between data investments and evolving export landscapes.

345

Submission Number: **345**	Track: **CDT**

Paper Title: Exploring the Integration of Avatars in Metaverse-Based Healthcare: Insights from Patients and Doctors

Authors: Kousik Mandal and Sudin Bag

Abstract: Overview: The rising prevalence of Augmented Reality and Virtual Reality technologies has accelerated the shift toward digital healthcare, using these innovations for patient-centric care. Integrating the Metaverse into such services can address geographical barriers and offer new opportunities for treatment, well-being, and fitness at lower costs while improving patient outcomes. In healthcare, the Metaverse combines three major technological trends, each capable of influencing healthcare and enabling innovative, cost-effective solutions. Digital healthcare now includes automated solutions like medical chatbots for patient interaction, beyond teleconsulting platforms. However, studies have noted these chatbots' limitations in simulating human-like interactions, hindering adoption. The Metaverse can bridge this gap by immersing patients and healthcare professionals in a virtual reality with avatars, facilitating interactions similar to real-world encounters. This virtual space blurs the lines between reality and simulation, allowing activities like work, meetings, business, and purchases through avatars. An avatar serves as a virtual representation in the 3D world, incorporating virtual agents, software, and AI applications to provide automated services or guidance. As embodied conversational agents, avatars act as digital counterparts, enabling simulated face-to-face interactions that build trust, rapport, and engagement with patients, enhancing communication and satisfaction. Additionally, these avatars exhibit significant anthropomorphism, attributing human traits to non-human entities, thus improving relatability. Purpose: The doctor-patient relationship relies on the patient's acknowledgment of the doctor's professionalism and traits like empathy, emotionality, and positive attitudes (Goold and Lipkin, 1999; Schmid Mast et al., 2008). Replicating these dynamics in a virtual environment using avatars is challenging, offering both advantages and limitations that require thorough research before widespread adoption. A positive response from a virtual agent can mitigate the perception that the agent is merely a program, enhancing human-virtual agent interactions. This is significant considering the Uncanny Valley theory, which describes the discomfort people feel when digital tools closely resemble humans but are not convincing (Berger et al., 2018). Focusing on perceived anthropomorphism levels when designing virtual settings is crucial. As the Uncanny Valley effect (UVE) may reduce trust, which is essential for successful e-commerce outcomes, this study examines how UVE influences consumer trust and willingness to adopt the metaverse platform during doctor consultations with human-like avatars. Design/methodology/approach: This study employed a sequential mixed methods approach to investigate medical professionals' perspectives and patients' intentions to adopt the metaverse. Semi-structured interviews with physicians were conducted via Zoom, lasting 60 minutes each, to explore their perceptions, sentiments, and ideas regarding users' virtual representations. Participants provided information about their current practices for discussing health information with patients and were shown a video demonstration of digital twin creation and a one-minute video of a human-like avatar discussing a fictional lab test result. Respondents were asked to imagine a scenario featuring their own identity and were questioned about their familiarity, thoughts, concerns, and potential use of avatars, as well as how they would introduce avatars to patients, handle feedback or complaints, and their interest in creating avatars for patient communication. An interview guide was used to minimize interviewer bias. Physicians and medical residents from various specialties participated in weekly patient interactions, confirming availability via email. Thirteen individuals (7 males, 6 females) with experience ranging from 1 to 35 years (average 19.7 years) and ages spanning 25-34 (n=7), 35-44 (n=3), 45-54 (n=2), and 55+ (n=1) were interviewed until data saturation was reached. Reflexive thematic analysis using NVivo was conducted on the transcribed interviews. A two-cell experimental design, varying digital

interactions' human-likeness, assessed intentions to adopt metaverse technology in healthcare. Two scenarios were created based on findings that eeriness peaks with hyper-realistic animation and is minimal in cartoonish, static conditions (Shin et al., 2019): a remote teleconsultation chatbot for symptom checks (poor human-like interactions) and a metaverse interaction with a doctor avatar replicating movements, expressions, and gestures (high human-like interactions). Results: The study aimed to explore doctors' perceptions of avatar use in healthcare. We identified 52 codes, 5 sub-themes, and 5 key themes from 13 interview transcripts. One key theme was the perceived advantages of avatars in patient care, comprising 19 codes. Doctors found avatars useful for delivering repetitive information efficiently but had concerns about legal and technological aspects. Most doctors predicted positive patient perceptions, citing convenience and accessibility. They proposed various financial models for avatar costs. When asked about using avatars in their practice, most doctors agreed, provided certain conditions were met, such as patient reception, development efforts, and healthcare outcomes. They cited potential patient benefits and a willingness to adopt new technologies as motivations. Discussion: The Metaverse offers significant potential to transform digital healthcare by enhancing patient access, experiences, innovative treatments, and cost-effectiveness through immersive, personalized care. Research has expanded our understanding of using avatars in patient care, highlighting both advantages and drawbacks. Benefits include increased credibility of patient information and personalized care from familiar physician avatars. However, concerns involve the risk of misinformation from doctor avatars and potential conflicts with metaverse content sources. AI-based characters without specific doctor identities can be advantageous as they can implement physician-proposed applications. Previous studies have shown the effectiveness of embodied conversational agents in healthcare, stressing the need to assess the impact of a doctor's identity on patient interactions with virtual personas. It is vital to consider potential negative consequences of avatar interaction errors that could harm doctor-patient relationships due to shared identity when evaluating the allocation of resources for avatar development. Researchers should also consider factors beyond physical attributes when defining a physician's avatar. Originality: This study explores the Metaverse's business potential in healthcare by examining patient preferences and doctors' perceptions of avatar-based healthcare services, as opposed to medical chatbots. It delves into doctors' opinions on using their identity for avatars, the advantages, concerns, patient reception, and financial implications of incorporating avatars into healthcare, as well as their willingness to employ avatars in practice. Through empirical research, the study compares the impact of low-interaction chatbots and high-interaction doctors' avatars on individuals' intention to use these digital healthcare services.

399

Submission Number: **399**	Track: **CDT**

Paper Title: Digital Health for All: An Endowment-Dissemination Perspective

Authors: Sawan Rathi

Abstract: Rapid digitalization in healthcare post-pandemic encompasses benefits, but it also risks leaving out individuals who either don't possess digital endowments or are incapable of using digital resources. In this paper, we propose a framework that conceptualizes the role of margins of digital endowment and methods of information dissemination through digitalization. We substantiate this framework with an analytical model using the theory of public information followed by empirical evaluation based on Indian data. We find that when public health information is disseminated individuals with digital endowments report better health. However, this benefit is not uniformly distributed and individuals living in urban areas or belonging to high caste reap more benefits from similar digital endowments. Through this paper we wish to recommend that digital emancipation in healthcare is much needed; however, the design of digital solutions for effective dissemination of information should consider existing digital divide.

429

Submission Number: **429**	Track: **CDT**

Paper Title: Redefining the Paradigm: AI-Enabled Capability Transitions in Indian Technology Outsourcing Firms

Authors: Rajarshi Mukherjee and Pritha Chatterjee

Abstract: India's information technology outsourcing industry has seen spectacular growth in the last three decades. Early researchers (Arora et al.,2001) point out that the growth has happened through a unique combination of resources like access to low-cost human capital, government support, and the right timing. During this period of growth, the firms have developed the market and created two streams of capabilities (Ethiraj et al.,2005) - client-specific capabilities, which have happened through repeated interactions with global clients, and extensive technology and project management capabilities, which have happened through the execution of technology-intensive transformations. Early researchers point out that technology outsourcing firms created unique competitive advantages through routine automation and technology implementation (Arora et al.,2001) and persistent investments in infrastructure, systems, and processes (Ethiraj et al.,2005) in the last two decades. However, these technology firms face a unique threat—the exponential growth of artificial intelligence and generative AI platforms (Statista,2024) has diminished margins for the firms in this industry. This happens because most workforce is involved in scaled software development and maintenance. With the adoption of artificial intelligence, firms face pressure in quicker development cycles, redefinition of platform applications using AI, and pressures in workforce reduction. Within this context, developing artificial intelligence (AI) capabilities would become a strategic lever for the technology outsourcing firms in India. The story of India is relevant because most technology outsourcing engagements happen in India. Indian firms like TCS, Infosys, HCL, and Wipro dominate the global outsourcing market. Furthermore, we elaborate that analyzing the how part through qualitative methods is far more critical; understanding the 'what impact' would be relevant later once the capability matures in the outsourcing business models. Hence, our research question is, RQ: How do Indian information technology outsourcing firms develop and leverage artificial intelligence capabilities to create and sustain competitive advantage? We find our study relevant in the current context for two reasons. Firstly, capability in an area would need acquiring and nurturing a talent pool, integrating relevant technology, and fostering a culture of innovation, contributing to self-sustaining capability. Although there has been a consensus among researchers that AI capabilities create business value (Mikalef & Gupta,2021), minimal studies have been carried out on how firms could build AI capabilities and bind them within the existing ecosystem within a short timeframe. Secondly, the advent of generative AI has created an exogenous shock, increasing the sudden adoption of AI globally. This has resulted in a sudden increase in demand with discourses in AI in multiple directions and unknown trajectories, making it difficult for firms to respond to these demands. The resource-based view (Barney, 1989,1991; Wernerfelt,1984) in strategy literature posits that firms derive sustained competitive advantages through valuable, rare, inimitable, and non-substitutable resources. Since the market is growing exponentially, technology outsourcing firms must create, nurture, and exploit the resources before their competitors do. However, acquiring AI capability is not easy for these firms because of two critical factors: The evolving nature of AI demand and the scarce talent pool, which creates a wide gap between demand and supply. Firms worldwide continue experimenting with the different use cases where AI could play a role. Although business leaders agree that disruption has happened, they are unsure how AI would fit into their business models(Ransbotham,2017). While this provides a tremendous opportunity, the areas where the AI demand will shoot up are unknown. Hence, it becomes difficult for them to create and nurture resources. Secondly, the talent pool of AI is relatively scarce. As per a report published by Deloitte Insights survey(Hupfer, n.d.), more than a quarter, about twenty-seven percent, reported extreme skill gaps in AI for technology implementations. Our study employs a phenomenological approach using semi-structured interviews and hermeneutic analysis of call transcripts to understand how Indian IT outsourcing firms develop and leverage AI capabilities for competitive advantage. We utilize purposeful snowball sampling (Parker et al., 2019) from middle management employees in major Indian IT firms - Infosys, TCS, HCL, Tech Mahindra, Wipro, and LTI-Mindtree, which together capture over 80% of the market share (Forbes India, 2024) until theoretical saturation is achieved (Miles & Huberman, 1994). Using Gioia methods(Gioia et al., 2013a; Magnani & Gioia, 2023), we create first-order themes based on our discussions with our study participants. The interpretation of our first-order themes leads to the second-order themes, and aggregation of the second-order themes results in the third-order themes, which come out as primary findings (Gioia et al., 2013)of our research. To complement interview data, we analyze call transcripts from the Capital IQ database using abductive reasoning, ensuring robustness by cross-validating themes derived from interviews and publicly available conference calls (James et al., 2013; McCaffrey, 2012). Our initial findings show that Indian technology firms employ a mix of processes, platforms, and routines to create and deploy artificial intelligence capabilities within the firms. Using modularization, the artificial intelligence components are embedded within the processes, which reduces turnarounds of projects and enablement resources and deployment of platforms. Furthermore, a factory-model approach of creating, deploying, and scaling artificial intelligence is used, which helps quickly create capabilities. We contribute to the literature in two ways. We extend the capability framework(Mikalef & Gupta,2021) to fit the business models of the technology outsourcing industry. Secondly, we argue that AI using a factory model would be a dynamic capability within the technology outsourcing firms, sitting on the ordinary capabilities of the firms. These capabilities are necessary for the day-to-day operations and competitiveness of the firm in stable environments. On the other hand, dynamic capabilities are higher-order capabilities that enable a firm to integrate, build, and reconfigure its ordinary capabilities and resources to respond to changing environments and seize new opportunities (Teece et al., 1997). We build our argument on the fact that information technology firms have significantly invested in building ordinary capabilities through technology resources, project management, and global reach. By aligning existing resources and revamping their artificial intelligence footprint, these organizations can create dynamic capabilities and deploy them to sense and seize future opportunities.

435

Submission Number: **435**	Track: **CDT**
Paper Title: Guiding Choices, Shaping Voices: Role of Digital Nudging and Choice Supportive Bias in Online Consumer Review Writing Behavior	
Authors: Anjali Pathania and Gowhar Rasool	
Abstract: In this study, we aim to explore the role of digital nudging in generating eWOM. We posit that nudges, strategically employed, can encourage consumers to share their experiences, thereby contributing to the eWOM landscape. Understanding how digital nudging interacts with individual cognitive biases, like the choice supportive bias, in the context of eWOM, forms the crux of our investigation. Our study also intends to dissect the influence of choice-supportive bias on the digital nudging-eWOM relationship. Choice-supportive bias is a cognitive process where individuals retroactively assign positive attributes to their previous decisions, reinforcing the correctness of their choice. This bias serves as a psychological buffer, helping decision-makers to evade cognitive dissonance—an internal discomfort arising from conflicting information by rationalizing their earlier decisions. In the context of our study, this bias could potentially intensify the effect of digital nudging on eWOM behavior. When digital nudges guide consumers toward a certain decision, the ensuing choice supportive bias might compel these individuals to spread positive word-of-mouth about their decisions, thereby influencing eWOM. Unraveling this intricate relationship between digital nudging and choice supportive bias, and their combined effect on eWOM, forms a pivotal aspect of our investigation.	

451

Submission Number: **451**	Track: **CDT**
Paper Title: Leveraging AI in Shaping Organizational Diversity and Inclusion: A Quantitative Approach	
Authors: Dr. Vaishali Patil and Dr. Irbha Magotra	
Abstract: Artificial Intelligence (AI) has become integral to modern organizational operations, particularly within Human Resources (HR) and Diversity & Inclusion (D&I) domains. AI tools such as automated recruitment systems, bias detection algorithms, and employee engagement platforms aim to tackle persistent challenges in diversity and inclusion. These technologies streamline HR processes, enhance decision-making, and provide data-driven insights to improve organizational representation and fairness. For instance, AI-driven recruitment tools standardize evaluation criteria to reduce bias and improve candidate selection accuracy, while bias detection algorithms identify and address biases in promotion and pay decisions. Despite these theoretical advantages, empirical evidence on the real-world effectiveness of these tools in achieving meaningful D&I outcomes remains limited. Existing research suggests that AI tools can enhance fairness and representation, but much of the current literature relies on theoretical models or anecdotal evidence rather than rigorous quantitative analysis. Notable instances, such as Amazon's AI recruitment tool inadvertently perpetuating gender bias, highlight the need for a deeper, empirical understanding of these tools' impact. Furthermore, the actual effects of AI tools on hiring levels, employee retention, and satisfaction are underexplored. This study aims to address these gaps by quantitatively assessing the impact of AI tools on various D&I metrics. It investigates the relationship between AI tools—recruitment, bias detection, and engagement—and key D&I outcomes, including diversity hiring levels, promotion possibilities for diverse groups, pay equity, retention levels, employee satisfaction, and engagement. The study also explores how the implementation level of AI tools (pilot, partial, full) and their duration of use (less than 6 months, 6 months to 1 year, 1 to 2 years, more than 2 years) influence these outcomes. The literature on AI tools in HR and D&I shows a growing interest in how these technologies can support equitable practices. AI-driven recruitment tools aim to reduce bias and improve candidate selection accuracy, while bias detection algorithms analyze employee data to mitigate biases in promotions and pay. Despite their potential, empirical evidence is limited. Studies often rely on theoretical models or anecdotal evidence rather than quantitative analysis. Instances like Amazon's AI tool reinforcing gender bias underscore the need for rigorous evaluations. Research by Holstein et al. (2019) and others reveals a gap in understanding the real-world impact of these tools on D&I metrics. Addressing these gaps through quantitative studies is crucial for assessing AI tools' operational impact and guiding organizations in optimizing their use. The research methodology involves categorizing variables into independent (AI tool type and implementation level) and dependent (D&I outcomes) variables. Independent variables include AI tool type (recruitment, bias detection, engagement) and implementation level (pilot, partial, full). Dependent variables encompass diversity hiring levels, promotion possibilities for diverse groups, pay equity, retention levels, employee satisfaction, and engagement. Due to a lack of real-time data, self-	

reported measures were used. Data was collected via a structured questionnaire distributed to HR managers, D&I officers, and key personnel in organizations implementing AI tools for D&I. A stratified random sampling method ensured a representative sample across industries and organizational sizes, yielding 250 responses. The data collection instrument was pre-tested for clarity and validity. Empirical results reveal significant insights into how AI tools impact D&I outcomes. Recruitment tools generally show higher effectiveness across most metrics compared to bias detection and engagement tools. Specifically, recruitment tools are associated with higher diversity hiring levels and retention of diverse employees. Bias detection tools, while crucial, show lower effectiveness in diversity hiring and promotions. Engagement tools, despite being less effective in certain metrics, excel in improving employee satisfaction and engagement. Statistical analysis confirms that different AI tools impact D&I outcomes differently, with notable differences between recruitment and engagement tools. The implementation level of AI tools significantly affects D&I outcomes. Full implementation consistently results in higher mean values across all metrics, suggesting that comprehensive deployment of AI tools leads to more favourable D&I outcomes. Organizations with full implementation report better results in diversity hiring, promotion possibilities, pay equity, retention levels, employee satisfaction, and engagement compared to those with pilot or partial implementations. This underscores the benefits of fully integrating AI tools into organizational processes. The study's findings have practical implications for organizations looking to enhance their D&I strategies through AI tools. Prioritizing recruitment tools can improve diversity hiring and retention. Organizations should invest in advanced recruitment technologies to attract a broader talent pool and enhance workforce representation. While bias detection tools are essential, their impact on diversity hiring and promotions may be limited if used alone. Integrating bias detection with other initiatives, such as unconscious bias training, can create a more comprehensive system for improving fairness in promotions and pay decisions. Engagement tools are crucial for fostering a positive work environment and boosting employee satisfaction. Organizations should leverage these tools to regularly assess and improve employee engagement, using feedback mechanisms to identify areas for improvement. Full implementation of AI tools is recommended over pilot or partial adoption, as it leads to better D&I outcomes across various metrics. Regular monitoring and evaluation of AI tools are necessary to ensure they meet D&I objectives, with clear metrics established to assess their impact. Transparency and accountability in AI tool usage can build trust and demonstrate a commitment to improving D&I. Customizing AI tools to meet organizational needs and integrating them into a broader strategy that includes other D&I initiatives can enhance their effectiveness. In conclusion, this study provides valuable insights into AI tools and their implementation levels in shaping D&I outcomes within organizations. Recruitment tools show high effectiveness in diversity hiring and retention, bias detection tools aid in identifying biases, and engagement tools enhance satisfaction and commitment. Full implementation of AI tools is associated with more favourable D&I outcomes compared to pilot or partial implementations. Organizations should adopt and fully implement AI tools tailored to their needs to improve recruitment, address biases, and foster an inclusive work environment. Future research should explore the nuanced effects of different AI tools and implementation strategies on D&I outcomes, using longitudinal studies to assess their long-term impact and effectiveness.

516

Submission Number: **516**	Track: **CDT**

Paper Title: The Impact of Video Length and Tourism Type on Viewer Engagement and Travel Intentions: An Experimental Study

Authors: Samridhi Mishra and Aditya Shankar Mishra

Abstract: This experimental study investigates how viewer engagement and travel intentions are affected by the duration of the film (short vs. long) and the style of tourism (religious vs. adventure). Understanding how these factors affect psychological and behavioral outcomes—such as curiosity arousal, attitude toward the video, intention to travel, religiosity, and sensation seeking—is the goal of the research. 121 participants were randomly assigned to view one of four types of videos, which included short and long videos on religious and adventure tourism, using a 2 × 2 factorial design. The findings showed that, in comparison to long videos, short videos typically aroused more interest arousal, more positive opinions toward the video, and stronger travel inclinations. In particular, shorter adventure tourism videos were more successful in drawing in high sensation seekers, but content related to religious tourism was more appealing to those who identify as more religious. The results emphasize how important it is to customize video content to the tastes and personality types of the target audience. Short-form video material can be used by marketers in digital marketing strategies to increase viewer engagement and stimulate travel-related aspirations. This study adds to the expanding body of research on tourist marketing by highlighting the significance of customized content marketing techniques for promoting travel destinations.

609

Submission Number: **609**	Track: **CDT**

Paper Title: Can augmented reality augment the sense-making and exploration potential of a tourist place?”

Authors: Ruchi Payal

Abstract: 1. Introduction Sense-making and Exploration potential are key informational dimensions which impact perception, preference or experience of an environment (Yuncu, 2015; Singh et al., 2008; S. Kaplan, 1987; Kaplan, R., Kaplan, S., & Brown, T., 1989; Staats & Wardt, 1990). Sense-making and exploration potential are very important information dimensions for environments like tourist places (Truyols, 2023; Yuncu, 2015). They can impact the perception, preference and experience of a tourist place. The informational dimension of sense-making and exploration are central to the visitor attitude, behavior and decisions. Tourist places, museums and tourist places are deploying augmented reality applications to enhance the offerings to the visitors so that visitors have a positive experience at the tourist place. (Marr, 2024; Forbes, 2023). However, the most important question is “Does the deployment of augmented reality application at a tourist place really augment the sense-making and exploration potential of a place and impact the experience, attitude and behavior of a visitor? If yes, then how?”. Several studies have examined variables like sense of place (Bain & Farbstein, 1990), sense of presence (Zhu et al., 2024) however the informational concepts of sense-making and exploration and its impact on tourist experience especially after deployment of these applications, are still underdeveloped and underexplored. To fill these research gaps logically, this study employed Kaplan’s information processing theory (Kaplan, 1989). The study examined the influence of augmented reality usage on sense-making and exploration leading to augmented tourist experience and happiness. 2. Literature Review and Hypothesis Development The study derives from four literature streams: 1) Augmented reality research in tourism, 2) Kaplan’s Information Processing Theory, 3) Experiential authenticity literature in tourism and 4) Authentic happiness literature in tourism 2.1 Application of Kaplan Information processing theory to Tourism Environment preference scholars and technology scholars suggest that an information processing theory based on sense-making and exploration is useful and can contribute to understanding of environment preference and technology preference in different contexts especially in tourism(S. Kaplan, 1987). 2.1.1 Sense-Making in a Tourist place Sense-making at a tourist place or tourist place may refer to comprehending or understanding or making sense of the tourist place. It is an informational outcome which may be influenced by the coherence and legibility qualities of the of the tourist place. 2.1.2

Exploration Attractiveness in a tourist place Exploration Attractiveness at a tourist place may refer to the process of being pulled or being attracted by the additional sources of information. It is an informational outcome which is influenced by the mystery and complexity qualities of the tourist place. 3. Hypothesis Development 3.1 Augmented reality impact in Tourism H1 There is significant difference in the sense-making potential of tourist place with and without augmented reality. H2 There is significant difference in the exploration potential of tourist place with and without augmented reality. H3 There is significant difference in the experiential authenticity of the tourist with and without augmented reality H4 There is significant difference in the authentic happiness of the tourist with and without augmented reality H5 There is significant difference in the tourist place recommendation by the tourist with and without augmented reality 3.2 Sense-making, exploration and Experiential Authenticity H6: Sense-making potential of a tourist place enhanced through augmented reality significantly impacts the experiential authenticity of a tourist. H7: Exploration potential of a tourist place enhanced through augmented reality significantly impacts the experiential authenticity of a tourist. 3.3 Experiential Authenticity and Authentic Happiness H8 Experiential authenticity of a tourist place enhanced through augmented reality significantly impacts the authentic happiness of the tourist 3.4 Authentic Happiness and Recommendation Intention H9 Authentic happiness of the tourist enhanced through augmented reality significantly impacts the tourist place recommendation intention H10 Authentic happiness of the tourist enhanced through augmented reality significantly impacts the augmented reality recommendation intention Figure 1: Research framework (Source: Author) 4. Research Methodology The study was divided into study 1 and study 2. The study 1 was a field experiment and the study 2 was a survey based quantitative research. 4.1 Study 1: Data Collection The study 1 was a field experiment. In the field experiment, the participants were recruited at the gate of a tourist site. 4.2 Study 2: Data Collection The study 2 was a cross sectional survey based quantitative research. The participants of the study were recruited from prolific platform 4.3 Measures All of the items on the study questionnaire were derived from existing published literature and adapted to suit the specific context. For the measurement of legibility, coherence, complexity and mystery, the items were drawn from Lee & Kozar (2009) and Singh et al. (2008). The items for experiential authenticity were sourced from Kolar & Zabkar (2010). The items for authentic happiness were adapted from Filep & Deery (2010), Peterson et al. (2005) and Seligman (2002). Place recommendation and augmented reality recommendations items were from Kolar & Zabkar (2010) and Lee et al.(2008). 5 Results The study 1 data from the field experiment was analysed using a one-way ANOVA test and the study 2 data from the quantitative survey was analysed using structural equation modelling. 6 Implications 6.3 Theoretical Implications The study proves that sense-making and exploration of the tourist place, the

experiential authenticity and the authentic happiness derived by the tourist is strengthened by the deployment of augmented reality applications. 7.2 Practical Implications The most important stakeholder, tourist, can be immensely benefited through these applications. Destination management organizations, cultural tourism managers, tour operators and other tourism stakeholders should prioritize augmented reality based immersive strategies and deploy the applications which take into consideration the principles of sense-making (coherence and legibility) and exploration (complexity and mystery) with special focus on both immediate and inferred aspects of the tourist place.

644

Submission Number: **644**	Track: **CDT**

Paper Title: Decoding the Predictors of Teachers' Behavioural Intention to Use ChatGPT using extended UTAUT model: Evidence from four Developing Economies of the World

Authors: Rakesh Kumar Meet, Yog Mishra, Waleed Mugahed Al-Rahmi and Fahad Alblehai

Abstract: Decoding the Predictors of Teachers' Behavioural Intention to Use ChatGPT using extended UTAUT model: Evidence from four Developing Economies of the World Introduction Advent of Artificial intelligence (AI) and its rapid advancement has impacted many industries, including education. One of the most notable innovations in this arena is ChatGPT, a type of generative AI (GenAI), a sophisticated large language model developed by OpenAI in 2022. ChatGPT leverages deep learning algorithms and the GPT-4 architecture to generate text that simulates human-like responses to diverse queries and prompts (Feuerriegel, 2023; Adarkwah et al., 2023; Strzelecki and ElArabawy, 2024). Its launch has led to significant interest, with millions of users engaging with the tool shortly after its release. Despite its many advantages, such as enhancing productivity and providing immediate assistance, ChatGPT also raises concerns about academic dishonesty and the overuse of chatbots in educational settings (Almogren et al., 2024; Saher, 2024). The ease with which students and teachers can obtain responses from ChatGPT might adversely impact their cognitive skills, and self-learning. The motivation behind this study is rooted in the ongoing academic discourse surrounding the impact of AI solutions like ChatGPT on education. While there is considerable research on the benefits and risks associated with ChatGPT, there is a notable gap in understanding how higher education teachers in different cultural and regional contexts perceive and intend to use this tool (Strzelecki, Cicha, Rizun, and Rutecka, 2024). Hence, the objective of this study was to explore the predictors of ChatGPT acceptance among higher education teachers in India, Malaysia, Saudi Arabia, and China. Literature Review After undergoing through the extant literature on various technology acceptance theories, this study has been grounded on the theoretical framework of Unified Theory of Acceptance and Use of Technology (UTAUT) model propounded by Venkatesh et al. (2003), with additional constructs of Fear of Missing Out (FOMO) and Narcissism (NRSM). This study included all the constructs of UTAUT such as Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC), which were used to assess their impact on behavioral intention (BIN) and its subsequent influence on the use behaviour (UBH). Hypotheses development has been depicted in the form of conceptual model (figure 1) below - Figure 1: Conceptual Model Research Methodology To address this research gap, quantitative research method was used, and an online survey was administered to 275 teachers from both private and public universities across four countries of India, Malaysia, Saudi Arabia, and China to collect the data using purposive sampling method. The survey questionnaire items for the constructs of PE, EE, SI, FC, BIN and UBH were adapted from the extant literature (Venkatesh et al., 2003; Venkatesh et al., 2012), FOMO (Przybylski et al., 2013; Riordan et al., 2020) and NRSM (Jonason and Webster, 2010; Aplin-Houtz, 2023). The Cronbach alpha of 0.852 confirmed the reliability of pilot study paving way for final survey between May to July 2024. Sampled data was analysed using AMOS-SEM 23 and SPSS 20 statistical tools. Findings and Analysis To assess the proposed conceptual model, reflective measurement scale was utilized. Standardized factor loading of all constructs were found to be substantial and it ranged from 0.591 to 0.911. The chi-square value was 434.901 with Degree of Freedom value at 254 (and p value<0.05). The model was found to be a good fit with CMIN/DF value of 1.712. RMSEA value of 0.051 indicated a good fit and other fit indices such as GFI (.912), AGFI (.853), NFI (.893) and CFI (.952) indicated acceptable and good fit (Hu and Bentler, 1999; MacCallum et al., 1996). Two critical factors for instrument development are Validity and Reliability. Confirmatory Factor Analysis is essential for determining Construct Validity and Reliability. In the measurement model, Construct Reliability ranged from 0.808 to 0.880 which exceeds the cut-off of 0.7 with fair margin. Convergent Validity of the construct can be determined by standardised factor loading and average variance extracted (AVE). The cut-off value for standardised factor loading is 0.5. The standardised factor loading 0.591 to 0.911 which is sufficiently high then the cut-off value of 0.5. AVE value was also sufficiently high then the cut-off value of 0.5 with the range of 0.555 and 0.725. Thus, variation deriving from the measurement model is less than the variance indicated by the construct (Hair et al., 2018). Regression analysis reveal significant insights into the predictors of ChatGPT acceptance among higher education teachers. FC (β = 0.37, p 0.00), PE (β = 0.36, p 0.00), SI ((β = 0.29, p 0.00), and FOMO (β =

0.13, p 0.03) were identified as significant and positive influencers of intention to use ChatGPT. Conversely, EE (β = -0.04, p 0.31) and NRSM (β = -0.04, p 0.37) were found to have insignificant influence on the behavioral intention to use ChatGPT. Discussion and Implications The study contributes to the existing body of knowledge by offering insights into the predictors of ChatGPT acceptance among teachers. The findings suggest several implications for the successful integration of AI tools like ChatGPT in educational settings. Policymakers should consider the factors influencing teachers' acceptance of AI tools when formulating guidelines. Implementing systems to monitor ChatGPT's use and gathering feedback from teachers can help in refining its application. Limitations and Future Research Directions This study contributed to the body of knowledge in many ways however it has its own set of limitations. First, the study done was cross sectional which couldn't capture the changing perceptions, attitude, and intentions of an individual towards an ever-evolving AI tool and the same could have been done deploying the longitudinal study. Second, socio-demographic moderators and the perception of respective generational cohorts towards ChatGPT can also provide interesting and executable insights into the relationship between predictor variables and Gen AI use intention and behaviour. Conclusion As AI tools like ChatGPT continue to evolve, understanding teachers' perspectives on their use becomes crucial for effective integration in educational settings. This study emphasized the importance of FC, SI, PE, and FOMO in shaping teachers' intentions to use ChatGPT.

647

<table>
<tr><td>Submission Number: 647</td><td>Track: CDT</td></tr>
<tr><td colspan="2">Paper Title: Why so serious? The effects of adding humor to online compliance trainings</td></tr>
<tr><td colspan="2">Authors: Somraj Sarkar and Shweta Sharma</td></tr>
<tr><td colspan="2">Abstract: Online compliance trainings often fall short to meet learner expectations, yielding low engagement and retention rates. The literature on prevention of sexual harassment (POSH) training is highly critical of its effectiveness citing it more as a legal mandate rather than an awareness driving exercise. However, limited studies try to research on viable solutions to enhance the impact of such web-based tutorials. Addressing this gap, our study explores the potential of using humorous analogies (a type of instructional humor) in online POSH trainings to improve the learning outcomes of the participants. Grounding our research in the instructional humor processing theory (IHPT) and situational interest theory (SIT), we conducted a comprehensive three-part experimental study to test our hypotheses. Study 1 accesses the impact of humorous analogies on learner's attention using Tobii eye tracking tool, while studies 2 & 3 measure the impact on training effectiveness. Our findings reveal that when humorous analogies are perceived as an appropriate form of humor within the training context, it increases the situational interest of the learner, which enhances both affective and cognitive learning outcomes. These results challenge the current understanding of humor usage in a sensitive topic and have profound implications across industries.</td></tr>
</table>

652

<table>
<tr><td>Submission Number: 652</td><td>Track: CDT</td></tr>
<tr><td colspan="2">Paper Title: Role of technology enablers for implementation of HR analytics in the Indian IT sector: A mediation analysis</td></tr>
<tr><td colspan="2">Authors: Rakesh Naik Vadithe, Bikrant Kesari and Rubvita Chadha Rajput</td></tr>
<tr><td colspan="2">Abstract: Technological advancements offer the potential to transform HR practices, but the effectiveness of human resource (HR) analytics implementation remains contingent upon various technologies. This study explores the impact of various technological enablers on implementing HR analytics within the Indian IT sector. Furthermore, the study explores the mediating effects of automated decision-making and managerial efficiency in the relationship between HR analytics and organizational performance. Drawing upon resource-based view (RBV) theory. Data was collected from 663 employees across various IT sectors in India. To validate the proposed model PLS-SEM was utilized through Smartpls 4.0. The findings show that technology enablers such as big data, chatbots, social media networks, and artificial intelligence have a positive impact on HR analytics implementation. Furthermore, the study reveals automated decision-making and managerial efficiency as partial mediators in the relationship between HR analytics and organizational performance. This research contributes to the literature on HR analytics implementation and also provides actionable insights for practitioners and policymakers within organizations, ultimately fostering organizational excellence in a technology-driven era.</td></tr>
</table>

663

Submission Number: **663**	Track: **CDT**

Paper Title: Leveraging AI Public Goods for Social Impact

Authors: Manisha Rathi and Shankhadeep Banerjee

Abstract: Offering digital tools and technologies like AI as public goods has been regarded as an effective approach to social development and welfare. This is because of the ‘public’ nature of such technologies that manifest through the attributes of public participation and public value. However, the mechanisms through which digital public goods (DPGs) lead to social impact have been understudied. We investigate how AI Public Goods (AIPGs) create social impact due to public participation and public value. Using the theoretical lens of Actor-Network Theory (ANT) and Capability Approach (CA), we analyze the case of an AIPG – Jugalbandi. We find that an ecosystem-driven capability enhancement approach is the mechanism through which AIPGs engender social impact. The importance of this mechanism lies in its potential to mitigate the concerns of self-sustainability and scalability around digital/AI public goods. The study contributes to the combined literature on AI for social good (AI4SG) and DPGs.

716

Submission Number: **716**	Track: **CDT**

Paper Title: Challenges in developing LLM platform in the Indian context: Assimilation from the Indus Project

Authors: Padmini Ramamurthy and Dr. Sujeet Kumar Sharma

Abstract: Large Language models (LLM) have revolutionized how humans communicate with machines. The ability of LLMs to produce human-like conversations makes them suitable for many downstream applications. Developing LLM requires careful consideration of the context of the downstream application, and language plays a significant role in defining the context for applications in India. Developing LLM is complex and rigged with challenges. Understanding the challenges Indic languages pose would enable LLM developers to create better adaptable solutions. Thus, the research objective is to understand the challenges of developing LLMs in the Indian context. One of the recent LLM developments is the Indus Project, a foundational LLM development initiative for the Indic language and its dialects, spearheaded by Nikhil Malhotra, Maker’s Lab, Tech Mahindra. Being a recent “grounds-up” development for Indic languages and dialects, it provides an excellent ground for understanding the challenges of LLM development in the Indian context better. Currently, Hindi and its 37 dialects are part of the project. A case-study-based qualitative research methodology is used to understand the challenges of developing grounds-up LLM for Indic languages. Five themes of challenges have emerged so far - Context, Data, Technology, Organizational and Regulations that are assimilated across three stages of LLM development lifecycle- “Prior” (consisting of Data collection and Data curation), “During” (Tokenization, pre-training and supervised fine-tuning) and “Post” (DPO, monitoring). Through this ongoing research, the intention is to build a body of knowledge by unearthing the unique challenges in the space of Indic LLM development.

830

Submission Number: **830**	Track: **CDT**

Paper Title: Operational Consequences of Blockchain Technology Adoption in Supply Chains: Do Motivation, Vulnerability, and Industry Context Matter?

Authors: Alok Raj, Samit Paul, Atanu Chaudhuri and Ujjal Mukherjee

Abstract: Firms are increasingly integrating Blockchain Technology (BCT) into their supply chains to enhance operational performance. However, the operations management literature offers limited empirical insights into how BCT is linked to operational performance and the conditions under which this relationship may vary. To fill this gap, we examine (a) the association between BCT adoption and operational performance and (b) the context such as the motivation of adoption (internal versus external), the firm’s operational and financial vulnerability, and the industry context (competition and growth) in which this association differs. We further examine the mechanisms through which BCT adoption is linked with firm-level operational performance. We consider 104 publicly listed firms that made non-speculative announcements related to BCT adoption between 2016 to 2020. We employ a combination of Coarsened Exact Matching (CEM) and difference-in-difference (DID) approach for the analysis. The results suggest that BCT adoption improves return on assets (ROA) by 4.8% and reduces total cost on sales (TCOS) by 1.3%. We find that BCT adoption driven solely by internal motivation improves ROA and reduces TCOS. Firms with relatively greater operational and financial vulnerability (lower Altman Z-score) experience more significant operational improvement after BCT adoption. Furthermore, results suggest that the improvement in ROA is mediated through the decrease in the TCOS from BCT adoption. We establish robustness of the results by removing impact of sample selection bias and omitted variables. Our findings can help firms assess the potential for improving operational performance through the implementation of BCT and identify the specific conditions under which these performance enhancements are likely to be most significant.

836

Submission Number: **836**	Track: **CDT**

Paper Title: VICARIOUS TRAVEL EXPERIENCE: TRAVELLING THE WORLD THROUGH THE SOCIAL MEDIA INFLUENCERS ON INSTAGRAM

Authors: Sudhir Bhatia and Harbhajan Bansal

Abstract: This paper conceptualizes and contextualizes the concept of vicarious travel experiences (VTE) in light of increasing travel content on social media via travel influencers. There exists a knowledge gap in this respect despite the growing importance of vicarious travel experiences for travel planning, destination image, and tourist behaviour. We conceptually define this newly documented concept and empirically examine its effect on the travel intentions of Instagram users. It is well-known that social media influencers are now an essential part of all kinds of marketing mixes, ranging from marketing products and services to marketing social causes. The unique ability of social media influencers to engage with a niche audience makes them a marketing magnet. Social media influencers (SMIs) are most accurately categorized based on the content they post, and according to the norm of product-brand-influencer fit, they get endorsements and brand deals accordingly. Travel influencers are one of the most popular categories of social media influencers. These influencers post their travel-related content, including interesting travel stories via reels, stories, social media posts, and text carousels. They also post advisory content and recommendations based on their experiences, which helps their viewers and followers in their travel planning. Notably, many of us experience their travel journeys through their content and feel like we are traveling along. We qualitatively explored this aspect and strengthened this weakly presented phenomenon. In the preliminary design phase, exploring the literature, it was observed that vicarious travel experience has not been given suffice scholarly attention. Drawing upon the extant literature, our research work addresses this research gap and aims to conceptualise this concept via a mixed method research design. On the basis of extensive literature survey and qualitative discussions, we quantified the VTE and further tested its impact on travel intention using structural equation modelling involving 360 respondents. It provides insights for destination marketers, travel agencies, and DMOs to be proactive and engaging via and the travel influencers. It underscores the importance of vicarious travel and advocates for further research employing multi-paradigmatic approaches.

869

Submission Number: **869**	Track: **CDT**

Paper Title: The Influence of Subjective Norms and Monitoring Perceptions on Mitigating Information Security Policy Violations in Hybrid Work Environments

Authors: Balagopal N and Saji Mathew

Abstract: Introduction The COVID-19 pandemic has significantly transformed the traditional work environment, establishing remote and hybrid work models in the post-pandemic era. This paradigm shift has introduced a variety of security risks, with a notable surge in insider threats and employees' violation of information security policies (ISPs). Ponemon (2022) reported that managing insider security incidents represents a substantial financial burden for organizations, with an average cost of $184,548 allocated to mitigating the effects of such risks. Furthermore, the study reported ISP non-compliance as a root cause of more than half of all cybersecurity incidents within organizations. Similarly, Kaspersky (2023) found that intentional violations of information security policies by employees were responsible for a considerable proportion of cybersecurity incidents in the past two years. Several studies on ISP compliance and violation literature have identified and tested various

factors influencing employees' intentions to violate ISPs, primarily within the traditional office environment. However, the distinct dynamics of remote and hybrid work settings necessitate a reassessment of the factors which could negatively influence the employees’ intention to violate ISP. The inherent differences between the traditional office environment and the remote/hybrid work environment could potentially render some factors more significant while others less impactful. In the backdrop of this changing work environment, our study seeks to identify the factors that can effectively mitigate employees' intentional ISP violations within this evolving work context. Theory Development In order to address employees’ ISP noncompliance in remote/hybrid settings, we employed a hypothetical scenario-based survey method, measuring constructs such as perception of formal monitoring, perception of peer monitoring, subjective norms, formal deterrence, and intention to violate ISPs. In our study, the perception of formal monitoring is defined as the extent to which employees believe their activities are systematically observed and recorded by organizational authorities using various technologies. The perception of peer monitoring is characterized by the degree to which employees feel their colleagues are aware of and attentive to their compliance with the organization’s ISP. Subjective norms refer to the perceived social pressure to comply with information security policies based on the expectations of peers and significant others. Finally, the intention to violate ISPs denotes the likelihood that an employee plans to non-comply with ISP. Drawing upon prior theories of Routine Activity Theory (Cohen and Felson, 1979) and Theory of Reasoned Action (Fishbein and Ajzen, 1975), the following hypotheses were developed: H1: Perception of peer monitoring in remote and hybrid work environments positively affects the subjective norms of employees. H2: Perception of formal monitoring in remote and hybrid work environments negatively affects the intention to violate ISP. H3: Subjective norms negatively influence employees’ intention to violate ISP in remote and hybrid work environments. H4: Subjective norms mediate the relationship between the perception of peer monitoring and the intention to violate ISP in remote and hybrid work environments. Methodology We adapted three scenarios from previous studies, modifying them slightly to fit the context of remote and hybrid work environments. The measurement items were also adapted from prior research. Data was collected through an online survey administered through LinkedIn, both through public postings and direct messages to connections. The survey targeted participants with at least six months of work experience in remote or hybrid environments. Each participant was presented with a single scenario to ensure the clarity and focus of their responses. A total of 162 participants completed the survey, and the collected data was analyzed using PLS-SEM with SmartPLS 4 software. Results Our early results reveal several critical insights. Firstly, the perception of peer monitoring exerts a positive influence on the subjective norms of employees. This suggests that when employees believe their peers are monitoring their actions, they are more likely to align their behavior with prevailing social expectations regarding ISPs. A notable result from our study is that subjective norms have a negative influence on the intention to violate ISPs. This indicates that stronger social pressures and expectations against ISP violations can effectively reduce such intentions among employees. Moreover, subjective norms have a mediating role in the relationship between the perception of peer monitoring and the intention to violate ISPs. Specifically, while peer monitoring itself may not directly deter ISP violations, it indirectly influences this outcome by strengthening subjective norms. In other words, employees who perceive a high level of peer monitoring are likely to experience heightened social norms against ISP violations, thereby reducing their propensity to engage in such behavior. Additionally, the perception of formal monitoring also negatively impacts the intention to violate ISPs, underscoring the importance of having clear, visible and enforced oversight mechanisms even in remote and hybrid work environments. Discussion and Conclusion Based on these findings, our study advocates for organizations to adopt strategies that enhance employees' perception of monitoring when they work from a remote environment. This can be achieved through various means, including the visible enforcement of security protocols, regular communication about monitoring practices, and clear articulation of the consequences associated with ISP violations. By increasing the perception of both peer and formal monitoring, organizations can cultivate a culture of compliance and reduce the risk of insider threats and ISP violations. In conclusion, the shift to remote and hybrid work environments necessitates a reevaluation of factors influencing employees ISP violation intentions. Our research underscores the significance of fostering a culture of both peer and formal monitoring and leveraging social norms to deter ISP violations effectively. As organizations continue to navigate the complexities of post-pandemic work arrangements, prioritizing these strategies will be essential in maintaining robust information security and safeguarding against insider threats. This study contributes to the expanding literature on information security in the context of new work environments and provides actionable insights for practitioners aiming to enhance information security. Future research will involve more comprehensive data collection and testing to further validate the findings.

886

Submission Number: **886**	Track: **CDT**
Paper Title: How Rewards Shape the Impact of Gamification: Role of Gamer Orientation and Reward Responsiveness	

Authors: Shubham Gupta, Garima Saxena and Tapas Ranjan Moharana

Abstract: 1. Introduction: Traditionally, gamification used game elements in non-gaming contexts (Deterding et al. (2011). However, gamification in marketing does more than include game elements, which Huotari and Hamari (2017) explain: “Gamification refers to a process of enhancing a service with affordances for gameful experiences to support users’ overall value creation.” This study extends this body of literature in exploring the influence of different types of rewards (i.e. tangible or intangible rewards) on their attitude towards playing the game, continuance engagement with the application (app) and intention to recommend the app to others. We also demonstrate the mediating role of reward satisfaction, and show how such satisfaction is likely to vary with different types of rewards and individuals. 2. Literature Review: Rewards and Consumer Responses While gamification has multiple game elements, rewards are one of the important and widely used elements. Rewards are extrinsic motivators and essential in behavioral decisions (Fisher & Ackerman, 1998; Deci, 1971; Michener & DeLameter, 1999; Skinner, 1953; Ryan & Deci, 2000; Sundel & Sundel, 2005). Researchers have created different categorisations for rewards including personality-based (Melancon et al., 2011) and benefits-based (Hwang & Choi, 2020; Eason et al., 2015, Behl & Periera, 2021); the most common being the classification based on tangibility (Arbore & Estes, 2013). Tangible rewards include cashback, discounts, prizes, etc., while intangible rewards include special privileged services, personalised communication, etc. Past research in different contexts indicates that the nature of the rewards can differently impact consumers (Philips et al.), (Behl and Perera), (Eason et al., 2015). Hence, H1: Tangible (vs Intangible) Rewards positively impact the reward satisfaction of the user. H2: Rewards satisfaction positively impacts Attitude towards playing the game. H3: Rewards satisfaction positively impacts continuance engagement intention. H4: Rewards satisfaction positively impacts intention to recommend. H5: Rewards satisfaction mediates the impact of tangible (vs intangible) rewards on (a) Attitude towards the game, (b) Continuance engagement intention, and (c) intention to recommend. 2.2Moderating role of Gamer Orientation The nature of rewards can lead to a differential impact on the customer (Eason et al., 2015), aligning with the customer’s objective or psyche (Loughrey et al., 2018). Researchers have provided different conceptualisations for player type (Bartle, 1996; Wang et al., 2022). Wang et al. (2022) classified gamer orientation into play for fun and played to win, adopted for this study. Players with a win orientation are focused on beating other players while play-for-fun individuals focus more towards game fairness, novelty or design-related affordances and are inclined towards non-functional items in the game (Farivar et al., 2018;Wang et al., 2022). Hence, H6: Gamer orientation positively moderates the impact of rewards (tangible vs intangible) on reward satisfaction of the user such that the effect of tangible (vs Intangible) rewards on reward satisfaction is accentuated (attenuated) for gamer with win (fun) orientation. 2.3Moderating Role of Reward Responsiveness Reward responsiveness is an individual’s proneness to experience positive feelings such as excitement and happiness when encountering rewards (Carver & White, 1994). A higher reward-responsive individual reacts more positively as compared to a lower-responsive individual (Aydınlıyurt et al., 2021; Van den Berg et al., 2011). Individuals with high reward responsiveness are likely to be more satisfied with the game’s rewards due to the higher measurability and visibility, whereas less easily calculable rewards would lower reward satisfaction (Hollebeek et al., 2021). Hence, H7: Reward responsiveness positively moderates the impact of tangible (vs intangible) rewards on the reward satisfaction of the user such that the impact of tangible (vs Intangible) rewards on satisfaction is stronger (weaker) for users with high (low) reward responsiveness. 3.Methodology: The current research comprised of two between-subject experiments. Study 1 investigated the main effects of reward type on reward satisfaction and consumers’ attitude towards the app, their continuance engagement intention and their intention to recommend. Study 2 investigated the moderation effects of gamer orientation and reward responsiveness. We developed a web application imitating the visuals of common e-commerce apps page with products, game icon and their reward pop-up system. We chose snake and ladders for the game because of its simplicity and high usage among e-commerce apps. The reward was manipulated to be tangible or intangible for some respondents. Thereafter, respondents were directed to a Google form in which they filled out the questionnaire. 4.Analysis and Results The conceptual model was tested using the technique of structural equation modelling. The results of structural model confirmed acceptable fit indices: $\chi2/df = 1.62$, $p = 000$), GFI = 0.91, CFI = 0.98, NFI = 0.94, TLI = 0.97, and RMSEA = 0.06, supporting hypotheses 1-4. The three mediation relationships were tested using Hayes Process Model 4 (Hayes 2017). Results demonstrated that the indirect effects of tangible (vs intangible) rewards on attitude towards playing the game, continuance engagement intention, and intention to recommend were significant, supporting the mediation hypothesis 5. Moderation model analysis were done using Process Model 7 (Hayes 2017). The interaction terms - tangible (vs intangible) rewards x reward responsiveness; and tangible (vs intangible) rewards x gamer orientation had a significant impact on reward satisfaction. Hence, hypotheses 6 and 7 were also supported. 5. Implications The results indicate the imperative need for brands and digital platforms to tailor rewards to consumers’ game orientation and their degree of responsiveness towards rewards. Reward satisfaction is deeply influenced by the effectiveness of matching the right rewards with the right consumers which finally impacts their responses towards the game and the app.

Submission Number: **900**	Track: **CDT**
Paper Title: Exploring the link between HRM 4.0 and strategic agility: A qualitative inquiry	
Authors: Abhyudaya Anand Mishra, Mridul Maheshwari and Jatin Pandey	
Abstract: Prior studies have investigated numerous benefits HRM 4.0 brings to organizations. However, little is known about how HRM 4.0 helps organizations develop strategic agility. Drawing insights from 31 semi-structured interviews with HR managers, this study unveils that HRM 4.0 equips organizations with three vital capabilities: functional, knowledge management, and ambidextrous capabilities. These capabilities are found to be crucial for fostering strategic agility and ensuring a sustainable competitive advantage. The findings of this research contribute substantially to the scholarly understanding of HRM 4.0's link with strategic agility and provides HR practitioners with better reasoning for HRM 4.0 adoption.	

973

Submission Number: **973**	Track: **CDT**
Paper Title: From Growth to Development: The Impact of Information and Communication Technology (ICT) on Human Development Index (HDI) in BRICS Economies	
Authors: Neetu Kumari	
Abstract: In pursuing human development in emerging economies, the conventional emphasis on economic growth alone has resulted in minimal improvement in the Human Development Index (HDI). This study recommends a paradigm shift, emphasising the critical role of technology, precisely Information and Communication Technology (ICT), in tackling developmental difficulties. The paper studies the influence of ICT on the HDI of BRICS nations from 2000 to 2021, considering variables such as economic growth (GDP), foreign direct investment (FDI), trade openness, inflation, and access to domestic credit. The empirical analysis, employing the Driscoll-Kraay standard error methodology and the Panel Corrected Standard Error (PCSE) approach, demonstrates that ICT has a favourable influence on all aspects of human development, including education, health, and GNP. Our research indicates that internet users, mobile subscriptions, and broadband subscriptions have a favourable influence on the Human Development Index (HDI), while telephone subscribers do not. From an economic policy standpoint, the findings can serve as a guideline for deploying and using ICT, potentially leading to economic growth and development, thereby maximizing its impact on human development.	

975

Submission Number: **975**	Track: **CDT**
Paper Title: Health Misinformation on Social Media: Psychological Drivers and Mitigation Strategies	
Authors: Muhammed Sadiq T, Saji K Mathew and Ranganathan Chandrasekaran	
Abstract: As instant messaging platforms have become a common ground for rapidly sharing and disseminating health information, it becomes imperative to design mechanisms that would contain the spread of health misinformation. Drawing upon psychological ownership theory, social exchange theory, and digital nudging perspectives, our multi-method study seeks to understand the psychological motives behind health misinformation sharing on instant messaging platforms and examine potential nudging interventions to mitigate health fake news sharing behavior. We conducted an experiment with 413 participants from India, using an innovative, in-house developed experimental platform resembling WhatsApp. Then, we did a questionnaire survey with the same set of participants to measure the constructs related to psychological ownership motivation and social exchange theory using pre-existing scales. This study contributes to the body of knowledge on psychological ownership theory, social exchange theory, digital nudge theory, and social media health misinformation.	

