RESEARCH

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Financial Modelling for Business Sustainability: A Study of Business Correspondent Model of Financial Inclusion in India

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Executive Summary

The study highlights the need for measures to accelerate the pace of the business correspondent (BC) model for financial inclusion in India. The financial analysis of the existing BCs with the existing products and services in practice shows a very diffusive break-even (more than 7 years). The occurrence of such a long-term break-even point can be a potential threat to the sustainability of new and struggling entrepreneurs like a Customer Service Point (CSP). A CSP agent runs a kiosk of a certain bank in a rural context, functioning like a BC between the bank and the beneficiaries. The primary investigation found that high cost and low volume of transaction at the CSP points are two major causes of the long break-even. In this context, the study revisited the constructs related to cost structure, market outreach, market potential and commission structure for channellizing respective banking and non-banking products. The major categories of products include (a) banking operation, (b) loan and over-draft, and (c) social security schemes. In search of a solution, the study adopts a non-random stratified sampling technique with a semi-structured interview process to collect the data from different stakeholders in the BC operation. To develop an economically viable BC model, the researchers use a standard financial modelling technique. In contrast to the existing kiosk model of CSP operation, the study found that while applying the new model a CSP agent takes three years to break-even under the same condition as that of the existing model. The study can also be applied in the domain of bottom of the pyramid (BOP) marketing by treating to create value among the low-income customers and business partners like CSPs. This research can further be extended to investigate the viability of the BC model from the banks' return on investment perspective.

KEY WORDS

Micro Entrepreneurs

Banking

Financial Inclusion

Business Correspondent

Financial Modelling

Access to finance by every section of the society is a prerequisite for achieving inclusive growth in any economy. The World Bank–Universal Financial Access (UFA) 2020 Overview (The World Bank, 2018) on financial exclusion depicts that India stands at 20.6 per cent of the world's two billion unbanked population, followed by China (11.6%) and Pakistan (5.2%) in the Asian region. Further, the World Bank Findex (The World Bank, 2014) survey shows that out of 1.2 billion Indian population, only 53 per cent of Indians are financially included. To make progress in financial inclusion, historically, Indian banks have favoured expanding their number of brick-and-mortar branches over deploying branchless technology. The banks have relied on business correspondents (BCs; i.e., third party agents) to reach the unbanked population in remote and unbanked villages. In 2006, the Reserve Bank of India (RBI) devised the BC model (Basu, 2006). The model not only aims to provide an alternative banking channel to millions by making financial services accessible for the un-/underbanked population through a branchless banking facility but also supports the national agenda for employment generation (RBI, 2008). The corporate BCs (also known as the BC network managers [BCNM]) act as a middleman and distribute the banking products with the help of multiple Customer Service Points (CSPs) or commonly referred to as agents or Bank *Mitras*. These Bank *Mitras* are the micro- or nano-level entrepreneurs, usually small shop owners or freelancers in the rural and semi-urban areas. The CSP agents act as the retailing points for delivering the banking services at locations other than a bank branch or ATM. The CSP agents are enabled to provide a defined range of banking services at low cost, hence are instrumental in promoting financial inclusion (Mehrotra, Tiwari, Karthick, Khanna, & Khanna, 2018). As an opportunity, most of the CSP agents join this BC banking business to supplement their existing income.

The banking products for financial inclusion offer the Bank *Mitras* a reasonable return on their investment; and there are 1.26 lakh Bank *Mitras* delivering branchless banking services in different Sub Service Areas (SSA; PMJDY, 2019). An SSA consists of three to four villages having combined average population of 1,600 to 1,800 (SLBC, 2019). Besides, as on November 2019, the progress of such a huge network of branchless banking

using the CSPs or the Bank *Mitra* network in rural India reports that there are 37.55 crore beneficiaries banked having 107,172.54 crore balance in their accounts (PMJDY, 2019). Moreover, the latest available data on the number of bank branches in rural areas shows an increase from 28,583 in March 2011 to 48,834 in March 2019 (RBI, 2019); while the number of branchless banking outlets (including ATMs) in rural India has risen from 34,316 in March 2010 to 547,233 and 518,742 in March 2017 and 2018, respectively (RBI, 2018, Table IV.25, p. 80). Such progress shows an impressive outreach of banking services through branchless banking.

However, the growth rate represented in these numbers do not take into account the number of CSP agents who are dormant (Kale, 2016). Moreover, a study conducted by Mehrotra et al. (2018) found that while the banking industry is employing more agents, customer growth is slowing down. One of the possible reasons could be the rise of over-the-counter (OTC) remittance transactions. It also indicates that the CSP agents are not able to generate enough customer registration or transactions. The results have a direct effect on the CSP agent return on investment and profitability. Besides, the CSP agents face a wide range of issues and challenges with respect to the product they offer, kiosk costing (fixed and operational), liquidity management, inadequate support from the banks, small profit margin, financing for working capital management, technology-related issues, marketing and communications, customer dissonance and service, low profit margin, etc. In this context, it is important to note that if the CSP agents earn more from the prior business than from the existing BC model operation, then he/she would be unwilling to commit more time since it is less profitable. While the operational process of the CSP agents holds potential, research indicates that the policy has not taken off in the way it was envisioned (ACCESS, 2014; Basu, 2006; Bhanot, Bapat, & Bera, 2012; Bihari, 2011; Kapoor, 2014; R. Pal & R. Pal, 2012; Singh et al., 2014). As a result, both the supply side (e.g., banks) as well as the demand side (e.g., beneficiaries) are struggling for smooth operational efficiency of the financial inclusion drive. Different studies envisage that the existing BC guidelines do allow just enough space for the improvement as well as a possibility for bringing a sustainable business model for the BC agents (R. Pal & R. Pal, 2012; RBI, 2015a, 2015b). Based on the multiple

issues and challenges with the BC model of business operation, the study raises the research questions: *Is the BC model of financial inclusion financially sustainable? Is there any scope of making the model more sustainable?*

BANKING INDUSTRY AND FINANCIAL INCLUSION IN INDIA AT A GLANCE

In India, nationalization of banks in 1969 marked the beginning of the process of financial inclusion (RBI, 2008). Following this, to promote financial inclusion, India adopted a number of other strategies such as setting up regional rural banks (RRBs), mandatory priority sector lending (PSL) by commercial banks, lead bank scheme, introduction of no-frill account (NFA), linking self-help groups (SHGs) to banks, kisan (farmer) credit cards, provisioning of doorstep delivery of financial services through approved banking/BCs. The Rangarajan Committee (RBI, 2008, p. 297) on financial inclusion in India defined it as a *process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.* In India, despite several steps taken by the government to accelerate financial inclusion, the status remains dismal. Existing empirical studies show that financial inclusion helps poor households (HHs) and the informal sector to improve their standard of living and paves the way for achieving higher economic growth (Bittencourt, 2012; Bruhn & Love, 2009; Rajan & Zingales, 1998). Moreover, an inclusive financial system helps in reducing poverty and income inequality (Beck, Kunt, & Honohan, 2009; Mukhopadhyay, 2016). However, poor HHs continue to languish under financial exclusion due to limited availability of financial products that match their diverse financial needs and varying income–expenditure patterns. Such financial exclusion entails larger transaction and opportunity costs for the poor. Hence, the Committee on Comprehensive Financial Services for Small Businesses and Low Income Households argues in its report that financial inclusion can be said to be complete only when there is access to a suite of appropriate products and services for all the financial needs of a HH or enterprise (RBI, 2016). Table 1 depicts the progress of financial inclusion in India from the introduction of the no-frill-account to the introduction of different social schemes as a part of inclusive finance agenda.

Table 1: The Progress of Financial Inclusion in India

2005	Reserve Bank of India (RBI) advised the banks to provide 'no frills' accounts and expand banking outreach to larger section of population.
2006	Banks allowed to use services of NGOs, self-help groups (SHG), microfinancing institutions (MFI) as business correspondents to extend banking services. One district in each state identified by State Level Bankers' Committee (SLBC) or 100 per cent financial inclusion (FI).
2007	Six million new accounts added and 2.6 million SHGs linked to banks touching 40 million HHs.
2007–2008	Two funds created by the Government of India: (a) Financial Inclusion Fund, (b) Financial Inclusion Technology Fund worth US$125 million each.
2010	Unique Identification Development Authority of India (UIDAI)-based Aaadhar project initiated to provide 'identity infrastructure' for FI. RBI allowed for profit companies, excluding non-banking financial companies (NBFC) to act as BC.
2011	Swabhimaan scheme launched to cover more than 74,000 villages with population over 2,000 with banking facilities. Number of bank accounts increased by approximately 100 million in 2011–2013.
2013	The committee on Comprehensive Financial Services for Small Businesses and Low Income Households (Chaired by Dr Nachiket Mor) submitted its final report.
2014	RBI released draft guideline for licencing of 'payment banks' or 'differentiated banks'. Pradhan Mantri Jan Dhan Yojana (PMJDY[1]) launched with the aim of linking every HH with banking facilities. The Phase II of PMJDY launched in 2015.
2015	183 million new accounts opened under PMJDY in the Phase II of PMJDY.