1053

Submission Number: **1053** | Track: **CDT**

Paper Title: Abstract or Concrete lingo? When Chatbots apologise for service failure in Online Travel Agencies

Authors: Rishab Chauhan and Payal Mehra

Abstract: Background of the study Digitization of customer experience involves the integration of digital technologies for customer interaction. This incorporates the use of any technology for service, marketing and sales. Many industries have digitally transformed their service operations especially healthcare and hospitality sectors mainly in the area of service recovery. Digital transformation increased online travel agencies (OTA) market share from $326.11 billion in 2021 to $658.38 billion in 2024 (Statista, 2024). OTA services are heterogeneous and diverse, so service failures are inevitable (Kumar & Shankar, 2023). Several OTAs use chatbots for service recovery (Cai et al., 2022). These chatbots often apologize in writing to mitigate the impact of service failures (Walker, 2019). However, previous studies have not focused on how chatbot language styles affect apology expressions in customer interactions about service breakdowns. The best language style for OTA chatbots to apologize to consumers and win their forgiveness is unknown. This study examines whether an OTA chatbot's abstract or concrete apology enhances customer forgiveness. Further, according to Sung et al. (2023) and Ahmad & Guzman (2023), perceived sincerity and empathy affect customer attitude in customer-company interactions. However, the serial mediation effect of perceived firm sincerity and empathy on chatbot language style in apologies and CF has not been studied. Moreover, service failure severity also affects customer reactions and preferences (Ho et al., 2020; Lv et al., 2021). But, whether severe vs. minor service failures affect customer preferences for concrete vs. abstract chatbot apology language styles is unknown. Lastly, two main types of OTA services are hedonic and utilitarian. Research has shown that hedonic and utilitarian customers react differently to service failures (Sameeni et al., 2022). However, little is known about how service failure type (hedonic vs. utilitarian) affects chatbot apology language preferences. To fill the aforementioned gaps, this research aims to examine the effects of OTA chatbot's apology, expressed in either abstract or concrete language, in earning customer forgiveness (CF). Anchored on the well-regarded signalling theory, this study examines how customers perceive the signalling intent of sincerity and empathy (Choi & Mitchell, 2022; Wang et al., 2023) conveyed through the language expressed in the OTA chatbot apology and it further impacts their forgivenss intention (Lee & Atkinson et al., 2019). The following hypotheses were proposed: H1: Overall, consumers exhibit higher forgiveness towards OTA if their chatbots apologize using concrete language rather than abstract language style. H2: Perceived firm sincerity and perceived firm empathy sequentially mediate the relationship between the language style used by the chatbot for an apology and CF. H3: If OTA service failure can be categorized as minor and severe, then in minor (vs. severe) service failure contexts, customers exhibit higher forgiveness towards chatbots that apologize using abstract language (vs. concrete) style. H4. Perceived firm sincerity and perceived firm empathy mediate the congruity effect of chatbot language style (concrete vs. abstract) and service failure severity (minor vs. severe) on CF. H5. If OTA service failure can be categorized as hedonic and utilitarian, then in utilitarian (vs. hedonic) service failure contexts, customers exhibit higher forgiveness towards chatbots that apologize using concrete language (vs. abstract) style. Figures 1-3 illustrate the proposed research model for the three experimental studies: Figure 1. Study1 Research model Figure 2. Study 2 Research model Figure 3. Study 3 Research model Methods Drawing on the positivist paradigm, the study utilises an experimental based approach to evaluate the phenomena and test the hypotheses. Figure 4 illustrates the process used to conduct the three experimentation studies Figure 4. Data collection procedure Results For Study 1, data was collected from 348 participants. A T test (SPSS) was used for manipulation check for chatbot language style. The bootstrapping method in Smart PLS was used to examine the serial mediating effect of PFS and PFE. Both H1 and H2 were supported. The results of study 1 revealed that overall, consumers exhibited higher forgiveness towards OTA if their chatbots apologised using concrete language rather than abstract language style, and PFS and PFE serially mediated the relationship between chatbot language style and CF. Study 2 was a 2 (Language style: abstract vs. concrete) x 2 (Service failure severity: minor vs. severe) experimental design. Study 2 investigated whether the severity of service failure (minor vs severe) influenced consumer preference for language style (abstract vs concrete) adopted by chatbots for apologies. 362 respondents participated in Study 2. The results revealed that the overall concrete language style of the chatbot was more effective in gaining CF. Further, if the service failure severity can be classed as minor vs severe, then customers exhibited higher CF towards chatbot that used abstract (concrete) language style in case of minor service failure. Moreover, the the serial mediating effects of PFS and PFE existed and the effects of the chatbot apology language style on CF was partially mediated. Thus, H3 and H4, along with the results of study 1 were supported. Study 3 was a 2 (Chatbot apology language style: Abstract vs. Concrete) x 2 (Service failure severity: Minor vs. severe) x 2 (service type: hedonic vs. utilitarian) experimental design. Study 3 investigated whether customer preference for chatbot apology language style (abstract vs concrete) differed in accordance with the type of service failure (hedonic vs utilitarian). It was also hoped that Study 3 would reproduce the results of Study 1 and Study 2. 470 participants participated in this study. The findings indicated that significant interaction effect was missing with regard to service type (all $p > 0.10$). Based on these findings, the different types of services (hedonic and utilitarian) were not examined separately. In the final analyses, all hypotheses except H5 were supported. The results of studies 1 and 2 were confirmed. Conclusions This is the first study that exclusively focuses on chatbot apology language style for service failure recovery in the OTA sector using signalling theory. The results provide useful suggestions to OTA managers regarding the design of a chatbot language style for apologising to customers for service failure.

1055

Submission Number: **1055**	Track: **CDT**

Paper Title: The Experience of Digitalization: Exploring the Interaction of the Poshan Tracker App and the Anganwadi Workers

Authors: Nitya Jadeja

Abstract: There is a rising emphasis on digital transformation of government services in India. The backdrop of this transformation has been a narrative of increasing efficiency and service delivery using technology (Digital India, n.d., Saxena, 2018). In the past few years, this transformation has been particularly prominent among welfare services (Guha & Viswanathan, 2021). These gaps have been attributed to inefficiencies in the system, and the shirking behavior of street-level bureaucrats. The government has motivated digital transformation to address these challenges (Maiti et al., 2020). However, this transformation has changed the way the street-level bureaucrat's work. Given that they hold a crucial position in ensuring that the intended beneficiaries avail the welfare services, it is important to understand how digitalization is transforming their work. Hence, this research explores the changing nature of work for the Anganwadi Workers [AWW], after the introduction of the Poshan Tracker app (Poshan Tracker, 2022). Anganwadi are daycare centers, established to ensure cognitive development of children between the age of 6 months to 6 years, and to provide nutritional meals to children, as well as pregnant and lactating mothers, to combat malnutrition (Joe & Subramanyam, 2020). In 2021, the Poshan Tracker app was introduced, to improve service delivery, and facilitate monitoring of the workers (Poshan Tracker, 2022). Focusing on the rural context, this research seeks to uncover the nuances of transformation, across a geography where there is a lack of physical architecture to support the digital architecture (SP et al., 2022; Venkatesh and Sykes, 2020). These nuances contribute to complexities within this sociotechnical system which is characterized by a diverse set of agents, constantly evolving to internal and external pressures, adding unpredictability in the outcomes (Benbya et al., 2020). Taking this complexity into account provides a useful theoretical lens to understand the emergent properties of the system (Benbya et al., 2020). For this paper, a qualitative methodological approach was adopted, drawing inspiration from the constructivist grounded theory approach. The constructivist grounded theory is an emergent method, which allows the researcher to study a dynamic phenomenon to build an inductive understanding (Charmaz, 2008, 155). For this exploratory study, fieldwork was conducted in Rajasthan, where the researcher visited Anganwadis in the blocks Kotra and Jhadol. Using participant observation and active interviews, as well as extensive memoing, themes were identified from the interviews. These helped shape the upcoming field visits, and the researcher adapted the broader set of questions accordingly. The fieldwork revealed several interesting insights. Firstly, among the workers interviewed, there was strong information asymmetry around the details of their compensation, rules of work and the functions of the app. There was no regular training undertaken to help them learn the app, even though the app went through frequent updates, with as many as one to two new updates every month. Secondly, Sahayikas were employed in Anganwadis, to assist the Worker by keeping the premises clean, cooking the meals and fetching the students (Joe & Subramanyam, 2020). The Anganwadi Workers and Sahayikas had a strong informal network, where they would assist each other to fill in the data within the app. However, the Sahayikas were not trained to use the app. This meant that in case an Anganwadi Worker was unavailable, she could not, in her official capacity, rely on Sahayika to help with the data work. Lastly, there is the phenomenon of duplication of work. The AWW were expected to fill in eleven physical registers with data on the demographic details of the village, the beneficiaries and their Aadhar details, and so forth. These registers were issued by the Central government and checked every month in the block level meeting. The same information had to be filled in the Poshan Tracker App. Given that the app's purpose was to reduce the data work in physical register; to improve data collection and monitoring (Ministry of Women and Child Development, n.d.), the persisting use of these registers indicated a dissonance in the goals of the policy and the outcomes expected from the digital architecture. These findings reveal the transformed the nature of work for the AWWs, who saw themselves as tasked with data entry, leaving no time to devote to the children coming to the Anganwadi. It also reveals the perceived precarity of the job, as they expressed concerns about being reprimanded and threatened with salary cuts if they failed to enter the required data. Finally, a dissonance was also observed between the Anganwadi Workers use of the app, and its intended benefits. The app increased their workload and created a sense of anxiety. Thus, the experience of the app has had unintended consequences on these workers. These findings are important in highlighting how digital architecture can marginalize vulnerable populations, and how governance models that solely focus on digital transformation, without accounting for these consequences contribute to a negative experience of technology.

1089

Submission Number: **1089**	Track: **CDT**

Paper Title: Impact of Geo-cultural Diversity on Teams' Innovation Performance

Authors: Dhruven Zala and Shanmuga Priya A

Abstract: Innovation contests have gained increased attention in recent years because of their unique ability to attract global participants to solve complex problems (Stouras et al., 2022). Given the global attention that these contests receive, they become facilitators for collaboration among participants. In turn, such collaboration opportunities enable participants to borrow from diverse perspectives to solve complex questions. This study attempts to understand the effectiveness of these team collaborations from a geo-cultural perspective (Turner & Roberts, 2023). Specifically, we use a natural experimental setup to understand national and global level collaborations and their impact on a team's innovation performance. Guided by the category elaboration model (CEM) (Van Knippenberg et al., 2004) which suggests positive as well as negative aspects of having a diverse work group, we argue that such collaborations can be effective as well as backfire. On one hand, such collaboration can activate a diverse group of participants, bringing more perspectives, novel ideas, and improved learning for the participants. On the other hand, mobilizing such collaborations remains a crucial concern because of cultural disparities, workstyle differences, and personal preferences, potentially affecting overall cohesion and effective resource utilization. These arguments, we posit are motivated by the underlying synergy dynamics, as suggested by CEM. Meaning the integration of information and decision-making amongst a culturally diverse work group remains a crucial point of concern (Wang et al., 2019), especially in the case of remote collaboration (Siebdrat et al., 2014). Adding to these, the time-bound nature of innovation contests further adds a critical collaboration barrier (Adamczyk et al., 2012). Furthermore, these teams compete with others as well to provide the best solution. In this regard, such collaborations not only have to be mobilized on time but must also ensure that they lead to quality outcomes (Bockstedt et al., 2015). On these fronts, the current understanding of literature and its associated practical implications are equivocal and subjective (Siebdrat et al., 2014; Wang et al., 2019), demanding further theoretical attention. Hence, given the uncertainty of conditions of these innovation contests (Deodhar & Gupta, 2022), we try to understand the efficacy of these collaborations. RQ: What impact do geo-cultural collaborations in innovation contests have on team innovation performance? Hypotheses: Positive CEM-Performance H1A: Teams collaborating nationally have a positive innovation performance. H1B: Teams collaborating globally have a positive innovation performance. Negative CEM-Performance H2A: Teams collaborating nationally have a negative innovation performance. H2B: Teams collaborating globally have a negative innovation performance. Data Analysis To empirically investigate these, we analyze data from a prominent innovation contest hosting platform focused on data science and machine learning challenges. This platform has participating organizations across the globe that post challenging problems and seek solutions. Participants can choose from a broad theme of problems, including but not limited to data science for healthcare, context-specific generative AI modeling, and machine learning for social good. The dataset contains team participation information across 2700 contests between the years 2011 to 2024. Our empirical analysis shows that despite the lower acceptance of collaborations beyond co-located participants (Figure 2) amongst the pool, non-collocated teams extend significantly more submissions towards contests (see Table 1). Further, teams collaborating remotely (nationally or globally) are effectively able to mobilize their resources which also reflects in their innovation performance as measured by the magnitude of submission. Next, we check whether this mobilization leads to quality solutions. For this purpose, we look at benchmark solutions submitted by teams at various stages throughout the competition. The analysis shown in Table 2 reveals teams' collaborating remotely is significantly providing benchmark solutions throughout the course of the contest. We further conduct an analysis of the magnitude of team diversity. That is, we move from a binary measure of global and national teams and look at the actual diversity. The effects remain consistent across this change, as reported in the respective analysis. It is noteworthy to mention that for globally distributed teams, the impact on team performance is higher as compared to nationally distributed teams. This, we argue, is because of the diverse nature of attention brought forward by cross-border collaboration coupled with the effective mobility of team resources. Contributions By bringing to light these findings, our study offers significant advancements on multiple fronts. First, we contribute towards a nuanced understanding of remote team collaboration and their innovation capabilities (Siebdrat et al., 2014; Wang et al., 2019). Second, we offer implications for literature and policymaking and practice the role by highlighting the positive potential of cross-border collaboration, especially in innovation contests. Finally, we add to the native literature on crowdsourcing and innovation contests by identifying novel phenomena and opening new dimensions of the team's geo-cultural diversity and its associated impact on innovation performance.

1090

Submission Number: **1090**	Track: **CDT**

Paper Title: Silent Voices: Uncovering the Hidden Customer Experience Indicators in AI-Enabled B2B Services

Authors: Subisha K R and Saji K Mathew

Abstract: Introduction Customer experience stems from a series of interactions between a customer and a product or organization that can elicit a reaction from the customer (Pine and Gilmore, 1998; LaSalle and Britton, 2003). Evaluating this experience is crucial for creating holistic customer value and establishing a competitive advantage (Gentile et al., 2007; Carbone and Haeckel, 1994). This evaluation relies on comparing a customer's expectations with the stimuli derived from interactions with the company or its products at various touchpoints (LaSalle and Britton, 2003). Advanced digital technologies, particularly artificial intelligence (AI), offer opportunities to reshape customer experiences and organizational processes (Ameen et al., 2021). However, leveraging these innovations poses several challenges especially in the measurement of customer experience (Kuppelwieser & Klaus, 2021). Traditional methods for measuring customer experience involves getting user ratings in a five-point or seven-point likert scale (Kuppelwieser & Klaus, 2021) or sentiment analysis of the customer interactions (Kushwaha et al., 2021). Since customer experience includes cognitive, affective, social, and sensorial dimensions (Ladhari et al., 2017), existing scales may overlook these aspects (Verhoef et al., 2009). This issue is exacerbated when customers provide no ratings or communicate ambiguously, leading to unreliable measurement models. In addition to human agents, AI-based conversational agents offer real-time communication through live chat interfaces, reducing costs and time (Adam et al., 2021). However, they often fail to meet customer expectations (Kuppelwieser & Klaus, 2021), resulting in escalation requests to human agents. Research Objectives This research has three objectives: First, to understand the impact of improper customer experience measurement on customer relations and service quality in B2B contexts. Second, to explore current methods of measuring customer experience and identify their limitations. Third, to investigate hidden indicators that can effectively measure customer experience in the absence of explicit data, specifically examining how behavioural patterns, customer engagement levels, and sentiment analysis can be utilized. Ultimately, we aim to improve customer experience measurement modelling and facilitate the digitization of the customer engagement process, thereby reducing unresolved requests handled by AI agents and minimizing escalations to human agents. Literature Review Automated social presence is inevitable in customer service in the future (Van Doorn et al., 2017), with companies strategically investing in AI to enhance customer engagement and performance (Mithas & Rust, 2016). Organizational performance in service quality is closely linked to customer experience metrics (Pitt et al., 1995). However, traditional metrics have significant limitations, including customer reluctance to provide ratings and ambiguity in sentiment analysis (He et al., 2011). Customer experience is influenced by the gap between expectations and actual experiences, as outlined by expectation confirmation theory (Bhattacherjee, 2001). In B2B contexts, flow—defined as complete user engagement—is often disrupted due to high escalation rates from AI to human agents, inaccurate AI responses, and failures to capture user sentiment (Van Doorn et al., 2017; Pace, 2004). Complex interaction patterns make understanding the influence of engagement on customer experience critical (Nielsen, 2000). Excessive cognitive load can hinder product usage, potentially leading to discontinuance (Hu, Hu, & Fang, 2017). Refining customer experience measurement methodologies can enhance AI agents' effectiveness, foster deeper customer engagements, improve service quality, and sustain competitive advantage. Methodology Our research focuses on B2B services, specifically examining how a SaaS (Software as a Service) company's digital product enhances customer engagement for a telecom company. The SaaS solution provides scalable tools that improve communication services, streamline operations, and foster better customer relationships. In the customer engagement cycle, AI agents are employed at Level 1, while human agents engage at Levels 2 and 3 to address more complex customer inquiries. We analyze customer experience metrics to gather feedback aimed at enhancing AI agent training. To achieve this, we aim to develop a unified metric for customer experience by integrating conversation-based and user-based properties with traditional experience ratings. This process involves collecting data from various touchpoints and analyzing conversation properties such as ticket resolution time, sentiment shifts, escalation request frequency, agent switch data, and agent affinity. Additionally, we will monitor user-based properties, including ticket frequency and onboarding effectiveness. By combining these insights with traditional ratings, we seek to create a comprehensive customer experience model. Utilizing machine learning techniques, we aim to develop an automated scoring system to calculate real-time experience scores, which will be validated and iterated through pilot testing. Conclusion By capturing customer experience indicators through their behaviour and engagement during service touchpoints with AI copilots or human agents, we propose a novel approach to measuring customer experiences for those who do not respond to traditional metrics. This method provides actionable insights, enhances service quality, and improves customer relationships.

1119

Submission Number: **1119**	Track: **CDT**
Paper Title: When Your Words Are Worried: Unveiling Linguistic Markers of Privacy Concern to Understand Affordances of Smart Technology	
Authors: Abhishek Kumar Jha and Saurabh Kumar	
Abstract: Artificial Intelligence (AI) has transformed consumer technology, reaching every sector from smart toothbrushes to autonomous cars. This rapid progression is fueled by data, enabling these technologies to adapt and personalize according to individual user needs. However, despite data being the lifeblood of AI, many users are hesitant to share their information due to significant privacy concerns. As a result, most smart devices are not used to their full potential by consumers. To guide our exploration, we build on the Affordance-Actualization (A-A) Theory to assess the impact of privacy concerns on the gap between the potential and actual use of today's smart technology. We focus on the usage of AI-enabled personal assistants (such as Amazon Alexa or Google Mini) and examine how varying levels of privacy concerns affect user behavior. We validated our model through a mixed-method approach, including an online survey of 543 current personal assistant users and a field study of user-generated content about smart assistants. To estimate users' privacy concerns from online text, we developed an artifact using a large language model to analyze privacy concerns in user-generated content about smart objects. Testing this artifact on over 90,000 online reviews of AI-enabled products, we demonstrated notable differences in usage patterns between users with higher and lower privacy concerns. Our findings provide compelling evidence that, despite extended use of smart technologies, individuals with higher privacy concerns do not utilize these technologies as extensively as those with fewer concerns about data sharing. These insights have significant implications for designers, developers, and managers striving to promote the broader adoption and effective utilization of smart technology.	

1145

Submission Number: **1145**	Track: **CDT**
Paper Title: REIMAGINING LAST-MILE DELIVERY: LEVERAGING PUT-TO-LIGHT SYSTEMS IN MICRO FULFILLMENT CENTRES	
Authors: Nisa James, Bajnu Abdu and Robert Jeyakumar Nathan	
Abstract: Abstract: This paper presents research findings from an ethnographic study investigating the implementation of a put-to-light (PTL) system within Micro Fulfillment Centers (MFC) to transform last-mile delivery in the Fast-Moving Consumer Goods (FMCG) industry. Grounded in immersive fieldwork data conducted at warehousing and distribution departments of India's largest FMCG manufacturer, this study examines the advantages derived from the close proximity of Micro Fulfillment Centers (MFCs). This study aims to identify and implement an effective strategy for optimizing last mile logistics issues by addressing the challenges faced by organizations. By closely examining the day-to-day practices, insights were gained into the challenges and opportunities of redefining lean supply chain dynamics, reducing lead times, and thereby enhancing customer satisfaction; thereby, enterprises could gain a competitive edge in the FMCG market. Drawing upon ethnographic groundwork data, the paper proposes a restructured supply network tailored to address the specific needs and pain points identified within MFC operations. Despite the intricate nature of FMCG logistics, advancements in technologies such as IoT, AI, digitization, and ERP systems have shown significant advantages in addressing these challenges. Through an analysis informed by ethnographic observation and informal interviews, the study advocates for the use of PTL systems coupled with leaner, more responsive supply chain practices, enabled by emerging technologies. These improvements will positively contribute to enhanced efficiency, reduced waste, and improved environmental sustainability for the FMCG industry.	

IIMA

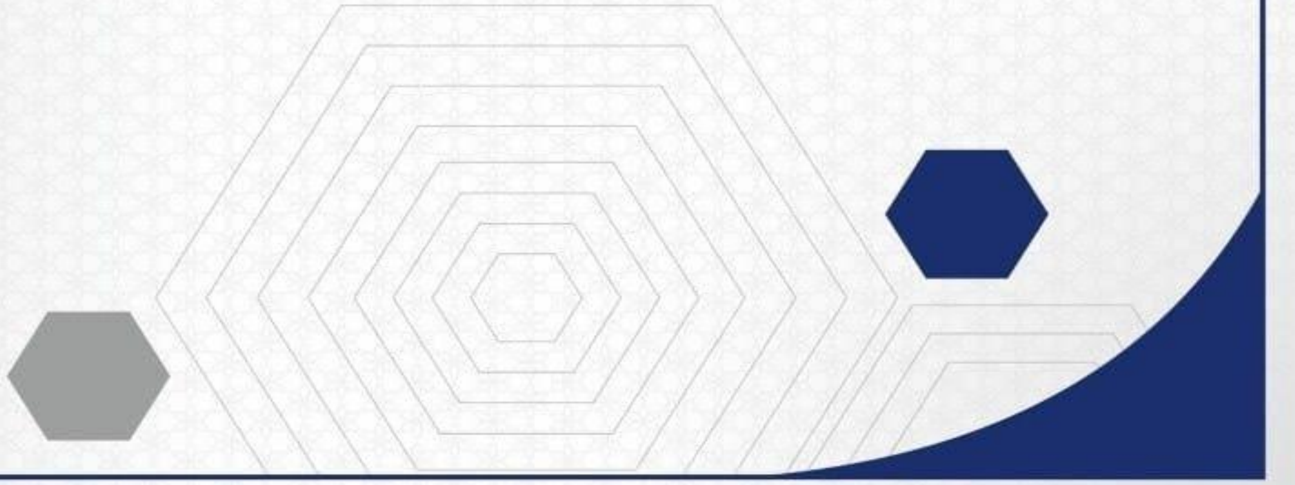
विद्याविनियोगाद्विकासः

IMRC 2024

India Management
Research Conference

IIM Ahmedabad

TRACK 08: INDIA RESPONSIBLE CAPITAL CONFERENCE (IRCC 2024)



Track 08: Corporate Governance, Corporate Sustainability, & Responsible Capital

64

Submission Number: **64**	Track: **IRCC-2024**
Paper Title: Job Seekers' perceptions of corporate social responsibility practices (CSRP) and organizational attractiveness: a multi-group analysis	
Authors: Dr. Esrafil Ali and Prof. Indranil Bose	
Abstract: Purpose- The paper aims to model the impact of corporate social responsibility practices (CSRP) on job seekers' organizational attractiveness (JSA) with special reference to two Indian states i.e., Andhra Pradesh (AP) and Odisha (OD). Finally, the paper examines whether there are any significant variations in the perception of job seekers in these two states. Design/methodology/approach- The study used two sets of data gathered from AP and OD business students pursuing their management courses. The model was developed and examined using partial least squares structural equation modeling (PLS-SEM). Furthermore, PLS-multi group analysis (MGA) was used to examine the specific differences between two sample groups. Findings- The study indicate that there is no significant variations in the perceptions of job seekers while selecting CSRP as an important criterion to choose organizations for job. The study's application of the MGA also found that there is a significant difference in the perception of job seekers in AP and OD sample groups in terms of their level of education about CSRP and JSA relationships. Practical implications- The study has various practical implication. One important aspect is that the benefit of CSRP is now not limited to civic society, rather it benefits the organizations in terms of HR practices. Second, the study recommends that organizations and educational institutions can take efforts to improve the CSR teaching and learning programs effectively. Today, CSR has elicited various positive stimulus in the minds of job seekers. Thus, the educational institutes who are involved in transforming the mindset of students could improve the CSR practical skills and knowledge to reduce the education gap. Originality/value- The study investigates CSR's effect on organizational attractiveness from the theoretical lens of Carroll's pyramid for two different groups of job seekers. Very few studies examined the complexity of this association with such research context. The results provide guidance for organizations, educators, practitioners, and job seekers that work on CSRP and its impact on JSA.	

92

Submission Number: **92**	Track: **IRCC-2024**
Paper Title: SRIMA – A new model of Sustainability integrating people, technology and process	
Authors: Shyni Carmel Mary Susaipragasam, Xavier Mj and Joe Arun C	
Abstract: This paper attempts to summarize myriad models, including the most popular ESG model, that discusses sustainability and Environmental protection. Methods: The models were evaluated on the dimensions Social Impact, Environmental Impact, Governance, Stakeholder Engagement, Integration, Collaboration, Reporting, and Transparency, this study delves into the intricate synergy between people, technology, and processes to identify gaps in these models. Design: The gaps include Sustainable Development (economic empowerment, social inclusivity, cultural preservation), Responsibility Integration (environmental stewardship, humanitarian engagement, ethical governance), Innovation and Collaboration (technological advancement, cross-sector collaboration, continuous learning), Measurement and Reporting (comprehensive metrics, transparent reporting) and Adaptive Governance (agile decision- making, policy advocacy). Moreover, this article introduces the Sustainable-Development, Responsibility-Integration, Innovation-Collaboration, Measurement-Reporting and Adaptive- Governance Model (SRIMA) that addresses these gaps. Findings: Through a comprehensive case study focusing on Tesla, Inc., this study illustrates the seamless integration of human expertise, advanced technology, and streamlined processes, highlighting the symbiotic relationship between ESG principles and global living standards, and environmental sustainability. Also, the SRIMA model was validated using PLS-SEM with 5 dimensions of SRIMA linked to ESG. The perception scores for Tesla on the 23 items also indicate that Tesla is performing well on all the items and contributing to environmental, social, and cultural sustainability. Conclusion: SRIMA model addresses the gap identified in ESG models and provides a	

comprehensive framework for enhancing sustainability and governance practices. The Significant contribution of Tesla to environment , social and sustainability measured through the developed model SRIMA.

108

Submission Number: **108**	Track: **IRCC-2024**

Paper Title: Strategic Portfolio Management: Navigating Macroeconomic Influences and ESG Principles for Optimal Stock Selection

Authors: Amit Kumar and Vinit Sikka

Abstract: The paper is presented with a view to adopting an integrated approach to stock portfolio management, laying emphasis on strategic asset allocation within the ESG framework against dynamic macroeconomic changes. The strategy follows construction of a diversified portfolio with the Treynor-Black and Markowitz models to optimally tussle between risk and return, with an ultimate goal of outperforming an ESG benchmark. First of all, the analysis conducted an overview of the macroeconomic environment—trends in inflation, monetary policies of central banks, and geopolitical changes that generally influence market conditions. After that, the more granular view of industry-level analysis did help pin down the strategy to technology, consumer goods, healthcare, and renewable energy sectors—key drivers of today's economy. At the second stage, securities promising sustainable growth and standing the ESG criteria were selected using intrinsic and relative valuation models. The investment strategy integrated both active as well as passive approaches in order to exploit inefficiencies existing in the market, all the while mitigating risk. In performance measurement, attribution analysis at the detailed level was performed with respect to contributions of asset allocation and security selection to overall performance. Results showed that strategic focusing on ESG-compliant sectors informed by robust analytical frameworks jibed very well with global trends in sustainability, enhancing portfolio resilience and growth potential. The paper intends to contribute to the discourse on integrating ESG consideration into portfolio management, thereby allowing institutional investors to optimize their investment strategy in an economically dynamic environment.

111

Submission Number: **111**	Track: **IRCC-2024**

Paper Title: Exploring the significance of Community Participation in ensuring the sustainability of Corporate Social Responsibility Programs

Authors: Trilochana Dash and Dr. Chandan Kumar Sahoo

Abstract: This study aims to understand the mediating role played by community participation on the relationship between corporate social innovation and sustainable corporate social responsibility. This research was conducted in Odisha, a state in India, with 448 respondents and a response rate of 89%. The convenience sampling technique was used, and questionnaires were prepared in English and translated into regional languages during data collection. Psychological separation and Harman's single-factor test were used to avoid common method bias. Exploratory factor analysis and confirmatory factor analysis will be performed step by step to validate the proposed model. This study is one of its kind concerning the variables considered, and it can work as a stepping stone for upgrading the delivery mechanism for corporate social responsibility programs, which can solve the fundamental problems faced in society more effectively.

116

Submission Number: **116**	Track: **IRCC-2024**

Paper Title: The Effects of ESG Reputation Risks and Investor Attention towards Sustainability on Earnings Management

Authors: Rudresh Pandey and Marius Sikveland

Abstract: In this paper, we examine the impact of reputation risk relating to environmental, social, and governance (ESG) incidents on firm earnings management practices in the US. ESG incidents refer to events where there is a negative impact, or a perceived threat of negative impact, on the environment, social systems, or the governance structures of a company or community. We measure ESG reputation risk as an event-based measure of firm-level negative ESG incidents. We find that firms with higher reputation risk relating to ESG incidents are more likely to manage earnings positively through discretionary accruals and the manipulation of real operating activity. This underscores the need for investors and regulators to scrutinize the financial integrity of companies facing significant ESG challenges. Further, we find that investor attention towards climate change, sustainable investing, and climate risk positively moderates the relationship between ESG reputation risk and earnings management. As sustainability has increased in importance for investors in recent years, problems relating to high ESG reputation risk have amplified for firms, resulting in heightened pressure to engage in earnings management practices.

225

Submission Number: **225**	Track: **IRCC-2024**

Paper Title: Validating the efficacy of The GreenSCOR model in creating sustainability performance for manufacturing companies: A sufficient and necessary condition analysis

Authors: Soumya Prakash Rath and Nikunj Kumar Jain

Abstract: The manufacturing sector plays an important role in achieving a country's overall sustainability objectives. To achieve sustainability in manufacturing, it is imperative that the intricate supply chain as a whole be also sustainable. Based on supply chain operations reference (SCOR) model, this study tries to find out how the GreenSCOR model in the supply chain helps a company in achieving its social, economic, and environmental objectives. This study used partial least squares structural equation modelling (PLS-SEM) to validate the sufficient condition for achieving sustainability goals. This was done by analysing empirical data obtained from a sample of 326 executives who were actively engaged in sustainability initiatives. In addition, our study use necessary condition analysis (NCA) to determine the necessary or bottleneck criteria for attaining the sustainability objectives. The study findings indicate that the mostly in-house components of GreenSCOR, specifically GreenSCOR-Planning and GreenSCOR-Make, have significant positive effects on all three dimensions of sustainability. GreenSCOR-Scouring positively influences both the economic and social performance of a company, while GreenSCOR-Delivery only has a significant positive impact on economic factors. Interestingly, all four components of GreenSCOR (Planning, Sourcing, Make, and Delivery) are necessary and can act as bottleneck factors in achieving social, economic, and environmental objectives. This study adds to the existing research on GreenSCOR and offers significant insights on how to achieve sustainability goals by promoting GreenSCOR practices.

233

Submission Number: **233**	Track: **IRCC-2024**

Paper Title: The Impact of Financial Distress and Governance Dynamics on Earnings Management: Insights from the Pandemic

Authors: Amandeep Kaur, Archana Singh and Girish Chandra Maheshwari

Abstract: This study examines how corporate board composition, foreign auditors, and financial distress influence earnings management via real activities. More specifically, the research investigates whether companies capitalized on the economic downturn during the pandemic to manage their earnings. Utilizing non-financial firms listed on the NIFTY 500 index in India from 2015 to 2022, the study employs the generalized method of moments –system estimator approach to address potential omitted variables and reverse causality issues. The results show that firms were more inclined to practice earnings management during the pandemic than in the preceding period. The presence of foreign auditors decreases the chances of manipulation of financial reporting. Regarding board composition, it is observed that larger, independent boards and those with CEO duality oversee managers more efficiently. Additionally, the results indicate that it is difficult for managers to manipulate operational, financial, and investment activities through real actions in financially distressed firms, especially during the pandemic. The findings offer investors and practitioners valuable insights into how firms react to the pandemic shock. For regulators and standard setters, the findings reaffirm the need to address shortcomings in accounting standards and governance norms to reduce the risk of cash flow misclassification, cost of goods sold, and discretionary expenditures.

242

Submission Number: **242**	Track: **IRCC-2024**

Paper Title: Perceived Board Diversity and Perceived Firm Performance: mediating role of Perceived Inclusion

Authors: Dr. Purva Kachhy and Dr. Narayan Baser

Abstract: There are numerous studies that have investigated the correlation between board diversity and company success; however, there are only a handful that have investigated the combined impact of both variables. The research that establishes a correlation between Firm Performance and Board Diversity is inconclusive. The present study investigates the extent to which employees' perceptions of the company's performance are influenced by board diversity. This investigation examines the role of Perceived knowledge, surface diversity, and employees' perceptions of inclusion as mediator. The current study collected data from 150 top- and middle-level personnel from public sector entities and private limited enterprises across a variety of industries in India. The performance of a firm is influenced by the diversity of its surface and knowledge, as demonstrated by structural equation modeling. Perceived Knowledge Diversity has a positive influence on Perceived Firm Performance, while Perceived Surface Diversity has a negative impact. Furthermore, the relationship between Perceived firm Performance, Perceived Surface diversity, and Perceived Knowledge Diversity was mediated by Perceived Inclusion. The present study investigates the relationship between Perceived Inclusion and Perceived Firm Performance in the context of Board Diversity. Future research should take into account additional variables that may impact the relationship. This paper investigates board diversity from the perspectives of Indian society and employment. Inclusion, a contextual component that has not been extensively investigated in India, is also incorporated in the study.

250

Submission Number: **250**	Track: **IRCC-2024**

Paper Title: Promotion of social enterprise as driver of sustainable economic growth: Empirical evidence from Gondia, Maharashtra

Authors: Kshitij Sharma

Abstract: Introduction District Gondia, a part of Nagpur division of Maharashtra, is primarily an agrarian economy with over half the population depending on agriculture, mostly paddy cultivation, for earning their livelihood1. Gondia has never been among the highest producers of milk in Maharashtra. A scrutiny of trends over 2003-04 to 2013-14 reveals that the in-milk bovine population has remained constant at around 75000 – 77,000 cattle2. The indigenous and cross breed milch cattle populations also have remained constant further reinforcing the fact that milk production has never been a very popular source of livelihood in the district. The unorganized milk production never yielded lucrative returns for the farmers, many of whom struggled to make ends meet. In this backdrop, Adani Foundation, the CSR implementation arm of Adani group of companies, mobilized the local farmer groups in form of a farmer producer company in the year 2020, introducing an organized approach encompassing breed improvement, fodder management, healthcare services, technical trainings and a cooperative model for aggregation of milk as a pilot project in 26 villages of Tiroda block in Gondia district. The project introduced a professional approach to the dairy business and went on to set up 45 village level milk collection centers and 5 bulk chilling centers, now aggregating nearly 17,000 liters of milk every day which is benefitting 1997 farmers who are directly associated with the project. The collected milk is transported to large processing facilities by the dairy cooperative that pays the contributing farmers via direct beneficiary transfers basis the quality of their milk. The milk collection centers are managed and operated by women of self-help groups who get fixed amount as handling charges from the aggregator. Objectives The researcher attempted to examine the role of focused entrepreneurship development initiative ensuring required technical support to facilitate project operations and strengthening linkages with reliable market stakeholders with involvement of community as driver of a thriving enterprise and augmenting incomes at household level. Methodology adopted was secondary review of available reports and analyses of MIS data collated over a period of 3.5 years. Results A review of data revealed that the project achieved several milestones with number of milk collection centers going up from 1 to 45 and, in turn, generating employment for 135 SHG women. Similarly, the number of farmers benefiting increased from 21 in October 2020 to 1997 in March 2024, registering a growth of 94 times. The annual milk collection grew 24 times since the inception year to reach 37.7 lakh liters. Most importantly, the annual payout to the farmers under the project increased 35 times from ₹17.94 lakh to ₹ 641.82 lakh. The trends demonstrate that the project has not only been able to attract new farmers but has also been instrumental in establishing a steady source of additional monthly income of Rs 9,000 to Rs. 11,000. Discussion Temporal analysis of the data indicates prolific growth of the enterprise year on year. The trend suggests that inputs provided in form of technical support to facilitate project operations; strengthening of linkages with reliable market stakeholders, and encouragement to community involvement are highly likely to result in a sustainable enterprise model. The project actively involved the local community at every stage, right from planning to implementation, thereby seeking to build upon their insights and aspirations which led them to assume leadership role ensuring that the decisions are made collectively. Conclusion It may be concluded that with concerted efforts on connecting the dots and encouraging community to assume leadership role, a cottage-scale enterprise can assume a growth path that could have a widespread positive effect on sustainable value creation for the community thereby contributing towards improved per capita income.

260

<table>
<tr><td>Submission Number: 260</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: Sustainability: Influence of firm's country of origin (COO) policies on green consumption behaviour (GCB)</td></tr>
<tr><td colspan="2">Authors: Vishal Sinha</td></tr>
<tr><td colspan="2">Abstract: Abstract: A for-profit firm's IPO (Input-Process-Output) Model's inherent aim is to maximize profit. Firms target consumers to ensure revenue, and going concern value. Over the years, consumers' buying intentions/behaviours have aligned towards sustainable consumption i.e.'Going Green'; resulting from increased awareness (mandated under goal 13; SDGs), and transparency (fueled by 'digitalization of processes'; shortening information transference between actors). GCB entails sustainable behaviours beneficial to the environment. Despite extensive studies on GCB and COO using frameworks like TBL, SCT, ESG, etc., research about firm's COO's sustainable policies' influence on GCB remains non-existent. Sustainability perception transcends if firm's COO advances sustainable policies influencing consumers' sustainability practices. Purpose: To identify GCB relative to a firm's COO's policies utilizing 'Mehrabian and Russel's; 1974: Stimulus-Organism-Response (SOR) Theory'. We propose that a firm's COO's sustainable policies influence consumers' GCB, mediated by cognitive factors, and moderated by construal processing. This novel approach integrates socio-psychological aspects, ensuring a sustainable future in a digital world. We explore two important research questions: (1) Do sustainable policies of a firm's COO influence sustainable consumption? (2) How does cognitive and construal processing influence this relationship? NOTE: COO implies favorable sustainable policies. CLT implies firm's entry into the host country is far/near. GCB implies sustainable and green consumer behaviour (here, behaviour signifies purchase intention)</td></tr>
</table>

261

<table>
<tr><td>Submission Number: 261</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: Which Directors Are Incentive-Aligned with Shareholders - And Does Their Gender Matter?</td></tr>
<tr><td colspan="2">Authors: Arun Upadhyay and Vikram Nanda</td></tr>
<tr><td colspan="2">Abstract: We provide novel evidence on the role of incentives such as career advancement, accumulation of board seats and compensation in motivating independent directors (IDs). In particular, we hypothesize that directors who are senior executives at other firms have strong promotion incentives to contribute as directors. Rationale is that effective board service and good appointing-firm performance signal leadership skills. Such signals could be particularly important for female executives seeking to enhance reputation, counter gender-bias and boost odds of promotion to CEO. Consistent evidence indicates female executive-IDs are associated with stronger appointing-firm performance and more favorable stock market response to appointment announcements.</td></tr>
</table>

268

<table>
<tr><td>Submission Number: 268</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: Is the supply chain of Indian electric vehicle (EV) companies environmentally-viable (E-V)? A sustainability reporting and disclosure perspective.</td></tr>
<tr><td colspan="2">Authors: Ranjan Kumar and Ishaan Sai</td></tr>
<tr><td colspan="2">Abstract: The penetration of electric vehicles (EVs) in India - the world's third-largest light vehicles and the largest two-wheeler market, and the fastest-growing for both two- and four-wheelers (Kapur, 2023; Mohile, 2023) - is projected to surpass 40 percent by 2030, growing eight-fold in seven years (Seetharaman, 2023). But, there is much more to this exponential growth than meets the eye, entailing significant hidden environmental costs and adverse impacts that can't be ignored (Carreon, 2023; Choudhury, 2021). This research focuses on the pertinent, but unexplored theme of environmental-viability (E-V) of the supply chain of Indian EV companies. An analytical framework comprising 10 objective parameters was developed based on global benchmarks and best practices, and applied to evaluate if the companies' EV supply chain is</td></tr>
</table>

environmentally-viable (E-V). Four key findings emerged from our analysis. One, none of the 14 prominent Indian EV companies has yet adopted the parameters that correspond to upstream environmental-viability, i.e. supply chain traceability for responsible and conflict-free sourcing of minerals. This omission is glaring when benchmarked with the global leader in the EV segment, Tesla, which has long back implemented a Conflict Mineral policy that extends to all its Tier 1 suppliers (Tesla, 2018). Two, at the midstream stage, companies have adopted and are reporting the three parameters. However, the extent of disclosure varies widely with the five prominent internal combustion engine (ICE)-based automakers, who have ventured into the EV business – Hero Motors, Mahindra, Tata Motors, TVS Motor, and VE Commercial Vehicles – providing the most detailed information on lean manufacturing and responsible waste management parameters. Apparently, their manufacturing prowess honed over decades and process expertise has enabled them to transfer the best practices from ICE-based to EV businesses. That said, sustainable packaging as a parameter remains an under-reported area for all EV companies, except for Ather Energy to some extent. Three, at the downstream stage, all EV companies have mentioned smart charging features, but they have interpreted it very liberally. The reporting on renewable energy grid charging is conspicuously absent, which in the Indian context can be explained due to limited battery charging infrastructure, and that too is largely reliant on thermal power-based grids. In such a scenario, it is still not possible for EV companies in India to track, report, and/or enable renewable grid-based battery charging. Finally, all EV companies have adopted circularity by enrolling in or creating a battery recycling and reuse alliance, an expected outcome of the mandatory regulation introduced in 2022. Research findings establish an urgent need for multipronged interventions across the supply chain by EV industry stakeholders in India.

270

Submission Number: **270**	Track: **IRCC-2024**
Paper Title: Impact of ESG on Firms: A World View	
Authors: Nabendu Paul	
Abstract: This paper uses a large data set which comprises of 64000 listed firms across various exchanges in the world, and attempts to consolidate the various impacts of ESG on firms. While other papers have individually looked at how ESG has impacted firm performance, firm competition, financing cost, financing frictions, firm innovation and corporate risk taking, this paper tries to attempt to address all of them together, with a much larger and heterogeneous data set. As I deviate from the typical US setting used for most of the empirical research in the literature and incorporate a larger setting of all the listed firm in the world to look at the phenomenon, I expect that the results would provide some definite directions to empirical research in this context.	

275

Submission Number: **275**	Track: **IRCC-2024**
Paper Title: Understanding the impact of greenwashing on consumers' purchase intention in the context of Indian Fashion Industry	
Authors: Abhijeet Vikramaditya Tiwari, Shivangi Jaiswal and Ruchika Joshi	
Abstract: Greenwashing is widespread in the fashion and textile business, where corporations deceive consumers about their products or services' environmental practices and eco-friendliness. Businesses frequently use sustainable messaging not due to authentic environmental concerns but to appeal to eco-conscious consumers and cultivate a false perception of their environmental responsibilities. This strategy not only deceives clients but also weakens the endeavours of truly sustainable firms. Although greenwashing is widespread, there is a lack of research on this subject, particularly regarding fashion businesses in countries such as India. This study seeks to close the existing divide by investigating the impact of greenwashing on green word of mouth, loyalty, and image and how these factors influence purchase intentions. The fashion industry significantly contributes to global pollution, including substantial harm to water resources, chemical pollution, and textile waste disposal. Several fashion companies have used green marketing strategies in order to meet the growing customer consciousness and need for sustainable products. However, some firms choose to engage in greenwashing instead of genuinely making efforts to reduce their impact on the environment. The issue of greenwashing in the fashion industry is particularly pertinent in India due to the country's significant and growing consumer market, coupled with an increasing awareness of environmental issues. However, the lack of research on greenwashing in this specific context leads to a lack of understanding of its influence on customer behaviour and perceptions in India. This study seeks to address this gap by particularly analysing the Indian market, providing useful insights that could aid scholars and business managers in	

understanding the implications of greenwashing. This study utilizes Partial Least Squares Structural Equation Modelling (PLS-SEM) to investigate the correlation between greenwashing and its influence on customer behaviour. The study investigates the impact of greenwashing on green word of mouth, loyalty, and image, and how these qualities subsequently influence purchase intention. When consumers see that inaccurate environmental assertions have misled them, they communicate their unfavorable encounters with others. Thus, depicting greenwashing had a negative impact on WOM. Secondly, consumer loyalty is essential for every brand, and loyalty towards environmentally friendly practices is especially significant for brands that promote themselves as sustainable. The study demonstrates that greenwashing erodes this loyalty. The perceived environmental friendliness of a company, sometimes known as its green image, is crucial for recruiting and maintaining environmentally sensitive consumers. Greenwashing undermines the positive perception of the company, causing consumers to doubt its genuineness and dedication to sustainability. Greenwashing has an impact on green word of mouth, green loyalty, and green image, which eventually results in a decrease in purchase intention. Consumers are less inclined to purchase from brands they perceive as deceitful, leading to a decline in sales and market share. The phenomenon of greenwashing in the fashion industry has a substantial and negative impact on customer behaviour and views. By comprehending these effects through theoretical frameworks and empirical studies, business managers may more effectively tackle the issue and advocate for truly sustainable practices. Comprehending the negative consequences of greenwashing is crucial for business managers who strive to establish and sustain consumer trust and loyalty. The results of this study emphasize the significance of authentic sustainability initiatives and clear communication. This has positive implications for the environment and contributes to the establishment of consumer confidence and loyalty, ultimately resulting in a more sustainable fashion sector.

284

Submission Number: **284**	Track: **IRCC-2024**

Paper Title: Corporate Board Diversity and ESG Performance: Evidence from G7 firms

Authors: Himanshu Joshi and Prachi Bhatt

Abstract: Growing climate concerns and its anticipated social consequences have enhanced the scrutiny of externalities created by corporate firms. Under the ESG movement, investors are increasingly including Environmental, Social, and Governance (ESG) factors in their investment decisions alongside the conventional risk-return metrics (De la Fuente et al., 2022). This movement facilitates easy access of capital to the firms with good ESG performance, leading to higher valuation (Van Durren et al., 2016). On the other hand, firms facing ESG controversies find it hard to raise capital. In this changed scenario, firms are compelled to examine the key ESG issues central to their strategy and operations. This requires identification of material ESG issues, developing financial metrics to assess their impact, adoption of innovative practice leading to improvement in ESG performance, and communication to the key stakeholders (Eccles & Serafeim, 2013). There is a growing recognition in the academic and practitioners' literature that ESG factors directly affect a firm's long-term financial performance (Nollet et al., 2016) and shareholder's value (Lahouel et al., 2022). Corporate firms having good ESG performance are considered legitimate by its stakeholders, allowing them an easy access to the capital markets and resulting in better valuation. Top management teams (TMTs) including corporate boards and CEOs are entrusted with the responsibility of driving the ESG agenda in their core strategic plan. Most CEOs now recognize that ESG issues are one of the key drivers of their corporate strategy. However, corporate boards largely remain holdouts in ESG adoption. Annual Corporate Directors Servery conducted by PwC in 2019 provides insights about the perspective of directors on ESG issues. Many directors remained sceptical about the ESG issues, more than 50% of them believe that their board were spending too much time on these issues, and 34% believe that investors provide over emphasis to the ESG issues. Corporate boards around the world have traditionally been focusing on short term financial performance, whereas, ESG issues require long term commitment which may not yield immediate results (Serafeim, 2020). Moreover, conventional corporate boards presume compliance as their primary task and pay less attention to the emerging ESG issues. Growing literature in governance indicates lack of diversity and expertise in the corporate boards to deal with complex and multifaceted ESG issues. Although, the extant literature has examined the impact of board composition and diversity on firm's financial performance, its impact on ESG performance has remained less explored. According to resource dependence theory (Pfeffer & Salancik, 1978) and upper echelons theory (Hambrick, 2007) board composition play a decisive role in steering the corporate strategy. Resource dependence theory postulates that board capital consists of human capital and relational capital. Human capital comprises of experience, expertise, and skills of the board members, whereas, relational capital encompasses their relationship with the external environment and diverse stakeholders (Hillman and Dalziel, 2003). Recent literature has highlighted the role of boards in encouraging the firm management in ESG adoption (Pucheta-Martínez & Gallego-Álvarez, 2019). Board diversity which is defined as the heterogeneity among board members can be examined from mainly from four perspectives – gender, independence, cultural, and skills. Both academic and practitioners' literature have highlighted the role played by the women directors in improving corporate governance and firm's environmental and social performance (Ginglinger. & Raskopf, 2023). PwC 2022 Annual Corporate Directors Survey reports that a higher proportion of female directors intend to prioritize reducing impact of climate change than the short-term performance, and a higher percentage of female directors envisage a clear linkage between environmental and social issues and corporate strategy than their men counterpart. In academic literature, resource dependence theory postulates that female directors bring different perspectives, skills and experiences to the boardroom, and their presence in the board improve board monitoring (Adams & Ferreira, 2009). Female directors' relational capital helps the board to connect better with the diverse stakeholders and external environment, leading to improved ESG performance (Mallin & Michelon, 2011). Board cultural diversity is a relatively less explored area in the literature. Al-Hiyari et. al. (2023) examined the moderating role of the board's cultural diversity on ESG performance and investment efficiency. Board independence measured as a proportion of independent directors in the corporate board plays a crucial role in reducing agency cost and information asymmetry (Fama and Jensen, 1983; Ntim et. al., 2013). Compared to the internal directors, independent directors have relatively stronger incentives to control managerial discretion. Researchers have reported a positive association between board independence and sustainability disclosures (Pizzi et. al., 2021); environmental disclosures (Rao et. al., 2012), and ESG disclosures (Arayssi et. al., 2020). In the present study, we postulate that to deal with the multiplicity and complexity of the ESG issues, sources of board diversity can play an important role. Using panel data for a period of eight years from 2015 to 2022 for listed firms from the G7 countries, we examine the impact of sources of board diversity namely, gender, independence, culture, and knowledge & skills on firm's Environmental, social, and governance performance. As firm size, age, and profitability can influence its ESG performance, these variables are controlled in our investigation. To tackle the issue of endogeneity, we have used system -GMM method. Our findings suggest that board gender diversity, independence, and board skills positively influence firms' ESG performance. Although these results are consistent for all the three dimensions of ESG namely, environmental, social and governance, impact vary in terms of their magnitude. Gender diversity has most prominent influence on the firm's social performance, whereas board independence and board skills have largest influence on the governance performance. Overall, gender diversity is the main source of diversity to the corporate boards which positively influence firms' environmental, social and governance performance. Our results are consistent with the industry fixed effects and system GMM econometric models. Our findings provide important implications for corporate boards, investors, and regulators.

285

Submission Number: **285**	Track: **IRCC-2024**

Paper Title: Analysing the impact of corporate social responsibility on the environmental performance of manufacturing firms in India: the role of sustainability disclosures and ISO 14001 certification

Authors: Baikunthanath Sahoo, Santosh Kumar Sahu and Krishna Malakar

Abstract: This study explores the effect of CSR on the corporate environmental performance of manufacturing firms in India. This research is conducted both at aggregate and disaggregated levels. Our sample consists of 21,138 firm-year observations collected from the Centre for Monitoring Indian Economy (CMIE) prowess database from 2009 to 2021 in India. The empirical findings reveal a significant positive relationship between CSR and the environmental performance of firms. Using the Difference-in-difference techniques, we also observe that the firm's environmental performance and energy efficiency are greatly affected by India's mandatory CSR disclosure act. In addition, these findings suggest that mandatory CSR disclosure alters firm behaviour and generates positive externalities. The results also indicate that environmental certified CSR firms are performing well in environmental indicators. Firms' sustainability disclosure has a positive effect on environmental performance. The result is more evident at disaggregate level analysis. The study has potential policy implications for profitability and sustainability in a competitive business environment. The paper concludes that attaining environmental sustainability as part of their social responsibility to care for the environment will require collaborative efforts from business society and policy bodies.

303

Submission Number: **303**	Track: **IRCC-2024**

Paper Title: SYNERGIZING DIVERSITY FOR SUSTAINABILITY: EVIDENCE FROM BOARD GENDER DIVERSITY AND ESG PERFORMANCE

Authors: Vishakha Jaiswal

Abstract: This study uses 1,511 observations from 2007 to 2023 from 387 firms in 49 sectors. The study provides management, policymakers, and stakeholders with valuable insights. Gender diversity improves ESG performance across all areas, according to findings. The governance pillar had the most significant impact, indicating firms' confidence in gender-diverse boards. The findings favor the token mechanism over the critical mass theory. A considerable representation does not add value, but a small one boosts ESG performance. Committing to best management practices may negatively impact a firm's ESG performance, while a formal policy on a well-balanced board structure can improve ESG performance. Board gender diversity on ESG issues benefits small firms more. This study emphasizes the importance of gender balance on corporate boards for integrated management. Companies should prioritize inclusive governance to achieve their goals.