Source: Helix Institute of Digital Finance (2015).

THE BUSINESS CORRESPONDENT MODEL IN INDIA

The BC model of financial inclusion depends upon the success of the CSP agents who are micro-level entrepreneurs. The study uses the Organisation for Economic Co-operation and Development (OECD) definition: Business with zero to nine employees are regarded as micro-enterprises (OECD, 2005, 2017). The micro-entrepreneurs distinguish themselves from larger small and medium enterprises (SMEs) through a deficiency of capacities such as networking, marketing, business planning, human resource and the use of IT. The deficiencies become the main hindrances to

micro-entrepreneurs at all stages of development (Barnes et al., 2012; Brush, Ceru, & Blackburn, 2009; Foreman-Peck, Makepeace, & Morgan, 2011; Gherhes, Williams, Vorley, & Vasconcelos, 2016; Greenbank, 2001). The agents act as the retail point for the banks by providing banking services at locations other than a bank branch or ATM. Figure 1 and Box 1 depict an outline of three different financial inclusion model and different products and services offered by the CSPs respectively. All the three models are self-explanatory and define the roles and responsibility of the respective stakeholders.
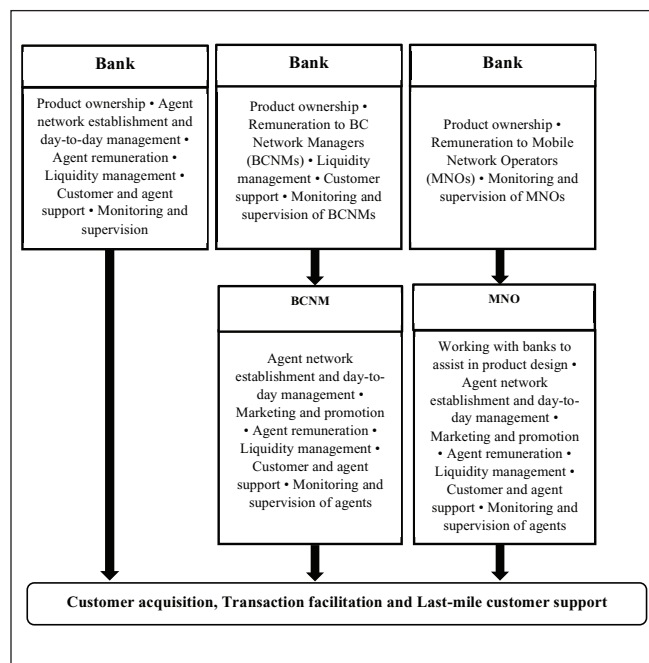

Figure 1: Financial Inclusion Models in India

Box 1: Products and Services Offered by the CSPs or the Agents

No-frill accounts (NFA)*, cash deposit and withdrawal, maintenance of NFAs, money remittance, recurring deposits, fixed deposits, loan processing, repayment of loan instalments, recovery of non-performing assets and other government social security schemes such as Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY),[2] Pradhan Mantri Suraksha Bima Yojana (PMSBY)[3] and Atal Pension Yojana (APY).[4]

Notes: *The recent nomenclature of the term no-frill accounts (NFA) has now changed to 'banking/savings & deposit accounts', or basic accounts.

While statistically, the progress of financial inclusion is impressive, there has been criticism emanating from various quarters that the scheme is not delivering what it was intended to (Mukhopadhyay, 2016). Many of the CSP agents are unmotivated due to compensation schemes and lack of support from the upper channels like the banks and the BC network managers for their business viability. The effectiveness of the BC model as a channel interface between bankers and beneficiaries needs to be addressed. The study has been designed taking into consideration the background of the financial inclusion plan in India. Therefore, the aim of the study is

1. To investigate the business sustainability of the BC model of financial inclusion
2. To propose a financial model for the BC agents based on commission and incentive structure of banks products

METHODOLOGY

To realize the objectives, the study considers four different strata of respondents, which includes scheduled commercial banks with a lead bank[5] status in the state, regulatory and coordination bodies, corporate BCs, and individual CSPs. For selecting the sample units, the random stratified sampling technique is used. Table 2 depicts the type and frequency of the respondents in each stratum. Details of the data sources are explained in the Appendix.

Table 2: Sampling and Frequency Table of the Respondents (Code, Category, Frequency and Organization)

Code	Category	N	Organization of the Interviewee
I1	Lead bank	1	Odisha Gramya Bank
I2	Lead bank	1	State Bank of India (Local Head Office, Bhubaneswar, Odisha)
I3	Lead bank	1	State Bank of India (Regional Office, Rourkela, District Sundergarh, Odisha)
I4	Lead bank	1	Bank of India (Zonal Office, Bhubaneswar)
I5	Lead bank	1	United Bank of India (Zonal Office, Bhubaneswar)

(Table 2 continued)

Code	Category	N	Organization of the Interviewee
I6	Lead bank	1	UCO Bank (Zonal Office, Bhubaneswar)
I7	Regulatory and coordination bodies	1	RBI
I8	Regulatory and coordination bodies	1	State Level Banker's Committee (SLBC)
I9	Corporate BC	1	Zero Mass
I10	Corporate BC	1	Network for Information & Computer Technology (NICT, a national BC)
I11	Corporate BC	1	Oxigen
I12	Corporate BC	1	Odisha
I13	Individual CSPs/ Agents	30	From six selected districts in Odisha

Note: The banks selected for the purpose are the lead banks to drive the financial inclusion in the state. N represent the number of samples from respective categories of data sources.

Based on the field coverage, the strata constitute six lead banks, two regulatory and coordination bodies, four corporate BCs and 30 CSPs or agents. The CSP agents are recruited from six districts of Odisha. The study adopts the random sampling approach for selecting the districts and the CSP agents. Regarding the nature of the samples, except the CSP agents, all the respondents belonged to the senior and middle management of the aforementioned stakeholders. The agents ran a CSP business either through the channel of corporate BCs or were directly appointed by the banks. The data was collected over a period of two months in May and June 2016.

DATA COLLECTION

The two objectives of the study indicate their existence with two broad categories of stakeholders. The first category links to the agents who retail the banking products and services to the end users. The second category is a list of stakeholders that are directly or indirectly involved in the decision-making process. Hence, two different sets of questionnaires were designed to extract comprehensive information from the respondents. The data were collected using a semi-structured questionnaire in a face-to-face interview. The typical profile of the respondents in the second category was that of an individual, more than 40 years old, with a banking and regulating experience in the range of 10 to 20 years and an average five years of experience in managing the financial inclusion division in their respective institutions. On the other hand, the typical first category respondents (the CSP agents) belonged to the 30- to 40-year age group, had a minimum qualification of 10+2 and a majority of them were graduates with an experience in the range of 4–8 years in the financial inclusion (FI) retail operation.

FINANCIAL MODELLING: STUDYING THE ECONOMIC VIABILITY OF THE CSPS OR THE AGENTS

There are variations in the approach with which the agent operates in these two models. In Odisha, the majority of the agents operate by the kiosk model, by using establishments such as small shops and rented houses. While in the second model, GPRS-enabled mobile sets also operate from a fixed point as well as move in neighbouring villages confined to their SSA—as allotted by the bank and State Level Bankers' Committee (SLBC). The study further analyses the economic viability of the aforementioned models, based on the information collected from different stakeholders. Table 3 presents the different CSP agent models. Table 4 depicts the existing practice of capital expenditure of the CSP agents. Table 5 lists the operating costs that were deduced from the fieldwork and discussion with relevant respondents. These inputs also serve as assumptions in the financial models presented later, with an average annual increase of 6.5 per cent on account of current inflation rate in India. Table 6 depicts the possible revenue streams that the CSPs depend on. Table 7 lists the five-year outreach projection for CSP agents based on the existing scenario. Table 8 depicts the five-year profit projections for CSPs operating on the kiosk model. This projection is on the basis of existing scenario assuming that there are no changes in the commission structure, additional training for the CSPs and product range for next five years.