309

Submission Number: **309** | Track: **IRCC-2024**

Paper Title: IT INVESTMENTS: A DOUBLE-EDGED SWORD FOR CORPORATE SOCIAL PERFORMANCE – INSIGHTS FROM THEORY OF SMART MACHINES

Authors: Pramendra Singh Tank and Bibek Bhattacharya

Abstract: We draw on the theory of smart machines to explore the relationship between firms' Information Technology (IT) investments and corporate social performance. The literature presents a theoretical tension regarding IT investments' impact on social performance, which we categorize as the bright side and dark side of technology. The bright side posits that IT investments enhance firms' social performance due to environmental scanning, data analytics and enhanced stakeholder management capabilities. Conversely, the dark side suggests that IT investments can harm social performance due to workforce dehumanization, surveillance, technostress, and information overload. Using the theory of smart machines, we resolve this tension and propose an inverted U-shaped relationship between IT investment and social performance. Additionally, we examine how firms' governance structures and ESG controversy moderate this relationship. Analyzing longitudinal panel data from public United States (US) firms over a six-year period, comprising 9,198 firm-year observations, we find robust support for our hypotheses. Our findings contribute to the literature on the antecedents of firms' social performance, which gains heightened importance in the context of the industry 5.0 framework that emphasizes firms' societal responsibility.

320

Submission Number: **320** | Track: **IRCC-2024**

Paper Title: Corporate controversies and internationalization of firms: Discovering the moderating role of ESG practices and advertisement

Authors: Indrani Sinha

Abstract: Many studies have still now focussed on the antecedents and consequences of ESG which stands for Environmental, Social and Governance practices but very little on ESG controversies. Since, the effect of ESG controversies cannot be said to be exactly opposite of that of ESG, this area of research demands special attention. The controversies can have a lesser effect on society, like CEO change, tax fraud, or a very huge impact, like a poisonous gas leak tragedy killing hundreds of civilians. Legitimacy is about how society perceives the actions of the firm as appropriate within its norms and beliefs. Firms' actions are based on gaining legitimacy in addition to economic consideration. As per the institutional theory, internationalization subjects firms under higher pressure to maintain legitimacy in the host foreign markets. Thus, the firms, as they internationalize, try to maintain better ESG practices and avoid any types of ESG controversies which may harm their reputation. In this research paper we tried to explore for the first time the relationship between ESG controversies and internationalization and hypothesize that ceteris paribus, corporate controversies negatively impact EMNEs internationalization. We have done our analysis in the context of BRICS countries that is for emerging economy multinational enterprises (EMNEs). We try to verify our hypothesis by making use of the theory of legitimacy that corporate controversies have a negative relation with emerging market multinational enterprises (EMNEs) internationalization. Reputation and legitimacy of firms in society is increased as they maintain good ESG practices also consumer awareness about ESG activities by the firm is built using advertising, which helps increase the firm's reputation. Since good ESG practices and advertisement both aids in internationalization, we also hypothesize that they act as positive moderators. We find support for our hypotheses using data from Refinitiv Eikon Asset4 database of firms from BRICS countries for the year 2016-2019. Our results also have huge implications for managers as it shows that ESG efforts by the firm need to be carried out diligently and reported accurately for the firm to gain a good reputation with all its stakeholders. Any kind of media reporting on ESG controversies also needs to be taken seriously, and the concerns addressed right away so as to prevent bigger adverse effects harming the growth prospects of the firm.

326

Submission Number: **326**	Track: **IRCC-2024**
Paper Title: Intersection of ESG Disclosure and Financial Distress: The Differential Impacts Across Varying Levels of Distress Risk	
Authors: Divyam Jain, K N Badhani and Ashish Kumar	
Abstract: This study addresses the question: Are ESG disclosures always beneficial for a company? We explore the risk mitigation aspect of ESG disclosures using signaling and agency theory, examining their effects on both distressed and non-distressed companies. Our findings reveal that while ESG disclosures reduce financial distress risk for financially stable companies, they do not aid distressed companies in their turnaround efforts and may even exacerbate their distress. This outcome is due to the differing strategic priorities of distressed versus non-distressed companies. Distressed companies must focus on immediate turnaround actions rather than long-term ESG activities, as diverting resources to ESG can provoke adverse reactions from shareholders and stakeholders. The study has been conducted in the Asian context that provides the unique settings for ESG issues and bankruptcy risks compared to the western counterparts. Our findings are robust, supported by a battery of robustness tests and alternative proxies, and contribute significantly to both academic literature and industry practice.	

348

Submission Number: **348**	Track: **IRCC-2024**
Paper Title: Roles of CEO and Board Characteristics on Sustainability Reporting	
Authors: Sreejith Kumar Krishnakumar	
Abstract: Sustainability reporting is an essential issue for multiple firms and industries today. Hawn and Ioannou (2016) and other studies demonstrate the importance of responsible disclosures and following specific standards in sustainability reporting. An important standard in this regard is the Global Reporting Initiative (GRI) standard, which helps firms to take "responsibility for their impacts by providing them with the global common language to communicate those impacts Disclosure following GRI standards can help stakeholders identify sustainability initiatives that are non-reversible and aligned with a firm's core capabilities (Durand et al., 2019). Tuggle et al. (2010) and other seminal studies show that several characteristics of the chief executive officer (CEO) and board of directors (board) tend to be important in strategic decision-making. CEO Duality measures the influence that a CEO who simultaneously serves as the board chairperson may have in shaping critical decisions in board meetings. CEO Duality should also theoretically impact the likelihood of enhanced disclosure of corporate social initiatives by following GRI standards. Bose et al. (2021) show in their study that CEOs serving on other companies' audit committees and boards, referred to as interlocking, can help create positive impacts on corporate social performance. Given this finding, such representation on multiple boards by board members can enhance the likelihood of higher disclosure through more rigorous reporting of various corporate social initiatives. Independent board members are more open to bringing new perspectives to improve corporate social performance. Hence, they can also improve the likelihood of enhancing the level of reporting of corporate social initiatives by following GRI standards. We plan to test the impacts of the variables mentioned above using a unique and merged dataset spanning the years from 2012 to 2022. Information on firm-level corporate social initiatives and reporting comes from the Refinitiv Eikon database, and data on CEO and board members, along with other financial performance data, come from the Compustat database. The study aims to understand whether established CEO and board-level factors also enhance the likelihood of firms following GRI standards of corporate social reporting.	

355

Submission Number: **355**	Track: **IRCC-2024**

Paper Title: Sustainable Supply Chain Financing: Way Forward for India

Authors: Sunil Rajak, Sarvesh Kumar and Santosh Kumar

Abstract: The study will provide a comprehensive analysis of SSCF instruments and their impact on the Indian supply chain, this research aims to contribute to the development of a sustainable and resilient SSCF ecosystem. The findings will be valuable for governments, policymakers, financial institutions and businesses seeking to adopt sustainable practices.

357

Submission Number: **357**	Track: **IRCC-2024**

Paper Title: Buyer Power and Vertical Mergers in Supply Chain Competition

Authors: Srishti Gupta

Abstract: The main topics of economic study have always been market power between firms, firms's behavior, and market performance. Market power in the supply chain focuses on the seller power (manufacturer/upstream firm) relative to the buyer power (retailer/downstream firm). Wal-Mart is one big retailer that, using its bargaining power, forces upstream firms to reduce the prices of their goods (Alibeiki et al., 2020). In India's agriculture sector, a few retailers exploit farmers with small landholdings through monopoly power (Zavala, 2022). Many studies in the literature focus on the vertical/horizontal relationship in supply chains (Trivedi, 1998; Tsay and Agrawal, 2004; Yao and Liu, 2005). An area that is not much explored is the market structure, where market power is more concentrated with downstream firms relative to upstream firms. Inderst and Wey (2007) analyze the sources and welfare implications of retailer power. Geylani et al. (2007) findings show that retail variety choices and market power between manufacturers and retailers are highly correlated. Nicholson and Young (2012), in their study, highlight a reinforcing structure where European Union buyers happen to have more bargaining power in comparison to suppliers because of their higher retailer power over consumers. Our paper contributes to this growing literature of buyer power by focusing on downstream first mover pricing contracts that make downstream firms leaders and upstream firms followers. We further, investigate factors that influence firm's decision to vertically integrate in presence of product differentiation and bargaining power. Using these findings, we endogenize the decision of channels to vertically integrate or remain separated and investigate whether the Nash equilibrium of this merger game is the socially preferable outcome. Model Our objective is to explore the price competition in this dual exclusive channel system in the presence of buyer power. We refer to qi, i = 1, 2, to represent the demand for product or channel i. Correspondingly, the retail prices are denoted by pi, i = 1, 2, and the wholesale prices are wi, i = 1, 2. To obtain logically consistent demand functions in different channel structures, we adopt the framework established by Singh and Vives (1984) and Wang et al. (2016): qi =a-pi+γpj i, j = 1,2 ; a, b>0 (1) We will discuss three cases. Case 1 discusses vertically separated structures under the FM regime. Case 2 investigates market outcomes when both supply channels vertically integrate. In case 3, one vertical channel is separated while the other is vertically integrated. Results wi,j,k* denotes optimal wholesale price. 'i' refers to firm number 1/2 respectively. 'j' explains regime type chosen by firm 1. Thus, j can be FM or VI. Similarly, 'k' defines regime type chosen by firm 2. Thus, k can be FM or VI. Similarly, pi,j,k* denotes optimal retail price. Proposition 1: For all values of γ,μ belongs to (0, 1), wi,(FM,FM)* > wi,(VI,VI)* = wi,(VI,FM)* = c Proposition 2: For all values of γ,μ belongs to (0, 1), pi,(VI,VI)*< pi,(VI,FM)*<pi,(FM,FM)* Proposition 3: For all values of γ,μ belongs to (0, 1), CS(VI,VI)> CSVI,FM>CSFM,FM Proposition 4: For all values of γ,μ belongs to (0, 1), SW(VI,VI)> SW(VI,FM)>SW(FM,FM) Comparison of Joint profits of channel 1 for all values of γ belongs to (0, 1) and c belongs to[0, 0.5) shows that for, simultaneous game in case 1 for values of γ belongs to (0, 0.77], VI is the dominant strategy for both the channels, so the subgame perfect equilibrium is that both channels integrate. For case 2 for values of γ belongs to (0.77,1), we find that there are two Nash Equilibria {VI, VI} and {No VI, No VI}. Of these two Nash Equilibria {No VI, No VI} is Pareto superior to {VI, VI}. In sequential game, in case 1 where γ belongs to (0, 0.77), both channels vertically integrate, and we observe a merger wave. While in case 2 when γ belongs to (0.77, 1) , (No VI, No VI) is the subgame perfect Nash Equilibrium. Conclusion: We can conclude that it is because of elimination of double marginalization, as discussed in the literature, under vertical integration regime that wholesale and retail prices are lower under it. For example, a Vertical combination between TRIL Urban Transport Private Limited, Valkyrie Investment Pte Limited, and Solis Capital Pte Limited who acquires 19.75% , 14.81% and 9.88% stakes respectively in GMR Airports Limited (Combination Registration No. C-2019/07/676). GMR is operating in the upstream market of operation and maintenance of airport while acquirers are performing in downstream market of provision of air transport services (scheduled/ non-scheduled) and other retail services. In 2017 CCI received a notice of vertical combination between Bayer Aktiengesellschaft (the acquirer), Monsanto Company and KWA Investment Co, wholly owned subsidiary of Bayer (Combination Registration No. C-2017/08/523). In the above cases both the parties were performing activities relating to supply, distribution and sale of products or services at different levels of supply chain. Of the above cases of vertical overlap, there is threat of foreclosure as for acquisition of GMR group by Tata Sons group may lead to conflict of interest where acquirer has an incentive to create entry barriers for competing airlines and GMR is having control in the market for provision of access to facilities. For the

Bayer and Monsanto case, Monsanto had 98-100% market share in the upstream market for the licensing of Bt.cotton traits in India and thus had ability to foreclose access to the product in downstream market. The CCI approved these mergers subject to the parties accepting certain conditions which would lessen the anti-competitive harms.

369

Submission Number: **369**	Track: **IRCC-2024**

Paper Title: Corporate Sustainability on a Crossroad: The Case of Sunbird Straws

Authors: Pallavi Datta, Yugantar Singh and Shailavi Modi

Abstract: Social entrepreneurs are vital in tackling pressing societal issues, fostering innovation, and creating lasting solutions for rural communities. However, their unique challenges often go unnoticed. This case study highlights the journey of Dr. Saji Kurungatil Varghese, the co-founder of Sunbird Straws, an eco-friendly startup, and the complexities they faced while considering business expansion. The purpose of this case is to provide insight into the world of social entrepreneurs and emphasize their importance and contribution on a wide scale. The learning objectives are intended to stimulate the students' comprehension of the various challenges faced by Indian social entrepreneurs. The case offers a rich educational experience spanning diverse fields, including business operations, entrepreneurship, sustainable products, social innovation and financial planning. The case on social entrepreneurship and corporate sustainability will guide students to comprehend its concept, significance, challenges and understand how businesses can be a force for positive social impact. The case study serves as a valuable tool for graduate students, helping them improve their critical thinking and solution-focused skills in preparation for their future entrepreneurial endeavors. Students should be able to analyze the case, answer questions, and evaluate the co-founder's business expansion dilemma.

434

Submission Number: **434**	Track: **IRCC-2024**

Paper Title: Board Gender Diversity and Climate Risk Disclosure

Authors: Abhinav Anand, Jalaj Pathak, Arun Upadhyay and Chi Zhang

Abstract: Does board gender diversity influence firms' climate risk disclosure? Textually analyzing U.S. firms' 10-K filings in 2010–2021, we find that adding female directors significantly decreases climate risk disclosure. Our results are robust to alternative variable definitions, alternative model specifications, and difference-in-differences (DiD) approach employing California Senate Bill No. 826. The results are stronger among firms with a female CEO as well as those with a board ESG committee. Further analysis indicates that, due to better monitoring of climate risk handling, firms with more gender-diverse boards engage in textually less complex and positively-toned climate risk disclosures, which in turn, result in a better environment rating and firm valuation. Overall, our study offers evidence that improving gender diversity in the boardroom can enhance firms' climate risk awareness and environmental practices.

448

Submission Number: **448**	Track: **IRCC-2024**

Paper Title: Breaking Barriers and Going Beyond Borders: Examining the Impact of Negative Performance Feedback, Female Board Representation and CEO Gender on Internationalization Strategies

Authors: Vishnusaranya Ivaturi and Nycil George

Abstract: Drawing on the behavioral theory of the firm, we postulate the relationship between negative performance feedback when the firm is closer to reaching its aspiration and when the firm is closer to bankruptcy and their decision on investing in internationalization. Following the emphasis on board diversity and its role in providing impetus for initiating strategic change in the organizations, we understand how and when board gender diversity i.e, presence of women in board influences the internationalization strategies of the firm. We further consider the role of CEO gender and how it interacts with the board of female representation to influence the decision of internationalization there by forming a three-way interaction. We hypothesize an inverted U-shape relationship between negative performance feedback and internationalization while the

female board representation weakens the increasing slope part of this relationship. We further posit that the CEO gender weakens this moderating relationship. Relying upon a sample of Indian firms from 2011 to 2022, we test these hypotheses and tabulate the results accordingly. We conclude the paper with contributions and future research agenda.

461

Submission Number: **461**	Track: **IRCC-2024**

Paper Title: MAPPING STAKEHOLDERS PERCEPTIONS OF DESTINATION RESILIENCE TO CLIMATE CHANGE: AN EXPLORATORY CASE STUDY OF THE ANDAMAN ISLANDS

Authors: Ankit Kumar, Sumiran Maheshwari and Ranjeet Kumar Raman

Abstract: Introduction The Tourism industry is multifaceted, reliant on natural attributes, and is highly sensitive, as factors like pleasant environments and science beauty strongly impact destination choice. Coastal tourism is a popular form of recreation and tourism that plays a significant economic role worldwide. However, coastal tourism destinations are highly vulnerable to the impact of climate change, underscoring the need to understand resilience factors from the perspectives of local stakeholders. While theoretical aspects of resilience are extensively covered in tourism literature, there is a critical need to operationalize its concepts and variables. Since tourism is a consumer-driven industry and tourists possess significant adaptive capacity, there is a dearth of literature investigating the demand side perspective of climate change mitigation strategies. Drawing on existing gaps in the literature, the present study seeks to analyze key stakeholders' perceptions regarding the impact of climate change on the Andaman Islands and explore the characteristics influencing the resilience of the coastal tourism destinations in the context of climate change. Methodology This current study adopted an exploratory case study approach to explore how key stakeholders in the Andaman Islands perceive destination resilience amid climate change. The research is conducted in two phases: initially, an extensive documentary analysis reviews existing literature and documents on climate change impacts and destination resilience specific to the Andaman Islands. This analysis provides a foundation for identifying relevant themes and variables, ensuring a comprehensive understanding of the region's challenges. Subsequently, purposive (non-probability) sampling, followed by snowball sampling, is used to gather 22 semi-structured interviews with stakeholders in the Andaman Islands, including tourists, local government officials, tourism operators, environmentalists, and community leaders. This approach enables the collection of detailed insights from individuals with significant knowledge and experience regarding climate change and tourism resilience. The semi-structured interviews allow for an in-depth and flexible exploration of stakeholder views, offering a nuanced understanding of the complex issues surrounding climate resilience. The data from these interviews are analyzed abductively through thematic analysis using MAXQDA (version 24.2) software. This methodological approach provides a structured understanding of the various factors influencing destination resilience as perceived by local stakeholders. The abductive analysis ensures that the findings are robust and valid, offering a comprehensive insight into the studied phenomena. Findings The findings of this study offer nuanced insights into the impact of climate change and resilience factors in the Andaman Islands. The thematic analysis study underscores the climate-related challenges experienced by the region. The 2004 tsunami exemplifies the region's vulnerability to extreme weather events, while persistent biodiversity loss, such as coral bleaching, further threatens the islands' sustainability and impact destination appeal. Stakeholders view these impacts as urgent issues requiring immediate action. In response to the climate change threat, the analysis uncovers the comprehensive array of key drivers influencing the resilience of coastal destinations. Effective stakeholder engagement is essential for resilience; destination stakeholders of Andaman islands, through knowledge sharing, cooperation and partnership, training and skill development, and trust building, possess a strong social network in the region. Innovation, infrastructure development, research and development, marketing and promotion, and management strategies are the significant components of learning and reflexivity, facilitating proactive climate action. The resilience literature suggests that governance of governance (meta governance) is an essential aspect of climate change governance. The thematic analysis revealed that the destination stakeholders of Andaman Islands reflect strong governance channels through public-private partnerships, policy frameworks, cross-scale governance, finance and funding, engaged governance, and supranational governance. The study highlights that inadequate socioeconomic opportunities heighten the vulnerability of stakeholders in the Andaman Islands in the context of climate change. Discussion This research underscores the importance of local stakeholder perspectives in developing resilience strategies for the Andaman Islands. By emphasizing key stakeholders' perceptions, the study underscores the necessity for resilience strategies to be context-specific, taking into account the distinct ecological, economic, and social dynamics of each destination. Stakeholder engagement, social capital, and adaptive capacity are critical for building resilience and fostering a proactive approach to climate change adaptation and mitigation. The study provides practical and theoretical implications for researchers, policymakers, tourism operators, and community leaders in coastal regions. These insights are crucial for ensuring the long-term sustainability of these vital tourism areas. Moreover, future research should explore the interplay

between climate change impacts and destination resilience in diverse coastal and mountain regions. Longitudinal studies could offer deeper insights into how resilience evolves over time and the effectiveness of various adaptation strategies. Comparative studies between different coastal destinations could identify best practices for building resilience.

485

Submission Number: **485**	Track: **IRCC-2024**

Paper Title: Virtual Reality in Tourism: Impact of Animistic communication on consumer sentiment

Authors: Naveenkumar Hanagandi

Abstract: Extended Abstract: Introduction Virtual reality is an immersive technology that allows users to experience in a simulated digital environment (Disztinger et al., 2017).This virtual reality technology is used in various industries, including Tourism, Digital Games, Health care, Defence Training, Construction, Education and more (Adachi et al., 2020).In a recent report published by the World Travel and Tourism Council in the year 2023, tourism has contributed 9.1% of the overall global GDP. That means the tourism industry is a global contributor to the economic growth. Tourism destinations have become a very important aspect of the tourism industry, and destination management companies promote the tourism destinations to their potential visitors (Dubois & Gibbs, 2018; Jankova et al., 2023). Tourism destinations are seeking innovative ways to attract tourists and boost their positive behaviour towards the destination (Losada & Mota, 2019)Sustainable communication is one such innovative way that helps tourism destinations build a positive image and enhance consumer sentiment (Beck et al., 2019; Tölkes, 2018).For example, Animism is the belief and faith that every non-materialistic world apart from humans, such as trees, rocks, oceans, rivers and mountains, have souls in them, and they are interconnected to humans and can communicate with each other (Martha, 2017; Tylor, 2010).Faith and belief enhances environmental consciousness (Harper, 2011). Environmental consciousness acts as a key factor for sustainability, which can enhance positive attitudes towards tourism destinations (Ahmad et al., 2020; Cheng & Wu, 2015). Hence, this arises to the term Animistic Communication. This research dives deep into the literature and identifies that the relationship between Animistic communication using virtual reality and consumer sentiment is yet to be explored, as well as key variables like social interaction, narrative engagement and user optimism that could shape the relationship between Animistic communication using virtual reality and consumer sentiment is yet to be explored. Research Objectives: To understand the impact of Animistic communication on consumer sentiment. To access how social interaction and Narrative engagement shape consumer sentiment To access the interaction between user optimism and mediating factors in shaping consumer sentiment. Research Methodology: The research objectives are backed by Narrative transportation theory (Gerrig, 1993). The study will be conducted using a controlled experimental research method that integrates an electronic virtual reality headset and mobile/tablet. The total sample size will be 150 samples. The research will be conducted using two different studies. Study 1 will understand the direct effect of the Independent Variable on the Outcome Variable, which is the direct impact of Animistic communication on Destination sentiment. For this study, the participants will be divided into 2 groups: one group will experience using a VR headset set, and the other group will experience using Mobile/Tabs. The total sample size for this study will be 75 samples, where 37 samples will be examined using an electronic virtual reality headset and the remaining 38 samples using Mobile/Tabs. Both groups will be shown a 360 video of a nature-based destination. Which will be viewed using an electronic virtual reality headset and mobile/tab. Simultaneously, Study 2 will understand the effect of mediators and moderators that shape the relationship between the independent variable and the outcome variable. That is, the mediating variables like social interaction and narrative engagement and moderating variables like user optimism would define the relationship between Animistic communication and Destination sentiment. For this study, the participants will be divided into 2 groups: one group will experience using a VR headset set, and the other group will experience using Mobile/Tabs. The total sample size for this study will be 75 samples, where 37 samples will be examined using a VR headset and the remaining 38 samples using Mobile/Tabs. Both groups will be shown a 360 walkthrough of a nature-based destination. Which will be viewed using an electronic virtual reality headset and mobile/tab. Both the studies would be surveyed through a field study considering samples as tourists or visitors to a hospitality industry or a destination. The data will be analysed through regression path analysis using the Hayes process Macro modelling tool to estimate the direct and indirect effects through mediation and moderation. Results and Implications: Virtual reality (VR) is a disruptive technology that changes the way people interact with things and brands(Klein, 2003; Wang & Datta, 2010). Virtual worlds have become very popular due to the ubiquity of smartphones, the cheapness of AR/VR apps and games as well as unforgettable immersive experiences (Ianenko et al., 2023). In recent years, sustainable communication has been an area of increased interest within marketing and consumer behaviour research (White et al., 2019). This involves giving non-human entities – like brands or products – qualities which are characteristic of living beings so as to create deeper connections between people and their surroundings(Portal et al., 2018). In marketing terms, this means treating them as if they were alive by endowing them with

human emotions and intentions, thereby making consumers see these objects not only as lifeless matter but also as something animate (Tölkes, 2018). It is rooted in the belief that all things, living or non-living, have spirits or souls which deserve respect and care (Cajete, 2017). Sustainable communication has also been proposed within consumer behaviour literature as an approach toward generating positive attitudes and behaviours among individuals towards brands and products through fostering satisfaction leading to loyalty and then advocacy for such items(Krizanova et al., 2019). This paper investigates the impact of sustainable communication (Animism) on consumer sentiment. Also, this would contribute to the literature on consumer behaviour by providing empirical evidence of the effects of sustainable communication (Animism) on consumer sentiment. This also contributes to the Tourism industry to develop more effective marketing strategies that can help industries navigate consumers towards sustainable practices.

486

Submission Number: **486**	Track: **IRCC-2024**
Paper Title: Information Technology enablers for Auto Sector to embrace circular economy	
Authors: Amar Jadhav	
Abstract: Auto sector can immensely benefit by adopting circular economy practices across their product life cycle stages . Information technology can be a catalyst to unlock the value . This paper provides practical recommendations on how auto sector can embed circularity in their supply chain decision making . It is covered through taking the needs of persona involved in different functions as well as looking at various processes which can be aided with circular decision criteria. The benefits of circular economy adoption has been explained by taking a case of a fictitious auto OEM company , which has adopted circular economy practices . Finally the paper ends with showing some paper mockups how top management of auto company can monitor the impact of circular practices adoptions on financial and environment.	

487

Submission Number: **487**	Track: **IRCC-2024**
Paper Title: Auditor Familiarity and Audit Quality in Business Groups	
Authors: Sairam Moturi, Vijaya Bhaskar Marisetty and Sanjay Kallapur	
Abstract: Understanding the motive for extended auditor tenure is difficult as it is simultaneously determined by auditor familiarity and the corresponding switching costs to the firm. We attempt to disentangle this by exploring the motive of auditor tenure in business groups, where auditor familiarity can be extended by transferring the auditor to another affiliated business group firms, with no impact on the switching costs. Using 8363 firm-year observations for the period 2003 to 2019 of Indian business group firms. After controlling for non-audit services and auditor tenure, we show that an increase in auditor concentration, that measures extended auditor tenure, reduces audit quality. We find that even mandatory auditor rotation law is not effective in improving audit quality as business groups reshuffle their auditor portfolio to reappoint existing auditors in other business group affiliated firms. Further, we find that business groups that extend the auditor tenure through reappointments engage in higher intra-group transactions and have poorer audit quality.	

489

Submission Number: **489**	Track: **IRCC-2024**
Paper Title: Threads of Change: How India can redefine Fashion Sustainability?	
Authors: Shivangi Jaiswal, Prince Dubey, Abhijeet Tiwari and Ruchika Joshi	
Abstract: The concept of sustainable fashion is gaining popularity all around the world as customers become more conscious of the environmental and social implications that their respective choices have. The term "sustainable fashion" refers to clothing that is designed, manufactured, and distributed in a manner that contributes to social equity and reduces the negative impact on the environment. There have been a number of studies that have shed light on the elements that drive customers' intention to purchase sustainable fashion. These aspects include environmental concern, social influence, and perceived consumer effectiveness. Within the scope of this study, the factors that influence the intention to purchase sustainable fashion	

in North Indian cities were explored. The findings gave useful insights into the behavior of consumers and brought to light the significance of information and education in the fashion industry's efforts to promote sustainable fashion. The findings of this study were expanded to the setting of India, where the fashion sector is an important economic driver and where there is tremendous potential for sustainable fashion. The purpose of this study was to gain an understanding of individuals' shopping habits, the factors that influence their purchasing decisions, and the channels through which they seek information on sustainable fashion. An analysis of the data was performed in order to recognize patterns and trends, which served to provide insights into the tastes and behaviors of consumers. In spite of the increased awareness, there are a number of obstacles that prevent the widespread adoption of sustainable fashion. A few examples of them are increased prices, restricted availability, and a dearth of information. There are considerable issues in India that are associated with price sensitivity and accessibility. Therefore, tackling these obstacles is absolutely necessary in order to increase the use of sustainable fashion. Confirmatory factor analysis and structural equation modeling techniques were extensively utilized throughout this investigation. Based on the findings, it was proposed that businesses should focus on initiatives that encourage more positive sentiments among customers about sustainable fashion. When it comes to sustainable fashion consumption, it is essential to ensure that customers experience positive emotions such as happiness, satisfaction, and a favorable attitude. This involves addressing common concerns such as cost and availability, as well as creating a shopping experience that is enjoyable, highlighting the benefits of sustainable fashion, and promoting the benefits of sustainable fashion. For consumers to be able to make more ethical choices, they require additional knowledge. According to the findings of the study, there are three primary avenues via which information about sustainable fashion can be disseminated: public education, peer influence, and business marketing programs. In the context of India, these channels have the potential to be very effective due to the significant impact that family and social networks have, in addition to the expanding reach of digital marketing. After conducting the research, the researchers concluded that enhancing customer attitudes toward sustainable fashion and offering additional information is essential for raising the intention to purchase sustainable fashion. The dissemination of information regarding corporate marketing and public education is particularly effective in India. This set of methods has the potential to promote sustainable fashion and contribute to a more sustainable future by taking into account the distinctive cultural and economic aspects that are present in India. In subsequent studies, it is recommended to investigate the influence that particular educational and marketing initiatives have on the behavior of consumers. In addition, research might investigate the impact that technology plays in the promotion of sustainable fashion strategies, such as the utilization of mobile applications and social media platforms. Having a better understanding of the regional differences that exist within India can also provide more in-depth insights on the tastes and behaviors of consumers.

493

Submission Number: **493**	Track: **IRCC-2024**

Paper Title: Critical Lens: GHG Metrics in the Plastic Circular Economy (A Case Study Approach for Plastic Waste Management in India)

Authors: Snehal Jariwala, Ankita Morbia and Ankrati Jain

Abstract: Greenhouse gases (GHGs) are a major contributor to global warming, necessitating urgent action across all sectors to mitigate their impact. The transition towards a circular economy presents a pivotal opportunity for reducing GHG emissions within the waste management sector. Extended Producer Responsibility (EPR) under the Plastic Waste (Management and Handling) Rules, 2016, as amended, is a critical policy approach that mandates producers to take responsibility for the entire lifecycle of their plastic packaging products, including their take-back, recycling, and final disposal. EPR practices reduce direct emissions from waste disposal and curtail upstream emissions associated with raw material extraction and production. India has made notable strides in implementing EPR, which has helped in reducing overall GHG emissions and enhancing climate resilience. While EPR and circular economy practices reduce GHG emissions, their effectiveness depends on several factors, such as waste collection methods, transportation efficiency, recycling processes, processing technology and the use of renewable energy sources. Moreover, the diversion of waste from landfills to recycling and co-processing is well-mapped in terms of GHG metrics, energy savings, and economic impacts. However, emissions from other factors, such as waste transportation and processing techniques are not as extensively documented, potentially obscuring the true impact of these practices on overall GHG reduction goals. This study shall guide strategies discussion at policy level as well as at infrastructure development is waste sector. In this study, we evaluated GHG emissions associated with the transportation of plastic waste based on our ground-truth data collection. Our company, Nepra Environmental Solutions Private Limited (NESPL), is one of the organizations responsible for implementing EPR for plastic waste across India. In order to effectively implement EPR programs and ensure compliance with regulatory requirements, plastic waste from the various locations of India including mountainous regions, islands, and cities is collected and disposed. To calculate

GHG emissions across varied regions, we tracked the journey of waste transportation from collection to disposal stations. We have gathered data like mode of transport, distance travelled by the vehicle, type of vehicle, type of fuel used, vehicle capacity, material load, and fuel efficiency. The emission factor is calculated based on the fuel type used by the vehicle. The emissions are then calculated by considering fuel consumption, which is based on the distance travelled and the fuel efficiency of the vehicle, expressed in kg CO2 equivalent per ton of plastic waste. We have observed that plastic waste generated in hilly regions such as Katra (Jammu & Kashmir), Kalimpong (West Bengal), and Gangtok (Sikkim) is transported to centralized disposal centres located in Madhya Pradesh, Rajasthan, West Bengal, etc often exceeding distance more than 1200 km. The calculated emissions from this transportation mainly range from 100 to 160 kg CO2e per ton of plastic waste, depending on factors such as the density and type of plastic waste, as well as the fuel efficiency of the vehicles used. In contrast, some quantity of waste is transported from Shimla to Solan, Himachal Pradesh, covering a distance of 80 km and emitting approximately 10-15 kg CO2e per ton. The quantum of waste transportation in this case depends upon the acceptance capacity of the disposal station, which may have limitations. Similarly, waste generated on islands is transported to mainland centralized disposal locations via waterways. For instance, waste transported from Port Blair to Chennai port (approx. 1300 km) by ship emits approx. 40-50 kg CO2e per ton. Waste transported from cities likes Ahmedabad to Rajula (300 km) emits 30-40 kg CO2e, from Indore to Dhar (64 km) emits 5-15 kg CO2e, from Pune to Chandrapur (17 km) emits 1-3 kg CO2e per ton, respectively. This variation in emissions underscores how transportation distances, the availability of disposal centres and their capacity to handle waste significantly influence GHG emissions. Additionally, issues such as maintenance and temporary shutdowns of disposal stations can further exacerbate the problem. In geographically challenged areas, such as hilly regions and islands, the limited number of disposal centres and their often-inadequate capacity necessitate long-distance transportation of waste to centralized disposal stations, resulting in notably high GHG emissions. However, these regions generate substantial quantities of waste due to tourism, which is a major contributor to their economies. Urban areas generally benefit from better access to nearby disposal facilities, which helps reduce GHG emissions and contributes to the effective achievement of circular economy goals. Nevertheless, in some urban areas, the lack of sufficient disposal facilities within the desired or appropriate radius can still result in higher emissions in certain situations. Based on our ground truth observations and analysis, we emphasize the urgent need for a comprehensive mapping of all factors influencing the effectiveness of EPR practices in reducing GHG emissions. It's crucial to recognize that while some companies claim to be plastic positive or plastic neutral, their overall approach to GHG mitigation is often unclear. These claims typically focus on plastic waste management without providing a detailed view of their GHG reduction strategies across value chain. To bridge this gap and truly optimize EPR for sustainable waste management, we need to address these factors and evolve policy frameworks accordingly to develop more robust circular economy models. One key policy recommendation is to establish small-scale processing units and disposal centres closer to collection points. This strategy would enhance transportation efficiency, reducing both costs and emissions. Additionally, partnering with local industries can create a reliable demand for Refuse-Derived Fuel (RDF), ensuring a steady supply and supporting local economies. By implementing these strategies, we can achieve a net positive impact and strengthen our sustainability efforts. This study reinforces the importance of a holistic approach to waste management and GHG reduction, ensuring that policies and practices are aligned with broader climate goals.

494

Submission Number: **494**	Track: **IRCC-2024**

Paper Title: EXPLORING THE ROLE OF GET (GIVING, EQUILIBRATING AND TAKING) IN DESIGNING SUSTAINABLE OFFERINGS- AN APPLICATION OF NEUROBEHAVIORAL ECONOMICS

Authors: Shilpa Chadichal

Abstract: Neurobehavioral economics recognizes that human choices are not only driven by rational calculations, but also influenced by emotional, psychological, and physiological factors. The increasing popularity of electric bikes and scooters in the transportation sector has led to the need for exploring the role of GET (Giving, Equilibrating and Taking) in designing sustainable offerings in this industry. GET is a concept that refers to the balance between the benefits and costs of a particular offering. The study aims to explore the role of GET (Giving, Equilibrating, and Taking) in designing sustainable offerings in the transportation sector, specifically in regards to electric bikes and scooters. The study will utilize a neurobehavioral economics framework and will employ survey research methodologies using SPSS Amos statistical tools. The data composed from the review will be analyzed to gain insights into the attitudes, beliefs, and behaviours of consumers related to sustainable offerings in the transportation sector. The major contribution is to recognize the influences that impact consumer decision-making in regards to sustainable offerings, and to highlight the importance of incorporating the principles of GET in designing sustainable offerings. The results imply that the GET principles, particularly the balance between giving, equilibrating, and taking, are crucial factors in designing sustainable offerings in the transportation sector and that these principles can have a big impact on consumer attitudes and behaviours towards such offerings. The study emphasises the significance of adopting the GET principles when creating sustainable offerings, and it makes the case that the study's conclusions can help establish strategies that will effectively promote sustainable products and contribute to a more sustainable future.

500

Submission Number: **500**	Track: **IRCC-2024**

Paper Title: Integration of sustainability dimensions with corporate purpose of private actors with specific reference to the Corporate Sustainability Due Diligence Directive (CSDDD)

Authors: Priyansha Hajela

Abstract: The term corporate purpose has re-emerged as a significant topic in the corporate governance regime after being dormant for several decades, undergoing a complete overhaul with the shareholder vs. stakeholder dichotomy. Traditionally, the concept of shareholder primacy was linked to corporate purpose focussing on maximization of returns for the shareholders, derived from a social norm rather than a legal mandate. The gradual evolution of the corporate purpose to integrate sustainability dimensions within the economic objective of the companies gained attention globally, exploring strategies aimed at addressing the broader social and environmental concerns by expanding the ambit to all stakeholders. The recent advancements in the international corporate governance framework moulded the corporate purpose in such a manner so as to provide solutions to the environmental and social issues while continuing to generate profits. Fast forward to the globalized economy it became imperative for business organisations to change the way of conducting business not only to survive and compete but also to thrive in the evolving business environment. The recent judgement of the European Court of Human Rights in the case of Verein KlimaSeniorinnen Schweiz and Others v. Switzerland observed critical gaps in formulating the adequate domestic regulatory framework and a failure on the part of the Swiss authorities to quantify a carbon budget and national greenhouse gas (GHG) emissions limitations. This placed the liability on states to suitably enact domestic measures in order to fulfil their international obligations. Similarly, in the case of Royal Dutch Shell in Netherlands the plaintiffs extended the argument of inadequate action on climate change to private companies, arguing that given the Paris Agreement's goals and the scientific evidence regarding the dangers of climate change, Shell has a duty of care to take action to reduce its GHG emissions in line with the goals of the Paris Agreement. The Hague District Court rejected Shell's defence of exemptions under the European Union Emission Trading System (ETS) and ordered the company to reduce its carbon emissions. Noticeably there is steady increase in the liability of private actors to fulfil the international obligations taking into account the social and environmental damage. The movement towards management accountability and director's duty of care has increased the obligations on the private actors (i.e. companies for the purpose of this research) in the governance frameworks. Due diligence has increasingly become an imperative part of corporate governance discourse. There has been a proliferation of instruments to integrate sustainability into the corporate governance and due diligence regime. Particularly within the European Union (EU), the discussions surrounding integration of ESG obligations into the domestic company law frameworks have fuelled the debate on corporate purpose and societal significance as the traditional thinkers restricted corporate responsibility to shareholders alone. The EU is pursuing a number of measures to further the objectives of the European Green Deal in order to achieve climate neutrality by 2050. These measures include the Corporate Sustainability Due Diligence Directive (CSDDD), Carbon Border Adjustment Mechanism (CBAM), Deforestation Regulations, among others. The Corporate Sustainability Due Diligence Directive has been adopted by the EU Council and approved by the EU Parliament. The Directive has been published in the Official Journal of the EU on 5th July 2024 and has entered into force on 25th July, 2024. After the entry into force, the Directive must be transposed into the domestic laws of the Member States within two years. The Directive seeks to maintain a uniform standard and act as a consolidated mechanism for enhancing due diligence practices across companies by creating a strong environmental and social governance framework. The Directive has proposed human rights and environmental obligations that will be binding on EU and non-EU entities falling within the prescribed thresholds and shall also extend to the subsidiaries and business partners of these entities. The Directive strives to ensure that the companies contribute to sustainable development and lead to "sustainable transition of economies through the identification, and where necessary, prioritization, prevention and mitigation, bringing to an end, minimisation and remediation of actual or potential adverse human rights and environmental impacts". In light of the above developments, the research proposes to examine the interactions between CSDDD on the one hand, and its impact in terms of corporate accountability for environmental and social obligations. It explores the manner in which regulatory frameworks enhance the sustainability obligations making it a part of the legal mandate. It seeks to examine the integration of such measures with the business processes in order to promote sustainable business operations aligned with the overall corporate purpose. Through the above understanding, the research seeks to analyse whether such instruments would strengthen sustainable value as a part of the corporate purpose or would be used as a means to escalate management accountability and obligations on the private actors by influencing the domestic legal frameworks of countries outside the EU.

512

Submission Number: **512**	Track: **IRCC-2024**

Paper Title: Does Mandatory Corporate Social Responsibility (CSR) Regulation Impact the Mergers and Acquisitions (M&A) Process and Aftermath? The Indian Evidence

Authors: Sulagna Bhattacharya and Kavita Wadhwa

Abstract: Worldwide, firms consider corporate social responsibility (CSR) as an essential strategic element for creating positive imprints on customers, society, and stakeholders in general. Emerging economies, including India, are also catching up with sustainable initiatives to improve society and the environment. One of the reasons for this widespread awareness and popularity of CSR lies in its reportedly favorable effects on firms. Several studies report that CSR reduces both systematic and firm-specific risks by lowering the cost of capital, reducing the illiquidity of stocks, and mitigating information asymmetry. CSR also benefits firm performance. The stakeholder value-maximization theory of CSR records a favorable relationship between a firm's CSR and its financial performance and wealth. While the contrasting shareholder expense theory portends that CSR spending hurts the shareholders by reducing the funds available to them and thus, is value-destructive for shareholders; firms are increasingly adapting their CSR strategy to other investment strategies, both organic and inorganic. Among the inorganic growth strategies, mergers and acquisitions (M&As) play a dominant role in the corporate restructuring market. The myriad intertwinings between CSR, firm performance, and value result in an effusive research focus on how CSR influences the entire M&A process. Unlike most countries, CSR spending is mandatory for eligible firms in India. Extant research that links CSR strategy with the M&A strategy of firms focuses exclusively on the non-mandatory CSR backdrop, where the entire CSR spending is purely voluntary; at the discretion of the firm. In India, however, a firm may spend more than its prescribed CSR amount. For such an over-compliant firm, the total CSR spending has two components: The prescribed CSR spending and the above-mandatory spending that the firm spends voluntarily. Similarly, the possibility of non-compliance also arises. Thus, spending more on CSR does not necessarily ensure CSR compliance; and a possible wedge exists between the total (aggregate) CSR spending and the voluntary (above-mandatory) CSR spending. These two unique characteristics of the mandatory CSR regulation motivate us for this research. To the best of our knowledge, we are the first to inspect the role of CSR in the M&A stages in the mandatory CSR environment. In this paper, we examine how CSR spending, compliance, and similarity of the M&A participant firms influence the acquisition decision, the choice of deal payment, and the speed of deal completion. We also inspect the effects of the pre-acquisition CSR of the firms on the post-acquisition integration and CSR performance. We perform empirical analyses by considering 349 Indian M&A transactions between the years 2015 and 2020. We report that acquisitions are more likely if the acquirer spends more on CSR and the target exhibits greater CSR similarity in the social CSR dimension; underscoring the importance of CSR spending and the significance of similarity with the target's CSR orientation. Next, we observe that while high total CSR spending by the firms encourages cash financing by reducing risks; greater voluntary CSR spending and CSR compliance boost stock payment likelihood by increasing cash outflow risks. We record a similar contrasting result for deal completion speed: While greater total CSR spending causes faster deal completion; acquirers' CSR compliance slows down deal completion. Therefore, while the stakeholder value-maximization theory corroborates total CSR spending; the contrasting shareholder expense theory dominates voluntary CSR spending and CSR compliance. Measuring post-M&A integration as the difference in the ROA of the acquirer between two years post-announcement and two years pre-announcement per literature; we find that if both the deal participants are CSR compliant, integration worsens. Thus, when both firms comply, the resulting double cash outflow burden lowers the post-acquisition ROA and integration; which fortifies the CSR overspending theory that establishes too much CSR spending to be wealth-reducing. Lastly, we record that CSR-oriented acquirers maintain their CSR consistency and regulatory compliance by increasing voluntary CSR spending post-acquisition. However, greater pre-acquisition social and environmental CSR of firms causes the post-acquisition social and environmental CSR spending to fall. This lies in the differential tax treatment of the CSR categories: While CSR spending under social and environmental dimensions is not eligible for any tax benefits, certain designated central government funds under the other categories of CSR offer income tax benefits. Hence, acquirers get incentives to contribute more to the other CSR categories at the cost of their social and environmental commitments and orientation. We make novel contributions to the existing CSR and M&A research. Firstly, in stark contrast to the non-mandatory CSR settings; we examine M&As in the Indian mandatory CSR environment and consider not only the total (aggregate) CSR expenditure per extant research; but also the voluntary (above-mandatory) component of total CSR spending. Secondly, we provide incremental evidence to extant research on the impacts of regulatory compliance on M&As by examining how CSR compliance affects M&As. Thirdly, in addition to the acquirer-target total CSR similarity; we also incorporate similarities in voluntary, social, and environmental CSR. Fourthly, extant researchers use the Social and Environmental scores provided by the ESG (Environmental, Social, and Governance) databases. In contrast, we use a spending-based approach in estimating social and environmental scores using the share of the preceding year's net income spent on the CSR dimension in the current year.

517

Submission Number: **517**	Track: **IRCC-2024**

Paper Title: Balancing Growth with Sustainability: A Systematic Review of Tourism Gentrification

Authors: Athira C and Meera Prathapan

Abstract: Though tourism boosts economic engines and employment markets, it also throws up substantial hurdles in catering to the essential needs of the local residents. As cities prioritise tourism over liveability, residents are mobilising to reclaim their communities. Tourism gentrification, the process of changing the character of a neighbourhood due to tourists or tourism-driven activities, has become a pressing issue in many destinations and a critical area of enquiry within tourism research. Employing the Themes-Context-Methodology (TCM) framework, this systematic literature review critically examines the existing body of knowledge on tourism gentrification, focusing on its impacts, underlying processes, and effective management strategies. Web of Science and Scopus databases were systematically searched using predefined keywords to identify, retrieve, and select relevant articles. After several screening steps, a final set of 66 studies was included in the review. By providing a structured overview of tourism gentrification, this study offers valuable insights for policymakers, urban planners, and researchers to develop integrated strategies that reconcile economic benefits with social justice and cultural authenticity.

528

Submission Number: **528**	Track: **IRCC-2024**

Paper Title: Green Bonds and the Inflation Reduction Act (IRA)

Authors: Sanjay Kumar Jain

Abstract: I study the impact of the Inflation Reduction Act (IRA) 2022 on the cost of green bonds in the USA. In this study, I employ a difference-in-difference methodology to compare the cost of green bonds issued by US firms in USD after the implementation of IRA by taking green bonds issued by non-US firms as a counterfactual. I find that after the implementation of IRA, the cost of green bonds in the USA decreased compared to that in other countries. Findings indicate that Governments can mitigate constraints on the cost and supply of climate financing through fiscal policy interventions that improve business environments for firms and spur the demand for cleaner fuels and products from individuals.

537

Submission Number: **537**	Track: **IRCC-2024**

Paper Title: Implementing Vehicle Scrappage Policy in Developing Economies with Informal Scrapping Centers and Diverse Producers

Authors: Karthik Ramaswamy and Rajeev R Tripathi

Abstract: Academic/Practical Relevance: The issue of developing an efficient end-of-life vehicle (ELV) recycling infrastructure in developing economies is complex, primarily due to the presence of informal scrapping centers and a variety of producers. Informal scrapping centers often operate without regulatory oversight. Additionally, the diversity of producers, with varying levels of commitment to recycling and recovery responsibilities, complicates the creation of an efficient recycling system. These factors introduce unique challenges that have not been thoroughly examined in either academic research or practical implementation. Methodology: Our study investigates three distinct recycling systems using game theoretic models: First, we consider an independent recycling system in which a producer either recycles the recovered product through a unique third-party recycler or manages recycling through its own facility. Second, we consider a collective recycling system with two diverse producers recycling their retrieved products, either through a common recycler or by jointly owning a common recycling facility. Finally, we consider a collective recycling system with homogeneous producers who recycle their recovered vehicles through a common third-party recycler or by owning a common recycling system. Results: Our analysis reveals the following insights: (1) Producer-owned individual recycling systems lead to superior recycling infrastructure in terms of efficiency and product recovery compared to systems contracted by third-party recyclers. (2) Under certain conditions, a collective recycling system with diverse producers with collective producer responsibility (CPR) sharing leads to better recycling infrastructure than individual recycling systems. (3) For a given range of the ratio of Individual manufacturer heterogeneity Collective systems with homogeneous producers yield the best recycling infrastructure.

554

Submission Number: **554**	Track: **IRCC-2024**

Paper Title: Towards Sustainable Metallurgy: A Framework Analysis of Charcoal-Driven Steel Production

Authors: Rupali Bhakat and Neelesh Mishra

Abstract: Purpose To achieve the global goal of net zero emissions, multiple methods have been studied so far to make the steel manufacturing process sustainable. Biochar as a substitute for coal is one of those methods that can reduce carbon dioxide (CO2) emissions in the steel-making process. This research paper identifies the gaps in the current studies. The objectives of this study are to identify the key enablers to support the adoption of biochar, to evaluate the effective implementation of those enablers, and to determine the influence of those key factors on the supply chain of biochar. This study also provides the implications in the area of research and practices. Methodology: Our methodology consists of several key steps: a) Literature Search and Data Collection: We searched for peer-reviewed journals on Scopus using keywords that resulted in 421 papers. After the primary screening, it was narrowed down to 136 papers. b) Relevance Screening and Objective Alignment: Further we analyzed the 136 papers and found 95 papers that align with our objective. c) Framework Application: Our study follows a systematic literature review (SLR) approach and evaluates the selected papers using three frameworks, TCCM (Theory, Construct, Characteristics, and Methodology) developed by Paul & Rosado-Serrano,(2019), ADO (Antecedents, Decisions, and Outcomes) developed by Paul & Benito, (2018) and 6W (Who, When, Where, How, What and Why) developed by Callahan, (2014). d) Data Synthesis: We categorized the paper using the three frameworks and synthesized the findings of the papers to compare the gaps, outcomes, and inconsistencies found in the reviewed papers. e) Temporal and Scope Analysis: We covered papers published from 1990 to 2024 for our research purpose to understand the historical developments and shifting trends in the application of biochar in the steel industry. Findings: The findings of this research present several key dimensions that enable the application of biochar in steel production. 1. Technological Enablers: Advanced technologies are required to utilize biochar in the steel-making process. This dimension presents various technologies for producing biochar and using it in the steel-making processes. Advanced Pyrolysis Technique. Improved Kiln Designs and Continuous Carbonization. Biomass Selection and Characterization. Optimized Injection System. Exploration of Direct Smelting. Integration into Electric Arc Furnaces (EAFs). Bio-CCS Technologies 2. Economy and Policy Enablers: This dimension is about creating a suitable economic environment for the adoption of biochar for steel production and creating a cost-effective alternative to fossil fuels. Cost Reduction. Carbon Pricing Mechanisms. Government Incentives. Financial Mechanisms 3. Industry Collaboration and Integration Enablers: This dimension emphasizes the importance of collaboration among the different players to overcome challenges, share expertise, and drive innovation. Research Collaboration and Knowledge Sharing. Industry Partnerships. Collaborative training programs 4. Logistics and Supply Chain Enablers: This dimension is about creating a sustainable supply chain, facing transportation challenges, setting standards, and managing storage. Sustainable Biomass Sourcing. Efficient Transportation and Logistics. Standardization and Quality Control. Storage and Handling. Minimizing Land Use Conflict 5. Social and Environmental Enablers: This dimension stresses the social and environmental responsibility that needs to be taken care of. Utilization of biochar in the steel-making process should not harm any community or environment. Community Engagement. Consumer Awareness and Education. Biodiversity Conservation. Sustainable Forest Management Relevance The identified key enablers in this paper highlight research gaps, industrial implications, and direction for future research. It can shape the future of the steel industry making it more sustainable. Research Purpose: Researchers can explore and delve deeper into the how and why of advanced technologies and research more on biochar's potential to be utilized in other stages of steel-making processes. Collaborative efforts and knowledge sharing will help to overcome the challenges associated with biochar-based steel. Practice Purpose: Industrial leaders can invest in advanced technologies, embrace policy support, build networks to foster industry collaboration, ensure the sustainable supply of biomass, and engage with local communities to build trust and shared responsibilities.

555

Submission Number: **555**	Track: **IRCC-2024**
Paper Title: GENDER DIVERSITY AND FIRM PERFORMANCE: ROLE OF EQUALITY	
Authors: Mafruza Sultana, Pooja Gupta and Asit K Barma	
Abstract: Beauty in the boardroom celebrates diversity, inclusiveness, and better governance in the boardroom. Gender diversity is one of the most important elements for today's business. At higher management levels, gender diversity in the boardroom is seen as a sign of better corporate governance. Besides ensuring equality, the presence of women directors on the board brings about a balanced and humane touch to aggressive financial and strategic policy initiatives. In India, the rule to have one mandatory female board of directors came with the introduction of the new Companies Act in 2013. By the end of 2015, most of the listed companies had complied with the rule but it seemed more of a token presence of women on the board of directors to fulfill the requirements rather than the real participation of women. The objective of the study is to find whether the presence of a higher proportion of women on the board of directors lead to a higher profitability & a better governance and impact on the capital structure & the quantum of CSR spend of the company. Data has been collected from CMIE-Prowess database from BSE-100 public companies in India. Study found that there is a significant difference between the two sets (one women director and more than one women director) in the case of profitability & capital structure at 95% confidence interval but couldn't find any significant difference in terms of CSR spend.	

564

Submission Number: **564**	Track: **IRCC-2024**
Paper Title: Examining the Influence of Mental Accounting on Green Investment Intentions: Insights from the Theory of Planned Behavior	
Authors: Rinky Yadav and Jagriti Gupta	
Abstract: The theory of planned behavior (TPB) unites intention with behavior by concentrating on attitude, subjective norms, and perceived behavioral control. It claims that the greatest direct predictor of social conduct in humans is behavioral intention. And in the present era, mental accounting plays an important role in directing the behavior of people. By keeping this in mind, this current study aimed to investigate the behavior of investors toward green finance in light of the theory of planned behavior by employing mental accounting as a moderating variable. The study uses the quantitative approach for the data collection from a sample of 400 investors on a purposive basis. By utilizing structural equation modeling (SEM) through the Smart PLS (v 4.1.0.6) software to analyze the data, the findings of the study demonstrate that attitude, subjective norms, and perceived behavioral control positively and significantly impact the intention to invest in green finance and intention to invest further leads to investment behavior positively. The findings also suggest that mental accounting negatively and significantly moderates the relationship between subjective norms and perceived behavioral control and intention to invest. However, this moderating relationship is not true in the case of attitude and intention to invest. The findings of this study also show that the present study is helpful for financial companies, governments, and individual investors; they can keep in mind the behavior-related traits that can influence investment decisions and design their portfolios accordingly.	

569

Submission Number: **569**	Track: **IRCC-2024**
Paper Title: Do Environmental, Social, and Governance (ESG) Disclosures Influence Corporate Value? Empirical Evidence from India	
Authors: Neelam Chauhan, Dr. Purva Kansal and Dr. Keshav Malhota	
Abstract: Abstract Purpose The rising significance of Environmental, Social, and Governance (ESG) disclosure in corporate reporting reflects a broader shift towards sustainable and ethical business practices. Due to the modern concept of sustainability, the markets have grown more competitive and dynamic, which has created tremendous pressure on corporations to achieve long-term sustainability and profitability (Malik & Kashiramka, 2024). ESG reporting practices focus on transforming corporations into accountable entities that take social and environmental issues seriously through which long-term sustainability can be achieved (Alshehhi et al., 2018). Therefore, Environmental, Social, and Governance (ESG) is	

critical to businesses and the expansion of the economy as a whole. These factors are being given weightage in any informed investment decision by all types of investors (Maji & Lohia, 2023). Because of the significant effect of these nonfinancial factors on future cash flows of a business, they are considered equally important on par with financial information. Regulatory frameworks across the globe have also begun to promote and regulate the disclosure of ESG information either in annual reports or as separate reports. These ESG issues also have a significant bearing on the financial and market performance of companies. Therefore, it is important to identify the influence of these ESG disclosures on corporate value. To fill this research gap, this study is conducted to examine the impact of ESG reporting disclosures on the value of corporations. The review of literature highlighted that a number of studies have been conducted on examining the association between ESG reporting and firm performance (Ademi & Klungseth, 2022; Hamrouni et al., 2020; Alareeni & Hamdan, 2020) in a country where ESG reporting is mandatory. Similarly, the literature also highlighted studies in the Indian context (Rao et al., 2023; Gopal & Lohia, 2023; Malik & Kashiramka, 2024), conducted based on the scores taken from ESG credit rating agencies and traditional measures of performance. However, this study differs from and extends previous literature in two ways. First, it investigates the influence of ESG disclosures and corporate value using ESG scores collected from a self-developed ESG framework. Second, the ESG disclosure may differ across different sectors, depending on the industry situation. Therefore, this study also highlights the difference in ESG disclosures among different sectors of selected sample companies and their influence on corporate value. As a result, our study provides a comprehensive view of the relationships between ESG disclosure and corporate value. Design/ Methodology : Sample Size and Period of Study The initial sample of the study includes all companies listed on the BSE 500 index as of March 31, 2022, over five years (2019-2023). A review of literature indicated that there are certain types of companies, which are not apt for determining their ESG practices. Therefore, different filters have been used to select the actual sample of the study. After the application of different filters, the usable sample size was reduced to 255 companies. Data Collection and Statistical Technique To achieve the objective of the study, the study has used ESG scores and financial data of sample companies. For ESG scores, ESG framework has been developed for companies in India using different standardized frameworks i.e., GRI framework, Dow Jones ESG index, NASDAQ ESG Index, WEF stakeholder capitalism matrices, and national guidelines provided by SEBI. In order to develop an ESG framework, the questionnaire is prepared, exploratory factor analysis is done and after checking the validity and reliability, the developed framework is finalized. To collect ESG scores of sample companies, content analysis of annual reports is done. The financial data of sample companies is collected through the Prowess Database. In order to investigate the influence of ESG reporting disclosures on the corporate value of selected 255 companies over five years i.e., 2019-2023, SPSS and Panel data regression technique is used. Both fixed and random-effect model is employed in order to do the analysis. Findings The study found that ESG score varies significantly between industries. Due to their exceptional performance across all ESG dimensions, the IT and Energy sectors have emerged as leaders. Due to their low scores on the environmental criteria, cement, construction, and metals and mining sectors are the least successful industries. Companies have been noted to have given the governance aspect a higher importance across all sectors. The study also found the positive impact of ESG reporting on corporate value in India. Companies with high ESG disclosures not only improve their financial performance but also receive higher market performance. The findings emphasise the need to incorporate ESG factors into company reporting frameworks. The findings encourage policymakers to strengthen ESG disclosure regulations and support programs that promote sustainability and transparency. Research Implications This analysis helps researchers and businesses determine whether providing more ESG information continues to have an impact on a company's performance and valuation. The Study's empirical findings will help government officials and politicians understand how their regulations affect corporate performance and help them to make better policies. The findings will also assist business practitioners in overcoming concerns about the possible detrimental impact of ESG measures on firm performance, thereby promoting innovative and strategic adjustments in business models to capitalise on ESG prospects. The insights will help the management team make better financing decisions by exposing how ESG ratings impact growth and shareholder wealth. Originality/Value This study adds to the growing literature on ESG and corporate value, offering useful insights to academics, practitioners, and politicians interested in sustainability and corporate governance. Using SPSS and panel data analysis, the study provides a comprehensive knowledge of the impact of ESG reporting on corporate value in India. Keywords ESG, Corporate Value, Sustainability, ESG Disclosure, ESG Reporting, Sustainability Reporting

570

Submission Number: **570**	Track: **IRCC-2024**
Paper Title: WHEN DOES SUSTAINABLE PACKAGING NOT WORK? CONSUMER INFERENCES FOR CORE AND PERIPHERAL CUES	
Authors: Kashish Gupta	

Abstract: Businesses make considerable use of sustainable packaging to attract customers. Numerous businesses have benefited from this form of packaging over the years. This study examined the effect of packaging claims on brand image, purchase intention and brand happiness. A 2 (Packaging: Sustainable and non-sustainable) by 3 (cue: core v/s peripheral v/s both)by 2 (product: hedonic v/s utilitarian) factorial experimental study was conducted to test the hypotheses. On the other hand, are sustainable packaging strategies effective across all product categories? The current study indicates that sustainable packaging is not always successful and is most effective when specific cues (core vs peripheral vs core plus peripheral) and product categories (hedonic vs utilitarian) are employed. The current study employed an experimental research design to investigate the research questions. Finally, implications for theory and management are discussed.

608

Submission Number: **608**	Track: **IRCC-2024**

Paper Title: THE IMPACT OF INTERNAL CARBON PRICING ON CORPORATE CAPITAL STRUCTURE: A PANEL DATA ANALYSIS

Authors: Nithin.K. Warrier and Dr.Smitha Nair

Abstract: Economic growth is not intrinsically good or bad. The growth in an economy implies an improved quality of life among individuals. However, economic growth often involves trade-offs, particularly in the environmental domain. The private sector plays a significant role in economic development, and production designs susceptible to environmental damage are increasingly being scrutinized and encouraged to adopt sustainable practices. In this context, internal carbon pricing, a voluntary mechanism for companies to re-evaluate their production processes by incorporating the additional cost of carbon. This practice nudges companies to align with regulatory oversight. Companies that integrate sustainable practices contribute positively to mitigating climate risk, enhancing customer value, evolving stronger relationships, and achieving long-term growth. Internal carbon pricing is a financial tool that enables companies to assign a monetary value to their carbon emissions, incentivizing emission reductions and informing sustainable business decisions. By internalizing the cost of carbon, companies can identify areas of their business where emission reductions will have the greatest impact. However, internal carbon pricing also entails redesigning production processes or incurring additional costs, which can influence companies' capital structure and financial mix. To explore these impacts, this study employs a quantitative empirical analysis using a panel data approach to capture the dynamics over time and across companies. Data will be collected from financial statements, ICP disclosures, industry databases, and regulatory reports. The study will analyze the effect of different levels of internal carbon pricing on capital structure measures such as the debt-to-equity ratio, while controlling for variables such as company size, industry sector, profitability, board characteristics, etc. This research aims to provide insights into how internal carbon pricing affects financial strategies and performance, ultimately contributing to a deeper understanding of the intersection between environmental sustainability and corporate finance.

668

Submission Number: **668**	Track: **IRCC-2024**

Paper Title: Strategic Evaluation of India's Net Zero Roadmap: Assessing Readiness and Resilience in the Transitioning Energy Sector

Authors: Anand Acharya, Shruti Sharma Rana and Akansha Sethi

Abstract: Introduction This study investigates the feasibility of future projected Greenhouse Gas (GHG) Emissions reductions through calculations as per ghg emission quantification standards such as GHG protocol. The study assesses the potential of Oil, Gas and Energy Sector Companies in India for achieving Net Zero as per their details of future plans officially disclosed in the public through a detailed regression analysis. Research In-depth research of 23 companies was conducted out of which 14 were considered for analysis based on the accessible information disclosed in their Annual Reports, Business Responsibility and Sustainability Reports, Sustainability Reports and Investor Presentations available on their official website. The model comprises of details of GHG emissions disclosed, breakup of multiple current as well as future assets promised by companies, along with the feasibility analysis in achieving Net Zero targets. Various Renewable Assets like Wind, Solar, CBG etc. were considered and their ability to save emissions in future was predicted based on basic conversion formulas (publicly available on the internet) which in turn gave future predicted equivalent GHG Emissions reduced/saved values. Data Collection Sources Data was collected from all the sources disclosed in public of various companies; Annual Reports, Business Responsibility and Sustainability Reports, Sustainability Reports and Investor Presentations available on their official website. Companies were selected on the basis of two parameters; availability and comprehensiveness of GHG emissions data and future renewable assets plans. This approach facilitated the analysis with reliable and robust data, providing a solid foundation base for regression model. This model incorporates a Regression Equation which is the display of Future Projected: Saved/Reduced GHG emissions (Y) ;$Y=\beta0 - \beta1\times\text{Scope 1} - \beta2\times\text{Scope 2} - \beta3\times\text{Scope 3} + \beta4\times\text{Future Wind} + \beta5\times\text{Future Solar} + \beta6\times\text{Future CBG} + \beta7\times\text{Future GH} + \beta8\times\text{Future Other Assets}$ on a variety of variables and their coefficients where $\beta0$ is the intercept, representing the baseline emissions offset when all factors are zero.$\beta1,\beta2,\beta3$ are the coefficients for the factors currently describing the categories of ghg emissions (Scope 1, Scope 2, Scope 3, respectively),$\beta4,\beta5,\beta6,\beta7,\beta8$ are the coefficients for the factors describing saved emissions/emission reduction in future (Future Wind, Future Solar, Future CBG, Future GH, Future Other Assets, respectively). Feasibility of Regression Analysis The model demonstrates high predictive validity with R2 of 0.9913764. The F-statistic of 71.85089 and ($p < 0.005$) confirms the model's statistical significance. Longitudinal analysis over multiple years indicates that strategic enhancement emissions saving factors in future significantly offset emissions, suggesting that achieving Net Zero GHG emissions is feasible with concerted efforts in adopting innovative and effective mitigation technologies. Each company has been analysed individually highlighting real-world prediction analysis. The findings provide a robust framework for policymakers and industry leaders to prioritize investments and overcome the Gap's identified in strategies towards a sustainable, Net Zero Future. Various indicators and parameters are assessed and based on them different trends are observed. Company Specific Analysis and Case Study basis Each of the 14 Companies were analysed individually to highlight real world predictions and identify the gaps in the current on-going strategies. While collecting data, a crucial observation was made showcasing the need to pay special attention to Scope 3 calculation and detailed disclosure. Certain Trends in Emissions were observed as follows SCOPE 1 SCOPE 2 SCOPE 3 TOTAL EMISSIONS CURRENT (FY 2022-23) Current Renewable Assets: Current Wind, Solar, Green Hydrogen, CBG etc were considered. Data not available was considered to be 0 for better quantitative analysis. Future Renewable Assets: Future Wind, Solar, Green Hydrogen, CBG etc were considered. Data not available was considered to be 0 for better quantitative analysis. For calculation of breakup of future Assets: 1MW wind with maximum capacity and efficiency was assumed to save/reduce GHG Emissions ~equivalent to 3000 tCO2e.Similarly 1 MW solar with maximum capacity and efficiency was assumed to save/reduce GHG Emissions ~equivalent to 1600 tCO2e. Meanwhile, for 1kg Green Hydrogen the emission saving co2 ~equivalent factor was taken as an average of 10-14 green hydrogen per kg/co2.Meanwhile an average CBG plant saves/reduces emissions ~equivalent to 15000 tCO2e.Then comprehensively to verify these calculations in the same model , individual breakup of each asset for each company was taken and then individual emissions saved/reduced by each renewable asset were converted from tCO2e to MW and on taking the sum of all these individual parameters values were obtained which were equivalent to the mentioned renewable targets by the companies, and thus the analysis was verified . Based on these assumptions and predictions our model evaluates individual projections of saved emissions in future for each company based on their mentioned target year of savings/reducing emissions. Policy Implications: These researched findings lay a perfect basis for policy formulation. Significant insights from this research can be used by policymakers to design certain beneficiary incentives and regulatory frameworks that highlight and encourage investments in renewables and other GHG emissions reduction technologies in order to achieve Net Zero Targets. By understanding the basis of these factors through our regression and detailed calculative analysis, most significant impact causing factors for GHG emissions can be prioritized by policymakers as they offer the greatest potential for emission reductions ensuring a sustainable future. Conclusion: To achieve Net Zero GHG Emissions in the Oil, Gas and Energy Sector Companies in India the study advises focused efforts towards increase in renewable assets in future and implementation of effective and sustainable reduction strategies. A detailed methodology and valuable insights described pave the way for future research and policy formulation for sustainable and Net Zero future in India. The comprehensive analysis both qualitative and quantitative, provides a clear roadmap for companies and policymakers to achieve their sustainability goals, ensuring that India can meet its climate commitments and contribute to global efforts to combat climate change.

674

Submission Number: **674**	Track: **IRCC-2024**

Paper Title: Does the pre-acquisition CSR orientation of firms influence the post-acquisition CSR Performance? The case of distressed M&As in India

Authors: Sulagna Bhattacharya and Kavita Wadhwa

Abstract: Mergers and acquisitions (M&As) are increasingly becoming a strategic tool of inorganic growth by firms. Existing research focuses on the motives and determinants of M&A decisions, deal characteristics, and post-M&A financial performance. Since sustainability and corporate social responsibility (CSR) are capturing the focus of firms as strategic instruments, researchers also examine the role of CSR in M&A decisions, processes, and outcomes. A segment of M&A research explores distressed M&As where the acquirer firm acquires a financially distressed target firm. These studies examine the risks of acquiring distressed firms and post-M&A performance in distressed M&As. However, existing literature is silent on the role of CSR in distressed M&As. Extant research finds a positive association between CSR spending by firms and their financial performance. CSR spending also lowers firms' financial risk. Since distressed M&As inherently carry greater risk as the targets are financially distressed, a moot question arises as to whether CSR spending by firms has any effect on distressed M&As. This study delves into the impact of pre-acquisition CSR on the acquirers' post-acquisition CSR in India, the third country in the world (after Indonesia and Mauritius) and the second emerging economy (after Indonesia) that made CSR spending mandatory from the financial year (FY) 2014-15. To our knowledge, we are the first to examine the association between distressed M&As and CSR in a mandatory CSR setting. In India, greater total (aggregate) CSR spending does not necessarily ensure CSR compliance; a firm is CSR compliant when it spends at least the government-mandated amount. Therefore, only the voluntary CSR spending, which is the portion of overall CSR spending above the government-mandated amount; is contributed to the society at the discretion of the firm. In this paper, we explore two specific questions in the context of distressed M&As: One, does the pre-acquisition voluntary CSR spending of the firms shape the acquirers' post-acquisition voluntary CSR strategy? And two, does pre-acquisition spending on the social and environmental CSR dimensions influence the acquirers' post-acquisition strategic choices on those dimensions? We use a sample of 140 Indian domestic M&A deals between 2015 and 2020 for our empirical analysis. For the baseline analysis, we classify the target firm as distressed if it has negative net working capital (NWC) in the pre-deal year (Peel and Wilson, 1989). For the robustness tests, we use return on invested capital (ROI) to classify a firm as distressed if it experiences a declining or negative ROI in the pre-deal year (Bruton et al., 1994). Using fixed-effects regression analysis, we find that for non-distressed M&As, greater pre-acquisition voluntary CSR spending by the acquirer and target firms causes the acquirers to increase their voluntary CSR after the acquisition. Also, greater acquirer-target voluntary CSR differential causes the post-acquisition voluntary CSR by acquirers to fall. Lastly, an increase in pre-acquisition social CSR has an unfavorable impact on the post-acquisition social CSR performance of the acquirers. In contrast, for distressed M&As, higher pre-acquisition voluntary CSR spending of the acquirer and target firms causes the acquirers' post-acquisition voluntary CSR to decline. In addition, a larger voluntary CSR differential between the acquirer and the distressed target causes post-acquisition voluntary CSR to rise. These bolster the CSR overinvestment theory that proclaims that too much CSR spending hurts firm performance from adverse impacts of high cash outflow on CSR. Next, we report that an increase in pre-acquisition social CSR causes an improvement in post-acquisition social CSR, but a rise in pre-acquisition environmental CSR causes a decline in post-acquisition environmental CSR performance. These results partially find support from the CSR consistency theory which predicts that firms that are consistent in their CSR strategy experience enhanced performance and value. In our sample, both the acquirers and targets spend a much larger proportion of their total CSR spending on the social dimension than on the environmental dimension. To reap benefits from consistency in their dimensional strategy, acquirers increase spending on the social dimension. Since environmental CSR is found to have a longer-term focus than social CSR, acquirers seem to be more concerned about staying focused on the shorter-term CSR dimension; which may explain the decline in environmental CSR performance. Further research can explore the implications of this finding. Our results stand robust when we deploy a different metric (declining or negative ROI in the pre-deal year) to capture the financial distress of the target firms. Our study brings forth some important implications for managers. Higher CSR spending by distressed firms carries with it an immediate negative accounting impact on the bottom line, which requires the managers of acquirer firms going for distressed M&As to take a vigilant approach toward their post-acquisition CSR performance, keeping in mind the impacts of CSR overspending. Also, managers should carefully examine the performance impacts of maintaining consistency in CSR orientation by deciding on whether to increase or reduce the spending on different CSR dimensions after the acquisition.

676

Submission Number: **676**	Track: **IRCC-2024**

Paper Title: Love Meets Sustainability: Exploring the drivers of Sustainable Dating in Modern Love - Perspectives of Millennials and Gen Z from South Asia: Implications for Sustainable Marketing and Branding Practices

Authors: Anjali Chopra and Jennifer Jagose

Abstract: The global pursuit of sustainable development has become increasingly urgent in recent times, with the United Nations (UN) introducing the Sustainable Development Goals (SDGs) as a comprehensive framework to guide the efforts of organizations and individuals towards a more sustainable future. When it comes to the intersection between sustainability, green marketing, and green dating, SDGs 3 (Good Health and Well-Being) and 12 (Responsible Consumption and Production) are particularly pertinent. With the increasing concern about environmental issues, sustainable practices are becoming important in different aspects of life, including dating. Today, more individuals prioritize sustainability in their personal lives

and seek partners who share their values. When two people who are romantically involved share similar environmental principles, their actions will have a more positive effect on the world. The present study aims to investigate the factors that influence millennial and generation Z (GenZ) relationship seeker's intention towards green dating in South Asia and examines the drivers behind this trend and explores how dating platforms can integrate sustainability into their marketing and branding strategies. The theoretical framework used is Ajzen's Theory of planned behaviour. The implications of this study are that brands who are focusing their efforts on sustainability can leverage their green marketing efforts to the fullest. The study's findings suggest that brands emphasizing sustainability could benefit from maximizing their green marketing strategies which can act as a crucial competitive differentiator in the market. The findings suggest that a significant proportion of millennials and GenZ express a strong commitment to sustainability and believe that green dating is a successful strategy for encouraging sustainable growth. Moreover, the primary motivators behind millennials' and Gen Z's intentions to engage in green dating behaviours are environmental attitudes, perceived behavioural control, subjective norms and green self-identity. Overall, this study contributes to the growing body of literature on green marketing and sustainable dating. The results of this study are instrumental for dating platforms and sustainable brands seeking to differentiate themselves to resonate better with the growing tribe of green dating relationship seekers. Sustainable green dating is not just a passing trend but a lasting shift in dating culture.

725

Submission Number: **725**	Track: **IRCC-2024**

Paper Title: The Shadow of Misconduct: How Unethical Behavior by One Firm Impacts the Valuation of Its Industry Peers

Authors: Urvashi Khandelwal and Chitranshu Khandelwal

Abstract: This study investigates the "shadow of misconduct," examining whether the revelation of unethical behavior by one firm negatively impacts the stock market valuation of its industry peers. Challenging the traditional tenets of finance theory, we draw upon behavioral finance to argue that investors may not always behave rationally and instead rely on heuristics or overreact to negative information, leading to industry-wide valuation effects. We hypothesize that a firm's unethical behavior, even if limited to a single actor, can trigger a cascade of reactions, including reputational contagion, increased regulatory scrutiny, and heightened investor risk aversion, ultimately impacting the entire industry. Using a sample of 2980 U.S. firms from 2015 to 2022, we employ OLS regression method to examine the relationship between a firm's market valuation and the ESG controversy scores of its industry peers. Our findings reveal a significant negative association between a firm's market-to-book ratio and the aggregate ESG controversy score of its peers, even after controlling for firm-specific factors. This effect is amplified when a firm within the industry exhibits exceptionally high ESG controversy or when the industry leader is perceived as engaging in unethical behavior. These findings have important implications for both investors and corporate managers, highlighting the importance of considering industry-level ESG risks and the far-reaching consequences of unethical behavior.

748

Submission Number: **748**	Track: **IRCC-2024**

Paper Title: IS GREEN HUMAN RESOURCE MANAGEMENT PRACTICES A DISGUISED CORPORATE SUSTAINABILITY ? - AN ANALYTICAL STUDY ON KOLKATA BASED INDIAN IT FIRMS

Authors: Anwesha Mukherjee, Anwesha Mukherjee and Anwesha Mukherjee

Abstract: India's industrial sector and foreign investment are causing environmental damage, causing over $80 billion annually. SMEs account for 40% of industrial output and 45% of exports. Overexploitation of natural resources contributes to natural catastrophes. To address this, organizations must plan sustainable growth and adopt green human resource management, emphasizing employee sustainability in every HRM setting. We also argue that "Green Human Resource Management" should be considered the bedrock of ecological consciousness. We zero in on "Green Human Resource Management," which focuses on HRM's part in an organization's approach to environmental management (GHRM). According to Mampra (2013), "green HRM" is the process of using HRM policies that promote effective utilization of the organization's internal resources, increase knowledge about environmental issues, and boost morale and happiness among workers. Others define Green HRM as an approach to human resource management that prioritizes protecting the environment by instituting policies, attitudes, and practices that encourage efficient use of organizational resources (Zoogah, 2011). Green HRM

promotes sustainable practices and raises awareness among employees, promoting environmental friendliness. Employers and specialists must establish connections between employee participation and eco-friendly management programs. Green HRM enhances compliance and productivity, providing real value to the company's brand and image. This article highlights some of the opportunities for achieving long-term viability via Green HR practices in businesses and focuses on the extended outcomes of the Green Human Resource Management (GHRM) and Corporate Sustainability(CS) of the Kolkata based Indian IT giants. RESEARCH GAPS Till date the increased attention being focused on the Corporate Sustainability activities regarding the development concept of the society and also the Green HRM concept, which stimulates the interest in research regarding the sustainability, environment management, minimizing the ecological footprints. But to date there is scanty literature on the integrative aspect linking Green HRM and Corporate Sustainability. So, this research is framed to minimize these gaps. RESEARCH OBJECTIVES The main aim of this study is to understand how the eco-friendly HR practices and Corporate Sustainability are mutually dependent and help in examining the HR roles in shaping the organization (Kolkata based Indian IT firms) towards the sustainable culture. Society Oriented, includes organizing the various community campaigns, women development campaign, go green campaign across the country spreading the message of saving the mother earth. Similarly the direct factors which influences Green Human Resource Management involves- Green Recruitment & Selection, includes saving the paper saving trees, maintain the e- portal for collecting the CVs and further proceedings. Green Training & Development, includes E-waste management training, development of employees' skills, knowledge, and attitudes about Environment conversation and EM initiatives. Green Reward & Recognition, includes green reward system, e- recognition portal, greening of performance related pay (PRP). this section of the study, the constructs for which the scales were obtained are measured after their validity and reliability have been confirmed. The generated scales were incorporated into the questionnaire's design. The Likert Scale (min 1; max 5) was the scale utilized for this. This study's data comes from both primary and secondary sources. The questionnaire completed by senior and mid-level managers from Kolkata's various IT companies is one of the key sources. Books, journals with citations, and business websites are examples of secondary sources. For this investigation, the sample size ranged from 110 to 120. Following collection, the data was statistically examined using AMOS (version 6) and the Structure Equation Model (SEM). The output validates the proposed model which means all the proposed hypotheses are accepted including the core one. The study's key finding was that there is a shared understanding of environmental sustainability between GHRM and CS. It also mentions how the GHRM fosters an excellent environment for promoting environmental sustainability. Under this, it was discovered that managerial responsibilities like hiring, choosing, rewarding, training, and development were crucial to the continuation of CS initiatives. The field of sustainable environments, where incentives, performance reviews, and other factors have a significant impact on environmental behaviors, is where GHRM plays a role. In summary, there is a strong positive correlation between GHRM and CS in companies that involve managers at all levels in implementing green practices by incorporating HR practices, implications, strategies, etc. The more managers are involved in this, the more they are essentially serving society under the guise of CS. Thus, it can be said that the IT behemoths, who are essentially putting the GHRM concept into practice, are participating in CS initiatives. Thus, GHRM may be thought of as a covert kind of corporate sustainability in some firms.

787

Submission Number: **787**	Track: **IRCC-2024**

Paper Title: Scaling Sustainable Agriculture Interventions: Achieving Triple Bottom Line Performance

Authors: Subhankar Saha, Haritha Saranga, Sriram Narayanan and Chandrakant Pradhan

Abstract: This research addresses a key societal challenge of agricultural crop residue burning (ACRB) in northwestern India that results in severe air pollution. It documents a large-scale intervention aimed at elimination of ACRB and promotion of Sustainable Agriculture Practices (SAP). SAP intervention is made possible through implementation of equipment sharing. We employ an intervention-based re- search (IBR) approach and present a framework for implementation of SAP and sharing economy model through the lens of socio-ecological model. We validate the effectiveness of the intervention by providing empirical evidence of improvement in economic (enhanced wheat yields and reduced wheat seed consump- tion), social (lower medication expenses), and environmental (decreased particulate matter emissions) performance in the intervened regions. The five year intervention was undertaken in a total land area of 0.3 million acres and with more than 58,000 farmers. We document learnings for literatures in SAP implementation and sharing economy. We provide key insights for policymakers and practitioners work- ing to promote SAP in resource-constrained settings. The intervention was recognized by the United Nations Sustainable Development Goals (UNSDG) Action Award from the United Nations Development Programme (UNDP) in partnership with the Government of Punjab.

856

Submission Number: **856**	Track: **IRCC-2024**

Paper Title: Market Preparedness for Policy Interventions towards Domestic Sustainable Markets: A study on Thai Rice Supply Chain

Authors: Gideon Balasingam, Rebecca Anns, Shobana S and Deepthi Krishnan

Abstract: Climate change is a critical global issue, impacting environments, economies, and societies. The Brundtland Report 1987, Our Common Future, introduced sustainable development, defined as meeting current needs without compromising future generations. This concept necessitates transformation in various sectors, including business, where sustainability must become a core principle. Integrating sustainability into market strategies allows businesses to attract environmentally conscious consumers, differentiate in a competitive market, and contribute to a sustainable future. For sustainable markets to thrive, they require sustainable production practices, market strategies, policies, and consumer habits. Studies indicate increasing global consumer awareness of sustainability, driving markets to cater to these needs and shift toward sustainability marketing. This paper examines the Thai rice supply chain using Fairtrade as a voluntary sustainability standard, exploring consumer awareness of sustainable sourcing and factors influencing sustainable market practices. It also assesses market readiness for sustainable products and policy measures needed to strengthen the domestic sustainable market ecosystem in the Global South. The paper is based on the research project conducted in Thailand by engaging university students by Fairtrade International using both desk and field research methods. The study is indicative of the market readiness for sustainable products. It also recommends the government take ownership of sustainable market, by ensuring that government policies are synonymous with established sustainable standards.

862

Submission Number: **862**	Track: **IRCC-2024**

Paper Title: A comparative study on methodologies for greenhouse gas estimation for agriculture in Tajikistan

Authors: Gideon Balasingam, Rebecca Anns, Shobana S and Deepthi Krishnan

Abstract: Global climate change poses a significant threat to sustainable development. This is evident through rising temperatures and resulting phenomena such as glacier melting, extreme weather events, and agriculture challenges. This impact extends across ecological, social, and economic systems worldwide. Agriculture, in particular, faces significant risks, with traditional crop production becoming increasingly untenable. This study, based on fieldwork in Tajikistan, conducted by Fairtrade NAPP, on one hand traces the current agriculture practices in Tajikistan that contributes to the greenhouse gas emission. On the other, it attempts to estimate GHG emission through these agricultural practices and explores different methodology appropriate for different crops based on feasibility of methodology and availability of data. It relies on an online tool, Cool Farm Tool and quantitative formula based on earlier research to estimate the emissions of Green House Gas in agriculture practices of crops like cotton, apricots and vegetables. In connection to this, the study identifies the causes of greenhouse gas emissions and the carbon sinks, and thereby draws attention to the sustainable agricultural practices.

881

Submission Number: **881**	Track: **IRCC-2024**

Paper Title: Impact of Corporate Innovation Culture on Emission Reduction Target Disclosure

Authors: Urvashi Khandelwal, Dr. Prateek Sharma, Dr. Alok Raj and Dr. Samit Paul

Abstract: We study whether corporate innovation culture motivates companies to disclose emission reduction targets. Using a novel dataset on corporate innovation culture from Kai et al. (2021), we show that innovative firms that disclose their emission reduction targets have significantly higher premiums than their counterparts. We posit that this financial incentive encourages these firms to disclose their emission targets. Additionally, our analysis reveals that innovative companies revealing emission targets not only decrease their emissions in the future but also set more ambitious goals. For robustness, we use Instrumental Variable regression and show that the results corroborate our main findings.

889

Submission Number: **889**	Track: **IRCC-2024**

Paper Title: The Strategic Role of Green HRM in Transforming Stakeholder Pressure into Sustainable Performance

Authors: Nanditha Dev and Dr. Johney Johnson

Abstract: 1. Introduction Today, companies all over the world experience pressure from the government or from other stakeholders to take necessary initiatives to combat sustainability issues mainly related to the natural environment and society (Yong et al., 2020). To safeguard the environment, firms must undergo vital measures to meet the stakeholder claim regarding environmental issues (Z. et al., 2018). As a way forward, organisations began to incorporate green human resource management (GHRM) along with business practices over the last two decades. GHRM is a newly recognised field in the management sciences that integrates environmental management techniques with traditional HRM strategy (Gardas et al., 2019). Researchers believe that GHRM helps the firm to get a competitive advantage by developing environmentally friendly employee behaviour, shaping environmental policies, enhancing eco-friendly performance, and their implementation at the workplace (Anwar et al., 2018). Previous studies also highlighted the need for the involvement of GHRM in sustainability matters, for example, Jackson and Seo (2010) and Zaid et al. (2018). A recent stream of studies provides empirical support and confirmed the potential of GHRM in addressing stakeholder pressure for sustainability (Guerci et al., 2015) and also to achieve sustainable performance (Khan & Mukhtar, 2024; Mousa & Othman, 2019; Saqib et al., 2021; Tanveer et al., 2023; Zihan & Makhbul, 2024). However, considerable uncertainty remains regarding the role of GHRM in answering the stakeholder pressure for sustainability in Asian country contexts and other institutional settings. Further, the underlying process (mediation) and boundary conditions (moderation) that govern the relationship between GHRM and sustainable performance are also unknown in the Indian context. The following hypotheses were developed for the study. H1: Stakeholder Pressure is positively related to Sustainable Performance H2: GHRM is positively related to Sustainable Performance H3: Stakeholder Pressure is positively associated with GHRM H4: GHRM is mediating the relationship between Stakeholder Pressure and Sustainable Performance H5: Stakeholder Pressure has a significant effect on Green Innovation H6: Green Innovation has a significant effect on Sustainable Performance H7: The relationship between stakeholder pressure and sustainable performance is positively mediated by green innovation H8: GHRM is positively related to green innovation H9: Effect of stakeholder pressure on green innovation is positively mediated by green HRM H10: The relationship between GHRM and sustainable performance is positively mediated by green innovation H11: There is a serial mediation of GHRM and green innovation between stakeholder pressure and sustainable performance H12: Resource commitment of the organisation moderates the direct effect of GHRM on Green Innovation H13: Resource commitment of the organisation moderates the relationship between GHRM and Sustainable performance 2.Research Methodology The research design adopted for the study includes both exploratory and conclusive research design using the survey method. A pilot study was carried out to check the reliability and validity of the questionnaire. Cronbach's alpha coefficient was computed for all the multi-item scales used in the questionnaire, and the alpha values obtained were above 0.7, which means they are internally consistent and reliable. Managerial-level employees of ISO 14001-certified large-scale manufacturing companies in the geographical area of Kerala are taken as the population. Simple random sampling is employed to draw samples from the frame. The study has a population size of 864 and is known. Hence, the study considers the estimated population size and uses the Yamane (1967:886) formula to obtain the required sample size (n =273). The present research obtained both primary and secondary data, which was essential and, therefore, gathered. The researcher developed a well-framed questionnaire to obtain primary data and administered it in person to the respondents. Secondary data were obtained from numerous sources, including information published by pioneers in the relevant domain, books, past literature, periodicals, case studies, regional publications, and governmental, media, and commercial sources. The questionnaire was administered to respondents directly through pen and paper, indirectly through sharing Google forms via email, and through professional platforms like Linked In. The scales given below have been adopted to measure the variables. Total - 43 Items 1. Green HRM- Singh et al (2020)- 13 items 2. Sustainable Performance –Zaid et al (2018)- 16 items 3. Green Innovation- Lai and Wen (2006)- 6 items 4. Stakeholder Pressure- Lee et al. (2018)- 4 items 5. Resource Commitment - Konadu et al. (2020) and Wu (2017)- 4 items These indicators were assessed on a 5-point Likert scale that ranged from Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. From the five equally scaled categories, Strongly Agree represents very high, agree describes high, Neutral demonstrates average, Strongly Disagree depicts very low, while Disagree implies low scores. Structural equation modelling (SEM) is used to test the proposed hypothesis. 3.Results The quantitative analysis revealed a significant positive relationship between stakeholder green pressure and adopting GHRM practices. Organisations experiencing higher levels of green pressure were more likely to implement GHRM initiatives. Furthermore, the results show that GHRM positively mediated the relationship between stakeholder green pressure and the sustainable performance of firms. It also confirmed the mediation of green HRM between stakeholders' green pressure and green innovation. The serial mediation of GHRM and GI is also

verified between stakeholder pressure and sustainable performance. The analysis also supports the boundary condition played by resource commitment between GHRM and sustainable performance. 4. Conclusion The findings of this study provide strong evidence that GHRM serves as a vital link in translating stakeholder green pressure into corporate sustainability. By integrating sustainability principles into HR practices, organisations can effectively internalise and act upon stakeholder expectations for sustainability. By highlighting the mediating role of green innovation, it provides a nuanced understanding of how organisations can achieve sustainability. However, the role of resource commitment highlights the need for a balanced approach, where organisations must strategically allocate resources to maximise the benefits of GHRM and green innovation. Future research should explore these relationships in different industrial contexts and examine the long-term impacts of GHRM on corporate performance.

891

Submission Number: **891**	Track: **IRCC-2024**
Paper Title: The CSR Puzzle: Decrypting its Influence on Financial Distress in India	
Authors: Priya Dhawan and Neeru Chaudhry	
Abstract: For a sample of Indian firms, we find that as the firm's engagement in corporate social responsibility (CSR) increases, the financial distress risk decreases. This negative relationship persists during the 2007-2009 financial crisis and Covid-19 pandemic. It exists both before and after the Insolvency and Bankruptcy Code 2016 became effective. The negative effect of CSR spending on financial distress is more dominant when firms engage in social-and-community and employee-related activities and when firms are in the younger stages of the firm life cycle. Domestic promoters (institutional and foreign institutional investors) weakens (bolsters) the negative effect of social-and-community related CSR spending on financial distress risk. In addition to institutional and foreign institutional investors, foreign promoters strengthen the negative relationship between employee-welfare spending and financial distress risk. Firms that engage in social-and-community-related and employee-related CSR activities have lower cost of debt and better credit ratings, which provides such firms with better access to capital markets and hence lowers the risk of financial distress. Our study highlights the importance of integrating CSR in the policymaking directed towards mitigating the financial distress risk. It in turn would reduce the chances of bankruptcy and reduce crises in an economy. Therefore, the findings of this study will be useful for policymakers, regulators, managers, investors, and employees.	

901

Submission Number: **901**	Track: **IRCC-2024**
Paper Title: The Green Fallacy: Investigating the Relationship between Greenwashing and Firm Risk	
Authors: Bhagya Bhutani and Sonali Jain	
Abstract: The article aims to investigate the role of greenwashing behaviour on the firm's financial risk. Using empirical data from the US, the UK, and India from 2016 to 2023, this study employs ordinary least squares (OLS) and Fama MacBeth regression and various robustness checks, including White cluster, Newey West, and 2SLS, to analyse the relationship between greenwashing and firm risk.The findings indicate an overall positive relationship between greenwashing and a firm's risk, particularly pronounced in large firms and firms with low liquidity and high leverage. The study finds a negative impact of greenwashing on firm risk in the USA and UK, while Indian firms show a positive reaction, likely due to lagged regulatory enforcement and higher information asymmetry. Additionally, the research highlights a negative impact of greenwashing on a firm's value, suggesting a decline in investor's trust and overall firm's wealth.The study adds to the literature by delving into the consequences of a firm's unethical communication practices and cautions management to avoid short-term cost-efficiency business communication strategies such as greenwashing that could backfire.	

904

Submission Number: **904**	Track: **IRCC-2024**
Paper Title: CEO compensation, family firms and Institutional investors: evidence from India	

Authors: Gobinda Gopal Pahari and Chandra Sekhar Mishra

Abstract: This paper examines the influence of family control and institutional investors on CEO compensation in India, using a dataset of 1729 listed NSE firms in India from 2009 to 2023. The findings reveal that family control reduces the levels of total and cash CEO compensation, indicating that controlling families do not exploit minority shareholders through CEO pay. The study also shows that institutional ownership is linked to higher CEO cash and total compensation, particularly in family firms. Additionally, foreign institutional investors and domestic institutional investors both significantly increase CEO compensation levels. Finally, the results suggest that institutional investors impact the structure of CEO pay. This study also found a significant positive pay performance sensitivity while interacting firm performance with family firms and family CEOs and their impact on the CEO pay. A strong connection between CEO pay and performance can align the interests of CEOs with those of shareholders, acting as a disciplinary measure to ensure CEOs make decisions that benefit shareholders and reduce potential CEO entrenchment. In firms with controlling family shareholders, CEO entrenchment is likely minimal since these family shareholders have incentives to provide oversight and minimize managerial entrenchment.

928

Submission Number: **928**	Track: **IRCC-2024**

Paper Title: Visualizing the ESG Performance: The Case of Photographs in Indian Financial Reports

Authors: Divya Soni, Advaita Rajendra and Kirti Saxena

Abstract: The emerging risk of climate change revises companies' use of more visuals to communicate sustainability initiatives in their annual reports. Given the qualitative nature of this information, it is crucial to explore their focal points and the message these images convey to articulate their sustainable practices within the Environmental, Social, and Governance (ESG) framework. Using a sample of 2031 images from 10 Indian companies listed in Nifty-50 for 2019 and 2023, this study investigates the changes in ESG visual reporting systems. By utilizing AI models to categorize and describe these visuals according to the ESG framework established by Harvard Law School, we find a shift in the image's focus from social to environment. Exploring further, we find that in communicating environment performance companies highly focus on biodiversity by using aerial view images, and production of products. Social images highly promote community relations by showing ethical and diversified group images. Governance is highly focused on showing boards' leadership by showing managers' portraits. Overall, this study investigates corporate impression management tactics and aims to empower investors through enhanced awareness and informed decision-making.

931

Submission Number: **931**	Track: **IRCC-2024**

Paper Title: GREEN PRODUCT MANAGEMENT: THE LINCHPIN OF A STARTUP'S SUSTAINABILITY

Authors: Eswar Prasad Manapuram and Dr. Truptha Shankar

Abstract: Despite growing recognition of the importance of environmental sustainability in the global business landscape, many established companies still prioritize revenue growth over sustainable practices. This trend is also prevalent among startups, where quick profitability often takes precedence. In this context, it is crucial to educate startups on transitioning from a linear to a circular economy by integrating sustainability in business strategy and product development. To address this need, the researchers surveyed 63 Indian Startup founders to gauge their awareness and approach toward achieving Sustainability. The study's findings indicate a substantial lack of awareness regarding environmental sustainability, its incorporation into product design, and its role in business growth strategy. Founders also perceive environmental sustainability as an additional burden, considering it a priority only after the business has grown. On the other hand, some successful founders believe that contributing to environmental sustainability can foster their startup's growth.

944

Submission Number: **944**	Track: **IRCC-2024**

Paper Title: On Forest, Environmental Policies, and Rainfall: Evidence from India's National Forest Policy

Authors: Neeraj Katewa, Lavanya Lavanya and Shreya Mishra

Abstract: Environmental policies provide a promising avenue for mitigating and adapting to climate change, but the complex relationships between climate, resources, and policies necessitate empirical evidence to guide effective policymaking. This study investigates the effect of India's National Forest Policy of 1988 using district-level data from the Village Dynamics in South Asia (VDSA) dataset. The 1988 policy, notable for its emphasis on community participation, has positively influenced forest cover. Our analysis includes an event study showing a significant and sustained increase in forest cover post-implementation. A Bootstrap Quantile regression further reveals the policy's strongest effects on dense forests. We conjecture that the policy aligns conservation efforts with community benefits by sharing the use rights of non-timber forest products, thus reducing illegal logging and enhancing reforestation and forest density. Further, we find that rainfall intensity moderates the policy's effect, highlighting the intertwined dynamics of forest, environmental policies, and rainfall.

955

Submission Number: **955** | Track: **IRCC-2024**

Paper Title: Climate Change Financing and Regulatory Framework - Lessons from European Union

Authors: Kriti Johri and Kriti Johri

Abstract: Introduction: Financing climate and environmental projects has been gaining traction around the world. Several instruments facilitating the process are now part of various capital markets. Green Bonds, sustainable debts, both activity and behaviour based, are emerging as relevant tools to bolster the transition to green economies. However their effectiveness is often forms part of market discourse, majorly concerning investors decisiveness. Green washing, impact washing, lack of global standards, market preparedness are often seen impeding their effectiveness. In India, these challenges are augmented due to the limited ecological awareness and inadequate government support. Meanwhile, the European Union (EU) has, so far, been able to establish regulatory framework that has fostered comprehensive strategies for sustainable finance. This, however can offer significants insights to regulate Indian endeavour to enhance green finance and climate risk preparedness. Green bonds are crucial in financing sustainable projects, yet India's green bond market struggles with ecological awareness, regulatory issues, and market maturity. The Debt-for-Climate Initiative (DCI) underscores the need for effective debt relief and climate action coordination, while the EU's Sustainable Finance Strategy, including the EU Taxonomy Regulation and SFDR, provides a framework for enhancing transparency and closing the investment gap for climate goals. This research proposal aims to explore the integration of climate risk into sovereign debt management and public finance, with a specific focus on enhancing green finance mechanisms in India. Problems and Issues: The integration of climate risk into sovereign debt management and public finance is complex and requires robust regulatory frameworks, increased investor awareness, and comprehensive implementation strategies. In India, developing the green bond market and sustainable finance instruments faces significant challenges, including market maturity, regulatory issues, and limited ecological awareness. Its market faces challenges such as greenwashing, a lack of global standards, and low investor awareness. The Debt-for-Climate Initiative poses complexities in coordinating debt relief with climate actions and managing debt swap operations. Sustainable finance in Asia is hindered by financing gaps, market adaptation issues, and regulatory obstacles. In India, green financial instruments are limited compared to global standards, and systemic issues in carbon trading must be addressed. Additionally, integrating climate risk into sovereign debt management is problematic due to the absence of common guidelines and comprehensive disclosure of climate risks. Critical challenges include increasing ecological awareness and securing government support for green finance. Developing robust regulatory frameworks is essential to support green finance and integrate climate risk into debt sustainability analysis. Enhancing investor communication about sovereign climate debt management and creating effective risk-sharing instruments are also necessary. Addressing market maturity issues and expanding the range of green financial instruments are crucial for advancing green finance in India. To enhance India's green finance landscape, the study suggests systematizing factors driving the green bonds market, introducing new green financial instruments, and adopting best practices from the EU Emissions Trading Scheme (ETS). Improving investor relations through better transparency and communication, developing a comprehensive climate risk framework, and encouraging private sector engagement are vital steps. Additionally, expanding country-specific strategies for sustainable finance will support India's transition towards a greener economy. A thorough analysis of regulatory frameworks is essential to identify best practices, enhance regulatory support, and promote private sector engagement in green finance. Research Questions: Upon referring to existing literature and data, following research questions have been crafted to execute this study. What is the relevance of green bonds and other sustainable finance instruments in India's fiscal growth and track challenges hurdling their implantation? How does the regulatory framework of the EU, including key directives and regulations, support the development and implementation of sustainable finance and green bonds? How do the EU's strategies contribute to effective climate risk management, and what lessons can be applied to India's green finance framework? How can these practices be tailored to increase ecological awareness and encourage private sector participation in India? Methodology: The study will employ a literature review of existing research on green bonds, sustainable finance, and climate risk management in India and the EU. The comparative analysis has been adopted with the view to EU's harbours an advanced jurisprudence on sustainable finance and therefore, by juxtaposing it with Indian framework offers opportunity to cull out best practices, principles, regulating policies and strategies to navigate through existing challenges. Thus, the study aims to provide recommendations for developing a robust green financial market in India and integrating climate risk more effectively into public finance.

968

Submission Number: **968**	Track: **IRCC-2024**

Paper Title: A Comprehensive Analysis of Discrepancies in Assurance Statements among Energy Sector Corporations: A Gap Assessment and Strategic Implications for Enhanced Sustainability Reporting Practices

Authors: Anand Acharya, Shruti Sharma Rana and Bhawna Singh

Abstract: The evaluation of sustainability assurance within the energy sector is still developing, despite its critical importance. A significant issue is the quality of the assurance process, which has substantial practical implications. However, there remains a notable gap in understanding what constitutes assurance quality and how it should be assessed. This paper aims to bridge this gap by analyzing and identifying areas for improvement in the assurance statements of leading energy sector companies, both national and global, such as ExxonMobil, Chevron, Shell, Reliance Industries, among others. Our analysis begins by comparing assurance statements against key indicators: scope, approach, limitations, final observations, and measures of independence declared by the assurance providers for each company. Previous studies have highlighted the linkage between the effectiveness of a firm's sustainability performance and the thoroughness of its assurance process. Thus, the assurance processes for the selected companies are scrutinized to address the following gaps: 1. Inconsistency in Defining Assurance Boundaries: Companies like ExxonMobil, Chevron, and Shell exhibit a lack of clarity in defining the boundaries of their assurance engagements. This inconsistency hinders stakeholders' understanding of the scope and limitations of the assurance provided, leads to incomplete data for inventory (Scope 1, 2, and 3) calculations, reduces credibility, and impedes effective risk management and strategic planning. 2. Inadequate Detailing of Methodologies: Specific methodologies used in the assurance processes are not uniformly detailed. For instance, Chevron does not provide a comprehensive description of its approach, making it difficult to evaluate the thoroughness and reliability of its assurance process. The lack of detailed methodology impacts the transparency and accountability of the assurance process, leading to questions about the rigor and robustness of the evaluations conducted. 3. Unclear Statement of Limitations: The limitations of assurance engagements are often not clearly stated. ExxonMobil, Chevron, and Shell do not explicitly mention the limitations, leading to potential misunderstandings about the scope and accuracy of the findings. This gap is critical, as limitations outline areas for improvement and allow for public disclosure of a company's performance. Consequences of this gap include misleading stakeholders, reduced accountability, regulatory and compliance risks, and hindered benchmarking and comparisons. The lack of clear limitations can also lead to an overestimation of the assurance's comprehensiveness, giving stakeholders a false sense of security. 4. Varying Detail in Final Observations: Final observations vary in detail and comprehensiveness. For example, Chevron's final observations are less detailed, providing limited insights into the key findings and overall effectiveness of the assurance process. Addressing this gap is essential, as final observations offer an overall understanding of the assurance process and areas for improvement. Failure to address this can result in missed improvement opportunities, inadequate stakeholder confidence, and ineffective decision- making. Detailed final observations are crucial for understanding the nuanced findings of the assurance process and for identifying specific areas that require further attention. 5. Independence and Conflict of Interest Issues: The measures taken to ensure the independence of the assurance providers are not always thoroughly documented. This lack of transparency can lead to concerns about potential conflicts of interest and the impartiality of the assurance process. For instance, if an assurance provider has other business relationships with the company being assured, it could compromise the objectivity of their findings. Ensuring the independence of assurance providers is fundamental to maintaining the credibility and reliability of the assurance process. 6. Stakeholder Engagement and Materiality Assessment: Another area of concern is the extent to which stakeholder engagement and materiality assessments are integrated into the assurance process. Effective stakeholder engagement ensures that the assurance process addresses the concerns and priorities of those most affected by the company's operations. However, in many cases, the level of stakeholder engagement is not clearly articulated in the assurance statements. Similarly, the process of determining materiality—what is significant to stakeholders and the company—is not always transparent. This lack of clarity can lead to gaps in the assurance process, where critical issues may be overlooked or insufficiently addressed. To address these gaps, it

is recommended that companies: - Clearly define and document the boundaries of their assurance engagements to ensure transparency and clarity for all stakeholders. - Provide comprehensive descriptions of the methodologies used in their assurance processes to enhance the rigor and transparency of the assurance. - Explicitly state the limitations of their assurance engagements to provide a realistic understanding of the scope and accuracy of the findings. - Include detailed final observations to summarize key findings and insights, helping stakeholders understand the assurance process and identify areas for improvement. - Thoroughly document the measures taken to maintain independence and avoid conflicts of interest, ensuring the objectivity and credibility of the assurance process. - Enhance stakeholder engagement and clearly articulate the materiality assessment process to ensure that the assurance process addresses the most relevant and significant issues for stakeholders and the company. This comprehensive analysis aims to enhance the quality and transparency of sustainability assurance in the energy sector, fostering improved stakeholder confidence and more effective sustainability practices. By addressing these critical gaps, energy sector companies can improve the robustness and credibility of their sustainability assurance processes, ultimately contributing to better sustainability outcomes and more informed decision-making.

974

Submission Number: **974**	Track: **IRCC-2024**
Paper Title: Blessed with Resources, Cursed with Poverty: A Cooperative Game Solution to Deal with the Paradox	
Authors: Rajeev R Tripathi and Ronit Neogy	
Abstract: Many resource-rich countries exhibit a paradox known as the ‘resource curse’ where, despite their abundance of natural resources, they struggle to fully benefit from their natural resource wealth. Contrary to expectations, these nations often demonstrate lower economic stability and growth rates compared to their resource- poor neighbors. In this paper, we offer a cooperative game theory-based solution to address this paradox, focusing on the cocoa industry. In African countries like Ivory Coast, Ghana, and Nigeria, where climatic conditions are ideal for cocoa cultivation, cocoa farmers often face extreme poverty despite their crucial role in the global chocolate supply chain. In contrast, chocolate manufacturers reap substantial benefits. Farmers, in a desperate attempt to increase their income, frequently expand cocoa cultivation into protected forests, causing deforestation, and resort to child labor in cocoa farms. This paper proposes a cooperative game solution where major cocoa-producing countries form an inter-governmental organization to control the cocoa supply. Such an organization could enhance its bargaining power within the supply chain, ensuring a more equitable distribution of profits and promoting social and environmental sustainability in their countries. This also helps chocolate manufacturers improve the sustainability of their global supply chains as the regulators are increasingly scrutinizing them in their own countries.	

1023

Submission Number: **1023**	Track: **IRCC-2024**
Paper Title: The Tripod of Modern Banking: Digital Payment Adoption, ESG Performance, and Financial Performance of Indian Banking Sector	
Authors: Shivani Jain and Jagadish Prasad Sahu	
Abstract: This study examines the relationships between digital payment adoption, Environmental, Social, and Governance (ESG) performance, and financial performance of Indian banking sector from 2011 to 2023. Employing panel data regression, the study hypothesizes a positive association between digital payment adoption and both ESG performance and financial performance of Indian banks, while anticipating a non-linear relationship between ESG practices and bank’s financial performance. Initially, increases in ESG activities enhance bank financial performance. However, beyond a certain point, the benefits of ESG activities diminish, resulting in diminishing marginal returns. By examining these dynamics in India’s banking ecosystem, this research aims to illuminate the interlinkage between sustainability commitments and overall performance for an environmentally conscious banking future. The contributions and implications of this research are discussed.	