Table 3: Different CSP Agent Models

Models	Description
Kiosk model	Laptop + hand-held capable of biometric identification operated from kiosk.
GPRS-mobile Model	GPRS enabled mobile set with biometric identification and Bluetooth-enabled handheld printer. (Fixed point and mobile based)

Table 4: Capital Expenditure of Different CSP Models

		Kiosk Model	GPRS: Mobile Model (Shop or Fixed Point)		GPRS: Mobile Model (Bike or No Fixed Point)	
Sl. No.	Item	Cost in ₹	Item	Cost in ₹	Item	Cost in ₹
1	Laptop	30,000	Biometric GPRS mobile plus Bluetooth-enabled handheld printer	15,000	Biometric GPRS mobile plus Bluetooth-enabled handheld printer	15,000
2	Biometric Unit/Machine	4,000				
3	Printer	7,000				
4	Kiosk furnishing: One time	30,000				
5	Data card	2,000				
6	Telephone/Mobile	4,000			Security deposit	25,000
7	Training/Year	0				
8	Working capital	20,000	Security deposit	25,000		
9	UPS	10,000			Motorbike	40,000
10	Others	0	Others	0	Others	0
	Total	107,000	Total	40,000	Total	80,000

Note: Figures are taken on average basis.

Table 5: Operational Cost of Different CSP Models per Year

Sl. No.	Models Item	Kiosk Model (Rural) Cost (in ₹)/Year	GPRS-mobile Model (Shop or Fixed Point) Cost (in ₹)/Year	GPRS-mobile Model (Bike or No Fixed Point) Cost (in ₹)/Year
1	Rent	6,000	6,000	0
2	Maintenance of H/W and admin.	6,000	2,000	6,000
3	Operator's salary	60,000	60,000	60,000
4	Connectivity charge	12,000	12,000	12,000
	Cost of insurance	3,600	3,600	3,600
6	Electricity	6,000	6,000	0
7	Visit to villages (Fuel expenditure)	6,000	6,000	12,000
8	Depreciation of capital investment@ 20% per Yr.	21,000	3,000	11,000
9	10% Charge for capital employed	10,700	4,000	8,000
	Total	1,31,300	102,600	112,600

Table 6: Commission Structure of the Different Services for CSPs

Sl. No.	Service Particulars	Average CSP/Agent Commission (in ₹)
A	**Banking Operations**	
1	No-frill account opening (NFA)(one time)	15 to 20
2	Cash deposit services (per transaction)	1 to 3
3	Cash withdrawal services(per transaction)	1 to 3
4	Maintenance of NFA (yearly)	0 to 2
5	A/c to A/c remittance (home branch A/c)(per transaction)	5 to 10
6	Opening of accounts: recurring deposits (RD) and fixed deposit (FD) (one time) (further deposits will be considered as normal deposit transaction)	10 to 15
7	Loan processing	10 to 15
8	From repayment to loan A/c	1 to 3
9	Commission earned on recovery of non-performing assets (NPAs)	10% of the collected amount
10	Life insurance: PMJJBY*	30
11	Non-life insurance/accidental insurance: PMSBY*	1
12	APY*: New enrolment	10
	*	

Notes: PMJJBY, PMSBY and APY are three social security product/schemes from the Government of India; figures are taken on average basis; year of data collection (2016–2017).

Table 7: Five-year Outreach Projection for CSPs

Existing Outreach of the BC	Year 1	Year 2	Year 3	Year 4	Year 5
Average number of SSA* covered by the BCs	1	1	1	1	1
Average number of HHs in the area as found from the field study and SLBC data	1,299	1,316	1,333	1,350	1,360
Percentage of HH enrolled with CSP/Average no of HHs to be enrolled (in %)	100	100	100	100	100
Extra number of HH to be enrolled per year	0	17	17	17	18
Average number of clients enrolled per HH	2	2	2	2	2
Total no of accounts in the SSA	2,597	2,631	2,665	2,700	2,735
Total accounts to be enrolled per year	0	34	34	34	36
Service Type	**Average No. of Transactions per Year**				
Average number of clients maintaining active accounts @ 20%** of total accounts enrolled. (Additional 5% cumulative increment from Year 1 onwards)	519	553	588	625	665
Average number of deposit transactions per active client/year. (Average 24 deposits by an active client per year.) The number of deposit transactions in the fourth and fifth years are assumed to have increased to 48.	12,468	13,261	14,106	15,003	15,958
Average number of withdrawal transactions per active client/year. (Initially, the average number of deposit transaction will be higher which will further reduce with the increasing financial literacy among the clients). The average number of transactions per year are assumed to be 48, 36, 36, 36 and 24, respectively for five years.	18,702	19,892	21,158	22,505	23,938