1051

Submission Number: **1051**	Track: **IRCC-2024**

Paper Title: Sustainable 'Innovations' Through Reverse Logistics And Lean Packaging

Authors: Nagamalini Thiravidamani and Reeves Wesley J

Abstract: The circular economy is an ideological economy where all the finite resources are optimised, and a closed-loop supply chain is practised. Business innovations help in manufacturing a product in a unique way that results in resource circularity and optimisation. A product or process has to be active on the environmental checklist that governmental agencies have laid down. This paper attempts to analyse corporations and their product and process innovations leading to total waste minimization1158 a-Cola and Amazon India's examples are taken to cite their product and process innovations. The social and practical implication of these companies' sustainable innovations sets the trend for waste reduction and collection seamlessly concludes with some takeaways for other corporations to follow and outlines the other detractors in the quick commerce ecosystem. Keywords: Product innovation, process innovation, waste management, UNSDG 12, Waste minimisation 1.0 Introduction: Circularity in an economy is quintessential to tackling resource crises and depletion. The United Nations' 17 sustainability goals (UNSDG) drafted in 2015 (DESA,2016) is a benchmark for the economies and corporations to follow. These goals have reshaped how businesses and corporations operate. UN SDG 12(Responsible Consumption and Production) has created an outline for enterprises to instil recycling behaviour and waste minimisation techniques in their production and consumption process (Buchholz, 2023; Sachs et al., 2023) This paper analyses the primary product and process innovations made by transnational corporations in bringing circularity in the market by combating plastic waste management. 1.1 Social Innovations: Innovation is a significant incubator for attaining the UNSD goals. Transnational corporations have been ethically aligned to give back to society through CSR initiatives (Sachs et al., 2023; DESA,2016). Companies like Amazon and Coca-Cola play a significant role in giving back to the communities and countries in which they operate. This qualitative study /paper outlines the CSR initiatives taken by the two MNCs (Amazon and Coca-Cola) to bring about waste minimisation and management in developing economies. Fig 1. a Reverse vending machine of Coca-Cola Fig 1. B (Authors' capture) 1.2 Sustainable Product Innovations: RVMs: Through the case study approach, the study will analyse the sustainable products developed by Coca-Cola. How a soft drink manufacturer uses social and ethical responsibility to climate action and brings circularity in the supply chain through reverse logistics. The UN's mission to attain SDGs by 2030 is not very far (DESA,2016). 1.3 Sustainable Process Innovations: Amazon India has been innovative about its waste minimisation, focusing on process sustainability. The paper examines Lean and Six Sigma methodologies, which enhance operational efficiency while reducing waste and emissions (Pongrácz et al., 2004). It presents case studies of organisations implementing sustainable processes, detailing the techniques and tools employed. Amazon is an electronic commerce marketplace that has penetrated the Indian market, catering to B2B and B2C segments (Kapur-Bakshi. et al., 2021). The company was known for its rigid corrugated packaging and carton-boxed packages. The packaging waste has been recently replaced with the manufacturers' 'own package' disclaimer. To a great extent, the initiative minimised the packaging cost and resultant landfills. Fig 2. Amazon's disclaimed lean packaging (Authors' capture) 2.0 Objectives of the study: 2.1 The paper will analyse and study the role of reverse vending machines(RVMs) in minimising plastic waste. 2.2 The paper will outline practices used by Amazon in packaging waste reduction 3.0 Expected Study Methodology: The study will comprise mixed methodologies. 3.1 Qualitative study - Case Studies: Coca-Cola has set up waste collection points to recycle pet and glass bottles. In India, their waste collection methodology is crafted so consumers can rationally discard the waste using their collection points. This has been simplified by introducing reverse vending machines (RVM) in educational institutes with high consumption patterns. 3.2 Quantitative study- Survey/questionnaire: Data will be gathered through surveys and interviews with customers and end users, and the data will be analysed using analytical techniques to ensure validity and reliability. This study will examine the packaging waste from last-minute purchases and additional packages created by quick commerce operators like Blinkit, Zepto, Swiggy Instamart, Dunzo and Big Basket. The brands are creating more saleability and marketability for their brand, yet they are the emerging contributors to the additional packaging waste. Though these companies have redesigned their delivery packages to paper bags (replacing plastic), they seem to fuel the unplanned packaging cost in the ecosystem. 4.0 Research Implications: The study will analyse the problems and pitfalls in our current waste management system. It will address the stakeholders' concerns about adopting sustainable recycling practices. The study will have the following implications. 4.1 Monetary Implications: The companies have been actively minimising manufacturing costs by reducing packaging costs. Amazon was able to achieve it through lean packaging. Coco-Cola reduced heirs by collecting the used plastic containers through the RVMs. 4.2 Social Implications: The environmental and social implications will exhibit society's problems and how the MNCs' role in lean waste management can ultimately lead to waste minimisation. 4.3 Technological Implications: Technology plays a significant role in RVMs' success; the study will also focus on its achievements and challenges through the lens of technology 5.0 Findings and Discussion : The paper will analyse the findings and outline the process of minimising. It will also conclude with suggestions that can ultimately result in zero waste in the production and consumption process by 2050. The impact of technology and artificial intelligence would be instrumental in lean management, which would be easily derived from the study. 6.0 Originality/value : The paper will add value by summarising the essential findings and implications for industry and academia. It will recommend future

research and practical strategies for companies to enhance their sustainability practices through behaviour modelling using ADKAR(Angtyan, H. (2019).

1064

<table>
<tr><td>Submission Number: 1064</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: Study of Impact Investment</td></tr>
<tr><td colspan="2">Authors: Swati Mulani and Dr. Vidhisha Vyas</td></tr>
<tr><td colspan="2">Abstract: The research investigates the dynamics of impact investment in our developing nation, focusing on the motivations and hurdles surrounding its adoption, employing the Behavioural Reasoning Theory (BRT) as a guiding framework. Through a mixed-method approach combining qualitative (thematic analysis) and quantitative (structural equation modelling) methodologies, the study aims to elucidate the factors influencing stakeholders' decisions regarding impact investment. Thematic analysis uncovers both drivers ("reason for") and barriers ("reason against") perceived by stakeholders. These insights are then integrated into a questionnaire survey, yielding 33 usable responses for testing hypothesized relationships. Key findings indicate that personal and social values significantly influence stakeholders' attitudes and intentions toward impact investment. Moreover, the study highlights the moderating effect of domain-specific innovativeness on these associations. Adapting these findings to the realm of impact investment, stakeholders can leverage insights into motivations and barriers to enhance the effectiveness of initiatives aimed at promoting impactful investments in developing nations. By aligning investment strategies with identified motivators and addressing barriers, impact investors can play a pivotal role in driving positive social change and sustainable development. This approach not only contributes to addressing pressing social and environmental challenges but also underscores a commitment to creating lasting impact through innovative investment solutions.</td></tr>
</table>

1067

<table>
<tr><td>Submission Number: 1067</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: On the Relationship between ESG and Default Risk.</td></tr>
<tr><td colspan="2">Authors: Rajat Rakshit and Dr. Preeti Roy</td></tr>
<tr><td colspan="2">Abstract: The following research paper investigates the relationship between Environmental, Social, and Governance (ESG) disclosure by the Indian companies & their associated default risk. Taking the sample from the National Stock Exchange (NSE) listed companies that are contributing towards environmental sustainability, the research work attempts to examine if ESG disclosure by the companies aligns with Merton's distance-to-default or not. In other words, based on the analysis, the research suggests that the companies that disclose more ESG-related information have a lower risk of default than the firms that disclose less. Among the different types of risks, we have taken credit risk into account for our research work, thereby focusing on the creditor’s perspective. The outcomes of the research may be useful for all the stakeholders, including the shareholders as well as the bondholders, to consider the firm's ESG disclosure parallelly with the chances of default on credit before making their investment decisions. The results have been inferred by testing various models of panel regression & then analysing the most significant models.</td></tr>
</table>

1092

<table>
<tr><td>Submission Number: 1092</td><td>Track: IRCC-2024</td></tr>
<tr><td colspan="2">Paper Title: Impactful Company Secretaries Insights from Indian Public Listed Companies</td></tr>
<tr><td colspan="2">Authors: Biju Varkkey, Virangi Shah, Varsha Kandala and Jaseena Mol</td></tr>
<tr><td colspan="2">Abstract: In public listed companies, Company Secretaries (CS) are designated KMPs (Key Management Personnel) who hold high levels of responsibility and accountability in listed companies. With increased focus on corporate governance, much attention is given to this role holder who works closely with the board of directors. While the legal roles and responsibilities of CS are defined by the Companie’s Act 2013 and other regulators, anecdotal evidence indicates that the personal agency of the CS does contribute to distinct impact making in the organisation. Global attention around regulatory disclosures pertaining to Environmental, Social, and Governance (ESG) have lately amplified, with India being no exception (Z. Zhang & Zhang, 2024). For instance, Securities and Exchange Board of India (SEBI) mandates Business Responsibility and</td></tr>
</table>

Sustainability Reporting (BRSR) for the top 1000 listed entities (by market capitalization). With Indian public listed companies gearing up focus on ESG initiatives and reporting, the role of CS is emerging to encompass newer responsibilities, requiring them to redefine roles and interaction patterns A preliminary literature review indicates gap in research examining the role of CS in shaping the ESG agenda within public listed companies. While there is extant literature on ESG practices and corporate governance (Krueger et al., n.d.; Wang et al., 2023; C. Zhang & Xie, 2024), the unique contributions made by CS in this context remain unexplored. This study aims to address this gap by investigating the role expansion, role conflicts, and practices adopted by CS within the ESG domain to enhance their personal and professional legitimacy in the organisation

1134

Submission Number: **1134**	Track: **IRCC-2024**
Paper Title: Navigating the Green Labyrinth: A Framework for Integrating AI and Digital Sustainability	
Authors: Sachin Choubey	
Abstract: The convergence of digital sustainability and artificial intelligence (AI) presents a fascinating landscape for workplace transformation. This paper explores how digital sustainability can reframe our understanding of AI and its augmentation within the workplace, particularly during COVID-19's disruptive impact. Practical strategies for integrating AI are crucial to building resilient organisations. We delve into the role of critical success factors (CSFs) in implementing AI augmentation, aiming to enhance work quality and navigate the challenges and opportunities presented by this confluence. Eleven propositions are formulated through a narrative review of existing research, providing a framework for integrating AI with a lens towards digital sustainability. This paper provides valuable insights for organisations seeking to unlock the full potential of AI while embracing a greener future of work.	

1140

Submission Number: **1140**	Track: **IRCC-2024**
Paper Title: Board interlocks and technological knowledge transfer	
Authors: Shikhar Bhardwaj	
Abstract: In this paper we explore the role of board interlocks as a mechanism for technological knowledge transfer. Knowledge is a key organizational resource, and firms often need to build on knowledge residing outside firm boundaries to achieve and sustain competitive advantage. Firms engage in an interorganizational tie formation in the form of a board interlock with other firms when there is knowledge dependence (Howard, Withers and Tihanyi; 2017). Thus, while we know the antecedents to formation of director interlocks, the outcome of such tie formation is neglected in previous research. Board interlocks happen when an individual linked to one company serves on the board of another. Many studies have examined the relationship between board interlocks and firm-level results, like adopting governance practices (Davis and Greve, 1997) and implementing strategies (Tuschke, Sanders, and Hernandez, 2014). These studies show that board interlocks, like other connections between organizations, offer an informational advantage that helps firms access crucial external knowledge for technological exploration (Ahuja et al., 2008; Li, 2021). Thus, prior work recognizes that interlocks formed by board of directors act as conduits of information between firms and can serve as means of knowledge transfer (Shropshire, 2010). We build on the work of Howard et al. (2017) to examine the consequences of when board interlocks are formed to manage knowledge dependence. Using the resource dependence theory, Howard et al. (2017) find that a focal firm is more likely to form an interlock with a firm whose innovations are closely aligned with the focal firm's core technology. We examine the consequences of director interlocks formed to manage resource dependence and argue that technological knowledge transfer from the interlocked firm to focal firm is more likely when the technological relatedness between the focal firm and interlocked firm is higher. Furthermore, we examine the firm-level and interlock-level characteristics are likely to influence the process of knowledge transfer. Using arguments from the absorptive capacity perspective Cohen and Levinthal, 1990; Zahra and George, 2002), we argue the technological focus of the focal firm will moderate the knowledge transfer owing to its ability to assimilate and apply knowledge from the interlocked firm. At the interlock-level, we argue that interlocks formed by focal firm CEOs will be most effective in ensuring knowledge transfer compared to those by other directors of the focal firm. Given that CEOs are more likely to have a deeper understanding the technological requirements and the operations of the firm, along with the power to allocate resources, we argue that the process of knowledge transfer to focal firm will be strengthened when director interlock is formed by the focal firm's CEO.	

Submission Number: **1158**	Track: **IRCC-2024**

Paper Title: A case study on Climate Risk Assessment and Management in Indian Financial Institutions

Authors: Manish Ranjan

Abstract: A case study on Climate Risk Assessment and Management in Indian Financial Institutions 1. Executive Summary This case study delves into how Indian financial institutions are implementing climate risk assessment and management in line, with the Reserve Bank of India (RBI) Draft Disclosure Framework on Climate related Financial Risks for 2024. It discusses the hurdles, strategies for mitigation and effects on stakeholders all while incorporating climate risk management practices. 2. Introduction Given the challenges that climate change presents to the financial sector Indian financial institutions are tasked with navigating these risks while adhering to new regulatory standards. This study advocates for an approach that integrates climate considerations into existing risk frameworks stressing the importance of both adherence and adopting best practices in managing climate risks. 3. Regulatory Context: The RBI's Draft Disclosure Framework applies to: All Scheduled Commercial Banks (excluding Local Area Banks, Payments Banks, and Regional Rural Banks). All Tier-IV Primary (Urban) Co-operative Banks (UCBs). All All-India Financial Institutions. All Top and Upper Layer Non-Banking Financial Companies (NBFCs) The framework is structured around four thematic pillars: Governance, Strategy, Risk Management, and Metrics and Targets. 4. Understanding, Key Challenges and Mitigation Strategies 4.1 Governance Structure Implementation Challenge: Establishing a robust governance structure for climate-related issues, including board oversight and management roles. Mitigation Strategies: To define clear responsibilities for climate-related issues in board and management mandates. To develop competencies through targeted training programs. Implementation of regular reporting processes on climate-related issues to the board. 4.2 Comprehensive Risk Identification and Assessment Risk Factor Identification. Comprehensive Risk Mapping A crucial first step in climate risk assessment is the identification of relevant risk factors across various domains: Credit Risk: To assess the impact of climate-related drivers on credit risk profiles, including potential changes in borrower creditworthiness due to physical or transition risks. Market Risk: To analyse how climate factors may influence market risk positions, including potential asset price volatility and valuation adjustments. Liquidity Risk: Evaluation of the effects of climate-related events on liquidity profiles, such as increased credit line drawdowns or accelerated deposit withdrawals. Operational Risk: To Identify potential disruptions to operations due to extreme weather events or regulatory changes. Integrated Risk Assessment In order to ensure a holistic view of climate-related risks, financial institutions must develop methodologies that: To incorporate both quantitative and qualitative assessments. Need to consider interconnections between different risk types. To assess short-term, medium-term, and long-term impacts. To account for both direct and indirect effects of climate change Challenge: Identifying and assessing climate-related risks across various domains. Mitigation Strategies: Need to develop methodologies for assessing climate impact on credit, market, liquidity, and operational risks. To implement integrated risk assessment approaches that consider interconnections between risk types. To assess short-term, medium-term, and long-term impacts of climate risks. 4.3 Strategy Development and Scenario Analysis: Scenario Development We need to create a robust scenario analysis framework is essential for understanding potential climate-related outcomes and their financial implications. Key considerations include: Need to align with scientific climate transition pathways (e.g., IPCC, NGFS) To incorporate national and international climate policies (e.g., Nationally Determined Contributions) To Develop of both physical risk scenarios (e.g., increased frequency of extreme weather events) and transition risk scenarios (e.g., policy changes, technological advancements) To consider of multiple time horizons to capture both short-term shocks and long-term trends. Stress Testing Capabilities Advanced stress testing methodologies should be employed to assess the resilience of financial institutions under various climate scenarios. This includes: Top-down and bottom-up approaches to measure climate risk. Static and dynamic balance sheet analyses. Integration with existing stress testing frameworks. Capability to perform sensitivity analyses to understand model uncertainties Challenge: Developing climate-resilient strategies and conducting complex scenario analyses. Mitigation Strategies: Align scenario analysis with scientific climate transition pathways and India's Nationally Determined Contribution. To develop both physical and transition risk scenarios with the use of technology. Integrate climate considerations into strategic planning processes. 4.4 Data Collection and Management Challenge: Gathering and managing comprehensive data for climate risk assessment. Mitigation Strategies: Invest in geospatial data integration for accurate physical risk assessment. Implement robust data governance and quality assurance processes. Develop centralized climate risk data repositories. 4.5 Impact Assessment on Credit Risk Metrics Challenge: Incorporating climate risks into credit risk models and portfolio analysis. Mitigation Strategies: Develop methodologies to adjust PD and LGD based on climate scenarios. Conduct sector-specific vulnerability assessments and geographical concentration analysis. Perform stress testing of capital adequacy under severe climate scenarios. 4.6 Metrics and Targets Development Challenge: Establishing and disclosing appropriate climate-related metrics and targets. Mitigation Strategies: Develop capabilities for quantitative reporting of financed emissions (Scope 1, 2, and 3). Establish science-based targets for portfolio decarbonization. Implement systems to track progress against targets. 4.7 Model Integration and Uncertainty Management Challenge: Integrating climate risk models into existing risk frameworks and managing inherent uncertainties. Mitigation Strategies: Incorporate Integrated Assessment Models (IAMs) and energy transition models. Develop in-house models tailored to the institution's specific portfolio. Utilize ensemble modelling approaches to manage uncertainty. Conduct regular back-testing and model validation. 4.8 Disclosure and Reporting Challenge: Meeting comprehensive disclosure requirements across all four thematic areas. Mitigation Strategies: Develop robust internal reporting frameworks aligned with RBI's requirements. Implement systems for tracking and reporting financed emissions by sector and asset class. Establish processes for regular review and validation of disclosures by the Board or a Board Committee. 5. Tech Led consulting support to overcome challenges: Leveraging latest Technology can be instrumental in enabling financial institutions to comply with the RBI's climate-related financial risk disclosure framework. 6. Conclusion In conclusion the effectiveness of implementing climate risk assessment and management hinges not, on meeting regulations but on nurturing a culture of climate consciousness across the organization.

1188

Submission Number: **1188**	Track: **IRCC-2024**

Paper Title: Connecting Through Anthropomorphism: How Human-Like Messages Enhance Empathy, Warmth, and Authenticity in Green Product Purchases with Nature Connectedness as a Moderator

Authors: Pooja Pooja, Vaishali Pandey and Vibhuti Tripathi

Abstract: Introduction Businesses have embraced green innovation techniques in response to the growing environmental concerns they face, and by doing so, they have gained new competitive advantages through a win-win strategy. The idea of "green marketing" was born out of this trend (Tseng & Hung, 2013). As a result of numerous crises compelling consumers to focus more on environmental preservation, product safety, and other features, green consumption has emerged as a new consumer trend (Maniatis, 2016). Although consumers are open to changing their consumption habits, their motivation to purchase green products is impeded by insufficient knowledge about the products' environmental benefits and skepticism about the authenticity of company claims (Prakash, 2002). As a result, encouraging green consumption among consumers has emerged as a key research priority, and increasing consumers' willingness to buy green products has become a topic of discussion among many scholars. A key component of the effectiveness of green product marketing is marketing communication and using anthropomorphism for this can lead to a positive impact on the green purchase intention of green products (Chen et al., 2017). Anthropomorphism involves assigning non-human entities human-like traits, intentions, and behaviors (Mota-Rojas et al., 2021). The common anthropomorphic implementation tactics in the context of green behaviour outlined by previous researches includes product design (Tong et al., 2020) and verbal communication (Touré-Tillery & McGill, 2015). Consumers having a strong desire for effectance or social connection are more motivated to engage in conservation behavior and respond more positively to anthropomorphic appeals (Tam, 2015). Anthropomorphism is inherently linked to human sociocognitive development (Epley et al., 2007). Empathic emotion is likely to arise when people encounter an object with human-like qualities (i.e., anthropomorphism) because these qualities suggest an ability to feel (Ketron & Naletelich, 2019). It has been shown that anthropomorphizing nature enhances individuals' sense of connection to it, fostering a deep natural empathy that boosts conservation behaviour (Tam, 2013). Therefore, this study proposes that anthropomorphic green message can induce the sense of empathy in consumers towards the green product which will further lead to perceived empathy and perceived authenticity. Warmth perceptions are likely to arise when a brand is depicted with human-like qualities, as these suggest that the brand has the capacity to feel (Zhou et al., 2019). Also, anthropomorphized green messages create authenticity by making brands more relatable and emotionally engaging, fostering social connections, reinforcing consistent messaging, and enhancing trustworthiness among consumers. The study also examines the moderating role of connectedness to nature on relationship between anthropomorphic green message and sense of empathy. Connectedness to nature refers to the relationship and interdependence between humans and the natural environment (Schultz, 2002). Therefore, this study suggests that the greater a consumer's connection to nature, the stronger their sense of empathy will be towards anthropomorphic green messages. Research Questions: 1. How do anthropomorphic messages influence the sense of empathy in consumers? 2. How does empathy generated through anthropomorphic messages impact the perceived warmth and authenticity of green message? 3. How does the connectedness to nature moderate the relationship between anthropomorphic green message and the sense of empathy in consumers Research Objectives: The aim of the study is to investigate how anthropomorphic messaging influences consumer empathy, perceived warmth, and perceived authenticity, and how these factors collectively impact the willingness to purchase green products, with a particular focus on the moderating role of connectedness to nature. Particularly the study aims: 1. To examine the effect of anthropomorphic green messaging on consumers' sense of empathy towards green products. 2. To analyze the impact of empathy on perceived warmth and perceived authenticity of green products. 3. To evaluate the influence of perceived warmth and perceived authenticity on consumers' willingness to purchase green products. 4. To investigate the moderating role of connectedness to nature in the relationship between anthropomorphic green messages and consumer responses. Research Methodology: This study adopts an empirical approach using a between-subjects experimental design to explore the impact of anthropomorphic message framing on customer empathy, perceived warmth, and perceived authenticity, and how these factors collectively influence consumers' willingness to purchase green products, with an emphasis the moderating role of connectedness to nature. Employing a quantitative methodology, data will be gathered through a structured questionnaire, incorporating validated scales from existing literature to measure empathy, perceived warmth, perceived authenticity, willingness to purchase green products, and connectedness to nature. Convenience sampling will be used to recruit participants, who will be randomly assigned to conditions featuring either an anthropomorphized message or a non-anthropomorphized message. The data will be analyzed using IBM SPSS and MS Excel, and Structural Equation Modeling (SEM) will be conducted using Smart PLS 4 to test the hypothesized relationships and moderating effects. Data Analysis and Results: The study is still in its data analysis phase. Implications of the Study: Theoretical Implications: First, the study contributes to the body of knowledge on anthropomorphism by demonstrating its influence on consumer emotions, particularly empathy, and how these emotions translate into perceptions of warmth and authenticity. Secondly, the investigation of connectedness to nature as a moderating variable adds depth to the understanding of how personal traits influence the effectiveness of anthropomorphic messages, offering insights into individual differences in consumer responses to green marketing. Thirdly, this research integrates theory of anthropomorphism and green marketing, illustrating how anthropomorphic messaging can be an effective strategy for enhancing the appeal of environmentally friendly products. Practical Implications:First, companies can significantly improve their green marketing campaigns by incorporating anthropomorphic elements into their messages. Secondly, Marketers can better tailor their advertising efforts by segmenting their audience based on their level of connectedness to nature. Anthropomorphic messages may be particularly effective for consumers with a high sense of connectedness to nature, allowing for more personalized and impactful marketing strategies. Thirdly, Brands can leverage anthropomorphic characters or narratives in their product design and packaging to create a more relatable and emotionally engaging brand image. This can foster a deeper emotional connection with consumers, leading to higher brand loyalty and increased sales of green products.

1198

Submission Number: **1198**	Track: **IRCC-2024**

Paper Title: Assessing the significance of relationship between ESG factors and financial performance on energy intensive companies in India

Authors: Digantika Ghosh and Dr. Shruti Sharma Rana

Abstract: 1. Introduction: Environment, Social & Governance (ESG) performance is increasingly becoming important to investors for making responsible investment decisions across all industrial sectors. Energy Sector is no exception. The Indian power sector is one of the most diversified in the world, considering it generates power from both conventional and non-conventional sources. According to the Central Electricity Authority (CEA), India will need to build 817 GW of generation capacity by 2030 and to keep up with our COP26 commitment 500 GW of this will have to come from non-fossil fuel sources. Oil & Gas sector is one of the most sensitive industries that needs considerable efforts to ensure disclosure on ESG information as required by investors. However, some ESG issues like practices on climate change goes beyond ESG ratings and needs deeper qualitative evaluation. Various theories are present which provides the justification for voluntary reporting by companies such as stakeholders theory, legitimacy theory, resource-based theory etc. The company's reporting on material topics is relevant to critical stakeholders only and is an instrument in either stakeholder theory. the study indicates that materiality analysis can strategically be misused to define report content without considering the interests of legitimized stakeholder groups and thus, does not improve the reports to those groups. Companies should provide a detailed description of their materiality analysis if stakeholders are their primary target. Studies indicate that materiality analysis can strategically be misused to define report content without considering the interests of legitimized stakeholder groups and thus, does not improve the reports to those groups. 2. Material and methods: Research Method to Assess ESG Disclosure of Material IssuesAs a part of the research objective content analysis of Integrated Annual Report/Sustainability Report of companies listed on the Indian Stock Exchange and a part of Energy Sector will be carried out. Furthermore, in line with a similar study, this study will use two sample selection criteria, first, companies that prepare sustainability reports for the period 2018- 2022; second, the company conducts a materiality analysis and reports this information in the sustainability report. For this reason, all reports will be screened using specific keywords (ESG topics, materiality, materiality analysis) and map their materiality disclosure to ESG Rating performance (Refinitiv). Based on sample review of top 1000 NSE listed companies total 58 Energy sector companies were identified. Data Points for Measurement: Correlation analysis and Multiple regression analysis on panel data would be performed to analyze the relationship between ESG rating and Firm value. Correlation Analysis can be

used to see if there is any connection between the ESG Rating and factors like Tobin's Q, ROA and ROE correlation tool is used to determine whether two data sets move in tandem, i.e., whether large values in one set are positively correlated with large values in the other, whether small values in one set are negatively correlated with large values in the other, or whether values in both sets are unrelated (correlation near zero). Profitability is gauged by both Return on Assets (ROA) and Return on Equity (ROE.); leverage using Debt to Equity Ratio (DER); and company size using total assets. ROA defines how effectively a company uses its assets to make a profit. ROE is a value that indicates how efficiently the company manages the resources invested by its investors. DER is a ratio that compares the company's debt with shareholder equity. The higher the DER means the company has higher debt than its equity. This condition is considered less good for the company. Multiple Regression Analysis: The strength of the association between the ESG Rating and the independent factors is assessed using regression analysis. Initially, an ADF unit root test is used to determine whether the series is stationary. The Hausman Test (test for model misspecification) can be used to discover endogenous regressors in a regression model (predictor variables). The test evaluates the consistency of an estimate with respect to another, less accurate estimator that is previously known to be consistent. It helps assess how well a statistical model fits the data. 3. Results and conclusion This research has the following contributions: the first is to provide an overview of stakeholder and legitimacy theory and the differences in the company's materiality analysis process evident through its ESG disclosure. Furthermore, this study will identify the relationship between the company's financial characteristics as measured by profitability (ROA and ROE).

1202

Submission Number: **1202**	Track: **IRCC-2024**
Paper Title: Are Developing Country Firms Facing a Downward Bias in ESG Scores?	
Authors: Jairaj Gupta, R. Shruti and Xia Li	
Abstract: Policymakers in emerging economies are increasingly concerned that global ESG scoring firms based in developed countries are 'unfairly punishing' their companies by assigning lower scores compared to those in developed countries. This study investigates and provides empirical evidence supporting this concern. Using panel regression analysis on a comprehensive cross-country sample of 7,904 listed firms from 2002 to 2022 across 50 countries, we find that corporate ESG scores in developing economies are significantly lower than those in developed economies. Further analysis indicates that this disparity is linked to institutional bias and measurement issues within ESG scoring agencies, stemming from information asymmetry. Our empirical evidence also suggests that ESG scoring agencies can mitigate these information problems by incorporating analyst coverage and experience into their algorithms. This study, therefore, contributes to the ongoing debate on the subjectivity of the global rating industry by demonstrating that the biases affecting the credibility of corporate credit and corporate governance ratings also extend to corporate ESG scores.	

1216

Submission Number: **1216**	Track: **IRCC-2024**
Paper Title: Steering green initiatives: role of environmental management teams and board attributes	
Authors: Vidya Mahadevan and Sowmya Subramaniam	
Abstract: This study investigates the role of specialized environment management teams and board attributes, such as board independence and board gender diversity, in driving the firm's green initiatives (GI). The study uses listed US firms for the period 2015-2022. The results suggest specialized environment management teams are more inclined towards implementing environmental protection and resource efficiency initiatives, ensuring that firms consistently work towards reducing their environmental impact. The results also suggest that an independent and gender-diverse board enhances monitoring and resource-provisioning roles and drives this socially responsible behavior. The results are robust to other green initiatives proxies across all sub-samples, even after addressing potential endogeneity issues. The study supports the upper echelon and gender socialization and ethicality theories, and legitimacy theory. It provides evidence that the environment management teams, and board attributes are substantive governance mechanisms to pursue green initiatives effectively. Green initiatives offer promising prospects for businesses to reduce their carbon footprint successfully. Understanding the drivers of these initiatives is crucial for assisting companies and policymakers in managing environmental concerns and making informed policy decisions, thereby efficiently assisting them in achieving national and international environment-related objectives.	

1228

Submission Number: **1228**	Track: **IRCC-2024**

Paper Title: Consequences of Mandatory Environmental Social and Governance (ESG) Reporting Policy on ESG Disclosure Quality

Authors: Muhammad Sani Khamisu and Ratna Achuta Paluri

Abstract: Environmental, social, and governance (ESG) information disclosure requirements have gained vast attention globally. Stock exchanges in many countries like the United Kingdom, Japan, India, and several other European countries have already set mandatory ESG disclosure in place. This gradual transformation from voluntary to mandatory stimulates other nations to adopt mandatory disclosure policies for sustainable development. Consequently, stakeholders are concerned about ESG issues and how firms respond to them. Nowadays, investors rely on ESG information before deciding to invest in companies. The reliance on stakeholders&#39; non-financial disclosures to recognize sustainable companies has led to an increasing supply of ESG reports. Despite the growing concern, other regulatory authorities are facing the dilemma as to whether to make ESG disclosure mandatory or maintain the existing voluntary standards. Countries like the United States are not willing to adopt the mandatory disclosure policy. Therefore, it could be deduced that the dedication to implementing mandatory ESG disclosure seems to vary across boundaries. This can be attributable to the major assertions that mandatory ESG disclosure is likely to bring about unintended consequences. It might increase the costs of dealings across the board or devalue the gravity of any company-specific or material industry-specific essential disclosures. Mandatory disclosure can also result in increased ESG-management costs as some corporations may likely disclose poor ESG information to their stakeholders just to comply with disclosure directives.

IIMA

विद्याविनियोगाद्विकासः

IMRC 2024

India Management Research Conference

IIM Ahmedabad

TRACK 09: LEADERSHIP RESEARCH & PRACTICE IN THE CONTEXT OF CHANGES IN THE WORLD OF WORK

18

Submission Number: **18**	Track: **ADCLOD**
Paper Title: Leader Resilience in the Digital Era – A Job Demand-Resource Perspective	
Authors: Laveena D, Sumi Jha and Nikhil K Mehta	
Abstract: Introduction The ongoing uncertain era of disruptions (Dubey et al., 2023) changing competitive and consumer trends (Wang et al., 2023) faced by organizations underscores need for the present research on leader resilience. Moreover, studies focusing on resilience in the leadership context are scarce (Förster & Duchek, 2017). And in this context, the present research applied the job-demands and resources model offering a wide aspect understanding of how resilience is developed within the leaders influenced by the organizational and individual factors, following the suggestions by Meneghel et al., (2016) to focus research at the relation between job demands, resources and resilience development and Guillén et al., (2021) of providing a deeper understanding of what it takes to develop and maintain resilience in an organizational workplace Methodology The present research adopts an interpretative phenomenological approach (IPA), a qualitative approach used for providing a detailed investigation of the person's lived experiences, participants' view about that experience and the meaning of that experience (Smith, 2011). For the present study 16 team leaders, agreed to be a part of this study. Sampling and Data Collection Leaders from a range of industries, from various practise locations and types, were sought out using a combination of purposive, snowball and convenience sampling techniques (Gregory et al., 2020). We conducted in-depth interviews using a semi-structured questionnaire to gather primary data regarding the factors which influence resilience. Data Analysis Participants were primarily asked the following promoting questions: 1.What factors within you drives you to be Resilient? 2.How does organizations help in developing Resilience? Findings Based on the analysis of the interviews; three key themes have emerged: 1. "Job Resources" 2."Personal Resources" 3."Job Demands" Job Demands-Resources and Resilience Model Theme 1: Job Resources The four sub-themes that appeared which are identified as the job resources influencing leader resilience are HRM Practices, Job Control, Empowerment and Perceived Organizational Support Theme 2: Personal Resources The sub-themes that appeared which are identified as the personal resources influencing leader resilience are Personality Factors (Emotional Intelligence & Optimism). Theme 3: Job Demands The sub-themes that appeared which are identified as the job demand influencing leader resilience are Techno-stress (Techno-complexity, Techno-insecurity & Techno-uncertainty). Discussion To classify the antecedents of leader resilience, as recommended by Bakker and Demerouti, (2017), we adopted the job demand resource model. It is remarkable that while previous studies have exhibited that LMX leadership (Gutermann et al., 2017), servant leadership (Rabiul et al., 2022) and transformational leadership (Hawkes et al., 2017), and are associated to the JD-R theory, it is recommended by Gottfredson et al., (2020) to study other leadership concepts in association with the JD-R model. Additionally, research has examined various levels of workplace resilience based on the job-demand resource models, for instance team resilience (Brykman & King, 2021), employee resilience (Maley et al., 2024) and organizational resilience (Njaramba et al., 2023). Referring to the research articles we have cited, limited research has examined leader resilience with respect to the job-demand resource theory. Therefore, as a contribution to the literature and in response to the recommendation by Schaufeli, (2015) that leadership should be studied in context of job demand and resources model, our study's model provides an opportunity for scholars to examine empirically the relationship between job demands, resources, and leader resilience in the future.	

66

Submission Number: **66**	Track: **ADCLOD**

Paper Title: The Relationship between Feedback Frequency, Task Performance, and Arousal Levels: A Study Using Electrodermal Activity

Authors: Mitali Saxena and Venkat Ganuthula

Abstract: Feedback is an indispensable element of progress and improvement, contributing significantly to the development of individuals, professionals, students, and organizations. It serves as an information source for the recipient to determine the next course of action to attain the desired level of performance. This has raised the question of how often feedback should be given to achieve optimal task performance. Therefore, the primary objective of this study is to ascertain the optimum frequency of feedback to achieve optimal performance outcomes in cognitive tasks. Further, this study aims to understand the emotional state of the feedback receiver while performing the task using physiological arousal measured through Electrodermal Activity (EDA) and examine how such arousal shapes the relationship between feedback frequency and task performance. This study offers a more profound comprehension of individuals' emotional responses when obtaining frequent, moderate, or no feedback. We performed a laboratory-based between-subjects experiment on 99 university students to achieve the above objectives. The experiment measured cognitive task performance using a mental arithmetic test with basic arithmetic operations while feedback frequency was manipulated. We employed E4 Empatica to monitor participants' physiological arousal using EDA to assess their real-time emotional state during task performance. Feedback information contained knowledge of results (KR). To test the impact of feedback frequency on task performance and arousal levels, we used a one-way analysis of variance. Results suggested that feedback frequency significantly influences the participants' task performance. We used Bonferroni post-hoc analysis to determine the pair-wise differences across the three feedback conditions. The optimal performance was achieved with a moderate feedback frequency. The same was also achieved graphically. Further, there was no significant difference in the mean arousal levels across the three conditions of feedback frequency. Using regression analysis, we tested whether the arousal levels moderated the relationship between feedback frequency and task performance. The regression model included the interaction terms for arousal and feedback frequency to assess moderation. Our results revealed significant moderation effects of arousal. The findings indicating optimal cognitive task performance under moderate feedback frequency support the study of Lam et al. (2011). Further, the arousal levels were maximum when the optimal performance was achieved. This supports the Yerkes & Dodson Law (1908), which suggests the need for optimal arousal to achieve optimal performance. This work significantly advances our understanding of emotions due to feedback frequency during task performance and strategic planning for optimal feedback frequency. Prior research has mainly examined the relationship between feedback frequency and task performance (Mertens et al., 2021; Park et al., 2019; Lam et al., 2011), as well as the association between emotional responses and task performance (Laybourn et al., 2022; Fisher & Noble, 2004). Further, only a few studies employed an unbiased metric to examine participants' emotional reactions while performing tasks (Horvers et al., 2024; Ayres et al., 2021). However, the literature failed to incorporate the interaction among the three variables: feedback frequency, arousal, and task performance. Employing EDA as a quantifier for emotional state caused by feedback frequency while performing a cognitive task surpasses the limitations of prior research. Further, this study significantly contributes to the fields of organization and education. Organisations, educational and training institutions, and schools employ various approaches to discover and nurture potential in the business and academic sectors. Therefore, the findings of this study are crucial for comprehending the emotional condition of individuals and subsequently determining the most effective frequency for providing feedback.

131

Submission Number: **131**	Track: **ADCLOD**

Paper Title: Leadership and Identity Development at the Confluence of Gender, Caste, and Reservation in India

Authors: Dina Banerjee, Alka Sharma and Ashay Kadam

Abstract: Development of leadership identity is crucial when leaders combat organizational challenges. The principle behind this assertion is that "leader" is a positive identity motivating organizational leaders publicly and privately (Ciotti, 2012). However, identity development is complex for Dalit women leaders in India who experience the dual jeopardy of gender and caste relations. Their experiences are further aggravated when they become leaders under the reservation system. This is because attributes of women, Dalits, and individuals under reservation are incongruent with the agentic attributes of leadership roles. In this study, we examine (a) the challenges they face at work, and (b) how their identities develop in the process. Deriving data from in-depth interviews with 91 Dalit women leaders, we analyzed the data qualitatively. Findings suggest that the work of Dalit women leaders is characterized by sexism, casteism, and anti-reservation stigma. Workplace

challenges impact their identities as Dalit women and as leaders. They cope by doing stigma management that improves their leadership identity and helps them earn self-validation as Dalit women leaders.

134

Submission Number: **134**	Track: **ADCLOD**
Paper Title: The Impact of Inclusive Leadership: How Engagement and Inclusive Climate Shape Employee Experience	
Authors: Apoorva Tiwari and Vishakha Kumari	
Abstract: With rising globalization, organizations and communities are becoming increasingly diverse. The present article focuses on the interaction between inclusive leadership and employee experience via climate for inclusion and employee engagement. Inclusive leadership can improve work experiences by fostering a work environment where diversity and inclusion are not merely words, but actual values put into practice. Businesses that place an emphasis on inclusive leadership and the overall employee experience are better able to draw top people, encourage innovation, and experience long-term success. We adopted a quantitative approach to validate this relationship. Findings indicate a significant and positive relationship between the two. The study further revealed that these variables are interconnected and mutually reinforced, further improving job efficiency. These findings might assist businesses in improving productivity and employee well-being in the overall employee experience journey.	

144

Submission Number: **144**	Track: **ADCLOD**
Paper Title: The relationship between Organizational Silence and Organizational Citizenship Behavior: Moderating role of Ethical Leadership	
Authors: Rekhapriyadharshini A, Rajesh Matha and Reeves Wesley	
Abstract: The purpose of this study is to determine the relationship between organizational silence and organizational citizenship behavior and to examine the moderating role of ethical leadership on the relationship between organizational silence and organizational citizenship behavior. Design/methodology/approach – Data were collected using survey method. Questionnaire were sent to faculty members working in private universities and colleges in Chennai and Visakhapatnam (India). The hypotheses and research model were tested using SEM (Structural Equation Modeling). Findings – Results indicate that organizational silence negatively affects organizational citizenship behavior. Ethical leadership does moderate the relationship between organizational silence and organizational citizenship behavior. Originality/Value – Although the relationship between organizational silence and organizational citizenship behavior was examined in previous studies, a very little research has tried studying the influence of ethical leadership on organizational silence nor on the relationship between organizational silence and organizational citizenship behavior. So the present study tries to examine the relationship between organizational silence and organizational citizenship behavior and also the role of ethical leadership between them	

214

Submission Number: 214	Track: **ADCLOD**
Paper Title: Leadership in the Ancient Indian Jain Organizations	
Authors: Alka Jain	
Abstract: Ancient Indian wisdom is highlighted today through two great epics of India-Ramayana and Mahabharata. Like these two great books of the Brahman tradition of ancient India, we also have the treasure of ancient Indian wisdom in the Shramana tradition. Their holy books give us a solid framework for a realistic understanding of human behavior in all fields of life. The scholar has picked up leadership practices of the Leaders of the Jain community. Need for Study: It has been found that there are various types of research done by scholars on the topics like 'Science in Jainism', 'Values in Jainism', and even 'Business Ethics in Jainism'. However, no scholar has worked on the HR component of the business separately while studying leadership practices from Jain literature. Efficient leadership was important in the ancient monk community of the Jains as they had to manage the four sanghas of the Jain population to stay on a disciplined path. Guiding deserving candidates with their leadership skills was the need of that era, hence their leadership practices are worth studying. Leadership is an action, not a position, as people misunderstand it. The myth that conventional views of leadership were	

shallow, may be broken with the help of this research. To understand the right meaning of leadership, A leader is one, who accomplishes a goal common for him and his followers with the help of a required change brought to the internal/external or inner/outer environment. According to Gardner there are quiet leaders and loud leaders. He specifies if one wants to develop as a leader, s/he has to assess him/her professionally, set an attainable goal, engage in a leadership training, interact with his/her network, and hone his/her soft skills.

215

Submission Number: **215** | Track: **ADCLOD**

Paper Title: "My Group wants me to share knowledge, but my leader doesn't": Examining role of behavioural flexibility and unethical pro-organizational behaviour in group creative role identity and knowledge sharing

Authors: Vinit Ghosh

Abstract: The purpose of the present research article is to find the effect of a collectivistic creative identity (group creative role identity -GCRI) on an individual's knowledge sharing (KS). Moreover, the present article examines the role of an individual's need for behavioural flexibility (NBF) as a mediator in the relationship between GCRI and KS. We also examined leader's unethical pro-organizational behaviour (UPB) effect on the relationship between GCRI and KS. Responses were collected through an in-person questionnaire survey. A convenience sampling strategy was adopted to identify teams in SMEs. Sample data is comprised of junior and middle-level employees (N = 252) working in teams (n= 50) across 15 organizations (located in metropolitan cities of India). Findings: It was observed that 1) Group Creative Role Identity is positively associated with individual employee knowledge sharing 2) The employee's need for behavioral flexibility positively mediates group-level CRI effect on knowledge sharing. 3)The perceived leader's negatively moderates the relationship between GCRI and KS such that in presence of a leader's high UPB, GCR and KS shares a weak relationship than in the presence of a low UPB. The group's CRI significantly impacts the team member's KS. The need for group affiliation and group affect may play a significant role. People with identity-based group tends to share knowledge within the team. The partial positive mediation effect of CRI on KS through BF indicates that because of the shared mental model of a creative group identity (CRI), the need for BF is also high within the group facilitating KS in the team. To an extent, leaders unethical pro organizational behaviour will facilitate knowledge sharing in teams where a few employees may feel to get undue advantage from the leader. However, when group CRI is high , high perceived leaders UPB dampens the creativity role identity and KS relationship. In such a case , the collective creative role identity nullifies the interest-driven favour-seeking from the leader for KS.

232

Submission Number: **232** | Track: **ADCLOD**

Paper Title: The examination of Respectful Inclusion as a dimension for reducing discrimination in Social Work practice

Authors: Ragland Gamaliel

Abstract: Culture and diversity are two realities for every social worker, and this is further strengthened by the increasing cultural diversity of the society (Azzopardi & McNeill, 2016). This necessitates cross-cultural competence as a fundamental requirement for the effectiveness and ethicality of social work practice (Azzopardi & McNeill, 2016; Osborn & Karandikar, 2023). Cross-cultural competence enables a social worker to become aware of the cultural diversity and work with sensitivity, respect, and proficiency in a diverse context (Azzopardi & McNeill, 2016). Of the two approaches of cultural deficit approach and cultural relativist approach adopted historically by social work (Azzopardi & McNeill, 2016), the cultural relativist approach is more aligned to a multicultural context (Barn, 2007). Cultural relativism considers all cultures as valid equally and denounces cultural hierarchy (Barn, 2007). This becomes important as social workers are always working with differences regardless of whether they have commonality in terms of their heritage or societal location with clients (Azzopardi & McNeill, 2016). In the context of cultural relativism, the competence of supporting and enhancing diversity by addressing inequity becomes one of the foundational requirements of social workers (Hurley & Taiwo, 2019). This aspect of understanding cultural diversity falls within the multicultural sensitivity approaches, which are focused on understanding cultural barriers and existing differences in societies, respecting individual and societal identities and responding to the oppression by social groups which are dominant in the society (Payne, 2020). Within the multicultural sensitivity approaches,

it is important to be cognizant of discrimination as people experience discrimination because of their differences from the majority culture (Azzopardi & McNeill, 2016). The tendency to segregate people into 'us' and 'them' based on the perception of similarities and differences, subordination of people based on their diverse identity and the experience of discrimination by those who are different within the power hierarchies are realities (Azzopardi & McNeill, 2016) facing social work practice. As social workers work with those who are marginalised experiencing discrimination often, they should focus on developing social inclusion interventions to reduce discrimination (Cedeño, 2023). Discrimination is an important aspect of social exclusion which refers to the "experience of being kept apart from others physically or emotionally" (Cedeño, 2023, p. 333). Social exclusion is the opposite of social inclusion, which is a "process of acceptance where diversity and identity are recognized. It is a state of being acknowledged and a form of social integration and incorporation" (Cedeño, 2023, p. 338). The role of social work profession is to facilitate social inclusion by promoting social change and focusing the practice on human well-being (Cedeño, 2023). Within the inclusion literature, the need for further research has been stressed for respect, referring to the treatment of an individual with appreciation and esteem (Shore et al., 2018). This is because a core element of the inclusive attitude is mutual respect (Sabharwal, 2014) and to have a culture of inclusion, all individuals should be respected (Pless & Maak, 2004). Respect for diversity is a central principle and treating individuals with respect is one of the important domains in social work (Lee, 2022). The literature on inclusion is still under development (Shore et al., 2011) and there are limitations to the research of respect (Clarke, 2011). The respectful inclusion of different local opinions and being committed to understanding the meanings of the diverse traditions of people will help to deal with sensitive issues effectively (Ssewamala & Sperber, 2012). Even though literature shows that studies have been conducted for respect and inclusion separately, there is no evidence of integrated empirical studies on respect and inclusion. There are some references to respectful inclusion, however, there is a dearth of theoretical or empirical studies relating to an integrated construct of respect and inclusion. For example, respectful inclusion is recommended regarding the involvement of male partners in decisions, such as treating male partners with respect and importance in maternity-related decisions (Wright & Geraghty, 2017). It has been identified as one of the features of facilitating learning communities because it accommodates the diversity of perspectives and authentic expressions (Wilson et al., 2004). While there were no definitions, the themes associated with respectful inclusion were related to involvement in decision-making, treating with respect, valuing others, valuing differences, and accommodating differences. In this article, Respectful Inclusion is the presence of respect and inclusion towards others and includes the behaviours of respecting and being inclusive of others. The model proposed by this article consists of four respectful inclusion dimensions based on the combination of respect and inclusion. Disrespectful exclusion is the opposite of respectful inclusion and indicates the absence of respect and inclusion. Respectful exclusion indicates the presence of respect and the absence of inclusion. Conversely, disrespectful inclusion indicates the absence of respect and the presence of inclusion. Social workers are required to develop respectful partnerships with their clients and that is being impacted by their feelings of inadequacy, organisational barriers and dealing with prejudice from their clients (Melendres, 2022). The core element of the inclusive attitude is mutual respect (Sabharwal, 2014) and to have a culture of inclusion, all individuals inside and outside the organisation should be respected (Pless & Maak, 2004). An inclusive workplace culture requires that all subcultures inside the organisation are respected and that each subculture can participate in the organisational culture (Pless & Maak, 2004). For such inclusion to occur, a climate is required where individuals feel that they are respected, and their contributions are valued (Daya, 2014). The increasing cultural diversity has prioritised the importance of cross-cultural competence for the effective functioning of social workers. Cross-cultural competence requires the enactment of respect and inclusion for effective social work practice and the management of discrimination. Literature shows that dimensions of respect and inclusion have been examined separately and an integrated dimension of respectful inclusion has not been examined presenting a gap. This article proposes Respectful Inclusion as a dimension for dealing with discrimination challenges in Social Work practice and will make contributions to theories relating to social inclusion, social exclusion and practice within the social work literature.

237

Submission Number: **237**	Track: **ADCLOD**

Paper Title: Creative Leadership: How Creative Leader Behaviour and Psychological Safety Drive Organizational Performance and Success

Authors: Alipta Dutta and Prof. Asha Bhandarker

Abstract: Creative leadership is increasingly recognized as a crucial determinant of organizational success in today's dynamic and competitive business landscape. This paper synthesizes existing research to examine the impact and implications of creative leadership for organizations. Drawing upon a multidisciplinary literature base encompassing leadership, innovation, organizational behavior, and psychology, we explore the characteristics, behaviors, and strategies associated with creative leadership. Our analysis reveals that creative leaders play a pivotal role in driving innovation, enhancing performance, and fostering resilience within organizations. By inspiring creativity, promoting collaboration, and navigating challenges adeptly, creative leaders create a culture of innovation that propels organizational success. Moreover, creative leadership is characterized by adaptability and a commitment to continuous learning and development. The managerial implications of creative leadership highlight the importance of cultivating a culture of innovation, adaptability, and psychological safety within organizations. Managers are encouraged to invest in leadership development, foster a creative culture, promote collaboration, and embrace change to unlock the full potential of their teams and drive sustained success. Future research should examine the contextual factors that influence the effectiveness of creative leadership, such as organizational size, industry, and cultural context. By advancing our understanding of creative leadership and its impact, this paper synthesizes existing research to examine the impact and implications of creative leadership for organizations. Drawing upon a multidisciplinary literature base encompassing leadership, innovation, organizational behavior, and psychology, we explore the characteristics, behaviors, and strategies associated with creative leadership. Our analysis reveals that creative leaders play a pivotal role in driving innovation, enhancing performance, and fostering Creative leadership emerges as a guiding force for organizations seeking to thrive amidst complexity, uncertainty, and rapid change.

254

Submission Number: **254**	Track: **ADCLOD**

Paper Title: The serially mediating roles of Relational Energy and Harmonious Passion in the relationship between Superior-Expressed Humility and Subordinate Adaptive Performance

Authors: Radhika Chandhok and Dr. Rinki Dahiya

Abstract: Identification of the Research Gap and Research Problem: Navigating the complexities of modern business necessitates organizational agility, operational efficiency and a culture of innovation (Huntsman et al., 2021). Additionally, Kaya and Karatepe (2020) posit that a cornerstone of the quest for competitive advantage lies in fostering a workforce adept at embracing change. It is within this context that the concept of adaptive performance assumes paramount importance, functioning as a key metric for evaluating an individual's capacity to not only survive but thrive in an environment characterized by dynamism and unpredictability. Extant research has extensively explored individual-level determinants of employee adaptability (Huang et al., 2014). However, responding to the call by Nejjari and Aamoum (2020) for further contextualization of adaptive performance antecedents, this study introduces superior-expressed humility as a precursor to adaptive performance. Although, the burgeoning body of research on expressed humility has demonstrably illuminated its positive influence on diverse facets of employee performance, encompassing both task-specific proficiency and broader contextual contributions (Wang et al., 2018; Ding et al., 2020). However, a critical research lacuna persists regarding its ability to cultivate adaptive performance (Zhang et al., 2024), a distinct and essential facet of employee performance, as identified by Allworth and Hesketh (1999). Addressing this critical gap, the current study investigates the understudied influence of superior-expressed humility on employee adaptive performance. Additionally, researchers have emphasised that unravelling the mediating mechanisms holds the potential to untangle the intricate nomological network surrounding expressed humility thereby, revealing its nuanced and multi-faceted influence on individuals and their distinct performance behaviours in the organization (Peng et al., 2023). Thus, explicating the mediating mechanism such as affective and cognitive processes underpinning the association between superior-expressed humility and employee adaptive performance represents a vital avenue for advancing leadership research. Henceforth, through a detailed literature review, the present research has identified two potential mediators, namely, relational energy and harmonious passion at work to illuminate the intricate interplay between superior-expressed humility and employee adaptive performance with the guiding theoretical framework of social information processing theory (SIP) (Salancik & Pfeffer, 1978). Aligned with the SIP theory (Salancik & Pfeffer, 1978), the current research proposes that superior-expressed humility acts as a key driver of subordinate adaptive performance through a sequential mediation process. Herein, increased relational energy, manifested through interpersonal interactions with humble superiors, is hypothesized to play a pivotal role in igniting harmonious passion at work among subordinates. Harmonious passion is defined as a positive motivational force, resulting from an autonomous internalization (Vallerand et al., 2003). Furthermore, individuals driven by harmonious passion at work exhibit a heightened predisposition towards identifying meaning and purpose within their professional endeavours and are therefore, prone to proactively invest their efforts in demonstrating adaptive behaviours. Consequently, the present study proposes a novel serial mediation model wherein relational energy and harmonious passion sequentially mediate the positive relationship between superior-expressed humility and subordinate adaptive performance thereby, shedding light on the underlying affective and cognitive mechanisms. Research Objectives: The current study aims to provide an integrated empirical model that investigates the

intricate dynamics of leaders' expressed humility and its influence on the adaptive performance of employees, with a particular focus on the serially mediating roles of perceived relational energy and harmonious passion, in the Indian SME sector. To ensure the effectuation of the aforementioned scholarly inquiry, the following operationalized objectives have been delineated: 1. To determine the impact of superior-expressed humility on subordinate's adaptive performance. 2.To explore the mediating role of subordinate's perceived relational energy between superior-expressed humility and subordinate's adaptive performance. 3. To comprehend the mediating role of harmonious passion at work between superior-expressed humility and adaptive performance of subordinates. 4.To examine the serially mediating roles of perceived relational energy and harmonious passion at work between superior-expressed humility and adaptive performance of subordinates. Research Methodology: Utilizing the data from 348 vignette based superior-subordinate dyads, the present study aims to investigate the relationship between superior-expressed humility and the adaptive performance of subordinates employed in Indian SMEs. Additionally, SMEs registered and listed on the Udyog Aadhar Portal by the Ministry of MSME, Government of India, and located at hub centres in the National Capital Territory of India were approached for data collection. The validation of the mediation model, particularly the assessment of indirect effects, was performed using Hayes Process Macro. Findings: The findings of the present research indicate that superior-expressed humility and adaptive performance of subordinates are positively related. Further, the findings suggest a partial mediation, with relational energy and harmonious passion serving as serial mediators in this dynamic relationship. Implications: The present study provides several theoretical as well as practical implications. In terms of theoretical contributions, first, it transcends the individual-centric focus of extant research on the antecedents of adaptive performance and adds a crucial contextual factor to the adaptive performance literature. Second, the current research delves into the hitherto under-illuminated domain of relational energy within Indian organizations (Kataria & Kumar, 2020), by unveiling the critical affective mechanism through which superior-expressed humility fosters subordinate adaptive performance. Third, by shedding light on the link between superior-expressed humility and subordinate harmonious passion, this research advances the understanding of how passion can be cultivated within organizational settings. Fourth, emphasizing the sequential mediating roles of relational energy and harmonious passion, the study pioneers the exploration of the affective and cognitive mechanisms linking superior-expressed humility to subordinate adaptive performance within the underexplored context of Indian SMEs, thereby, contributing to the theoretical discourse on expressed humility in Indian organizational contexts. Practically, the results of the current study lend credence to humble leadership's effectiveness within the Indian context, hence warranting significant endorsement for its implementation in Indian organizations.

301

Submission Number: **301**	Track: **ADCLOD**

Paper Title: Unveiling Common and Unconventional Leadership Strategies Amid Uncertainty: An Empirical Study of Indian Tech Startups and Global Corporations

Authors: Eswar Prasad Manapuram and Dr. Truptha Shankar

Abstract: The objective of this research is to understand how Leadership should be redefined to thrive in today's uncertain times. This study aims to analyze how different tenets of Leadership vary at different levels of hierarchy across two dimensions namely Indian Startups and established global organizations. Through an empirical approach, this research also strives to cater to some unique out-of-the-box Leadership strategies to assist budding entrepreneurs and aspiring leaders in corporate companies. Note: The first dimension (Startups) is part of my PhD research, while the second dimension (corporates) was conducted for this conference to gain a comprehensive understanding of the state of leadership in India and worldwide. In January 2024, Mosteanu et al. [1] highlighted that collaborative strategies and partnerships are essential for enhancing resilience and adaptability in times of uncertainty. In May 2024, Joel et al. [2] identified vision setting, innovation, team building, and decision-making as key aspects of entrepreneurial leadership necessary to navigate challenges during uncertain times. 1. What is the most preferred Leadership Style in times of change and uncertainty? 2. What are the common and uncommon strategies for Startups to thrive in times of uncertainty? 3. What are the common and uncommon strategies for Corporations to thrive in times of uncertainty? We developed a Design Thinking-based framework to help startup founders navigate risks during uncertain times. The framework uses a double-diamond model: the first diamond addresses the problem space, and the second focuses on solutions. It involves diverging to list all problems and converging to prioritize them based on customer and business needs. We propose general solutions, refine them with context and common sense, and validate their effectiveness through short feedback cycles. The full paper will include diagrams for detailed explanation. Data collection was conducted across two dimensions - 1. Startup Founders 2. Leaders (Top, Middle, and Lower Management) from established corporate companies across India, USA, UK, Australia, and Canada. Dimension#1: Startups Sample Size: 84 surveys and 16 semi-structured interviews, covering 64 introductory, 28 growth, and 8 matured startups. Using convenient

and snowball sampling, this sector-agnostic study employed mixed methods—quantitative analysis with descriptive statistics, ANOVA, and reliability tests (Cronbach's alpha), and qualitative analysis using grounded theory research to develop theory extensions from founder interviews. Dimension#2: Established Organizations Sample Size: 18. India: 8 USA: 4, UK: 4, Australia: 1, Canada: 1. Method used was convenient sampling. Any sector was welcome. Research methodology was again based on Mixed methods just like in Dimension#1. RESULTS & FINDINGS: Based on the survey and interview outcomes from real-life Startup and established organizations, below findings were derived from this empirical study. 1. 90% of startup founders and 84% of corporate leaders prefer situational leadership, making it the most favoured style across sectors and hierarchy levels. 2. Just as leadership strategies vary by hierarchy in established companies, startup founders should tailor strategies based on their lifecycle stage and sector. 3. Results reveal that the founders and top management leaders employ unconventional strategies to navigate uncertainty, attributing their success to these approaches. 4. After performing a Thematic Analysis on the semi-structured interview content from startup founders and corporate leaders, the following themes which are perceived as strategies can be derived: a. Successful founders and leaders emphasized that money is merely a means to an end, not the end itself. b. Collaboration over Competition: Rather than struggling with red ocean strategies, companies can explore the blue ocean by collaborating on innovative ideas to overcome problems inflicting mankind. c. Tailored project management methodologies are most effective in today's VUCA (Volatile, Uncertain, Complex, Ambiguous) world. Both corporate managers and startup founders prefer customized approaches over a one-size-fits-all solution like Agile, particularly in BANI (Brittle, Anxious, Non-linear, Incomprehensible) conditions. d. 70% of leaders identify a lack of contextual understanding as a primary cause of project failures. f. 75% of leaders consider common sense a crucial yet underrated skill in times of change and uncertainty. g. Unfortunately, 90% of early-stage startups, 85% of growth startups, and 75% of matured startups view Environmental Sustainability (ES) and Corporate Social Responsibility (CSR) as overheads. However, grounded theory research has highlighted a few exceptional cases where successful founders have stressed that ES and CSR initiatives contribute to long-term growth and sustainability for startups. Similarly, 90% of leaders from established corporations agree that these initiatives are crucial success factors for any company. Note: Detailed Analysis of the results of the study will be provided in the full paper. In today's rapidly changing world, where uncertainty is the only constant, it is crucial to analyze both macro and micro environments and seek innovative and unconventional strategies not just to survive but to thrive. The biggest takeaway from this empirical research is that - Unlike the common notion of laying emphasis on revenue generation, focusing on solving problems that benefit people and in-turn the society, plays a key role in attaining sustainable outcomes for both Startups and established companies. Hence, having a vision that is people-centric and pursuing this Northstar relentlessly and more importantly resiliently, emerges as the secret sauce for success for both Startup Founders and Corporate Leaders. It turns out that money is only a by-product of this whole approach. Additionally, giving back to society through ES or CSR initiatives helps startups achieve long-term sustainability, just as it does for corporate giants. Another striking finding from this study is the importance of collaboration over competition. Instead of competing, organizations can join forces, adapt, and align on a common vision to tackle the numerous challenges the world is facing.

352

Submission Number: **352**	Track: **ADCLOD**

Paper Title: Assessing the Indian Banking Work Environment for Creativity: A 4-Step Adaptation Protocol

Authors: Madhura Hate and Satishchandra Kumar

Abstract: In expecting creativity from employees, organisations need to first assess their capability to foster creativity (Amabile, 1996) - a field that remains nascent in India, especially the Indian banking context. The present study adopted the 4-step protocol by Ambuehl and Inauen (2022) to adapt the 'Work Environment for Creativity' scale (Azeem et al., 2019) for the Indian banking sector. Unlike standard adaptation procedures, this protocol includes an additional step of defining the concept within the new context. Thus, the procedure involved 4 steps: (1) conducting a literature survey and qualitative interviews to define the workplace environment for creativity specifically within the Indian banking context, providing a foundational understanding beyond mere translation and item adaptation; (2) performing relevance rating and assessing content validity to ensure the scale's appropriateness; (3) evaluating reliability, as well as convergent and discriminant validity to confirm the scale's robustness; and (4) executing comprehensive testing and analysis to finalize the adaptation. With a Cronbach's alpha of 0.88, the adapted scale is a robust measure and provides a stepping stone for further research into organisational initiatives for tackling the very present challenge of managing and encouraging creativity. Psychometric properties of the adapted measure as well as results from each step in the procedure are discussed in detail.

370

Submission Number: **370**	Track: **ADCLOD**
Paper Title: Evidence-based leadership development for physicians: A qualitative study from India	
Authors: Kamal Gulati	
Abstract: Introduction: Research demonstrates a positive relationship between medical leadership, quality of physicians' professional experiences and improved clinical outcomes. This qualitative research investigates how physicians' experiences of leadership impact the dynamics of professional behaviour change within Indian healthcare. Traditionally, physicians in India often assume leadership roles without any formal training in leadership. This results in significant leadership competency gaps within both the public and private sectors, and contrasts starkly with the several health systems where many hospitals' CEOs are from non-medical backgrounds. India's national health policy 'recognizes that human resource management is critical to health system strengthening and healthcare delivery .... [and] recommends development of leadership skills, strengthening human resource governance in the public health system.' This involves public, private, and non-profit hospitals in urban and rural settings. Methods: We conducted interviews of 30 consultant-level physicians, between May-July 2023. Participants were sampled purposefully to ensure diverse criteria based on (i) an equal gender balance, (ii) recognizing informal and formal leadership roles; (iii) specialty, and (iv) consultant levels. They represented diverse disciplines: clinical (37%), surgical (30%), para-clinical (23%), and hospital administration (10%). Questions addressed importance of leadership development, barriers and enablers for effective leadership, work-life balance, and burnout. Data was analysed using thematic analysis. Results: Our study revealed that a lack of medical leadership development was associated with barriers to physicians driving systemic changes. The interviewees reported a lack of capability and latitude to engage in institutional work. This meant they were constrained in being able to influence or enact organisational change to improve clinical services. Moreover, the lack of institutional and personal resources impacted negatively on their working lives and careers and a perception of insufficient agency to resource and craft their careers arose from inadequate fundamental management and leadership knowledge. Six major themes emerged: (i) pathways to medical leadership, (ii) (de)motivation for leadership, (iii) challenges for physician leaders, (iv) strategies practiced, (v) work-life balance and burn out, and (vi) medical leadership development. Findings revealed that physicians in India rely on personal resources in absence of institutional support. Second, collectively physicians recognise need for formal leadership development despite being equivocal about merits of moving into formal leadership positions. Third, gaps between national and institutional policies were exerting unsustainable burnout. Finally, highlighting the case for comparisons between objective and subjective driving and restraining to illustrate rational and emotional arguments for change. Even senior physicians who had learned effective management skills on the job experienced acute frustrations in not working in a context where medical leadership development is mainstreamed. They were likely to feel that while others assume they have overcome career obstacles, the reality is they have been thrust into positions typically unprepared. Physicians are deprived of continuous professional development opportunities in the management and leadership domain. Moreover, they are surrounded by colleagues who are firefighting and operational rather than strategic. Conclusions: Given the emphasis on strengthening leadership skills in India's national health policy, we recommend integration of leadership development into medical education and service in India. This first-of-its-kind qualitative research from India explores the processes of de/re-professional behaviours amongst physicians following the COVID-19 pandemic, critically appraises physicians' (de)motivations to develop medical leadership capabilities, identifies the non-spread of leadership development in a context of burnout and the absence of work-life balance, and provides an evidence-based model which explains institutional, cognitive and emotional barriers to leadership development.	

372

Submission Number: **372**	Track: **ADCLOD**
Paper Title: Twenty Years of Silence: Shining a Light on Gender Disparities in Academic Medical Leadership in India	
Authors: Kamal Gulati	
Abstract: Introduction-Research has demonstrated disparities in career advancement and retention for women in academic medicine compared to their male counterparts. The underrepresentation of women in this field can hinder medical leadership, innovation and sustainability within health systems. This study aims to fill a research gap by exploring the underrepresentation of women physicians in academic medicine. By doing so, it hopes to provide information that can inform	

evidence-based interventions in healthcare settings and shape policies conducive to fostering gender academic medical leadership in India. The findings of this research have the potential to impact national policies, prompting changes within health system frameworks to enhance women's representation in academic medical leadership across low- and middle-income countries. We collected data between October-December 2023 from annual reports of the hospital for the period 2004 to 2022 available on the official hospital website. Information pertinent to 2023 were obtained from faculty records maintained by the administrative department. The data included the names, numbers, and department categorizations of faculty, as well as their ranks (assistant professor, associate professor, additional professor, and professor). The most senior professor in each department was designated as the head. The hospital comprised 56 departments, which we categorized into three domains: clinical, paraclinical (non-direct clinical services, e.g., laboratories) and surgical. Additionally, the first author also collected information about the gender of faculty in leadership positions such as department heads, chiefs, medical superintendents, deans (academic, research, and examinations) – and the directors during the same period. To support India's ambitions for Nari Shakti (women empowerment) and Viksit Bharat @2047 (developed India @2047), we propose several multilevel recommendations. These integrate previous studies on women in academic medicine with sociocultural sensitivities in a low-income developing country context to mitigate significant gender inequities in academic medicine in India. Evidence-based systems-level changes are required to increase the representation of women in academic medicine, particularly in medical leadership roles in India. Research is, therefore, needed into the root causes of the recruitment, advancement, and retention of women physicians in academic medicine at all career stages. We suggest qualitative and comparative studies on the impact of interventions to overcome persistent gender inequity in academic medicine in India.

382

Submission Number: **382**	Track: **ADCLOD**
Paper Title: The impact of Ethical Leadership on Organization Citizenship Behavior in Indian Private Sector Banks: the mediating role of Happiness at Work	
Authors: Animesh Singh and Dr. Rashi Banerji	
Abstract: Organizational citizenship Behavior (OCB) at the workplace allows private sector banks to foster an optimistic work environment contributing to organizational performance. While ethical leadership has been established as an interpreter of OCB, however, enhancing OCB through employee happiness remains a gap. This paper investigates the impact of ethical leadership (EL) and happiness at work (HAW) on organization citizenship behavior (OCB) in Indian private-sector banks. In this study happiness at work (HAW) is represented by job satisfaction, affective commitment, and work engagement. Furthermore, the paper explores whether HAW mediates the relationship between EL and OCB. The study involved cross-sectional data collection of 468 respondents from 5 major private sector banks in Delhi/NCR. The model of the study was validated by structural equation modeling (SEM). The findings of this study suggest that ethical leaders can motivate employees to exhibit OCB. Managers should focus on ethical leadership and create a positive work environment to promote HAW and motivate employees to voluntarily assume extra responsibilities beyond their assigned roles, enhancing OCB. This study also adds to the existing knowledge of research in leadership by revealing both direct and indirect relationships between EL and OCB through the mediation of HAW. Managers should recognize that ethical leadership fosters an altruistic attitude in employees, promoting HAW and OCB.	

413

Submission Number: 413	Track: **ADCLOD**
Paper Title: Enablers of Technostress for Gen Z: A TISM-MICMAC perspective	
Authors: Santanu Mandal, Devi Prasad Kotni, G. Kartheepan Kartheepan and Eswar Koushik	
Abstract: Technostress, a condition brought about by modern technology, has become an area of increasing concern for Generation Z (Gen Z) (La Torre et al., 2019; Tarafdar et al., 2010). Technological development has made life quite remarkable for Generation Z: born between the mid-1990s and early 2010s, their introduction to digital technology started from a very young age. Over time, this environment has altered their modes of behaviour, expectations, and even stresses in unique ways. There are several reasons for this demographic that explain the technostress phenomenon. To some extent, Gen Z's technological advantage of Gen Z become a never-ending task to remain updated with trends in technology features. Such endless change can be worn on people's minds. Moreover, their social media savvy triggers people to maintain a continuous	

online presence (Serbanescu, 2022), despite the fact that communicating with one another was originally designed as an internal thing, and fewer demands were put on the medium by posting to Friends Or Public timelines, which invariably leads to anxiety and stress. Global connections are another source of Gen Z's technostress (Imjai et al., 2024). Being able to make friends around the world is one thing, but on the other hand, this all-pervasive nature of human contact leaves no clear distinction between work and non-working conditions in life. Therefore, the omnipresence of digital contact does not permit individuals to take a break, leading to greater stress levels (Pichler et al., 2021). Moreover, Gen Z's entrepreneurial spirit heightened their feelings of technostress. In an environment where innovation and technology are called for to open new businesses (Dreyer & Stojanová, 2023), a person has to exert huge effort and, at the same time, be highly adaptable under strong competition conditions for businesses to eventually take off, which leads to a great deal of stress. Generation Z's readiness for change is also translated into their ability to do things "faster than light." However, having to learn or adapt all the time, this continuous process is very wearing on people (Riley & Nicewicz, 2022) adding to their stress load. By using digital platforms for creative expression, Ge and Z can display their talent to the world. However, the constant pursuit of creativity and affirmation is a quick way to achieve burnout. Furthermore, their consciousness of the environment (Agarwal et al., 2023) and focus on health and wellness also modifies interactions with technology. As they use technology to speak up on behalf of these causes (From & Read, 2018), the increased flow of information and the urgency of these global issues can In summary, the sources of technostress for Gen Z members are closely tied to their digital lifestyles and unique characteristics as a generation. Realizing these sources will be important for formulating strategies to reduce technostress and improve mental health in Gen Z.

427

Submission Number: 427	Track: **ADCLOD**

Paper Title: Navigating the Hive: Role of Queen Bee Syndrome on leadership development and Career Advancement

Authors: Shreya Mrinal and Dr. K. Lavanya Latha

Abstract: Queen Bee Syndrome (QBS) is a critical phenomenon observed in workplace environments where powerful women exhibit behaviours that hinder the professional growth of other women, thus perpetuating gender disparity and obstructing the creation of supportive work environments. This paper delves into the roots, manifestations, and effects of QBS on women's career advancement. By synthesizing findings from various theoretical frameworks and literature, including social identity theory, tokenism, and organizational culture, this research provides a comprehensive understanding of QBS. Manifestations such as criticism of other women, preference for male subordinates, and self-distancing behaviours are examined. This study highlights the detrimental impacts of QBS, including reduced mentorship opportunities, increased workplace tension, and reinforcement of gender inequality. This paper concludes by proposing strategies to mitigate the negative effects of QBS, such as promoting inclusive leadership, establishing strong support networks, and fostering organizational culture change. Addressing QBS is essential for supporting women's career advancement and achieving greater gender equality in the workplace.

471

Submission Number: **471**	Track: **ADCLOD**

Paper Title: The impact of big five personality on virtual collaboration: The role of team communication as a moderator.

Authors: Anchal Kukreti and Shatrughan Yadav

Abstract: Using computer-based platforms for virtual communication, collaboration and negotiation has become the norm in the twenty-first century. Many firms, including Amazon, TCS, Zoom, and Wipro, have in the past promoted remote work and virtual collaboration. However, these same corporations are now requesting that its employees should come back to the office. Employers believed that there was a lack of camaraderie and teamwork among staff members, which had reduced productivity, which was one of the main reasons they felt that workers should return to the office. Companies observed that when working solo in a remote work setting, people tend to be more productive; but, when participating in virtual team collaboration, their output declined. Literature Suggests that when employees work virtually at individual level are more productive rather than when they work in teams. This research aims to assess the influence of personality traits on virtual collaboration, with a specific focus on team processes (team trust and team cohesion) and virtual communication as a moderating factor. In a virtual collaboration setting, researchers discovered that personality-based trust had an impact on the overall reasons for trust. Additionally, research indicates that working remotely makes it harder to collaborate with coworkers and makes it more difficult to establish and sustain social interactions, which might due to less social and in personal contact with each other. According to some researchers, one could be able to determine a person's best fit for a virtual team by looking at their big five personalities. To ascertain the causal association between the big five personality traits and team trust, team cohesiveness, virtual collaboration, and virtual communication, this study will employ an explanatory research method. We shall employ quantitative research methods to achieve the given study objectives. Our approach will be surveys. Members of virtual teams will receive surveys, which will be in form of questionnaires. To ensure a varied range of personalities and experiences inside virtual teams, purposeful sampling will be used, in which members are selected based on specific traits or positions that are crucial to virtual cooperation. Therefore, the study will help in understanding that how people's personalities might influence collaboration, when they collaborate virtually. Examining the roles that various personality qualities play in virtual communication and team processes can also provide us insights into how to achieve better virtual teamwork in the future.. This study will provide valuable insights for businesses looking to enhance their virtual collaboration strategy.

476

Submission Number: **476**	Track: **ADCLOD**

Paper Title: The Role of Leadership in Creating Meaningful Work to Reduce Turnover Intention.

Authors: Ankita Verma and Shatrughann Yadav

Abstract: In order to reduce the intention of turnover in contemporary businesses, this study explores the critical role that leadership plays in fostering meaningful work environments. Because high turnover rates result in higher recruitment costs, the loss of organizational knowledge, and operational disruptions, employee retention has emerged as a major concern. How important workers believe their employment is can have a big impact on their turnover intention, which is the chance that they will quit. Workers' impression of their work as meaningful and useful is a key indicator of meaningful work, which is associated with higher job satisfaction and lower intention to leave. This study investigates the ways in which various leadership philosophies and techniques might create this kind of atmosphere, ultimately leading to increased employee retention. Theories such as the Job Characteristics Model and Self-Determination Theory, which highlight the role of job significance, autonomy, and intrinsic motivation, provide the theoretical foundation for the idea of meaningful work. If workers believe their work has significance and is in line with their personal values and objectives, they are more likely to stick with the company. On the other hand, reasons including a bad company culture, a lack of prospects for advancement, and job discontent are what motivate people to intend to leave their jobs. Effective leadership can greatly improve employee well-being and company performance by addressing these problems. Meaningful work environments are greatly impacted by leadership types, especially transformational, servant, and authentic leadership. By clearly communicating their vision, exhibiting a dedication to the organization's objectives, and creating an atmosphere that promotes innovation and career advancement, transformational leaders enthuse and encourage their workforce. They provide workers a feeling of purpose and belonging while also recognizing their unique contributions. Employees' perception of the greater significance of their work is increased when transformational leaders foster a culture of innovation and continual development. Conversely, servant leadership places a higher priority on the growth and well-being of staff members. By empathizing, listening, and fostering a sense of community, servant leaders foster a positive work atmosphere where staff members feel respected and valued. Servant leaders assist staff members in discovering a deeper sense of purpose in their work by placing a strong emphasis on ethical behavior and personal growth. This can increase job satisfaction and decrease the likelihood of turnover. This leadership approach encourages employees to remain dedicated to the company by fostering a sense of belonging and respect for one another. Transparency, moral conduct, and sincere connections are traits of authentic leadership. Real leaders encourage an honest and transparent culture within their organizations and are loyal to themselves. Authentic leaders assist staff members in discovering a greater sense of meaning and purpose in their job by balancing the organization's ideals with their own. Reducing turnover intention requires loyalty and trust, both of which are fostered by this alignment. Additionally, open communication and feedback are encouraged by authentic leaders, giving staff members a sense of value and being heard. Other essential components for developing meaningful work environments include autonomy and empowerment. Employees feel more empowered and accountable for their job when their leaders empower them by delegating authority and promoting decision-making. Employees who feel that their efforts have a direct impact on the company have more meaningful work experiences and higher job satisfaction as a result of empowerment. Leaders who encourage autonomy foster a climate of mutual respect and trust, which raises the perceived value of work even more. Empirical analyses of prosperous establishments such as Google and Zappos illustrate the potential of proficient leadership in fostering significant

work environments. These businesses place a strong emphasis on personal growth, innovation, and employee involvement, which leads to high job satisfaction and low employee turnover. Workers at these companies frequently express a greater sense of fulfillment and purpose in their job, underscoring the beneficial effects of leadership on their working environments. These case studies offer real-world illustrations of how effective leadership techniques can be used to increase meaningful work and lower intention to leave. However, creating meaningful work environments is not without challenges. Leaders may face resistance to change, limited resources, and diverse employee needs. Addressing these challenges requires a proactive and adaptable approach. It is crucial for leaders to continuously assess and improve their practices, using regular surveys and feedback mechanisms to identify areas for improvement. Additionally, considering cultural and individual differences in employees' perceptions of meaningful work is essential for tailoring leadership approaches to meet the unique needs of the workforce. Organizations should implement policies that support leadership development and promote meaningful work. This includes leadership training programs, mentorship initiatives, and employee wellness programs. By prioritizing meaningful work and creating supportive policies, organizations can achieve higher employee retention rates, improved job satisfaction, and overall better organizational performance. In conclusion, leadership plays a vital role in creating meaningful work environments that reduce turnover intentions. By adopting transformational, servant, and authentic leadership styles, and by empowering employees, leaders can foster a sense of purpose and fulfillment in their workforces. Organizations that prioritize meaningful work are likely to see higher employee retention rates, improved job satisfaction, and enhanced overall performance. This paper underscores the importance of leadership in shaping work environments and highlights strategies that can be employed to create meaningful work experiences, ultimately leading to better retention and organizational success.

513

Submission Number: **513**	Track: **ADCLOD**
Paper Title: Servant Leadership in Education: The Impact on Student Green Behaviour through Environment Concern	
Authors: Mudang Tagiya and Odang Mara	

Abstract: Purpose - The aim of this study is to investigate the impact of servant leadership on students' green behaviour in an educational institution, focusing on the mediating role of environmental concern. It intends to explore how servant leadership can foster environmental responsibility among students by enhancing their concern for the environment and promoting sustainable behaviours. Design/Methodology – The research was conducted in Itanagar Smart City, Arunachal Pradesh, India. The study employs structural equation modelling (SEM) to analyse data collected from 311 higher secondary students in Itanagar. A convenience sampling approach was used to select the respondents, and the data were analysed using AMOS 21 and SPSS version 21 statistical software. Findings – The findings shows that servant leadership significantly enhances students' environmental concern, which in turn positively influences their green behaviour. Environmental concern partially mediates the relationship between servant leadership and green behaviour. The results indicate that servant leadership directly impacts green behaviour while also shaping it through increased environmental concern. Theoretical implications - The study contributes to the theoretical understanding of servant leadership by demonstrating its impact on environmental sustainability within educational fields. It extends existing leadership theories by highlighting how servant leadership can influence green behaviours through mediating factors like environmental concern. Practical implications - Practically, the findings suggest that teachers and school leaders should adopt servant leadership principles to effectively promote environmental responsibility among students. By integrating sustainability into their leadership practices and fostering a supportive environment, they can enhance students' environmental concern and encourage green behaviours. Originality/value - This research is original in its focus on the relations of servant leadership and environmental behaviour in educational settings. It provides valuable insights into how leadership styles can be leveraged to address environmental challenges, offering a new perspective on integrating leadership practices with sustainability goals in educational institutes. Paper type – Research paper

521

Submission Number: **521**	Track: **ADCLOD**
Paper Title: A systematic literature review on the relationship between HR Practices and subjective well-being: Developing a novel model using AMO framework	
Authors: Harleen Kaur and Parul Malik	

Abstract: Enhancing subjective well-being is crucial for managers as it reduces employee turnover rates and fosters favorable organizational outcomes. This systematic review identifies key HR practices that enhance subjective well-being and recognizes relevant theories, moderators, and mediators to establish a conceptual model illustrating the interconnections between HR practices and subjective well-being. A comprehensive review of 42 articles from FT-50 and ABDC journals was conducted, employing an inductive content analysis approach. Despite extensive literature on HR practices and subjective well-being, existing research lacks a comprehensive conceptual model. This study identifies HR practices based on the Ability-Motivation-Opportunity (AMO) framework. Key HR practices identified include training and development programs, recruitment practices, psychological benefits, incentives and rewards, supportive and developmental policies, participation and involvement, job enrichment, and interpersonal relations and collaboration. The findings provide managers with actionable insights for implementing HR practices that significantly enhance employees' subjective well-being. This study also makes a valuable contribution to the HRM literature by introducing a novel conceptual model utilizing the AMO framework that clearly demonstrates the intricate interconnections between HR practices and subjective well-being.

543

Submission Number: **543**	Track: **ADCLOD**
Paper Title: Leadership Strategies for Managing Remote Work in the Post-Covid Era	
Authors: Shabnam Ibrahim, Ayesha Farooq and Irna Ishrat	
Abstract: Objective: The unprecedented shift to work-from-home during the Covid-19 pandemic has transformed the landscape of organizational management, highlighting the crucial role of leadership in transitioning to remote working and strategies to overcome the challenges. This study explores the multifaceted role of leadership in managing remote work in the post-covid era, focusing on the strategies and practices that have emerged as critical for sustaining productivity, fostering employee engagement, leveraging digital tools, and technologies to foster team building, and maintaining organizational culture. Methods: This research employs a qualitative approach to comprehensively examine the role of leadership in managing remote employees. This study utilizes semi-structured interviews and case studies to gather insights into the experiences, challenges, and strategic approaches related to hybrid work mode. The study also reviews existing literature on remote work, digital transformation, leadership theories, and change management to contextualize the findings. Findings: The shift to remote work during the pandemic has provided employees with unprecedented access to the global job market, allowing them to circumvent geographical restrictions associated with traditional workplaces. Key drivers facilitating this shift include technological advancement, and the increased flexibility of work hours and conditions. However, challenges persist, notably inadequate technological infrastructure, lack of supervision and monitoring, delayed communication and collaboration, and less organizational commitment. Conclusion: While remote work offers a promising pathway for economic empowerment and greater work-life balance for employees; targeted interventions and effective leadership strategies are needed to overcome the infrastructural deficits, and to overcome the challenges faced by both employees and employers in remote work system. By fostering a supportive and adaptable work environment, leaders can not only sustain but also enhance organizational performance and employee well-being in the evolving landscape of work. Implications: The findings suggest that policymakers and stakeholders in workforce development need to create supportive environments that enhance access to technology, eliminating communication challenges and providing support to remote employees. This study would provide actionable insights and recommendations for organizations in optimizing their remote work strategies.	

548

Submission Number: **548**	Track: **ADCLOD**
Paper Title: “Employee Engagement amid Surveillance: The Mediating Role of Psychological Safety”	
Authors: Subhi Tyagi, Dr. Sangeeta Sahney and Dr. Monika Tanwar	
Abstract: “When People Go to Work, They Shouldn’t Have to Leave Their Hearts at Home.” -Betty Bender Introduction - In today’s era, companies are heavily dependent on remote working, and there is widespread use of technology-driven tracking mechanisms at workplace. Employees are compelled to download monitoring software in their private systems. While such mechanisms have been adopted, and the monitoring of workforce is becoming the new normal, the use of mechanisms and impact on employees is yet to be comprehended (Bowell P. et al., 2023). This necessities studies in the domain so that a contribution can be made towards the well-being of our current workforce and upcoming generations, (Kellogg et al., 2020).	

Purpose - The current study is aimed at examining the impact of surveillance on the behavioural aspects of working professionals in the corporate sector in India. The primary focus of this research study is to investigate the effect of workplace surveillance on employee engagement in different modes: a direct mode, a mediated mode, and in total. Furthermore, the intent of this study is to ascertain the extent to which psychological safety mediates the relationship among surveillance and engagement behaviour of employees. Design/methodology/approach - The research instrument comprises a Likert scale questionnaire, on which so far,400 responses have been obtained from employees. The data has been analysed and hypothesized relationships between workplace surveillance, psychological safety, and employee engagement tested by Factor analysis and SEM (structural equation modelling). Findings - The findings of the survey reveal that the direct effect of surveillance on engagement behaviour is not statistically significant. This indicates that workplace surveillance does not have a consequential direct impact on employee engagement. However, the mediated effect of workplace surveillance on engagement behaviour of employees, through psychological safety, has been found to be statistically significant, which highlights the relevance of psychological safety in this relationship. The total effect of workplace surveillance on employee engagement has also been found to be significant, and the major proportion of the total effect is mediated by psychological safety. These findings bring to light the importance of careful planning and implementation of workplace surveillance practices by organizations so that the psychological safety of employees is not compromised. This is required so as to ensure that engagement level of employees is maintained, eventually contributing towards a more supportive and productive work environment. Research implications - The study contributes to academia, and literature in the domain by showcasing the impact of surveillance, and illustrating its linkage with other behavioural constructs. An attempt has been made to contribute to managerial, institutional, and societal levels, as it would provide a path to managers in the domain of human resource management to successfully and ethically frame and implement surveillance policies and practices of their organization, while at the same time considering the well-being of their employees. An attempt has also been made to contribute towards the betterment of society by showcasing the relevance of the contribution of our youth and their psychological association with organizations and their work, amid the surveilling nature of their surroundings. Research limitations - The study is confined to working professionals in the corporate sector in India, and not internationally. Originality/value - The extant literature is somewhere lacking in providing evidence pertaining to the influence of surveillance practices on employee's attitude and behaviour (Yost et al., 2019). This study provides a valuable glimpse into the complex relationships between workplace surveillance, employee engagement, and psychological safety. The three areas have been studied in isolation, but through this study, an attempt has been made to study them in integration which is illustrated through their interconnectedness.

588

Submission Number: **588**	Track: **ADCLOD**

Paper Title: TOWARD THE MEASUREMENT OF REMOTE PSYCHOLOGICAL CAPITAL: SCALE DEVELOPMENT AND VALIDATION

Authors: Vineet Arora, Amit Shukla and Jasvir Nachatar Singh

Abstract: The COVID-19 pandemic and technological advancements have made remote work increasingly prevalent in organizations. Although measures such as information technology self-efficacy and virtual work self-efficacy exist, there is a lack of comprehensive tools to assess the psychological resources of remote workers. Accordingly, the purpose of this paper is to conceptualize, develop, and validate a scale called "Remote Psychological Capital" (rPsyCap) to measure the psychological capital of individuals working remotely, such as those working from home. Methodology After conducting a literature review and utilizing the criteria of positive organizational behavior, a mixed-methods approach was adopted, involving both qualitative and quantitative methods, to generate items for the development of a rPsyCap measure. Following rigorous and established scale development procedures, six factors representing the psychological capacities of remote workers were identified through exploratory factor analysis and further validated using confirmatory factor analysis. Additionally, the rPsyCap construct is specified as a second-order factor composed of six first-order factors. Findings A final 20-item rPsyCap scale, covering six psychological capacities of remote workers, has been developed. The new scale demonstrates good construct reliability and convergent validity, offering valuable insights into how to better support remote workers in overcoming the challenges posed by remote work. Implications The scale is useful for both researchers and practitioners. A deeper insight into its dimensions can help human resource managers and organizational psychology consultants identify the relevant psychological capacities to focus on during training and coaching interventions. Additionally, the scale addresses the long-awaited need to understand psychological capital in the context of remote work. Originality The authors believe that this is the first study to develop a valid and reliable scale for assessing the psychological strengths of remote workers in the Indian context.

619

Submission Number: **619**	Track: **ADCLOD**
Paper Title: Navigating Toxicity: a qualitative analysis of leadership hurdles among healthcare professionals	
Authors: Fousia Azeez and Dr. Nimitha Aboobaker	
Abstract: Abstract Purpose The recent decade has evidenced an increased interest in exploring the toxic experiences of professionals at their workplaces. Few studies have reported that toxic leadership experiences lead to lowered employee work outcomes. However, there exists a need for an in-depth exploration of the phenomenon, and this study seeks to examine the experiences of toxic behaviors at the workplace, its outcomes, and coping strategies. Design/methodology/approach This study employed a qualitative approach, integrating the Gioia method with an inductive grounded theory framework. To gain a comprehensive understanding of their toxic experiences at the workplace, data was collected from twenty-eight healthcare professionals using semi-structured interviews and informal discussions. Findings The findings from this study reveal a significant prevalence of toxicity from professors towards healthcare professionals. The study shows that many students continue to experience "toxic" practices, with only very few reporting the incidents to relevant authorities, raising essential questions about the appropriateness of current intervention efforts. Five themes emerged within the students' narratives based on the questions that were framed ("frequency of occurrences," "outward behavior," "repercussions," "coping strategies," "support mechanisms," and "Is toxicity a pedagogical tool"). " Originality/value This study addresses a critical gap by investigating toxic leadership in the healthcare sector, specifically focusing on healthcare professionals' experiences of toxicity from their professors. Building on previous research, this paper advances the understanding of toxic leadership within healthcare by exploring the lived experiences of healthcare professionals. By identifying and addressing these issues, the study aims to enhance overall well-being, professional development, and the quality of training in medical settings.	

637

Submission Number: **637**	Track: **ADCLOD**
Paper Title: Beyond Adversity: Unveiling the Positive Power of Perceived Discrimination on Motivational Strivings	
Authors: Hera Wali and Nishant Uppal	
Abstract: Numerous comprehensive research from various disciplines (e.g., Schmitt et al., 2014; Triana et al., 2015, 2019) have established that perceived discrimination is a formidable stressor. Though it is well-documented that perceived discrimination is a threat that triggers harmful psychological and physiological reactions, it remains pervasive in organizations, impacting motivation and employee engagement (McCord et al., 2018; Korn Ferry, 2023). Indeed, substantial evidence highlights that every two out of three employees suffers from workplace discrimination and microaggressions (Massachusetts Institute of Technology, 2023). While past discussion research has extensively established the adverse effects of perceived discrimination on individual behaviours, there is limited but robust evidence that prior research suffers from a narrow focus on the direct effects of discrimination. This complements a line of literature suggesting that not all individuals may appraise perceived discrimination as uniformly threatening, which could dampen its negative impacts and possibly result in favourable outcomes (Kaiser et al., 2004). The possibility that individuals may not appraise perceived discrimination as threatening originates from the transactional theory of stress (Lazarus & Folkman, 1984). As per the transactional theory of stress, researchers have begun explaining stress appraisals (i.e., threat and challenge) and their motivational impacts (Li et al., 2017). Therefore, we aim to explore the impacts of perceived discrimination on motivations through these appraisals. The discussion indicates the adverse effects of perceived discrimination (e.g., Schmitt et al., 2014; McCord et al., 2018); we assume the attention has frequently been directed toward the immediate consequences rather than the intricate function of stress appraisals. The transactional theory of stress and coping posits that how individuals perceive stressors as threats or challenges can greatly impact their behavioural reactions (Lazarus & Folkman, 1984). Indeed, organizational stress appraisals can potentially promote or hinder creative job behaviours through higher or lower intrinsic motivation (Li et al., 2017).	

Moreover, motivated behaviour may be best understood via motivational strivings (Barrick et al., 2002, 2013) i.e., achievement, communion and status strivings. Building on Barrick et al. (2013), research posits that stress results in discernible modifications in individuals' dispositions. These changes, in turn, adjust their motivation in complex ways, as these motivational strivings are derived from their underlying dispositions (DeShon & Gillespie, 2005). Therefore, perceived discrimination, a formidable stressor, may influence the motivational strivings based on its appraisal as a threat or challenge. Despite the aforementioned evidence, there are still gaps in understanding the mechanisms of how these appraisals influence the relationship between perceived discrimination and motivational strivings. We use the transactional theory of stress and coping's threat and challenge appraisal process to explain these mechanisms (Lazarus & Folkman, 1984). This also uncovers how dual appraisal of perceived discrimination can mitigate negative effects and potentially lead to favourable motivational outcomes. We will conduct a vignette-based experiment to evaluate how perceived discrimination impacts motivation. This method is useful for studying sensitive topics in controlled experiments and measuring causation (Aguinis & Bradley, 2014). The vignette is derived from Salvatore and Shelton's (2007) study, where racial bias was modified when selecting employees. Participants were randomly allocated to read and respond to a high or low-discrimination narrative. Participants' perceptions of discrimination and their appraisals were assessed. Achievement, communion, and status motivations will also be assessed. We will employ the scenario to alter gender discrimination in a selection context using the methodology proposed by (Triana et al., 2019). Following Lazarus and Folkman (1984), we expect people to view perceived discrimination as a threat or challenge affecting their behaviour. Threat appraisals should negatively affect achievement and status strivings but positively affect communion striving. Challenge appraisals, however, may benefit all three motivational goals. The results will extend the extant discrimination literature, highlighting the significance of appraisals in mitigating the adverse effects (Kaiser et al., 2004) and focusing on the effects on motivational strivings via appraisals. One significant contribution to the theory and literature of this research will be viewing discrimination positively (i.e., increasing achievement, communion, and status strivings), as prior research has focused solely on adverse effects (e.g., Schmitt et al., 2014) Aguinis, H., & Bradley, K. J. (2014).

653

Submission Number: **653**	Track: **ADCLOD**

Paper Title: ABUSIVE SUPERVISION AND EMPLOYEE WORK ALIENATION: MEDIATING ROLE OF EMPLOYEE UNETHICAL BEHAVIOR. A CONCEPTUAL REVIEW

Authors: Asmabi Kk and Smarty Mukundan

Abstract: Since the turn of the 20th century, the discipline of leadership—both in theory and in practice—has rapidly expanded within management science. Most management and organization concepts assign leadership a fundamental role in upholding values, inspiring workers, and sharing aspirational futures. Leaders are not always constructively using power. They misuse power to benefit their self while making others trouble. “Abusive supervision” is defined as “the subordinates’ perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact” (Tepper, 2000). Abusive supervision negatively influences subordinates’ work-related attitudes and psychological health, which in turn affects both in-role and extra-role behavior (Tepper, 2000), abuse directly depletes employees’ energy, physical, and emotional resources (Wang et al., 2020), and it has a significant effect on subordinates’ perception of organizational justice, their intention to leave, commitment to the organization, job satisfaction, and ability to balance work with family life (Tepper, 2000). Perceptions of abusive supervision are positively associated with the subordinates’ poor sleep quality (Tariq et al., 2020), work-family conflict (Tepper, 2000), the feeling of hopelessness, humiliation, anxiety, justifying retaliation, employee turnover, the climate of distrust and disloyalty (Starratt & Grandy, 2010), aggression against coworkers, organizational deviance (Tepper, 2007), and employee silence (Wang et al., 2020). Studies are showing that the perceptions of abusive supervision originate as a result of perceptions of injustice in the organization, this supervisory injustice embodied the social exchange processes shared by subordinates and supervisors over time (Chan & McAllister, 2014; Mackey et al., 2017). The influence of dysfunctional leadership on the ethical and unethical behavior of followers’ is a less attended area in organizational studies. Abusive supervision generates situations that weaken followers' moral courage and, in turn, their capacity to act morally even in situations where doing so could put them in danger (Hannah et al., 2013). The LMX theory emphasizes that leadership behavior could shape the exchange relationship between leaders and members (Jiang et al., 2019), and the perception of the quality of the relationship between the leader and member will mediate the behavior respectively. The unexpected, rare, and surprising nature of negative treatment will induce psychological distress in the receivers (Duffy et al., 2002). The negative events evoke a lack of control, feelings of distress, and helplessness, and they elicit increased causal attributional activity, and complex cognitive representations about the self, which finally create a behavioral response of fight-or-flight response (Duffy et al., 2002). The deontic theory of justice “suggests that individuals care about justice, tend to perceive justice violations after observing unjust events such as peer abusive supervision, and are motivated to have emotional and behavioral reactions to perpetrators” (Zhang et al., n.d.). Chan

and McAllister claimed that when managers misuse their authority and betray their subordinates, it provokes strong emotional responses (Chan & McAllister, 2014). The perception of supervisory abuse which is characterized by sustained displays of hostile verbal and nonverbal behavior will create consequences that have the potential to create a dissociative personality in work settings. We argue that employee perception of abusive supervision act as an explanator for employee unethical behavior and work alienation. Researches that draw from social cognitive theory found that the consequence of abusive supervision is subordinates' unethical organizational behavior (Liu et al., 2019). Only a small number of studies have focused their attention on the association between abusive supervision and subordinates' unethical behavior. When an organizational member is involved in unethical behavior they violate the accepted norms of the organization (Klein & Shtudiner, 2020). "Alienation describes a phenomenon that undermines the sense of self, employee attitudes, business purpose, and social networks", workplace alienation indicates that employees are depleting resources due to abusive bosses, hindering their ability to perform their duties effectively (Banai & Reisel, 2007). It has been found that abusive supervision acts as an antecedent for creating a climate of distrust and disloyalty (Starratt & Grandy, 2010), such distrust can stem from either actual or perceived harm and may indicate a persistent paranoid disposition or a state of paranoia that has been induced (Chan & McAllister, 2014). We draw conceptual foundations for our analysis of employee responses to abusive supervision from an established social psychological, and managerial literature on employee unethical behavior and work alienation. Our focus is on explaining the dynamics of abusive supervision within a framework for understanding work alienation. We decided to focus our attention on the relationship between abusive supervision and work alienation because it helps us to understand the escalation of abuse in supervisor-subordinate relationships.

670

Submission Number: **670**	Track: **ADCLOD**

Paper Title: Inclusive Leadership and Employee Outcomes – Examining the mediating roles of Psychological Safety, Perceived Inclusion, and Employee Thriving

Authors: Virajanand Varma, Reshmi None and Devika Gulla

Abstract: As the workforce becomes more diverse, the need for inclusion in the workplace also increases. Scholars have suggested that leaders must exhibit inclusive behaviors to build and sustain an inclusive culture in the organization. Through two studies, we examine the relationship of inclusive leadership with positive employee outcomes. Study 1, a field study, reveals that psychological safety mediates the positive relation between inclusive leadership and employee perceptions of workplace inclusion. Study 2 used three-wave online surveys to replicate the mediating role of psychological safety in the relationship between inclusive leadership and employee perceptions of workplace inclusion. Furthermore, the results of Study 2 show that the psychological safety and perceptions of inclusion originating from inclusive leadership lead to employee thriving at work, which in turn leads to increased citizenship behaviors and lowered turnover intentions.

706

Submission Number: 706	Track: **ADCLOD**

Paper Title: Organizational culture and employee voice in the public sector: A perspective

Authors: Lokesh Malviya

Abstract: Purpose: By deploying the theory of planned behaviour, this paper tries to review the literature around employee voice keeping in mind the different organizational cultures prevalent in different types of organizations (the focus of the study is the public sector compared to the private sector). Design Methodology/Approach: The study explores the literature around employee voice and employee culture in addition to the research on the public sector to arrive at the different inhibitors and motivators of employee voice behaviour in the public sector vis-à-vis a context-agnostic setup. Findings: Based on the philosophy of working in the public sector and the different way in which stakeholders interact with organizations in this domain, a set of clearly distinct and specific motivators and inhibitors of employee voice have been proposed. I propose that motivators of employee voice in such a culture would be the macro-culture in which the particular entity is embedded, the felt obligation towards public benefits, the time in which the organization was established (the norms, beliefs, and values of that era), inclusive leadership, and the public service motivation levels of the person engaged in the voice behaviour. While the inhibiting factors can be the macro-culture itself (especially, a high power-distance culture), political constraints or if there is an expectation of backlash from the public representatives, highly centralized decision-making set-ups with the superior being at the helm of affairs for every small or big decision, "passing the buck" as the

dominant norm, the inferiority complex of managers impacting their self-efficacy and thereby the efficacy of voice, time in which the organization was established becomes important here too (it has been established in the research that different generations of workforce have different expectations from their work), and the loyalty to the political leadership. Originality/value: Previous literature has not explored how determinants of voice vary based on the type of organization we are analyzing. This gap has been addressed through this paper. The analysis done in this study explores, minutely, how culture and norms get established and perpetuated in a public sector entity. Leaders moving from one organization type to another may do well to keep in mind the differences in cultures between the different types. Further, leaders will have to encourage their subordinates differently in different settings if the leadership wants the employees to actively engage in voice behaviour which, as the extant literature suggests, can benefit the organization. Although PSM and felt obligation may provide some motivation to the employees to engage in voice behaviour, however, if they consistently see failures on this front, it can create a vicious cycle and subsequently, stress and demotivation.

714

Submission Number: **714**	Track: **ADCLOD**

Paper Title: Inclusive Leadership: A Bibliometric Analysis of Past Milestones and Future Research

Authors: Shubhangi Chowdhry

Abstract: Inclusive leadership is a transformative approach that prioritizes diversity, equity, and belonging in an organizational culture. It fosters a psychologically safe environment where employees feel empowered to share their unique perspectives, discuss differences, and engage in collaborative problem-solving (Ashikali et al., 2021). By promoting both uniqueness and a sense of belonging, inclusive leaders create conditions in which employees can be authentic (Randel et al., 2018). Nevertheless, the amount of organizational scholarly knowledge on inclusive leadership appears to be fragmented and incoherent, despite substantial efforts to consolidate the literature. This is because the literature is frequently summarized using subjective methods in the existing reviews in this field. Leadership researchers may encounter challenges in recognizing the progress made in inclusive leadership, gaining a comprehensive understanding of its objective insights, and establishing a course for future research. Therefore, through this study, we provide an understanding of the past, present, and future of inclusive leadership research. This study conducts a bibliometric analysis in which we analyze 786 papers published between 2004 and 2024. First, through bibliographic coupling, citation analysis, and co-word analysis of extant studies, we highlight prominent authors, influential works, leading organizations, countries, and journals in inclusive leadership. Second, through clustering, emergent core themes in inclusive leadership are mapped to gain an understanding of the leadership style. We used two different bibliometric softwares to analyze the data, i.e. VoS viewer and Biblioshiny software were used in the study to understand the literature on inclusive leadership.

718

Submission Number: **718**	Track: **ADCLOD**

Paper Title: Do Relational Leaders Impact Change Readiness for Digital Transformation? Interplay of Mindfulness and Resilience of Employees

Authors: Sonali Narbariya

Abstract: This study aims to address the gap in understanding how relational leadership and mindfulness influence employee readiness for digital transformation in India's service sector. Despite recognizing the importance of leadership and individual psychological states in navigating digital transformation, existing research often overlooks how these elements interact to shape employee attitudes towards such transformations. By analyzing data from 293 service sector employees using statistical methods, this research reveals that state mindfulness serves as a mediating factor between relational leadership and change readiness. Furthermore, it uncovers that employee resilience can both support and hinder the adaptation process, depending on its interaction with leadership dynamics. Employing Social Exchange Theory and Social Learning Cognitive Theory, the study provides a comprehensive framework to explore these relationships. Social Exchange Theory helps understand the cost-benefit analysis employees perform regarding digital transformation, suggesting that effective relational leadership fosters positive perceptions that enhance readiness for change. Meanwhile, Social Learning Cognitive Theory highlights the importance of leadership in modelling adaptive behaviors and the role of mindfulness in fostering cognitive flexibility necessary for embracing technological shifts. This research fills a critical gap by offering insights into the mechanisms through which relational leadership and mindfulness contribute to digital transformation readiness. It emphasizes the complex role of employee resilience, enhancing our understanding of factors that facilitate or impede organizational change.

783

Submission Number: **783**	Track: **ADCLOD**
Paper Title: Exploring Leadership Perception Shifts in Online vs. Offline Communication Environments	
Authors: Kanishk Upadhyay and Lalit Krishna	

Abstract: This study examines the impact of communication mediums (online vs. offline) on leadership perception effectiveness, with a focus on whether digital communication alters how leadership qualities are perceived by team members. Leveraging the Leadership 360 Degree Feedback Tool, the research encompassed a sample of 41 leaders and 246 respondents (six per leader), facilitating a comprehensive analysis of leadership perceptions in varying communication settings. The research builds upon existing literature that has documented the modulation of emotional expression in digital versus face-to-face interactions and its potential impacts on interpersonal dynamics (Morrison-Smith,2020; Derks et al., 2008). Studies by Wang and Emurian (2018) and Avolio et al. (2000) have explored how digital tools reshape leadership practices and communication flows within organizations, providing a foundation for this investigation. Preliminary findings indicate significant variations in the perception of leadership attributes across communication mediums. Notably, aspects such as integrity and delegation are perceived more favorably in online settings, suggesting that the medium of communication plays a crucial role in shaping leadership dynamics. This study extends the discourse on digital communication's influence on leadership by empirically assessing its impact, thereby contributing to both academic research and practical applications in organizational management.

786

Submission Number: **786**	Track: **ADCLOD**
Paper Title: Leadership Styles and their Impact on Organizational Culture and Performance – Transformational Service leadership as the way forward	
Authors: Vidya Aswath and Celina A	

Abstract: Success of any initiative depends on multiple factors that impact the initiative and helps achieve the intended target. Amongst the many impacting factors, the most important and the one that provides the direction and impetus for achieving the objective are the Leadership styles and attributes exhibited by an individual or team involved in the initiative. This applies to all types of initiatives , be it Academic or Social or Business related , where a group of people work together to achieve a larger goal. In Organisations that are business oriented, leadership focusses on identifying a potential business objective and working towards achieving that objective. There are various leadership styles or approaches like Visionary, Coaching, Autocratic, Democratic, Bureaucratic, Transactional, Transformational etc., that have their own pros and cons based on the scenarios they are applied in. While there are numerous success stories of leadership capabilities in the last many decades, there are many instances where leadership has been found wanting in fulfilling the needs of the business and people involved. The major reason for these failures are the ever changing dynamic nature of business , fulfilling needs of people at all stages , overcoming market and competitor challenges and other socio economic conditions to name a few. To fully understand this complex phenomenon of Leadership styles and their impact on business outcomes under various trying scenarios, it is imperative to understand the present and upcoming challenges , the driving factors behind these challenges and how a leader must equip and adapt his capabilities to ensure achieving a leadership equilibrium position and help achieve a positive impact on the organisation's culture and performance. The driving factors for the upcoming scenarios would cover areas like disruptive technological innovations, diversity, adaptability, culture, barriers, service mindset, etc. With this objective this paper uses a mix of theoretical and a practical survey based analysis to get a 360 degree view of various leadership styles and their impact on organisation culture and performance. While the theoretical study part of the paper focusses on the evolution of leadership styles until now and the approaches that have been adapted to overcome those challenges, the survey-based analysis covers various challenges foreseen in near future and what are the priority areas that leaders can focus to device a sustainable organisation culture and performance from working professionals across various sectors.