(Table 7 continued)

Service Type	Average No. of Transactions per Year				
Average number of remittance transactions per active client/year. (Assumption: For first 2 years = 0 and next consecutive years would be 4, 6 and 12 per client per year, respectively)	0	0	2,351	3,751	7,979
Average number of recurring deposits (RD) and fixed deposit (FD) opened per year. (@ 1% of the total active accounts per year)	5	6	6	6	7
Average number of loans disbursed/processing by CSPs per year (very less in number)	0	0	1	1	1
Average tenure of loans in years/average number of Equated Monthly Instalments (EMIs) per year	12	12	12	12	12
Average loan size in ₹ (Assumption: 10% increase of the average loan amount every year)	5,000	5,500	6,050	6,655	7,321
Average number of recovery from NPA accounts/year	6	6	6	6	6
Average amount of recovery amount from the NPA accounts/month.	500	500	500	500	500
Average number of clients obtaining life insurance per year (PMJJBY). (Average 20% per year and an increment of 10% from the previous year from 2nd year onwards)	104	114	126	138	152
Average number of clients obtaining life insurance per year (PMSBY). (Average 20% per year and an increment of 10% from the previous year from 2nd year onwards)	104	114	126	138	152
Average number of active accounts enrolling for Old Age Pension. (Average 0.5% per year and an increment of 10% from the previous year from 2nd year onwards)	3	3	3	3	4

Notes: Figures are taken on average basis; *SSA: According to SLBC of the Government of India, an SSA consists of three to four villages having combined average population of 1,600 to 1,800.

** From the field survey, the average number of clients maintaining active accounts in an SSA has been considered as 20%. This percentage of total active accounts varies from SSA to SSA;

Table 8: Five-year Profit Projection for CSPs Operating the Kiosk Model

Capital Cost	Y1	Y2	Y3	Y4	Y5
Laptop	30,000	0	0	0	0
Biometric unit	4,000	0	0	0	
Printer	7,000	0	0	0	0
Kiosk furnishing: One time	30,000	0	0	0	0
Data card	2,000	0	0	0	
Telephone/Mobile	4,000	0	0	0	0
Working capital	20,000	0	0	0	
UPS	10,000	0	0	0	0
Others	0	0	0	0	
Total capital cost per CSP	**107,000**	**0**	**0**	**0**	**0**
Currency in ₹					

Operational Cost (@ 6.5% Increment Every Year, i.e., Inflation Rate of India	Year 1	Year 2	Year 3	Year 4	Year 5
Rent	6,000	6,390	6,805	7,247	7,718
Maintenance of H/W and admin	6,000	6,390	6,805	7,247	7,718

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FINANCIAL MODELLING FOR BUSINESS SUSTAINABILITY:
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(Table 8 continued)

Operator's salary	60,000	66,000	72,600	79,860	87,846
Operational Cost (@ 6.5% Increment Every Year, i.e., Inflation Rate of India	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Connectivity charge	12,000	12,780	13,610	14,495	15,437
Cost of insurance	3,600	3,834	4,083	4,348	4,631
Electricity	6,000	6,390	6,805	7,247	7,718
Visit to villages (fuel expenditure)	6,000	6,390	6,805	7,247	7,718
Depreciation of capital investment@ 20% per Yr.	17,400	17,400	17,400	17,400	18,618
10% charge for capital employed	10,700	11,396	12,136	12,925	13,765
Total operational cost	**127,700**	**136,969**	**147,051**	**158,019**	**171,173**
Currency in ₹					
Earning from BC Operation	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
From no-frill account opening (NFA)(one time)	0	506	513	519	526
From cash deposit services (@ ₹3 per transaction)	37,403	39,784	42,316	45,010	47,875
From cash withdrawal services (@ ₹2.25 per transaction)	56,105	59,676	63,475	67,515	71,813
From maintenance of NFA (yearly) @ 30% of the active A/c maintain average quarterly balance of ₹ 500	3,740	3,978	4,232	4,501	4,787
From A/c to A/c remittance (home branch A/c)	0	0	9,403	15,003	31,916
From opening of accounts: recurring deposits and FD (one time) (Further deposits will be considered as normal deposit transaction.)	51	55	58	62	66
From loan processing	0	100	100	100	100
From repayment to loan A/c	0	60	60	60	60
From commission earned on recovery of NPAs	300	300	300	300	300
From Pradhan Mantri Jeevan Jyoti Bima Yojana: Life Insurance	3,116	3,429	3,772	4,149	4,564
From Pradhan Mantri Suraksha Bima Yojana: Non-life insurance/Accidental insurance.	104	114	126	138	152
From Atal Pension Yojana: New Enrolment	26	29	31	34	38
Total revenue	**100,848**	**108,033**	**124,387**	**137,394**	**162,198**
Total operational cost	**127,700**	**136,969**	**147,051**	**158,019**	**171,173**
Total profit for a CSP	**(26,851)**	**(28,937)**	**(22,664)**	**(20,626)**	**(8,975)**