Submission Number: **792**	Track: **ADCLOD**

Paper Title: Building organizational resilience through culture: a case of Tessarakt

Authors: Naziya Zaina Naufal, Priya Nair Rajeev and Rahil Mehdi

Abstract: Resilience is the intrinsic characteristic of organizations that can respond and rebound swiftly,or come up with unique ways of functioning under pressure than others(Vogus and Sutcliffe, 2007).It is usually considered as a valued trait for an organization (and its team) to navigate through various forms of obstacles. At the employee level, it is described as the capacity of the organizational members to revive and even excel when confronted with challenges and hardships (Shin et al., 2012;Luthans et al.,2010).Organizational resilience is usually used to refer to resilience at the organizational level and researchers have described it in different ways and forms,such as a capacity, capability, outcome, behavior, process, approach or strategy,characteristic, performance type,or all of these combined (Hillmann & Guenther,2021). It was defined by Carmeli and Markman(2011) as a continuous process of acquisition and management strategies. Lengnick-Hall et al. (2011) mention about possessing a resilience capacity and having a resilience capability which is not the same. It was highlighted by Richtnér and Löfsten(2014) that possessing a capability means maintaining both capacity and ability, and it transforms into organizational capability when an ability for resilience is effectively translated into action within an organization. S. Lombardi et al.(2021), in an attempt to "improvise" the concept of resilience, revealed that resilient leadership is a phenomenon characterized by its contradictory nature (Giustiniano et al.,2020). The paradox arises from certain processes like empathy vs. rationality, exploration vs. sticking with the vision and mission, foresight vs. being conventional, which are important for dealing with obstacles. They also discovered that leaders need to present themselves as "being outside the system" and "being in the system" so that they can empathize and maintain an emotional distance, which can help them to adapt their approach as they plan the next strategy. In essence, resilient leadership combines contradictory actions that involves a paradoxical capability: which is the ability to function normally in unprecedented times. The data suggests that resilient leadership involves both planning for short term as well as long term ; it requires the ability to strategize while also being flexible enough to change those plans or drop them when confronted with unpredictable situations (Weick,1993). Weick's (1993) explanation of leadership rings particularly true for startups that straddle both the immediate challenges of setting up and strategizing for being sustainable. Startups have been crucial for economic growth and development of many countries. Technology-based startups are growing faster than non-tech ones due to their importance in the evolving knowledge economy. Rapid advancements in technology mean it becomes obsolete quickly, increasing the failure rate of new businesses. Therefore, for a startup to survive long-term, entrepreneurs need a great idea and passion as well as a strong team, market understanding, competition insight, networking with the startup ecosystem, knowledge of regulatory policies, risk assessment, and effective long-term strategies, all while employing resilient leadership strategies to adapt and succeed in a rapidly evolving environment(Nutan &Nagpal,2024). Though evidence suggests that Indian companies have thrived in an environment that encourages risk-taking, experimentation, and learning from failures (Punj,2021), there is a research gap in explaining how leadership can make a startup resilient, especially as fledgling organizations go through much turbulence in their initial years. According to the organizational life cycle model proposed by Greiner(1997), the creativity phase occurs at the birth stage of the organization, with an emphasis on both the product and the market. The crisis occurs when the leaders experience communication gaps, are burdened with management tasks, and do not find enough time to focus on building the organization's culture. Case Context: This study is centered on Tessarakt Experiential - an Indian creative startup that focuses on event management and storytelling. Set up in 2018 by Rahil Mehdi and his co-founder Praveen Singh, the startup was an actualization of the formers dream to provide a space for 'curious misfits' who struggled in a formal office setting. The company aimed to foster a relaxed and human-centered culture, avoiding pressure on employees to meet targets. Similarly, in client interactions, cold emails or messages were never utilized. Instead, the focus was building client relationships, ensuring they always felt warm and welcome. Despite rapid revenue growth, the organization soon felt the pressures of opposing cultural norms that developed differently in their two offices in Delhi and Bengaluru. The Delhi office focused on meeting targets, while in Bangalore, they focused on diversifying and on expanding the operations. This created a difference of opinion among the two offices,among leadership and the employees. Both offices experienced a communication gap,lack of work norms to keep them together, leading to unmet expectations. The company culture,which was Rahil's main vision of starting Tessarakt,started crumbling. Employees and leaders started experiencing burnout, and conflicts started emerging. The fissures it caused were so deep that the management decided to pause to reflect, rectify, and reinvent the organizational culture. To not give up on his dream, Rahil worked with his team to rebuild the organization by fortifying its culture, developing strategies to sustain its vision, and addressing emerging challenges. Objectives: The study focuses on the leadership crisis, which was resolved through creativity and has led to the successful resurgence of what Rahil calls 'Tessarakt 2.0.' The attempt is to examine how the creative and entrepreneurial culture acted as a key factor in expediting the organization's revival and propose a conceptual model of culture based resilience. Methodology: This study employs an in-depth case study method to examine the transformation of resilience from a mere capacity to a dynamic capability for

rebuilding and reinventing an organization. The methodology involved conducting in-depth interview sessions with the founder to understand the organization's culture,the crisis,and the leader's role in resolving it. The interviews were meticulously transcribed, and significant parts were highlighted for further analysis. Additionally,the literature review provided the conceptual framework underpinning the study,guiding the analysis and interpretation of the collected data. Expected contribution: The renewal of Tessarakt Experiential is an example of building resilience through culture. The insights derived from critical analysis of the case will offer a model for other startups facing similar challenges.

810

Submission Number: 810	Track: **ADCLOD**

Paper Title: Integrating Spiritual Practices into Contemporary Leadership: revisiting Patanjali Yoga Sutras

Authors: Lakshmi Kumari and Priya Rajeev

Abstract: Today's leaders face dual challenges: those arising from the inner self and those imposed by the outer world. External challenges include global issues such as pandemics, climate change, inequality, and migration (Laszlo, C., Waddock, S., Maheshwari, A. et al. 2021). Internal organizational challenges encompass achieving corporate excellence, securing corporate profits while also maintaining ecological balance, restructuring businesses, and managing turnaround processes to constantly grow in national and global contexts (Sharma, Vipin & Associates, 2013). The Center for Creative Leadership (2024) identified inner trials that leaders often face, including but not limited to lacking confidence, authentic display of leadership, failure, impatience, inertia, and the impostor syndrome. These issues can seriously hinder leadership success. Added to these is the expectation to play the role of a mentor to subordinates and create more leaders within the organization (Balcerzyk, 2021). Balancing personal growth and professional success is particularly challenging given the diverse roles a leader must play. To manage these multifarious challenges, contemporary leadership practice suggests that leaders engage in activities such as self-reflection, contemplation, self-analysis, meditation, adherence to values, self-care, training, and rituals (e.g. team meetings, performance reviews, or strategy planning). Drawing a parallel, a devotee employs similar practices under Aatma Bodha and Tatva Bodha Saadhana - practices aimed at self-awareness of the inner soul, such as meditation, rituals, and mindfulness, fall under Aatma Bodha. In contrast, activities for assessing and refining physical actions, such as journaling, motivational readings, and receiving guidance from a coach, fall under Tatva Bodha. While a devotee seeks guidance from a Guru, a leader consults mentors or coaches, both maintaining a long-term perspective. While contemporary practices support leadership development, there is value in revisiting proven spiritual practices to address gaps in maintaining these practices. Integrating spiritual practices into leadership can provide a holistic approach to managing internal and external challenges, and fostering sustainable leadership growth.

840

Submission Number: 840	Track: **ADCLOD**

Paper Title: Silent Struggles: Workplace Loneliness and Employees Wellbeing- The Moderating role of Inclusive Leadership

Authors: Vaishali Jadon

Abstract: The World Health Organization (2023) reports that loneliness and social isolation increase the risk of dementia by 50%, early death by 25%, and stroke and cardiovascular diseases by 30%. To promote mental health and well-being by 2030, as outlined in Sustainable Development Goal 3, particularly sub-goal 3.4 (United Nations, 2023), it is essential to address loneliness, which significantly contributes to anxiety, depression, and suicidal tendencies (Harvard School of Public Health, 2023). US Surgeon General (Murthy, 2017) has identified loneliness as "a modern epidemic" requiring urgent attention. Individuals experience distress when social ties fail to meet their expectations or their fundamental need for belongingness, Workplace loneliness is a "psychological pain of perceived relational deficiencies in the workplace" (Wright and Silard, 2021: 6). It is associated with adverse outcomes, including employees' emotional exhaustion (Becker et al., 2022), decreased employee performance (Lam and Lau, 2012). These adverse outcomes stem from an inherent and fundamental human inclination to establish social connections and reciprocal relationships (Schachter, 1959) and are related to employee motivation and satisfaction (Dutton and Heaphy, 2003). Therefore, it is important to study workplace loneliness and understand how we can reduce the feeling of loneliness in the workplace. Our study responds to the need for research on the mechanism between workplace loneliness and its negative effects (Firoz & Chaudhary, 2022).This study explores the mediating role of employee silence (acquiescent silence) on employee wellbeing, suggesting that workplace loneliness leads to acquiescent silence, which further impacts employee wellbeing. Additionally, this study investigates which leadership style

can mitigate the effects of workplace loneliness on employee outcomes, focusing on how inclusive leadership moderates the relationship between workplace loneliness and employee silence behavior.

884

Submission Number: **884**	Track: **ADCLOD**

Paper Title: An Analysis of Human Resource Management Policy Challenges on the Gig Economy

Authors: Debarna Das, Dr S.N. Ragavendra and Ruma Agnes

Abstract: Covid -19, the pandemic era, a period of unprecedented health crisis which created an extremely challenging environment for human resource management (HRM) in organizations. Institutional Complexity (IC) added to the plight of HRM for Gig Worker. IC in the Gig Economy has gained relevance due to the conflicting, corporate logic which is control-enhancing and market logic which is autonomy-enhancing. This study intends to analyze the impact of IC on employee engagement and productivity of Gig Workers during that era and would also show how online food delivery platforms succumbed to the challenges of freelance status of Gig Workers along with carrying out best HRM practices, such that the business operation can run smoothly as well as the health of all the stakeholders are given due respect. This is be done by systematic literature review using PRISMA method. The findings will enhance the knowledge paradigm of decision makers, and they will be able to implement policies which would not only be employee friendly but also withstand the test of time. To foster a more nuanced understanding of the importance of employee engagement and productivity keeping the anchor on institutional complexity at that time, few common themes across the context, highlighting new-normal as well as recommendations of future scope of research would be put forward though this work.

892

Submission Number: **892**	Track: **ADCLOD**

Paper Title: Radical Resilient Leadership: How Narendra Modi's Vision is Transforming Indian Politics Amid Global Uncertainties

Authors: Shubham Shah, Harish Rawat, Vibha Swaroop and Dr. Ashish Sinha

Abstract: This systematic literature review (SLR) aims to explore the concept of "radical resilient leadership" and its potential to transform the Indian political landscape amidst global uncertainties and crises, drawing on the leadership style and vision of Prime Minister Narendra Modi. Narendra Modi's arrival as the Prime Minister of India has been a significant event that has garnered substantial attention, both in the public sphere and in academic discussions (Panda, 2016). His leadership has been characterized by a focus on improving the country's business environment, investing in infrastructure, emphasizing manufacturing, skills, and vocational training, and harnessing technology for economic development - a collection of ideas and policies often referred to as 'Modi-nomics' (Schöttli & Pauli, 2016). While this term has been criticized for its vagueness, it highlights the distinct approach Modi has brought to economic governance, where he is often depicted as an 'efficient, tough, and incorruptible administrator' (Schöttli & Pauli, 2016). Beyond the economic realm, Modi's tenure has also witnessed a revamping of India's foreign policy, with initiatives such as the 'Look East' policy being transformed into the 'Act East' policy, and a renewed effort to build stronger ties with India's neighbors, known as the 'Neighbourhood First' policy (Hall & Ganguly, 2021). Moreover, the Modi government has sought to reground Indian foreign policy with a set of principles that align with what it perceives as India's traditions, to restore the country's standing in the world and ensure its status and interests are respected by major powers (Hall & Ganguly, 2021). However, the extent to which Modi and his administration have achieved these objectives or will achieve them through their policies remains a subject of keen debate (Hall & Ganguly, 2021). Some argue that the Modi government has revolutionized India's foreign policy, while others maintain that there has been no substantive change and that India's future direction is likely to remain both predictable and moderate (Pardesi, 2021). Ultimately, the impact of Narendra Modi's leadership on Indian politics and the country's role in the global arena is a complex and evolving narrative, one that warrants continued scholarly attention and analysis. Narendra Modi's tenure as Prime Minister of India has been the subject of extensive analysis and debate, with his leadership and policies shaping the country's domestic and foreign affairs in significant ways. The study synthesizes existing theories of servant and transformative leadership and contextualizes them within Indian politics to propose a conceptual model for leadership development. This review addresses the need for a paradigm shift in leadership approaches to tackle the unprecedented challenges of the 21st

century. Objective The primary objective of this SLR is to investigate how radical resilient leadership, inspired by Narendra Modi's vision, can revolutionize Indian politics to effectively confront global and domestic challenges. Specific objectives include synthesizing the existing literature on servant and transformative leadership, analyzing their applicability in Indian politics, identifying key attributes and practices of radical resilient leadership, and proposing a conceptual model for leadership development. Methodology A comprehensive literature search was conducted across multiple academic databases, including JSTOR, Scopus, and Google Scholar, using keywords such as "servant leadership," "transformative leadership," "Indian politics," "resilient leadership," and "Narendra Modi." The selection criteria focused on relevance, credibility, and recent publication dates, with a preference for studies published between 2000 and 2024. The inclusion of Narendra Modi's political journey and practical approach ensures continuous improvement and balance in the leadership model. Key information from the selected articles was extracted and categorized based on themes such as leadership attributes, practices, and impacts. The synthesized data identified common patterns, gaps in the literature, and implications for Indian politics. Key Findings The review highlights the complex geopolitical and domestic challenges that Indian political leaders must navigate, such as the Russian-Ukrainian conflict, Middle Eastern turmoil, US-China trade tensions, economic disparities, social unrest, and environmental degradation. The findings suggest that effective leaders in the current global landscape must possess a blend of empathy, sustainability, innovation, collaboration, and transparency. Proposed Conceptual Model The proposed model for radical resilient leadership includes the following key principles: 1. Empathy and Engagement: Leaders must actively listen to and address constituents' needs, fostering trust and participatory governance. 2. Sustainability and Responsibility: Policies should be sustainable and responsible, ensuring decisions made today do not compromise future generations' needs. 3. Innovation and Agility: Leaders should cultivate a culture of creativity and adaptability within their organizations. 4. Collaboration and Partnerships: Building alliances across sectors enhances policy impact and facilitates collective problem-solving. 5. Accountability and Transparency: Ethical governance and transparency are vital for maintaining public trust and ensuring informed decision-making. Implications The adoption of radical resilient leadership can significantly transform Indian politics, driving transformative change and fostering a sustainable and resilient political system. This leadership model emphasizes the importance of empathy, sustainability, innovation, collaboration, and accountability, providing a comprehensive approach to governance that addresses both immediate and long-term challenges. Conclusions This SLR underscores the transformative potential of radical resilient leadership in Indian politics. By integrating servant and transformative leadership theories and contextualizing them within the Indian political landscape, the study proposes a model that can guide leaders in navigating global and domestic uncertainties. The findings hold significant implications for policymakers, political strategists, and leadership development programs, offering valuable insights into fostering a more resilient and responsive political system.

952

Submission Number: **952** | Track: **ADCLOD**

Paper Title: Leadership Dynamics: Influence on Organizational Culture and Performance

Authors: Obaidullah Saidkhily, Ayyoob A, Amal Sabah and Dr. Aparna Sajeev

Abstract: Leadership styles, ranging from transformational and transactional to autocratic and democratic, have been shown to influence various aspects of organizational life. Transformational leadership, for instance, is often associated with positive organizational outcomes due to its focus on inspiration, motivation, and fostering a supportive culture. Conversely, transactional leadership, emphasizing rewards and punishments, may affect organizational performance and employee engagement differently. These relationships are further complicated by demographic factors, such as gender and age, which may affect leadership effectiveness and influence organizational outcomes. This study aims to bridge existing gaps in the literature by examining the relationships between leadership styles, organizational culture, employee engagement, and organizational performance. The research comprehensively analyzes how different leadership approaches influence these critical variables by focusing on a sample of leaders and managers from diverse organizations. The study employs a quantitative research design to assess these relationships rigorously and offers insights into the role of demographic factors in shaping leadership effectiveness. The significance of this research lies in its potential to enhance theoretical understanding and inform practical management strategies, thereby significantly impacting organizational success. The study provides valuable information for developing targeted leadership development programs and optimizing organizational strategies by elucidating how leadership styles influence organizational culture and performance. Ultimately, the findings aim to support organizations in navigating the complexities of modern leadership and achieving sustained success in a rapidly evolving business environment.

981

Submission Number: **981**	Track: **ADCLOD**
Paper Title: Employee Silence beyond organizations: A review and Conceptual Framework for the Future Research	
Authors: Jasveen Kaur and Sushma Rani	
Abstract: Employee silence is pervasive in organizations and extensive scholarly inquiry has surfaced in the domain of organizational behavior, concerning when and why employees choose to speak up or maintain silence. So far, the research attention has been directed towards studying employee silence when it becomes an established behavior. However, a complementary/alternative understanding of employee silence has been presented in this article by focusing on its origins, where, the influence of culture and upbringing on the development of silent behavior in prospective employees has been emphasized. These factors have been underscored in order to provide a conceptual framework that facilitates further research and analysis and enhances comprehension of the phenomenon of employee silence. The study shall address the need to consider the influence of past experiences, cultural contexts, educational and social environments, and individual characteristics and predispositions on employee silence behavior within organizations. Consequently, by working on its roots, this study shall ultimately aid organizations in comprehending employee silence and addressing the pre-employment factors that contribute to it. It shall further prescribe the gaps to be filed in the future.	

982

Submission Number: **982**	Track: **ADCLOD**
Paper Title: From Intent to Impact: HRM in the Gig Economy	
Authors: Vaishnavi Gautam, Mridul Maheshwari and Manish Gupta	
Abstract: The confluence of technology and gig work has revolutionized the nature of work, workforce and workplaces. These transformations have altogether challenged not only the traditional employment model but also emerged as a challenge for organization to manage and retain their workforce. Although, literature offers insights on how HRM unfolds in gig work but fails to provide how well organizations' intended strategies translate into practice and how gig workers perceive these efforts. Therefore, this study aims to examines the subtleties and nuances of HRM implementation in gig work when HRM traverses from intended to actual to perceived HR levels in gig work. Using a qualitative single case study approach, this study unveils three major gaps in HRM implementation in gig work namely, ‘intended-implemented gap’, ‘implemented -perceived gap’, ‘intended-perceived gap’. In so doing, this study attempts to contribute to advancement of HRM scholarship in two ways. First, this study is expected to extend the SHRM process framework (Wright & Nishi, 2007) in gig work and second the study is expected to offer an inductive model of the emergence of multi-level gaps in HRM implementation arising from the interplay of various actors, aspirations and actions within gig work.	

995

Submission Number: **995**	Track: **ADCLOD**
Paper Title: Mission ‘Transition:’ Analysing Perceived Leadership Adaptation Challenges in Military to Corporate Career Transition, using Grounded Theory	
Authors: Tanya Ahuja	
Abstract: Career transition is defined as the process of changing objective occupational roles or subjective professional orientations. Although some studies explore challenges in career transitions, no study particularly looks at challenges in leadership style adaptation. The objective of this study is to answer the question: How do transitioning military officers perceive the challenges in adapting their leadership approaches during the transition to corporate roles? The idiosyncratic and distinct nature of private and public sectors, especially the military organisation, and the uncertainty characterising the transition period makes this question interesting. This study adopts a grounded theory methodology to collect, code and analyse the data, to theorise on perceived leadership challenges and to build on the Adaptive Leadership theory. Primary data was collected from 27 interviews of military officers enrolled in the Armed Forces Programme (AFP), a career transition	

training course, at a prominent management school in India. The findings revealed the most prominent perceived challenges to be skilling, work culture, bonhomie and value-mission alignment. Making a theoretical contribution, the study proposes a novel 4-C Career Transition Model (4-CCTM) for analysing leadership adaptation in career transitions, based on the four Cs: competence, culture, community and consciousness. Rich insights emerge from the results that may be significant for practitioner viz. transitioning officers, training organisations, public policymakers, defence organisations and employers. The study points towards a need for holistic emotional, social, cognitive and technical preparedness and training in career transitions for leaders, and guides future research in this direction.

1011

Submission Number: **1011**	Track: **ADCLOD**

Paper Title: Identity Leadership and Turnover Intentions: A serial mediation model

Authors: Utkarsh Nigoti and Virajanand Varma

Abstract: Identity leadership is grounded in social identity theory, which posits that individuals derive a part of their self-concept from their membership in social groups (Tajfel & Turner, 1979). Effective identity leaders are perceived as prototypical members of the group who advance the group's interests and who create a sense of shared identity among members (Hogg et al., 2012). Recent literature has expanded on these foundations, emphasizing the dynamic and context-dependent nature of identity leadership. Steffens et al. (2021) conducted a meta-analysis of 62 studies and found a significant positive correlation between identity leadership and various performance metrics, including team effectiveness, employee engagement, and overall organizational success. A study by van Dick et al. (2018) revealed that identity leadership is associated with lower levels of employee burnout and higher job satisfaction. This is attributed to the sense of belonging and purpose that identity leaders foster within their teams.

1136

Submission Number: **1136**	Track: **ADCLOD**

Paper Title: Unveiling the mechanism of inclusive leadership and organizational learning culture on career sustainability among IT employees: The mediating role of psychological capital

Authors: Ravina Matani and Dr. Tripti Singh

Abstract: Career sustainability has become essential for both individuals and organizations in navigating the rapid developments in technology. (Lawerence et al., 2015). The employees' health, happiness, and productivity are the key components of career sustainability throughout their career paths. Sustainable careers refer to "sequences of career experiences reflected through a variety of patterns of continuity over time, thereby crossing several social spaces, characterized by individual agency, herewith providing meaning to the individual" (Van der Heijden & De Vos, 2015, p. 7). Various studies have focussed on the individual factors leading to career sustainability (Talluri et al., 2022; Richardson et al., 2017). However, there exists a notable gap in research combining both individual and organizational factors (Retkowsky et al., 2023). Specifically, the current study aims to bridge this gap by examining the organizational factors of inclusive leadership and organizational learning culture, alongside the individual determinant of psychological capital to achieve career sustainability. Although sustainable careers have received increased recognition, there is still a lack of empirical research (Castro et al., 2020). Zhu and Qian (2014) noted that traditional leadership studies have primarily examined leader traits and behavior. On the other hand, modern leadership studies emphasize the relationship between leaders and their subordinates (Orieno et al., 2024). The UN Millennium Development Goals prioritize inclusivity. Our research provides several contributions to the existing literature on career sustainability. First, it provides empirical evidence explaining the mechanism linking inclusive leadership and organizational learning culture to career sustainability. Second, it highlights the significance of psychological capital as a crucial personal resource in a dynamic work environment. Finally, our research provides some practical implications for IT organizations desiring to improve their leadership interventions and adaptable learning culture to support the long-term career development of employees.

1045

Submission Number: **1045**	Track: **ADCLOD**

Paper Title: Understanding leader-member exchange dynamics through personality congruence: Implications for work engagement and employee well-being

Authors: Veer Pratap Singh Rana and Neerpal Rathi

Abstract: Employees at work indulge in developing interpersonal relations through formal or informal structures to harness organizational support and resources. The interpersonal relationship between the member and leader in the workplace, i.e., Leader-Member Exchange (LMX), is of utmost significance. Leaders, especially the immediate supervisor, represent organizations to the members and influence employee-organization exchange. Drawing from the person-supervisor fit, the personality traits of leaders and members are the prominent determinants of LMX quality, focusing on the personality congruence between leader and member. The personality traits of authenticity and self-monitoring are significant in social interactions and are associated with numerous benefits at the workplace. Authentic personality, on the one hand, focuses on being true to your values and ideals. On the other hand, a self-monitoring personality is concerned with presenting oneself as per social cues. Through the dyadic data collected from supervisors and subordinates, this study aims to explore the dynamics of LMX quality in light of authentic and self-monitoring personality traits, which are quite contrasting. The data will be analyzed through the quantitative techniques appropriate for fit-based problems. The study will have practical implications for fostering employee well-being and work engagement. Further, the study will contribute to the personality congruence and relationship-based leadership literature.

1086

Submission Number: **1086**	Track: **ADCLOD**

Paper Title: Navigating the Shadows: A Meta-Analysis of Toxic Leadership in Educational Institutions

Authors: Sonu Kumari, Sunita Rani and Ankur Sabharwal

Abstract: Toxic leadership presents destructive behaviors and attitudes that impose crucial challenges for educational institutions. These types of leadership behaviors lead to unfavorable consequences for organizations; such as affecting the organizations' climate, well-being of people, and ultimately students' related outcomes. Thus, addressing such issues become challenging for the organizations. The present study is a meta-analysis that integrates empirical studies to provide a panoramic understanding of the prevalence, characteristics, and consequences of toxic leadership in educational institutions. The analysis is an aggregation of empirical studies and provides a comprehensive view of the factors that contribute to creating Toxic leadership and ultimately examining the impact on educational institutions and their stakeholders. The analysis also identifies key moderators and mediators, which further offer insights for future research and practical interventions. The findings provide practical implications for educational leaders, policymakers, and researchers.

1101

Submission Number: **1101**	Track: **ADCLOD**

Paper Title: "The Shackles of Leader Aggressive Humour": A Systematic Review and Future Research Direction

Authors: Akanksha Mishra

Abstract: Introduction: In the era of dynamic and modern workplaces, leadership styles play crucial role in shaping the organization and its people. The use of leader humor, specifically when tinged with aggression, has gained significant attention due to its dysfunctional outcomes. Aggressive humor wavers on the boundary of being edgy and offensive yet provokes laughter through its sharp wit and boldness. Grounded in the roots of superiority theory, aggressive humor is aimed at insulting and belittling others by making them feel inferior. The unfiltered and demeaning nature of aggressive humor when coupled with power, creates catastrophe and gives birth to a dysfunctional leadership style. The shackles of such leadership suffocate the spirit of positivity, shake the foundation of a healthy organization and erode creativity and trust from its people. Moreover, when the leader has a niche for aggressive humor, the situation becomes worse, as it acts like a secret weapon for unlocking covert oppression. Clocked in a guise of harmlessness, aggressive humor conceals its underlying offensiveness. Therefore, aggressive humor from the leader acts as a catalyst for subtle discrimination and dignity attacks. The motto of "laughing at others rather than laughing with others" fuels hopelessness and mistrust among the employees, paving way for a toxic workplace. Amidst the darkness of toxicity, a ray of hope ignites the urge for a new dawn. The gravity of this issue invites immediate action and makes this investigation immensely crucial. Therefore, this systematic literature

review has four major motives. First, to reveal how leader's aggressive humor creates a toxic workplace. Secondly, to unveil the gravity of the issue by highlighting its personal, organizational and relational outcomes. Thirdly, to identify the coping mechanisms used by employees to deal with its detrimental effects. Finally, to propose a novel framework for future research. Methodology: A systematic literature review of 37 articles was performed. In order to increase transparency in reporting of this research PRISMA framework (Preferred reporting items for systematic reviews and meta-analyses) was used. Inclusion Criteria: The inclusion criteria comprised of peer reviewed journal articles in English language. The timeline for extraction of articles was from the start year of the databases till the day last search was performed. Search strategy: the search strategy comprised of broad search term related to the topic. These search terms were "aggressive humor", hostile humor", "leadership", "leader", "manager", "supervisor". Additionally, we took into account the differences in spellings of the same word (i.e., humor and humour). Finally the following query string was formed in Scopus using these search terms in double inverted commas: TITLE-ABS-KEY (("aggressive humor" OR "hostile humor" OR "aggressive humour" OR "hostile humour") AND ("leadership" OR "leader" OR "manager" OR "supervisor")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")) Further, research articles were extracted from another four databases namely, ProQuest, EBSCOhost, Web of Science, ProQuest and SAGE Journals. Also, articles were extracted through manual search from the databases of various peer-reviewed journals. Study selection: a total of 37 articles were selected after filtering the retrieved articles based on their relevance for the study. Combination of thematic and narrative synthesis was used. These studies catered to the four objectives of this study. Findings: thematic analysis of the retrieved papers resulted in the development of four major themes which catered to the first objective. These were namely, a. power assertion (the use of derogatory jokes by leaders to belittle and humiliate others and strengthen their dominant position), b. focused microaggression (micro assaults, microinvalidation, and microinsults), c. covert discrimination (gendered jokes, racial jokes, etc.), d. learned helplessness (acceptance of aggressive humor as a part of the organizational culture). Further, the study revealed that leader's aggressive humor corrodes the personal and professional life of the employee. Moreover, it perpetrates detrimental organization outcomes like, low morale, disengagement from work and low productivity. Similarly, it results in negative relational outcomes (impact on personal and professional relationships) and personal outcomes like, stress, anxiety, loss of hope and a sense of mistrust. This review also shed light on the coping mechanisms used by employees to deal with leader's aggressive humor. two major themes emerged namely, emotion focused coping and problem focused coping, which catered to the third objective. Emotion focused coping included seeking social support, catharsis, emotional expression, and even avoidance of the situation, etc. Whereas problem focused coping included assertiveness training, use of formal channels, third party intervention, direct communication and negotiation, etc. Lastly, we built a novel framework showing future research directions by analyzing the research gaps. Future Research Direction: based on the review of 37 peer reviewed articles the potential for future research lies in investigating the nature of leader aggressive humor under various theoretical lenses, perform longitudinal studies and cross sectional to unveil the loop holes related to the topic. Further, studying the interaction of artificial intelligence (AI) and leader aggressive humor can provide valuable insights. Moreover, Researchers could delve into the long-term effects of leader aggressive humor on employee's stress, quite quitting and turnover rates. Studying the effect of different types of aggressive humor like, put-downs, sarcasms on various professional levels and demographic groups can be a rich addition to the available literature. Finally, researchers should focus on developing various coping strategies and models aimed towards mitigating the negative outcomes of leader aggressive humor. Limitations of the study: This systematic literature review of 37 peer reviewed articles on "leader aggressive humor" has various drawbacks. First of all, the articles are restricted to English language which creates ground for loss of relevant literature published in other languages and also generates scope for potential cultural and linguistic biases. Secondly, relevant literature might be lost due to omission of grey literature. Thirdly, the concise nature of the review topic and the number of studies included may narrow down its scope for generalizability. Lastly, the use of thematic and narrative analysis may introduce the element of subjectivity.

1132

Submission Number: **1132**	Track: **ADCLOD**
Paper Title: Examining integrity-based trust on bullying and employee silence: An experimental causal-chain study	
Authors: Dr Arathi Krishna, Dr Devi Soumyaja and Dr. Rahul R Lexman	

Abstract: Introduction Leadership styles marked by dysfunctional characteristics can have enduring negative impacts on employees, undermining job performance and productivity. Research indicates that workplace bullying often stems from dysfunctional leadership (Kurtulmuş, 2020). Consequently, victims frequently exhibit this dysfunction through a lack of trust in their organization, colleagues, and supervisors. The current study aims to explore integrity-based trust, which involves expecting others to adhere to accepted norms (Kim et al., 2006). Research shows that this form of trust is essential for fostering strong interpersonal relationships (Kim et al., 2004), which can be severely damaged by workplace bullying, particularly between victims and their immediate supervisors (Krishna & Soumyaja, 2020). In an academic context, workplace bullying can severely damage integrity-based trust, particularly between victims and their immediate supervisors, such as department heads or college principals. This erosion of trust can worsen collegiality and departmental operations, potentially leading to employee silence (Krishna et al., 2024). Consequently, these outcomes may result in a decline in academic freedom and hinder knowledge sharing. Using an experimental causal-chain design, the present study addresses this research gap by examining how integrity-based trust influences the relationship between bullying and employee silence. Literature review and theoretical background Einarsen et al., (2011, p. 15) defined workplace bullying as repeated and regular negative acts like harassment, and social ostracism, that has negative impacts on work performance. However, there has been limited research into why academic faculty members choose to remain silent in response to workplace bullying (Krishna et al., 2023; Krishna et al., 2024). The present study aligns with social exchange theory, and examines faculty member's silence in workplace bullying context. The present study examines employee silence in detail, focusing on relational silence, where employees withhold input to avoid damaging relationships; defensive silence, driven by fear of negative repercussions; and ineffectual silence stemming from the belief that speaking up will be ineffective. Understanding these dimensions can provide insights into why employees might choose to remain silent despite facing workplace bullying. The present study also explores the mediating role of integrity-based trust in bullying-silence relationships. Studies indicate that there is a need for further research to develop a bullying-free academic environment, as silence has not been thoroughly examined as a strategy to prevent academic bullying (Miller et al., 2019). Methodology According to the experimental causal-chain design (Spencer et al. 2005), the study involves two sequential but distinct experiments (1A and 1B). The first experiment (1A) randomly assigns participants to different conditions or levels of the independent variable (workplace bullying: bullying and no bullying) and measures the mediating variable (integrity-based trust) to determine the causal influence between the independent and mediating variables. In the second experiment (1B), participants were randomly assigned to different levels of the mediating variable (integrity-based trust high vs. low) and then assessed the dependent variables (employee silence behaviours). If the manipulated independent variable significantly affects the mediating variable (study 1A) and the manipulated mediating variable has a significant impact on the dependent variable (study 1B), then this supports the existence of a chain of causal effects and provides strong evidence for mediation (Spencer et al., 2005; Vancouver & Carlson, 2014; Lee & Feeley, 2017). We presented vignettes to participants, asked them to imagine themselves as the faculty member described, and had them answer questions for manipulation checks and dependent variables. In Study 1A, 170 university faculty members and in Study 1B, 193 faculty members participated in the experiment voluntarily. The variables measured are workplace bullying (NAQ-R; Einarsen et al., 2009), Integrity-based trust (McAllister, 1995), and employee silence (Brinsfield, 2013) Results Manipulation check in both the studies were significant.

1148

Submission Number: **1148**	Track: **ADCLOD**
Paper Title: Employers' and Employees' Perceptions of Career Break through the Lens of Psychological Contracts: A Qualitative Study	
Authors: Sumit Manderna and Mridul Maheshwari	

Abstract: In exploring the perceptions of career breaks from both employers and employees, this study attempts to uncover the gap in the subjective interpretation of psychological contracts. In so doing, it attempts to move from an ideologically biased formula designed for particularly managerialist interpretation to a more consensual understanding of psychological contracts. The implicit obligations and reciprocal mutuality stand strained when experiences such as career break are experienced by the employer-employee dyad. The study contributes to explaining the hitherto unexplored relationship between career breaks and psychological contracts. It underscores the importance of perceived organizational support in maintaining trust and commitment, highlighting how clear communication and reintegration programs can prevent perceptions of breach.

1163

Submission Number: **1163**	Track: **ADCLOD**

Paper Title: Connecting the Dots of Nonprofit Sustainability: An Analysis of Strategic Building Blocks and Leadership Practices

Authors: Ashish Kumar, Prof. Vijit Chaturvedi and Prof Dr Sanjeev Bansal

Abstract: The United Nations' 2030 Global Agenda outlines 17 Sustainable Development Goals (SDGs) covering poverty, health, education, gender equality, sustainability etc. Attaining these ambitious targets by 2030 necessitates significant contributions from nonprofit organizations. However, nonprofits face challenges related to organizational sustainability that often stem from poor performance and lead them to shut down their operations worldwide. Existing research literature covers organizational sustainability from a limited perspective, focusing solely on finance or other isolated organizational factors. Researchers examine governance or management sustainability areas individually rather than together, leading to a fragmented approach. This piecemeal method has misled numerous nonprofits in their pursuit of sustainability, resulting in failure and frustration. This paper identifies a significant gap in the nonprofit sustainability approach through a literature review and systematic analysis. Nonprofits struggle with sustainability due to the lack of an inclusive organization sustainability framework, impeding their mission and limiting their contribution to the SDGs, ultimately posing challenges for the poor. This situation is familiar to many nonprofits worldwide, regardless of geography or sector. To address this and connect the dots of nonprofit sustainability, the paper conducts an extensive literature review to develop the first conceptual framework for nonprofit sustainability, including governance and management for nonprofits. Additionally, it provides a detailed analysis of nonprofit sustainability leadership practices, factors, and strategic building blocks to understand the landscape. The presented framework and findings benefit global nonprofits, offering an integrated organization-wide approach to address complex sustainability challenges, sustain their mission, and contribute effectively to the SDGs. This paper is an excellent reference and a foundational resource for researching, developing, and building on nonprofit sustainability knowledge. This paper shares 191 nonprofit sustainability factors, four governance strategic building blocks with 24 leadership practices - and six management strategic blocks and 24 leadership practices.

1177

Submission Number: **1177**	Track: **ADCLOD**

Paper Title: Investigating the Influence of Positive Leadership on Flourishing of Women in the IT Sector: Exploring the Connection through Work Engagement

Authors: Baisakhi Debnath, Harold Andrew Patrick and Richa Tiwari

Abstract: In the competitive and global work setting, positive leadership, flourishing, and work engagement are critical behaviours that must be cultivated within businesses and human resources to enhance effectiveness. Information technology organizations focus on creating positive experiences for software professionals to improve work engagement (through job resources and demands) and flourishing (feeling good and functioning well) by incorporating empowering processes. A descriptive, sequential mixed-method approach was employed, incorporating qualitative and quantitative analyses to test the conceptual model. The study used a stratified selection method to sample the top 25 IT organizations. These organizations were categorized as Indian multinational corporations (MNCs) and foreign MNCs. Software professionals were selected using a judgemental method based on three specific inclusion criteria for participation in the survey. The qualitative data underwent content analysis to identify themes, while the quantitative data was subjected to descriptive and inferential statistics to address the study's objectives and test the hypotheses. Additionally, the variables' direct and indirect mediation effects were examined using Structural Equation Modelling (SEM) and AMOS. The study contributes to the theoretical literature on positive leadership and other study constructs among women IT professionals, especially the findings on the connection between positive leadership and flourishing with the mediating role of work engagement, which still needs to be reported. The study necessitates organizational leaders adopt a positive approach to foster trust, commitment, empowerment, and engagement, ultimately boosting organizational profits and overall flourishing. Interventions in organizational development, like positive leadership training initiatives, can enhance flourishing.

1191

Submission Number: **1191**	Track: **ADCLOD**

Paper Title: Understanding the Impact of Analytics and Artificial Intelligence (AI) at Workplace in Enhancing Employee Engagement Mediated by Employee Trust and Age - A Mixed-Methods Approach Using PLS-SEM and FSQCA

Authors: Manish Bharthi and Dr Prakash Tiwari

Abstract: Objective: This article aims to develop a multifaceted model that incorporates artificial intelligence into human resource procedures and organizations, to analyze its impact on employee engagement leading to organization performance mediated by employee trust in artificial intelligence technology, moderated by age. Methodology: A sample of 238 working professionals and human resource experts across India participated in the study. The constructs of the model encompass various facets of artificial intelligence integration within the elements and activities at the organization, these include, organizational culture, leadership, and the reduction of employee workloads. Additionally, the model examines the relationship between employee engagement and enterprise performance. A mixed partial least squares structural equation modeling (PLS-SEM)/fuzzy-set qualitative comparative analysis (fsQCA) methodology was employed for the modeling and data analysis. Originality/Value: This study first tackles significant issues about the use of AI and analytics in the workplace and how it affects employee engagement. Second, by adding employee age and trust in AI as novel drivers of employee engagement that lead to organizational motivation and performance, this research adds to the body of literature already in existence while offering novel and innovative insights. Finally, by combining linear (PLS) and nonlinear (fsQCA) procedures, the study makes a significant methodological addition. It demonstrates that both methodologies offer a greater grasp of the issue at hand as well as a more in-depth knowledge of the patterns of antecedent elements. Findings: The verdicts demonstrate that AI-supported in maintaining organizational culture, leadership, and reducing staff workloads all had a positive impact on employee engagement leading to a significant impact on organizational performance and employees trust in technology plays a significant impact. The findings present clear directions for organizations, focused on improving their understanding of the characteristics on the factors influencing employee engagement.

IIMA

विद्याविनियोगाद्विकास:

IMRC
2024

India Management
Research Conference

IIM Ahmedabad

TRACK 10: DATA SCIENCE & ARTIFICIAL INTELLIGENCE

Track 10: Data Science & Artificial Intelligence

8

Submission Number: **8**	Track: **CDSA**
Paper Title: A New Algorithm for LU Factorization through Fast Matrix Multiplication	
Authors: Yajush Bhatia	
Abstract: This paper presents a novel algorithm for computing the LU factorization of a square matrix in O(nlog27) time complexity, significantly improving upon existing algorithms with O(n3) time complexity. The proposed algorithm has the potential to revolutionize various computational tasks relying on LU factorization.	

10

Submission Number: **10**	Track: **CDSA**
Paper Title: Intelligent Authentication Gateway: Bridging the Gap between Traditional and FIDO2 Security through AI/ML Enhancement	
Authors: Dasari Nishith (Vellore Institute of Technology), Ikshit Samanta (Vellore Institute of Technology) and Dr. Rajarajan G (Vellore Institute of Technology)	
Abstract: The prevalence of password-based authentication remains a significant security risk, susceptible to attacks like phishing and credential stuffing. FIDO2 presents a promising alternative, offering robust public-key cryptography and various authenticators for a more secure and user-friendly experience. However, transitioning from traditional systems to FIDO2 faces challenges, including integrating with existing infrastructure and ensuring a seamless user experience. We propose an Intelligent Authentication Gateway (IAG) that bridges this gap, leveraging the strengths of both traditional and FIDO2 authentication. The IAG employs an ML model, called Gator, trained on various parameters to dynamically assess risk and direct users to the appropriate authentication method. For high-risk scenarios, FIDO2 provides enhanced security, while low-risk situations utilize traditional methods for efficiency and convenience. This hybrid approach optimizes security based on context while minimizing disruption to user experience, enabling organizations to smoothly transition to FIDO2 and addressing user acceptance and integration complexities.	

106

Submission Number: **106**	Track: **CDSA**
Paper Title: Revolutionizing Health Diagnostics: The Impact of AI and Machine Learning on Precision Medicine	
Authors: Krish Somaiya	
Abstract: The integration of artificial intelligence (AI) and machine learning (ML) into healthcare has the potential to revolutionize diagnostic accuracy and efficiency, marking a transformative shift from traditional methodologies to innovative, data-driven approaches. This paper explores the impact of AI and ML on modern healthcare diagnostics, examining their capabilities, benefits, and challenges in enhancing diagnostic accuracy.The increasing complexity of medical data and the necessity for precise and timely diagnoses have driven the adoption of AI and ML technologies. These technologies excel at analyzing vast datasets, identifying patterns, and making predictions with a level of accuracy unattainable by human clinicians alone. AI algorithms can process and interpret complex medical images, recognize anomalies, and provide diagnostic suggestions, which assist radiologists and other specialists in making more accurate and faster decisions. For instance, convolutional neural networks (CNNs), a type of deep learning model, have demonstrated remarkable proficiency in image recognition tasks, such as detecting tumors in radiographs and classifying skin lesions from dermatoscopic images.Machine learning models also play a crucial role in predicting disease outcomes and patient prognoses. By analyzing historical patient	

data and identifying risk factors, ML algorithms can forecast the likelihood of disease progression and potential complications. This predictive capability is particularly beneficial for managing chronic diseases such as diabetes, cardiovascular conditions, and cancer, where early intervention can significantly improve patient outcomes. Furthermore, AI-powered diagnostic tools can assist in personalized medicine by tailoring treatment plans based on individual patient profiles, thereby enhancing the effectiveness of therapies and reducing adverse effects.Despite these advancements, the implementation of AI and ML in healthcare diagnostics presents several challenges. One primary concern is the quality and reliability of the data used to train these models. Medical data often come from diverse sources, including electronic health records (EHRs), medical imaging, and genomic databases, which can vary in quality and completeness. Ensuring the integrity and standardization of this data is crucial for the accuracy and generalizability of AI models. Additionally, the "black box" nature of many AI algorithms, particularly deep learning models, poses a challenge for clinical adoption. Clinicians may be reluctant to trust diagnostic recommendations from models that do not provide transparent reasoning for their decisions. Addressing this issue requires the development of explainable AI techniques that can elucidate the decision-making processes of these models.Ethical considerations also play a significant role in the deployment of AI and ML in healthcare. Ensuring patient privacy and data security is paramount, given the sensitive nature of medical information. Moreover, the potential for algorithmic bias must be carefully managed to prevent disparities in healthcare delivery. AI models trained on biased or unrepresentative data can inadvertently perpetuate existing inequalities, leading to suboptimal care for certain patient groups. Rigorous validation and ongoing monitoring of AI systems are necessary to mitigate these risks and ensure equitable and fair diagnostic outcomes.The regulatory landscape for AI in healthcare is evolving, with regulatory bodies increasingly recognizing the need for comprehensive frameworks to oversee the development and deployment of AI-based diagnostic tools. Clear guidelines and standards are essential to ensure the safety, efficacy, and ethical use of these technologies. Collaboration between regulators, healthcare providers, and AI developers is vital to establish best practices and foster trust in AI-driven diagnostics.To fully harness the potential of AI and ML in healthcare diagnostics, interdisciplinary collaboration is essential. Integrating insights from computer science, medicine, and bioinformatics can drive innovation and address the multifaceted challenges associated with AI implementation. Moreover, continuous education and training for healthcare professionals are crucial to equip them with the necessary skills to effectively utilize AI tools in clinical practice.The future of healthcare diagnostics lies in the seamless integration of AI and ML into everyday medical practice. As these technologies continue to evolve, their ability to provide accurate, efficient, and personalized diagnostic solutions will significantly enhance patient care and outcomes. This paper underscores the transformative potential of AI and ML in healthcare diagnostics, advocating for a balanced approach that embraces technological innovation while addressing ethical, practical, and regulatory challenges.the role of AI and ML in modern healthcare diagnostics is both promising and multifaceted. By leveraging their advanced analytical capabilities, healthcare systems can achieve unprecedented levels of diagnostic accuracy and efficiency. However, realizing this potential requires addressing data quality, transparency, ethical concerns, and regulatory requirements. With concerted efforts from all stakeholders, AI and ML can become integral components of a more precise, effective, and equitable healthcare system.

151

Submission Number: **151**	Track: **CDSA**

Paper Title: Unveiling Investment Opportunities: Leveraging Artificial Intelligence to Navigate Millennials' Behavioral Finance Biases in Investment Decision-Making

Authors: Rahul Chauhan, Salim Shamsher and Rahul Chauhan

Abstract: Purpose: This study investigates the influence of Artificial Intelligence (AI) on millennials' investment decision-making processes, focusing on the relationship between trust in AI systems and the adoption of robo-advisory services for wealth management. Additionally, it explores how AI affects millennials' behavioral finance decisions based on their financial knowledge levels. Design/Methodology/Approach: The research employs a descriptive survey technique, utilizing structured questionnaires to collect primary data from 754 millennials from India. Multi-Stage sampling ensures representation across various institutions in the capital market, providing a comprehensive view of millennials' investment behaviours. Used RStudio for detailed statistical analysis. Findings: The findings indicate a significant positive relationship between millennials' trust in AI systems and their intention to adopt robo-advisory for wealth management. Moreover, AI's impact on millennials' behavioral finance decisions varies based on their levels of financial knowledge, with higher knowledge levels positively influencing perceptions of AI's impact. Originality/Values: This research contributes to the understanding of how AI shapes millennials' financial choices, highlighting the role of trust in AI systems and financial literacy in influencing adoption patterns and perceptions. The study underscores the significance of AI in navigating behavioral biases and enhancing financial

decision-making processes among millennials. The results offer valuable guidance for financial service providers, policymakers, and technology developers aiming to improve AI integration in financial markets globally.

189

Submission Number: **189**	Track: **CDSA**

Paper Title: Transforming Academic Writing: AI and the Convergence of Global Standards

Authors: Arjun Prakash, Shruti Aggarwal, Jeevan John Varghese and Joel John Varghese

Abstract: Abstract: This study investigates changes in academic writing quality from 2012 to 2024 by analysing over one million social sciences abstracts indexed in the Web of Science. It examines the influence of nationality, income levels, geographic region, native language, and gender on writing quality measured using readability scores. A mixed-generalised linear model (GLM) explores the impact of internet penetration on writing standards. The findings reveal significant improvements in writing quality and a convergence between native and non-native English researchers. The econometric model confirms that internet accessibility positively affects writing quality. The study also highlights the use of AI in academic writing, particularly in non-native English-speaking countries, by examining frequently overused words identified by Large Language Models (LLMs). The study shows a global reduction in writing disparities across diverse demographic groups, indicating a shift towards a more inclusive academic environment. Introduction The global academic landscape is influenced by the predominance of English as the lingua franca, facilitating international collaboration and knowledge dissemination. However, this dominance challenges researchers from non-English-speaking backgrounds, often hindering their visibility and influence within the academic community. AI represents a transformative innovation in academic writing, evolving from simple word processors to sophisticated tools that enhance writing efficiency and quality. AI applications like Grammarly and generative AI tools like ChatGPT assist in drafting and research, improving the quality of academic inquiries and influencing educational methods. Technological Advancements Bridging Linguistic Gaps Technological advancements, particularly AI-driven tools, are crucial in mitigating linguistic disparities in academic writing. Digital tools like grammar checkers and AI-driven writing assistants support non-native English speakers by correcting linguistic errors and enhancing their understanding of academic norms. Increased internet penetration significantly influences the quality of academic writing by providing broader access to scholarly resources and writing tools, facilitating global academic collaborations, and supporting researchers from non-English-speaking backgrounds in improving their writing and communication skills. Assessing Writing Quality: Readability and Syntactic Complexity Readability tests and syntactic complexity measures are extensively used to assess the quality and complexity of academic writing. Readability tests quantify how easily a reader can understand a text, with formulas like the Flesch Reading Ease Formula, the Flesch-Kincaid Grade Level, and the SMOG Grading formula focusing on sentence length, syllable count, and polysyllabic words. Syntactic complexity refers to the structural intricacy of sentences and clauses, with studies showing that more complex and varied sentence structures positively correlate with improved writing quality. Combining readability formulas and syntactic complexity measures offers a holistic view of text complexity, providing insights into the overall quality of academic writing. Data and Methodology The study data comprised 1.03 million academic abstracts from Web of Science databases from 2012 to 2024. The primary dependent variable for the study is the quality of academic writing, assessed through various readability tests performed on each abstract using the Python textstat library. In addition to readability scores, the study uses a set of unique adverbs and adjectives identified by Liang et al. (2024) to be uniquely overused by ChatGPT. The country of publication was determined from the corresponding author's reprint address, and countries were categorised based on World Bank classifications regarding geographic region and income levels. To measure the impact of internet penetration, the study uses data on "Fixed Broadband Subscriptions (Per 100 People)" from the World Bank dataset. Quantitative and Econometric Analysis A mixed-generalised linear model (GLM) is employed to explore the impact of internet penetration and demographic factors on writing quality. The fixed effects in the model include internet penetration, native English-speaking status of the country, gender of the first author, funding status, open access status, income, and geographical categorisation. Random effects were incorporated by allowing random intercepts for each country, capturing unique unobserved effects specific to countries. The model also includes random slopes for internet penetration to account for its varying impact on readability across countries. Results The findings reveal significant improvements in writing quality and a notable convergence between native and non-native English researchers. Publications from native English-speaking countries exhibit more complex writing, but non-native English-speaking countries, particularly China, have shown remarkable improvements. The econometric analysis confirms that internet accessibility positively affects writing quality, with greater internet access correlated with higher readability scores. The gender of the first author is significantly associated with writing quality, with female-authored papers generally exhibiting more complex syntactic structures than male-authored papers. The study extends the analysis to explore the influence of language models in academic writing, using a list of 100 adverbs and 100 adjectives identified by Liang et al. (2024) as uniquely overused by ChatGPT. The increasing frequency of these terms, especially in non-native English-speaking countries, suggests a broader adoption of AI tools, contributing to improved writing quality. However, using these terms raises ethical considerations, including the need for clear guidelines and standards for AI usage in academic writing. Discussion The study's results provide insights into the evolution of academic writing quality, emphasising the effects of AI tools, demographic factors, and internet penetration. The convergence of academic writing quality between native and non-native English-speaking countries highlights the potential of AI to contribute to academic excellence across diverse linguistic and economic divides. The study also reveals gender differences in academic writing quality, with female-authored papers generally exhibiting more complex syntactic structures. The positive impact of internet penetration on writing quality underscores the significant role of digital connectivity in enhancing access to scholarly resources and writing tools. Conclusion This study systematically explores the evolving nature of academic writing quality, demonstrating significant trends and shifts across various demographic groups. The findings highlight the pervasive influence of internet penetration and AI tools, which have played a crucial role in enhancing the quality of academic writing globally. The study's policy implications include clearer guidelines and standards for AI usage in academic writing, ensuring that scholars can access AI-enabled writing tools while maintaining academic integrity. By addressing linguistic disparities and promoting inclusive academic environments, AI tools can democratise access to high-quality writing support, making it accessible to a larger audience.

206

Submission Number: **206**	Track: **CDSA**
Paper Title: Design of an AI-based Information System to Improve Freshness Efforts in Long-Distance Cold Chain Transport	
Authors: Vinay Reddy Venumuddala	

Abstract: Artificial Intelligence (AI) systems, powered by Machine Learning (ML), are increasingly ubiquitous across various domains, offering solutions from classification to generation tasks. However, the efficacy of AI systems hinges on their alignment with domain knowledge. This research draws on the author’s year-long engagement in a larger project on digital transformation in cold chains undertaken by stakeholders from industry and academia. The presented work specifically concerns the design of an Information System to tackle contract design challenges in long-distance cold chain transport. We propose an AI-based Information System that aims to adaptively optimize contracts between suppliers and logistics service providers (LSPs) by leveraging data from cold chain trips. We present a prototype implementation of a reinforcement learning (RL) component central to the proposed AI system. We also discuss the design theoretic implications of our study, particularly the potential adaptability of our proposed system to other contexts in logistics and beyond.

219

Submission Number: **219**	Track: **CDSA**
Paper Title: Artificial Intelligence in Stock Market Forecasting: Exploring the Long Short-Term Memory Model for Stock Prediction	
Authors: Iqbal K I and Remya Ramachandran	

Abstract: The application of artificial intelligence in stock market management has become increasingly vital for investors aiming to maximize returns and manage risks efficiently. This study investigates the efficacy of LSTM neural networks compared to traditional ARIMA models in predicting stock prices. Our analysis focuses on companies within the Nifty50 index, evaluating the performance of these forecasting models. The findings reveal that the LSTM model outperforms the ARIMA model in predicting stock prices for 47 out of the 50 companies analyzed. In cases where ARIMA surpassed LSTM, the differences in their respective Root Mean Square Error (RMSE) values were minimal. The superior efficacy of LSTM models is attributed to their robust capability to identify intricate patterns and dependencies in time-series data, which linear models like ARIMA often miss. The results indicate that integrating LSTM models into stock market analysis can significantly enhance predictive capabilities and decision-making processes, highlighting the value of advanced neural network architectures in financial forecasting.

404

Submission Number: **404**	Track: **CDSA**
Paper Title: Smashing the Silicon Ceiling: Stronger IPR and Female Participation in Chinese AI Patenting	
Authors: Shubhangi Agrawal, Sawan Rathi, Chirantan Chatterjee and Matthew Higgins	
Abstract: Do stronger intellectual property rights incentivize female participation in innovation? We provide new evidence on this question using a unique database of artificial intelligence patents publicly shared by the USPTO. Our identification strategy leverages China's WTO TRIPs accession, which led to stronger intellectual property rights in 2002. We find a significant rise in the number of female inventors and an increase in the number of patents with females on inventor teams vis-a-vis a control group of countries. We also find that after stronger intellectual property rights, the quality of Chinese artificial intelligence patents with female inventors on the team improved. Results are robust controlling for unobserved heterogeneity at the country, technology class, and over time. Additional robustness tests with synthetic controls, coarsened exact matching, randomized inference and alternative control groups support our benchmark findings. Our results highlight that stronger intellectual property rights can be helpful in improving gender division of labour thereby benefitting society and innovation.	

547

Submission Number: **547**	Track: **CDSA**
Paper Title: Unpacking the Period Paradox: The causal link between Menstrual Health and Hygiene and Mental Health Outcomes in Nepal	
Authors: Karan Babbar	
Abstract: Despite growing recognition of inadequate Menstrual Health and Hygiene (MHH) as a critical development concern, its causal link with mental health remains unexplored. This study investigates the causal impact of improved MHH practices on the likelihood of experiencing anxiety and depression among women aged 15-49 in Nepal. Using data from Nepal Demographic Health Survey (NDHS) and employing an instrumental variable approach with proximity to health facilities as an exogenous source of variation, we find that women with better MHH practices experience a a 33.5 percentage point reduction in the likelihood of experiencing anxiety and a 32.3 percentage point reduction in the likelihood of experiencing depression. This impact is particularly pronounced for those from disadvantaged socio-economic backgrounds, underscoring the potential for MHH interventions to contribute to broader development goals. The findings provide strong empirical support for policies promoting comprehensive MHH programs, including interventions aimed at reducing menstrual taboos and improving reproductive health. These programs should include expanded access to period products and educational initiatives.	

636

Submission Number: **636**	Track: **CDSA**
Paper Title: A divide-and-conquer approach for spatio-temporal analysis of large house price data from Greater London	
Authors: Kapil Gupta and Soudeep Deb	
Abstract: Statistical research in real estate markets, particularly in understanding the spatio-temporal dynamics of house prices, has garnered significant attention in recent times. Although Bayesian methods are common in spatio-temporal modeling, standard Markov chain Monte Carlo (MCMC) techniques are usually slow for large datasets such as house price data. To tackle this problem, we propose a divide-and-conquer spatio-temporal modeling approach. This method involves partitioning the data into multiple subsets and applying an appropriate Gaussian process model to each subset in parallel. The results from each subset are then combined using the Wasserstein barycenter technique to obtain the global parameters for the original problem. The proposed methodology allows for multiple observations per spatial and time unit, thereby offering added benefits for practitioners. As a real-life application, we analyze house price data of more than 0.6 million transactions from 983 middle layer super output areas in London over a period of eight years. The methodology provides insightful findings about the effects of various amenities, trend patterns, and the relationship between prices and carbon	

emissions. Furthermore, as demonstrated through a cross-validation study, it shows good predictive accuracy while balancing computational efficiency.

657

Submission Number: **657**	Track: **CDSA**
Paper Title: Demand forecasting for a Pure Play Fashion Retailer using Neural Network	
Authors: Ravi Kumar P, Ettishri Rajput, Kaja Bantha Navas R and Mohit Kumar	
Abstract: In the dynamic fashion industry, optimized inventory management holds immense value for brands. This work proposes a model fostering collaborative planning across various functions within the company, enabling strategic decision-making for both merchandise planning and replenishment. The core objective is to demand forecast the monthly projections of Spring Session -24 and validating the model efficiency with the help of actual sales and the RMSE value generated by the model. Currently, a push-based strategy drives inventory, potentially leading to overstocking or stock outs. Our model suggests transitioning to a push-pull hybrid, leveraging demand forecasts and real-time sales data to dynamically adjust replenishment. This shift promises not only reduced initial purchase quantities with associated cost savings but also optimized replenishment plans minimizing unnecessary warehouse shipments and improving product flow to stores.	

684

Submission Number: **684**	Track: **CDSA**
Paper Title: Artificial Intelligence in the Recruitment Process as an e-HRM Practice	
Authors: Suba D and Dr. Arockiam K	
Abstract: Artificial intelligence plays a significant role in every business operation in the modern era. This research study is aimed at investigating the impact of AI in the recruitment process, adopting a descriptive design. It consists of 169 respondents as a sample size, collected using the convenience sampling method among recruiters and HR professionals from various companies that are implementing artificial intelligence in the recruitment process. The major elements of the study focused on identifying AI-powered tools for creating job descriptions, screening, and conducting interviews to attract quality hires to the organization. The collected data were analyzed through structural equation modeling with Smart PLS 4 software. Since it is connected to information systems, involving knowledge as power, it also permeates the management field, especially after COVID-19. Thus, it contributes to the existing body of knowledge. The results found that AI-powered tools for screening and automated video interviews (AVI) have a great impact on effective hiring. The AI-powered job description has no significance in effective hiring.	

696

Submission Number: **696**	Track: **CDSA**
Paper Title: Forecasting Domestic Water Consumption and leakages – an IoT approach	
Authors: Hemanth Venkatesh Murthy and Gopal Krishna Sharma	
Abstract: Water stressed areas of South Asia and Indian subcontinent need innovative cost-effective solutions to manage consumption, detect leakages. The solutions need to be retrofitted into current infrastructure with minimal changes. Most residential and commercial buildings in these areas have their own water tanks to manage uninterrupted water supply. This paper proposes to use ultrasonic sensors fitted on top of water tanks to measure consumption and detect leakages, thereby not requiring any plumbing changes. Long Range Wireless (LoRa) is used to read the sensor values, which has high penetration capabilities in built environment. Neural network model is built using the consumption data. In this specific case model is built for a residential complex water usage, and the model can predict the usage patterns correctly. The model is also able to detect deviations in usage patterns thereby alerting for leakages and abnormal values.	

768

Submission Number: **768**	Track: **CDSA**

Paper Title: A Dual-Space Regularized Approach for Sign Prediction of Edges in Signed Social Networks

Authors: Mukul Gupta

Abstract: In numerous practical applications, the relationships between objects in a network can be characterized by polarity, leading to the concept of signed networks. These signed networks are distinct because the connections between nodes or entities are assigned positive or negative signs, which signify trust/friendship or distrust/enmity between them. This polarity in relationships is crucial for a variety of data mining tasks and decision-making processes as it adds a layer of meaning to the interactions within the network. In the realm of signed networks, one significant challenge is the prediction of signs for edges that are unsigned. Addressing this problem requires sophisticated methods that can effectively leverage the available network structure to infer missing information. This study focuses on this issue—predicting the signs of edges that do not have assigned labels in undirected signed networks. To tackle this problem, the work proposes a new approach involving dual-space regularized representational learning for nodes. For business leaders, particularly those focusing on targeted advertising and personalized content delivery, our findings suggest practical strategies for audience segmentation and engagement. By understanding and predicting user trust dynamics, businesses can tailor their advertising and content strategies to better meet the needs and preferences of their target audiences. This can lead to more effective marketing campaigns, increased user satisfaction, and improved overall business outcomes. Practically, our research provides actionable methods for improving user experience and trust management on social media platforms. The insights gained from our study can be used to develop new features and strategies that enhance user interaction and satisfaction. Additionally, our methodology can be adapted and applied to other domains where predicting relational dynamics is important, such as organizational networks, collaborative environments, and online communities. Societally, the ability to predict and manage trust dynamics in social networks has significant implications. Accurate trust prediction can help mitigate conflicts, reduce misinformation, and promote positive online interactions. By improving trust management, our research contributes to creating safer and more constructive online spaces, benefiting both individual users and the broader online community. Representational learning is a technique where nodes in a network are transformed into low-dimensional dense vector representations. These representations capture essential characteristics of the nodes and their relationships, enabling the model to perform various downstream tasks more efficiently. In the context of signed networks, these learned representations are used to predict the signs of previously unsigned edges. This approach is advantageous because it does not depend on specific domain knowledge or the distribution of edge signs within the network. Instead, it relies solely on the structural information of the network and available sign information of the edges, making it broadly applicable to different types of signed networks. The proposed method is designed to be independent of social theories like Structural Balance Theory or Status Theory, which means it can be applied across various fields and types of networks without requiring specific considerations and changes for each case. The fundamental idea is to learn effective node representations that encapsulate the underlying structure and relationships within the network. By utilizing these representations, the method predicts the polarity of the edges where the sign is not known, thereby filling in gaps in the network's connectivity information. To validate the effectiveness of this approach, experiments were conducted using two real-world benchmark signed networks i.e. Epinions Wikipedia RfA. These networks provide a diverse set of examples with varying structural characteristics and edge distributions. The performance of the proposed method was evaluated against existing benchmark techniques that also aim to predict signs of unsigned edges in signed networks. By comparing results, the study demonstrates that the new method offers significant improvements in accurately predicting edge signs. The outcomes of these experiments highlight the effectiveness of the proposed node representation learning technique in the task of sign prediction for unsigned edges. The method's ability to work with only structural information and its independence from specific domain characteristics and social theories make it a robust tool for handling signed networks. This advancement not only contributes to the field of network analysis but also opens up new possibilities for applying representational learning techniques in various domains where understanding the polarity of relationships is crucial. The method's demonstrated effectiveness across benchmark datasets underscores its potential as a valuable tool for practitioners and researchers working with signed networks. Overall, our study makes a substantial contribution to both academic research and practical applications by offering a novel and effective approach for predicting the signs of ties in social networks. The findings of this work may have the potential to influence the development of new tools and strategies for social media platforms, business applications, and other domains where understanding and predicting relational dynamics are crucial.

771

Submission Number: **771**	Track: **CDSA**

Paper Title: A machine learning approach to analyzing user behavior and optimizing workflow

Authors: Anupama Raveendran and Dhanya M

Abstract: E-commerce, known for its vast reach and cost-effective advertising, requires effective user behaviour analysis to optimize user experience and enhance workflow. This study explores the use of clickstream analysis to investigate user activity and detect suspicious behaviours. Additionally, it employs Markov chains, a machine learning algorithm, to optimize user workflows, providing UI/UX designers with recommendations to minimize uncommon behaviours and streamline user interfaces.

818

Submission Number: **818**	Track: **CDSA**

Paper Title: Sotto Voce: The Impacts of Technology to Enhance Worker Voice

Authors: Smit Gade, Achyut Adhvaryu, Teresa Molina and Anant Nyshadham

Abstract: We conducted a randomized controlled trial in which we enabled workers to directly and anonymously communicate with HR through mobile-phone-based technology. Treated workers were much more likely to know about the tool than controls, though usage was low: only 5% of treated workers reported ever using it. Despite this, turnover and absenteeism were 10% and 5% lower, respectively, for treated versus control workers. Together these findings suggest a substantial option value of enhancing worker voice, which can promote positive workplace behaviors even when workers do not directly avail themselves of the technology.

876

Submission Number: **876**	Track: **CDSA**

Paper Title: A Comprehensive Framework for Detecting Fraudulent Consumers in Electricity Distribution Using Advanced Machine Learning and Optimisation Techniques

Authors: Shubhradeep Nandi, Revanth Sai R and Charan M Sai

Abstract: Fraudulent consumers have always posed a significant challenge for Distribution Companies (DISCOMs), not only affecting their revenue directly but also impacting their reliability and efficiency. The identification of these fraudulent consumers is thus a critical necessity for DISCOMs. While direct inspections and manual verifications are common practices, they are highly challenging and inefficient due to the vast volume and diverse nature of the consumer base. This study addresses the issue of identifying potentially fraudulent consumers by leveraging advanced data intelligence techniques to analyse electricity consumption patterns. The aim is to develop a comprehensive framework that includes a comparative analysis of various modelling techniques, integrates cost-sensitive analysis, and optimises the inspection processes. Comparative Analysis of Fraud Detection Models The first objective of this study is to perform a comparative analysis of fraud detection capabilities using sophisticated machine learning models. These models are developed by incorporating domain-specific features and evaluating their performance using robust metrics. Novel features such as threshold analysis, zero-reading analysis, and consistent meter shifting analysis are introduced to enhance model performance. Additionally, analyses based on non-IR (Industrial/Residential) billings and shorter billing cycles are employed to further refine the models. The study develops and evaluates four different machine learning models to ensure diversity and avoid redundancy in characteristics: 1. Bayesian Logistic Regression: This model quantifies uncertainty and provides probabilistic predictions, making it useful for understanding the likelihood of fraud. 2. Weighted Random Forest: To handle imbalanced data, this model assigns different weights to different classes, ensuring that minority classes (potential fraud cases) are given adequate importance. 3. Radial Basis Function Kernel Support Vector Machine (RBF SVM): This model handles non-linearity in the data, making it effective in capturing complex patterns in electricity consumption that might indicate fraud. 4. Feedforward Neural Network: This model captures more nuanced patterns in the data, thanks to its ability to learn multiple layers of abstraction. The performance of these models is evaluated using metrics such as accuracy, precision, recall, F1 score, and the Area Under the Receiver Operating Characteristic Curve (AUC-ROC). This comparative analysis helps identify the strengths and weaknesses of each model, providing insights into the most effective models or combinations of models for fraud detection. Cost-Sensitive Analysis To ensure that the fraud detection models are not only accurate but also economically viable, a cost matrix is defined. This matrix accounts for various costs associated with the inspection process, including the costs of false positives and false negatives. The cost of false positives (inspecting non-fraudulent consumers) can lead to unnecessary expenditures, while the cost of false negatives (failing to detect fraudulent consumers) can result in significant revenue loss. By incorporating the cost matrix into the fraud detection models, a cost-sensitive dimension is introduced. The objective is to minimise the overall cost involved in the inspection process while maintaining high detection accuracy. This approach ensures that the models are focused not only on detecting fraud but also on optimising the economic impact of their predictions. Optimisation of Inspection Processes To further enhance the study, an optimisation problem is formulated with the goal of optimising the inspection process. The problem is defined to determine the optimal number and sequence of inspections to maximise the economic benefit. The cost matrix defined earlier is used as a key component in this formulation. A genetic algorithm is developed to solve the optimisation problem. Genetic algorithms are well-suited for solving complex optimisation problems due to their ability to explore a large search space and find near-optimal solutions efficiently. The algorithm iteratively improves the sequence of inspections, considering both the inspection costs and the potential revenue recovery from detecting fraud. The genetic algorithm is initialised with a population of random inspection sequences. Each sequence is evaluated based on its cost and economic benefit. The best-performing sequences are selected for reproduction, and genetic operations such as crossover and mutation are applied to generate new sequences. This process is repeated until the algorithm converges to an optimal or near-optimal solution. Results and Discussion The results of the comparative analysis demonstrate that each model has unique advantages. The Bayesian logistic regression model provides valuable probabilistic insights, while the weighted random forest model effectively handles imbalanced data. The RBF SVM model excels in capturing non-linear patterns, and the feedforward neural network model demonstrates superior ability in learning complex patterns. When cost-sensitivity is integrated, the models show significant improvements in economic efficiency. The cost-sensitive versions of the models reduce the overall inspection costs while maintaining high detection accuracy. This underscores the importance of incorporating economic considerations into fraud detection frameworks. The genetic algorithm successfully optimises the inspection process, resulting in a significant reduction in inspection costs and an increase in economic benefit. The optimised sequences of inspections ensure that resources are allocated efficiently, prioritising high-risk consumers and minimising unnecessary inspections. This study presents a comprehensive framework for detecting fraudulent consumers in the electricity sector using advanced data intelligence techniques. By conducting a comparative analysis of various machine learning models and integrating cost-sensitivity, the study addresses both the accuracy and economic viability of fraud detection. The optimisation of the inspection process further enhances the operational efficiency of DISCOMs. The proposed methodologies improve fraud detection capabilities while ensuring that the process is time and cost-efficient. This contributes to the overall efficiency and reliability of DISCOM operations. Future work could explore the integration of additional data sources, such as social media and IoT data, to further enhance the accuracy and robustness of the fraud detection framework. In summary, the study's novel approach combining machine learning models, cost-sensitive analysis, and optimisation techniques offers a robust solution for DISCOMs to tackle fraudulent consumers effectively, ultimately leading to improved revenue protection, operational efficiency, and reliability.

930

Submission Number: **930**	Track: **CDSA**

Paper Title: Comparative Analysis of Transformation Functions for Modelling Diminishing Advertising Impact on Sales

Authors: Deval Patel and Sagar Kadam

Abstract: Advertisers extensively employ marketing mix models (MMM) to gauge ad effectiveness, plan budgets, and simulate business scenarios. Understanding the impact of advertising on sales, whether linear or non-linear, is crucial. This study delves into the types of responses (linear, concave, S-shaped) observed in sales concerning advertising efforts and their implications. The advent of marketing mix modelling (MMM) has revolutionized the way businesses understand the impact of advertising on sales. By dissecting the components of the marketing mix - product, price, place, and promotion - MMM provides granular insights into the effectiveness of advertising campaigns. Marketing mix modelling (MMM) is a robust statistical analysis technique that has been widely adopted by businesses to measure the impact of advertising on sales. This method leverages historical data to determine the effectiveness of various marketing activities across different channels and their contribution to sales and revenue. This paper aims to discuss the various transformation techniques used in MMM to model the diminishing advertising impact on sales. The concept of diminishing advertising impact on sales refers to the economic principle where, after a certain point, each additional dollar/rupee spent on advertising yields progressively smaller increases in sales. This means that initially, advertising may significantly boost sales, but as more money is invested, the effectiveness of each additional ad decreases. It’s like filling a glass with water; the first few pours make a big difference, but once the glass is close to full, adding more water doesn’t increase the amount by much and might even spill over. Methods:

This paper examines diverse functional forms, including Power function, Negative Exponential, Hill function, Sigmoid function, and Weibull function. These functions are commonly utilized across various industries, such as Retail, Consumer Packaged Goods (CPG), Pharmaceuticals, Banking, and Tourism, where brand promotions are targeted towards consumers via multiple channels (Social Media, Paid Search, Digital Display, Emails, TV, Radio, Newspaper, Out of Home, etc.). The main objective of using these functions in model building is to capture the non-linear relationship between sales and advertising activity. The research covers the following aspects for each functional form: Equations: Detailed mathematical representation of each function. Parameter Descriptions: Explanation of parameters involved in each function. Special Use Cases: Specific scenarios where each function is particularly effective. These functions were tested on an open-source advertising dataset to evaluate their application and usefulness in developing robust regression models. The dataset includes various advertising metrics for promotional channels and sales revenue data, providing a comprehensive basis for analysis. Marketing Mix Modelling Analysis: It primarily involves two types of transformations applied to each advertising activity: Advertising Decay: The effect was handled using the Adstock formula. Saturation Effect: The effect was handled using the functions covered in this research paper. By implementing the Adstock and Saturation functions with their different parameters, we have developed a range of features that represent different aspects of advertising activities. Following this, a comprehensive correlation analysis was conducted. This analysis examined the relationship between sales figures and each of the newly transformed advertising features—those that have been adjusted by the Adstock and Saturation effects. The purpose of this detailed examination was to gain a clearer and more nuanced understanding of how these transformed advertising activities are connected to sales outcomes. Regression Model Development: We built several regression models where the dependent variable was sales, and the independent variables were transformed advertising activities. The final robust regression model was selected based on evaluation metrics such as R-square, Mean Absolute Percentage Error (MAPE), p-values, etc. This modelling approach enables the selection of the best parameters for the saturation function. Results: The research identifies a critical knowledge gap regarding the appropriate selection and application of transformation functions for distinct promotional channels. Addressing this gap is vital for statisticians, marketers, and modelers aiming to optimize functional form selection for diminishing returns in their specific industry and promotional channels. The detailed modelling analysis results are covered in the full paper describing the modelling approach and model results, however, below is the graphical representation of various functional forms applied when we used some hypothetical values for x (marketing channel) between 0 to 10.

980

Submission Number: **980**	Track: **CDSA**

Paper Title: Enhancing AI Financial Advice: Centralized Memory Repositories and Small Language Model Integration

Authors: Sai Srikanth Madugula and Kiran Kumar Ravulakollu

Abstract: Artificial intelligence (AI) and machine learning (ML) are developing at an astonishing rate that could revolutionize financial advising services by allowing AI agents to examine large datasets and provide accurate financial advice. However, these agents' effectiveness, particularly those using large language models (LLMs), depends on maintaining consistent and accurate memory across multiple models. This study introduces a Central Memory Repository (CMR) framework to address memory consistency issues, ensuring models share and update memory effectively. The framework's performance is evaluated through quantitative and qualitative methods, focusing on integrating Small Language Models (SLMs) to enhance financial advisory precision. The CMR framework addresses memory inconsistencies across ensemble models specializing in various aspects of financial prediction, such as short-term trends and sentiment analysis. These inconsistencies can lead to conflicting predictions and reduce the ensemble's reliability. The CMR system centralizes memory storage and synchronization, incorporating advanced attention mechanisms to ensure models focus on relevant shared information, aligning their memories and improving prediction accuracy and reliability. The research explores existing AI memory management techniques and develops the CMR framework, followed by rigorous testing to assess its impact on prediction accuracy, memory consistency, and user satisfaction. Findings indicate that addressing multimodal memory consistency can significantly advance AI-based financial advisory systems, enhancing their reliability. This research is motivated by the growing reliance on AI for financial decision-making, which requires consistent memory states across models. The CMR framework enhances prediction accuracy, improves user trust, and supports the development of advanced financial AI systems. By bridging a critical gap in AI financial advisory, this study offers a competitive edge in the fintech industry through innovative memory synchronization and multimodal data integration.

999

Submission Number: **999** | Track: **CDSA**

Paper Title: Proximity-based approximation algorithms for integer bilevel programs

Authors: Sriram Sankaranarayanan and Shubha Vatsalya Vanga

Abstract: This paper presents a novel approach to solving Integer Quadratic Bilevel Programs (IQBPs) using proximity-based approximation algorithms. IQBPs, which involve a hierarchical decision-making process with a leader and a follower, are known for their computational complexity, particularly when there are integer decision variables. We introduce a new algorithm, the Relaxed Foresight Algorithm, that approximates solutions for both optimistic and pessimistic versions of Integer Convex Quadratic Stackelberg Games, a subset of IQBPs. The algorithm leverages the concept of proximity, which measures the difference between the integer and continuous solutions in the follower's problem, to provide bounds on the approximation quality. Our theoretical analysis demonstrates that the proposed method can achieve near-optimal solutions with a guaranteed performance bound, making it a practical approach for complex decision-making scenarios in optimization.

1029

Submission Number: **1029** | Track: **CDSA**

Paper Title: Bridging the Data Divide: Leveraging AI to Estimate Constituency-Level Data from District-Level Data

Authors: Kaustubh Dabral

Abstract: India's commitment to achieving its Sustainable Development Goals (SDGs) by 2030 requires detailed monitoring and targeted interventions right down at the parliamentary constituency level. However, as Subramanian et al. (2024) noted in their call to action, the need for constituency-level data to be readily available represents a significant obstacle to successful SDG monitoring. This lack of constituency-level data is due to the mismatch between district and constituency boundaries, making direct district-level disaggregation impossible. In response to this pressing demand, this paper presents a framework that combines three AI techniques: 1) areal interpolation with machine learning, 2) small area estimation based on Bayesian hierarchical models and 3) spatial microsimulation. This framework can help bridge the data gap at the constituency level by making use of district-level data, census information, and related geospatial covariates.

1030

Submission Number: **1030** | Track: **CDSA**

Paper Title: Comparative Study of ChatGPT and Gemini in Enhancing Business Management Communication and Decision-Making

Authors: Aniket Dwivedi and Kajal Kansal

Abstract: AI models like ChatGPT and Gemini are increasingly integrated into business processes to enhance decision-making capabilities. However, a detailed comparative analysis is essential to understand their respective roles, effectiveness, and potential challenges. Our study aims to address this knowledge gap by exploring how these AI models can boost organizational productivity and performance. Through a combination of literature review, expert interviews, and case studies, we investigate the roles, effectiveness, and challenges of ChatGPT and Gemini. Additionally, we conduct a survey and market research to examine their usage across different demographic segments, focusing on frequency of use, ease of use, challenges, biases, and future scope. The survey considers diverse perspectives based on age, gender, and educational background. The findings provide significant insights into how these AI models facilitate improved business communication, data analysis, and strategic decision-making.

1042

Submission Number: **1042** | Track: **CDSA**

Paper Title: Cooperative Adoption of Supply Chain Traceability

Authors: Sanjith Gopalakrishnan, Devpriyo Ray and Sriram Sankaranarayanan

Abstract: With the increasing complexity of global supply chains, traceability - the ability to track products from origin to consumption - is viewed as an essential first step in effective quality control and compliance, particularly relating to ethical

sourcing that meets environmental and labor obligations. Despite these benefits, the widespread adoption of traceability technologies in supply chains is hindered by challenges, including the high costs of adoption and the misalignment between the firms incurring these costs and those reaping the benefits. To address these challenges, we consider a game-theoretic model of traceability technology adoption on a directed acyclic supply network of multiple consumer-facing firms with possibly overlapping supply chains. Our model considers firms with heterogeneous adoption costs and benefits making traceability adoption decisions. In our base model, for a firm to receive the benefits of traceability, all the firms in its upstream supply chain must have adopted the traceability technology. We also consider a more general model where firms receive partial benefits from having a partially traceable supply chain. In both models, we demonstrate that the efficient (i.e., optimal traceability technology adoption strategy for the supply network) outcome can be formulated as an integer linear program (ILP) with a totally unimodular constraint matrix, making it computable in polynomial time. We then define a transferable utility cooperative game, the supply network traceability game, which is shown to admit a non-empty core. We introduce a restricted variant of the Shapley value as a novel cost-sharing mechanism, which can be implemented through a series of transfer payments from downstream firms to upstream suppliers, a concept we formalize as upstream implementability. This cost-sharing mechanism, when efficient, supports the network-optimal traceability strategy. Furthermore, it is coalitionally rational (i.e., belongs to the core), fair (satisfying symmetry and the null-player property), and is implementable solely via upstream transfer payments. In cases where the cost-sharing mechanism is not efficient, it remains fair and upstream implementable, supporting an equilibrium traceability strategy that induces a subset of firms to become traceable. We extend our results to the partial traceability setting. Finally, using a real-world supply network data set comprising 38 supply chains across 22 industries, we numerically identify instances that admit an efficient cost-sharing mechanism supporting the network-optimal traceability strategy. In cases where the cost-sharing mechanism is not efficient, we compute the ratio of network-wide welfare gains delivered by the cost-sharing mechanism compared to the optimal traceability strategy, which can be interpreted as the inverse of an associated price-of-anarchy measure. In summary, supply chain traceability adoption is beset by implementation challenges arising from a misalignment of who benefits and who incurs costs. A central theme of our work is to advance cost-sharing mechanisms via transfer payments as a strategy to incentivize adoption of supply chain traceability. This can be viewed as a complementary strategy to seeding, where supply chain leaders (or technology firms) subsidize the technology for a carefully selected subset of firms in the network to kickstart the technology diffusion at minimal cost.

1052

Submission Number: **1052**	Track: **CDSA**
Paper Title: Beyond Surveys: Using Social Media to Understand Consumer Behavior in Sustainable Food Marketing	
Authors: Chellapilla Deep Prakash and Joel Joy Polimetla	

Abstract: Although sustainable food marketing is a growing research field, recent studies have primarily focused on consumer perceptions of sustainability in food products and brands (Burkert et al., 2023; Nascimento & Maria Correia Loureiro, 2024). These perceptions impact brand image (Kwok & Lin, 2024) and green marketing strategies (Gustavo et al., 2021). However, these studies (published in ABDC journals) have predominantly used survey data. Our systematic literature review (SLR) focused on articles in ABDC category journals. We used inclusion and exclusion criteria to guide our review (Siddaway et al., 2019). The initial search, performed using the Scopus database, included keywords such as "food AND sustainability" and others. While this search yielded 1584 articles, with the inclusion and exclusion criteria on subject area, document type, publication stage, source type and language, we retrieved 234 articles. After reviewing titles and abstracts to ensure relevance, 141 papers were selected. These articles were analyzed using the TCCM (theory-context-characteristics-methods) and ADO (antecedents, decisions, outcomes) frameworks. The review revealed that health consciousness, environmental concern, social identification, and simplified information significantly influence consumer behavior. Despite extensive research, there is a notable gap in studies using social media data. These studies have not examined which aspects of a brand or an influencer's social media communication about sustainable food practices are most strongly correlated with gaining a competitive advantage. Furthermore, there is a lack of research on how different social media messages about sustainable food practices influence consumer engagement metrics such as likes. This gap suggests the potential of social media data to provide insights into consumer behavior, helping brands and influencers to fine-tune their strategies for maximum impact. This study aims to address this gap by examining the influence of different sustainable food marketing-related social media messages on consumer engagement metrics. Using the Sprinkler tool, we extracted tweets using the same keyword search criteria mentioned in our SLR. Additional criteria included a follower count greater than 50,000, English language, and tweets posted between January 1, 2020, and June 30, 2024. Based on these criteria, we extracted 18,379 tweets. In our preliminary analysis, we performed topic modeling on the tweet messages. Initially, we cleaned the text data by removing non-word

characters, converting text to lowercase and removing stopwords. We then converted the cleaned text into a document-term matrix and applied Latent Dirichlet Allocation (LDA) to extract the top words for each topic, aiding in theme interpretation. The topic modeling analysis revealed five key themes: (1) Waste Management & Sustainability, focusing on waste management, organic products, and sustainable practices; (2) Daily Life Activities and Health Concerns, centered around aspects of home life, food, health, and essential services; (3) Agriculture and Rural Issues, addressing rural concerns such as those affecting farmers, migrant workers, and agricultural practices; (4) Environmental Health and Community Well-Being, emphasizing the importance of a clean environment, hygiene, and community support; and (5) Public Health and Safety During Lockdown, concentrating on the impact of the virus and lockdown on daily life, migrant workers, and government orders. We investigated the factors influencing the number of favorites (likes) a tweet receives, using the log-transformed count of favorites as the dependent variable (6405 non-zero observations). The regression analysis revealed that the context of the tweets significantly influences their popularity. Tweets categorized as "Replies" received significantly fewer favorites, while "Updates" received more, indicating that informational content is more appealing to users. Neutral and positive sentiments were associated with fewer favorites, suggesting that other sentiments (potentially negative or mixed) resonate more with the audience. Additionally, the presence of links, photos, and videos in tweets led to significantly fewer favorites, contrary to the belief that multimedia content always enhances engagement. Analyzing the content of the tweets, we found that specific topics have varying influences on the number of favorites. Tweets about "Waste Management & Sustainability" have a significant negative effect on favorites. In contrast, tweets discussing "Public Health and Safety During Lockdown" have a significant positive influence, reflecting high public interest in health and safety issues during the pandemic. Topics related to "Daily Life Activities and Health Concerns," "Agriculture and Rural Issues," and "Environmental Health and Community Well-Being" do not show a statistically significant influence on the number of favorites, indicating these themes might not strongly drive engagement in terms of likes. This study contributes to the literature by bridging the gap between traditional survey-based research and social media analysis, offering insights into consumer engagement with sustainable food marketing. The low engagement with tweets on sustainability and rural issues suggests a need for more creative and engaging ways to communicate these important topics. The significant interest in public health and safety content during lockdowns indicates that timely and relevant information is crucial for capturing audience attention. Understanding these contextual and content-specific drivers of engagement can help in designing more effective communication strategies. Future research could incorporate additional engagement metrics such as shares and comments, and examine the long-term effects of different communication strategies on brand loyalty.

1071

Submission Number: **1071**	Track: **CDSA**
Paper Title: Eco-Influence: How Instagram Shapes Sustainable Fashion Choices in India	
Authors: Meenal Sharma, Udit Chawla, Vinod Sharma, Sujit Dutta and Devika Mulchandani	
Abstract: The purpose of this paper is to examine message appeal of Instagram Influencer on Instagram users purchase intentions towards sustainable fashion product in India. We will investigate various attributes of social medic influencers and analyse the factors that drive Indian consumers' willingness to purchase sustainable fashion product. This study employs a purposive sampling technique to select participants and Technology Acceptance Model (TAM) is utilized as the theoretical framework for this study. From the study, 4 factors were emerged which were Perceived Culture, Perceived Environmental Awareness, Perceived Attitude and Perceived Credibility. With the help of Structured Equation Modelling, it has emerged that the impact of the factor is found to be high towards perceived credibility and perceived attitude followed with others with significant influence towards Customer Purchase Intention.	

1074

Submission Number: **1074**	Track: **CDSA**
Paper Title: Revisiting Academic Strategies for Sustainable Education: Adoption of a Deep Learning based Facial Emotion Detection Model	
Authors: Madhumita Guha Majumder, Tushar Tripathi and Tripti Mahara	

Abstract: Abstract As facial expression exhibits the mental state of an individual, it is important to understand the emotion of a student in a teaching-learning environment. The study has developed a Deep Learning model, followed by a Two-Way ANOVA model to evaluate the emotions of students. The results reveal that the students' emotions keep fluctuating from time to time, depending upon the hour of the day. The findings can help the policymakers to strategies a better learning environment for sustainable learning. Keywords: Deep Learning, Emotion Detection, ANOVA, Students Introduction Facial expressions convey verbal or non-verbal emotions during communication (Darwin, 1996). In educational environment facial expressions of students depict their emotional state that aids in understanding their learning journey and well-being. For instance, if a student is tensed, the learning will not be effective but if the student is happy, the learning becomes effective. Thus, it is vital to understand the emotions of students, which provide insights to the management for making the learning environment conducive. Studies reveal the comparison of various Deep Learning (DL) models for accurate emotion recognition (Ballesteros, 2024). Few studies utilized the output of these models in an academic setup. Ming (2023) utilized the model output to understand the mental stress of the students and Li (2022) used to assesses the extent of their mental health. Scanty of literature reveals the need and application of assessment of emotions in an academic environment and the present study addresses this gap. Methodology A DL model was built to detect the emotions of the students using Facial Expression Recognition dataset. This dataset comprises of a collection of facial images labelled with corresponding emotions including anger, disgust, fear, happiness, sadness, surprise and neutrality. Out of total 35887 facial images with different expression, 28,709 images were used for training and 7,178 for validation. The performance of AlexNet, VGG16 and VGG19 models were compared. The results revealed that AlexNet outperforms VGG16 and VGG19 with an accuracy of 94.25% after 15 epochs, while VGG16 achieves 87.32% accuracy after 100 epochs and VGG19 achieved an accuracy of 91.2%. This highlights AlexNet's superior accuracy and efficiency in capturing facial expression patterns compared to others. Thus, AlexNet was adapted to analyze the emotions of 150 students in a B-School. The images of 150 students were captured at four distinct time slots of the day: Slot1 (8:30-9:30 AM), Slot2 (11:00-12:00 Noon), Slot3 (1:00-2:00 PM), and Slot4 (4:00-5:00 PM), which are their arrival time, class hour, lunch break & departure time respectively. These images were fed as inputs to the model to assess the emotional states of the students. The output was further analyzed using a two-way ANOVA with respect to category & slots for insights. Figure1 depicts the research methodology of the study. Figure1 Research Methodology Findings The results of the DL model reveal that the students exhibit seven emotion categories including 'Happy', 'Sad', 'Neutral', 'Angry', 'Disgust', 'Fear' and 'Surprise', which vary from time to time. Number of images under each category turns out to be the dependent variable in ANOVA model which studies the significance of these variations. As observed in Table 1, Angry, Happy and Sad are the only emotions that are significantly vary during all the different slots of the days whereas 'Fear' is not statistically significant. It is evident that a few students adapt 'Neutral' emotions throughout the day except during lunch break. Elements of 'Surprise' is only significant when the students come to the B-school and during lunch hour. Emotions impact the learning process along with the mental health of an individual. Thus, to enhance the students' effective learning and to create a sustainable learning environment, the management of an educational institute needs to dive deeper into the emotions of students, specially, when they are feeling sad throughout the day. Also, the policy makers can devise certain strategies to embellish the students' happiness into effective learning. The drawback of the study is the small sample size used for analysis and hence the findings cannot be generalized for a B-school. On the other hand, this research gives an insight into the applications of facial emotion recognition in an academic environment.

1109

Submission Number: **1109**	Track: **CDSA**

Paper Title: Automating the Software Testing Life Cycle by leveraging Generative AI

Authors: Amit Tandon, Gaurav Padam and Anvi Kohli

Abstract: Software development involves engineers creating systems to solve real-world problems, typically following a software development life cycle (SDLC). The SDLC is a comprehensive framework that includes several steps, such as requirement analysis, planning, designing, coding, and testing, to deliver reliable systems for end-users. Among these, software testing is crucial for ensuring the quality, trustworthiness, and reliability of a product. However, the software testing life cycle is often undervalued in the industry. Testing is a widespread validation method used to verify that the developed software meets the client's requirements and is capable of future enhancements. Validation and verification processes, including testing, are essential for this purpose. The simultaneous processes of software development and validation often result in testing being slower, leading to delays or the delivery of error-prone products. Despite consuming 50-60% of project resources, the testing process involves manually creating scenarios and test cases, testing against requirements, and iterating to ensure bug-free software. This manual approach is time-consuming, prone to errors, and can miss edge cases, particularly in complex modules. Industry studies highlight that test management and test automation are among the most challenging aspects of software testing. To expedite this labor-intensive process, we propose a method that uses advanced AI tools to automate various phases of the testing cycle. Our approach involves using powerful large language models (LLMs) to understand testing requirements and generate corresponding test cases. To improve accuracy, we introduce a feedback loop where users can provide feedback on generated test cases, allowing the model to refine its output based on user input. These test cases then go as inputs to an automated Code Generation Function which uses Code Generation LLMs such to generate code based on the identified set of parameters in the first step as described above.

1115

Submission Number: **1115**	Track: **CDSA**

Paper Title: A multi-agent model with hybrid Jaya algorithm for multi-objective DFJSP with energy management

Authors: Manojkumar Pal, Murari Lal Mittal, Sagar Gughe and Surya Prakash

Abstract: Modern production systems are often carried out on multiple manufacturing sites at different locations to lower the production costs and exploration of the business. The distributed manufacturing is getting more interest from industries after covid 19 outbreak to fulfill the demand through multiple manufacturing sites. The manufacturing sites commonly consist multiple flexible machines which can operate all or partial operations to complete the jobs. Such job shop is known as Flexible job shop (FJS). This paper investigates the Distributed Flexible Job-shop Scheduling Problem (DFJSP) where three problems: factory allocation, job sequencing, machine allocation. The research for DFJSP can be seen frequently in the literature in recent times. Energy efficiency in manufacturing have received considerable attention from enterprise and countries. Thus, this paper investigates the DFJSP with energy management with the goal to minimize the makespan and total energy consumption. For the solution, DFJSP can be considered strongly NP- Hard because adding one more problem of factory allocation makes DFJSP more complex to solve than FJSP. To solve such complex DFJSP, the decentralized decision-making based approach is proposed. The authors presented a novel decentralized approach based on multi-agent system (MAS) with hybrid Jaya algorithm. The approach has been demonstrated with an illustrative example. The future scopes are also discussed.

1161

Submission Number: **1161**	Track: **CDSA**

Paper Title: Reducing Tanking in the NBA: An Analysis of Incentive-Based Policies

Authors: Rudresh Raval and Shreya Sam

Abstract: Introduction Tanking in professional sports, particularly in the NBA, is a strategy where teams deliberately lose games to secure a higher draft position, thereby increasing their chances of acquiring top talent. While tanking can be advantageous for teams in the short term, it undermines the competitive integrity of the league and can have long-term negative consequences. This study aims to analyze the impact of tanking on long-term team performance and evaluate the effectiveness of various policies designed to mitigate tanking. Research Context The NBA employs a draft lottery system where teams with worse regular-season records have a higher probability of obtaining top draft picks. This system inadvertently incentivizes tanking, especially for teams out of playoff contention. Previous studies have highlighted the prevalence of tanking and its negative implications, especially on fan attendance (Gong et al., 2021). But there has been limited focus on evaluating policy interventions to reduce tanking. Building on the framework used in (Csató, 2024) this study simulates 25 years of NBA seasons (1000 times) to assess the impact of different anti-tanking policies. Theoretical Background The study of tanking in the NBA can be contextualized within the broader framework of organizational economics, specifically focusing on the theory of incentives. In organizational economics, incentives are mechanisms designed to align the interests of agents (e.g., teams or employees) with those of principals (e.g., the league or employers). Incentive theory posits that agents respond to rewards and penalties that influence their behavior. In the context of the NBA, the current draft lottery system creates perverse incentives by rewarding poor performance with higher draft picks. This misalignment between short-term losses and long-term gains drives teams to tank, compromising the competitive balance of the league. Economists such as Holmstrom and Milgrom (1994) have emphasized the importance of carefully designed incentive structures to ensure desired outcomes. Their work on multitask principal-agent problems illustrates that when agents are rewarded for certain activities (e.g., securing top draft picks), they may neglect other important tasks (e.g., maintaining competitiveness). By extending this theory to the NBA, we examine how modifying the incentive structure can reduce the prevalence of tanking and promote fair play. Simulation Model The simulation model used in this study replicates key elements of the NBA season, including regular-season games, playoff contention, player development timelines, and trades. Teams are assigned initial Elo ratings, and game outcomes are simulated using a Poisson distribution. Tanking probabilities are calculated based on team performance, and various policies are implemented to evaluate their effectiveness. Note that for the scope of this document we have ran the simulation only 100 times. Key policies simulated include: 1. Post-Season Tournament for Bottom Teams: A tournament for the bottom teams to determine draft order. 2. Incentives for Late Season Wins: Providing additional incentives for teams to win games in the last 20 games of the season. 3. Penalties for Excessive Tanking: Imposing penalties on teams that tank excessively over multiple seasons. Results for Each Policy The impact of each policy was assessed by comparing the average tank probabilities and the correlation between tanking probabilities and long-term team performance for the initial simulations. 1. Post-Season Tournament for Bottom Teams: ○ Average Tank Probability: 0.920 ○ Impact on Long-Term Success: Correlation of 0.196 ○ Analysis: This policy did not significantly reduce tanking, as teams continued to tank despite the tournament. 2. Incentives for Late Season Wins: ○ Average Tank Probability: 0.917 ○ Impact on Long-Term Success: Correlation of -0.008 ○ Analysis: This policy slightly reduced the tank probability and neutralized the benefits of tanking. 3. Penalties for Excessive Tanking: ○ Average Tank Probability: 0.917 ○ Impact on Long-Term Success: Correlation of -0.026 ○ Analysis: This policy was the most effective, reducing the perceived benefits of tanking more than the other strategies. Theoretical Contribution This study contributes to the existing literature on organizational economics and incentive theory by applying these principles to the context of professional sports. By simulating the effects of different policies designed to mitigate tanking, our results demonstrate how carefully structured incentives can influence team behavior and improve competitive balance. The findings support the notion that aligning incentives with desired outcomes (e.g., competitiveness) can reduce negative behaviors (e.g., tanking). Furthermore, this research extends the application of multitask principal-agent theory to a novel domain, highlighting the importance of comprehensive incentive structures in complex environments. The study also underscores the practical challenges of designing effective policies, such as the difficulty of proving intent in tanking, and proposes pragmatic solutions to address these issues. Conclusion The simulation results suggest that both incentives for late-season wins and penalties for excessive tanking are effective in reducing the benefits of tanking. However, detecting and proving intentional tanking can be challenging, as teams can claim poor performance is due to other factors. Therefore, we propose implementing incentives for late-season wins as a pragmatic approach to mitigate tanking. This policy encourages competitiveness and provides tangible benefits without the need to prove intent, thereby preserving the integrity of the league.

1204

Submission Number: **1204**	Track: **CDSA**

Paper Title: The Long-Run Effects of Protected Land Rights on Economic Development: Evidence from Scheduled Areas in India

Authors: Ankit Bhatia and Ankit Bhatia

Abstract: This paper investigates the long-run effects of protected land rights on economic development. Globally, 400 million Indigenous people hold about 25% of land resources under place-based protected land rights, yet they comprise 50% of the world’s extreme poor. By combining archival administrative data with frontier geospatial econometric methods in causal inference, this paper advances our understanding of the impact of protected land rights on barriers to entrepreneurship, structural transformations, and place-based poverty alleviation programs. I examine the long-run impacts of protected land rights using a natural experiment of Scheduled Areas (SAs) in India. Originating as a military response to Indigenous rebellions in the 19th century and formalized through the Scheduled Districts Act of 1874, the SAs are specially administered tracts that guarantee constitutional protection of the land rights to Indigenous communities. Instituted through state-specific Land Alienation Prohibition (LAP) legislations, SAs are a colonial-era legacy institution encompassing approximately 20% of the nation's landmass and home to about 150 million people. LAP regulations restrict land transfers (including land leasing) between Indigenous and non-Indigenous communities, place spatial limitations on transfers among Indigenous members, and in some extreme cases, even prohibit mortgaging land to institutional creditors. The SA policy presents a theoretical and empirical puzzle. While secure property rights support entrepreneurship development by incentivizing productive investments in the land economy, restricted land transactions adversely affect the efficient use of land resources and diminish agglomeration gains. Further, the limitation on land transfers under asymmetric information incentivizes grey markets, collusion, and rent-seeking, hindering the economic development of intended beneficiaries. Investigating the long-run impacts of protected land rights is crucial to understanding the complex interplay of historical legacies, property rights institutions, and economic geography, to understand the drivers of the long-run underdevelopment of Indigenous protected areas. I use a village-level geographic Regression Discontinuity Design (RDD) to assess the causal impact of LAP regulations on the persistent economic underdevelopment of protected areas in India. To implement large-scale RDD, I collected,

combined, and geocoded various archival and administrative data sources. As the first step, I geocoded SA boundaries from text-based administrative records. Next, I mapped the SA boundaries with different Census databases including Population Census, Economic Census, Socio-Economic Caste Census, and SHRUG databases. Lastly, to test the mechanisms driving the main outcomes, I web-scraped and geocoded village-level land prices and collected high-resolution spatial data on built-up density. Additionally, I collected and digitized the historical 1872 Census using Natural Language Processing to establish baseline conditions before the policy implementation. I run a non-parametric RDD with a 25 km optimal bandwidth and boundary fixed effects with 50 km segments, including a range of geographic, topographic, and socio-economic controls. I use Conley standard errors to account for spatial correlation and cluster my observations at the sub-district level. My preliminary findings show that SAs on average have 12% higher poverty rates, 16% higher reliance on agriculture as a source of income, and 18% fewer private firms. Furthermore, a larger share of private firms is seasonal or casual in nature, and the size of private firms is smaller in protected areas compared to adjoining non-protected areas. I test for competing hypotheses on isolation and restricted property rights to illuminate the drivers of underdevelopment in protected areas. Rejecting the isolation hypothesis, I find that SAs on average do not have any discontinuous access to core public goods, including primary schools, medical facilities, public banks, rural roads, police stations, and post offices. Detailed analysis of high-resolution data on built-up density, employment shares in land-based sectors, and land prices indicates that the lesser private sector dynamism and poorer knowledge sector development in SAs are primarily attributed to lower agglomerations due to land transaction restrictions. Lastly, I test for heterogeneities and find that SAs in states with LAP bans on land leasing and mortgaging have higher poverty rates and smaller private sector firms, lending further evidence of the adverse implications of LAP regulations. With poverty rates above 50%, SAs count among the most backward regions globally, yet the policy of land alienation prohibition persists. These results emphasize the need to reassess the policy framework and institutional mechanisms governing protected land rights to realize the economic potential of SAs and the human freedom and individual liberties of 150 million people living within them. Existing literature has commonly attributed the under performance of Indigenous communities to their self-selection into non-market economic activities. However, my findings fundamentally challenge these theories. I argue that the economic backwardness of Indigenous populations is rooted in the historical persistence of land alienation prohibition regulations, which adversely impact the broader structural and spatial transformation of protected Indigenous areas.

1211

Submission Number: **1211**	Track: **CDSA**
Paper Title: Incentivized Exploration via Filtered Posterior Sampling	
Authors: Anand Kalvit, Yonatan Gur and Aleksandrs Slivkins	

Abstract: We study "incentivized exploration" (IE) in social learning problems where the principal (a recommendation algorithm) can leverage information asymmetry to incentivize sequentially-arriving agents to take exploratory actions. We identify posterior sampling, an algorithmic approach that is well known in the multi-armed bandits literature, as a general-purpose solution for IE. In particular, we expand the existing scope of IE in several practically-relevant dimensions, from private agent types to informative recommendations to correlated Bayesian priors. We obtain a general analysis of posterior sampling in IE which allows us to subsume these extended settings as corollaries, while also recovering existing results as special cases.

Track-wise Submission Summary

Track 01: Entrepreneurship: Facilitators & Hurdles Related to Scaling Up of Startups: 69, 231, 286, 340, 341, 371, 396, 455, 484, 490, 505, 507, 568, 595, 606, 766, 845, 921, 1041, 1043, 1176

Track 02: Management in Health Services: 31, 85, 150, 153, 560, 578, 590, 880, 923, 949, 1083, 1088, 1167

Track 03: Gold & Precious Metals: Business and Economic Policies: 168, 368, 411, 468, 604, 779, 780, 853, 857, 1102

Track 04A: Finance, Accounting, and Economics: 59, 93, 166, 178, 187, 217, 318, 350, 356, 395, 443, 477, 495, 514, 518, 699, 752, 767, 775, 824, 828, 854, 877, 897, 912, 916, 991, 993, 998, 1010, 1062, 1144, 1199

Track 04B: Real Estate: 87, 113, 249, 328, 353, 367, 417, 432, 536, 557, 573, 575, 579, 584, 613, 634, 646, 770, 793, 919, 1217

Track 05: Behavioral Science in Management: 90, 296, 317, 383, 412, 424, 428, 452, 510, 545, 567, 594, 627, 656, 801, 913, 934, 970, 1002, 1072, 1142, 1173

Track 06: Transportation and Logistics: 41, 54, 96, 102, 198, 201, 205, 207, 211, 280, 282, 387, 444, 446, 473, 502, 541, 544, 610, 622, 630, 659, 677, 681, 686, 694, 732, 739, 747, 751, 756, 806, 838, 852, 914, 950, 1005, 1025, 1091, 1187, 1197

Track 07: Digital Transformation: 213, 345, 399, 429, 435, 451, 516, 609, 644, 647, 652, 663, 716, 830, 836, 869, 886, 900, 973, 975, 1053, 1055, 1089, 1090, 1145

Track 08: India Responsible Capital Conference (IRCC 2024): 64, 92, 108, 111, 225, 233, 242, 250, 260, 268, 275, 284, 285, 303, 309, 326, 348, 355, 357, 369, 434, 461, 485, 486, 487, 489, 493, 500, 517, 528, 537, 554, 555, 564, 569, 570, 608, 668, 725, 856, 862, 881, 889, 891, 901, 904, 928, 931, 944, 955, 968, 974, 1023, 1051, 1064, 1067, 1092, 1134, 1140, 1158, 1188, 1198, 1202, 1216, 1228

Track 09: Leadership Research & Practice in the Context of Changes in the World of Work: 18, 66, 131, 134, 144, 214, 215, 232, 237, 254, 301, 352, 370, 372, 382, 413, 427, 471, 476, 513, 521, 543, 548, 583, 588, 619, 637, 653, 670, 706, 714, 718, 783, 786, 792, 810, 840, 884, 892, 952, 981, 982, 995, 1011, 1045, 1086, 1101, 1132, 1136, 1148, 1177, 1191

Track 10: Data Science & Artificial Intelligence: 8, 10, 106, 151, 189, 206, 219, 404, 547, 636, 657, 684, 696, 768, 771, 818, 876, 930, 980, 999, 1029, 1030, 1042, 1052, 1071, 1074, 1109, 1115, 1161, 1204, 1211

भारतीय प्रबंध संस्थान अहमदाबाद
INDIAN INSTITUTE *of* MANAGEMENT AHMEDABAD
विद्याविनियोगाद्विकास:

Contact Us

For general inquiries, registration support and sponsorship inquiries, please reach out to us at **imrc2024@iima.ac.in**.
For more details on IMRC 2024, please scan the QR code or click the link below to visit our website.

Conference Website : https://conference.iima.ac.in/imrc2024/