Note: Figures in parentheses show negative value; currency in ₹. The commission structure for respective services may be referred to Table 6.

Observations of the Existing BC Model Implemented by the Banks

Figure 2 depicts a 10-year projection, which indicates that the CSP agents achieve their break-even point after the 7th year of business operation. The break-even has been calculated on the basis of average active accounts present in an SSA, containing 1,299 (average) number of HHs and 2,597 number of NFAs. While majority of the NFA accounts are found to be dormant, an average 20 per cent (as per the outcome of the discussion with different stakeholders) of the total NFAs in an SSA has been found to be active. This 20 per cent equals to 519 number of active accounts from a single SSA with an average of 2,597 NFAs. From the empirical data, as collected from different stakeholders, very limited banking products are offered through the CSP agents in Odisha as a part of their existing operation. Moreover, the most common services availed by the beneficiaries via the BC mode of operation are

limited to only deposits, withdrawal and a few remittance services. Whereas other enlisted services with a CSP such as recovery of non-performing assets (NPA), recurring deposits, fixed deposits (short and long term), loan processing and microloan deposits are given less attention. Therefore, the present activity of the CSP agents does not result in recovery of investment made upfront.

By comparing the kiosk model with other BC models of operation, both the capital and operation cost in case of kiosk model is on the higher side (refer to Tables 4 and 5). However, because of the security and fixed-point accessibility of the CSPs, the kiosk model is popular with banks as well as the beneficiaries. However, the study estimates that in a typical rural scenario, the CSP agents, who handle an SSA, with a population of 1,600 to 1,800 receive Rs. 2,000 after meeting the obligatory expenses towards travel to the base branch, cost of electricity and connectivity, and other variable costs. This low-income perspective of the existing kiosk model at a high fixed, as well as operational cost, leads to lack of interest and motivation among the personnel handling the CSPs. Hence, there is an imperative need for the development of a new model where a CSP agent can optimize the investment. At the same time, the model should be productive for both the banks as well as the beneficiaries on a long-term basis with a minimum fixed income.

PROPOSED MODEL

In the proposed model for BCs operating the kiosk model, following assumptions have been made, taking into consideration the data collected from different stakeholders.

- Average percentage of active clients is the same, that is, 20 per cent.
- Additional forecasting of 15 per cent growth of HH numbers every year against the previous year percentage of active HH from year to year.
- The capital and variable cost remain the same for both the existing practice and the proposed model of practice.
- The width of product range has been increased from the existing product basket in the kiosk model.
- The commission structure for different products is taken on its average, based on the data collected during the field survey.
- The proposed model can vary depending upon the users' preference for decision-making by putting different data such as percentage of enrolling active accounts, commission structure, and cost structure for fixed and variable cost.

Tables 9–14 explain the proposed model in detail with five-year projections. Figures 3 and 4 depict the break-even point for a CSP agent under the proposed model.

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Total Profit	-26851.6	-28936.7	-22663.8	-20626.3	-8974.76	-8391.6	-3985.2	421.2	4827.6	9234
Total Income	100848.3	108032.7	124387.6	137393.5	162198.5	172190	187396	202602	217808	233014
Total Operational Cost	127700	136969.5	147051.5	158019.9	171173.3	180584	191384	202184	212984	223784
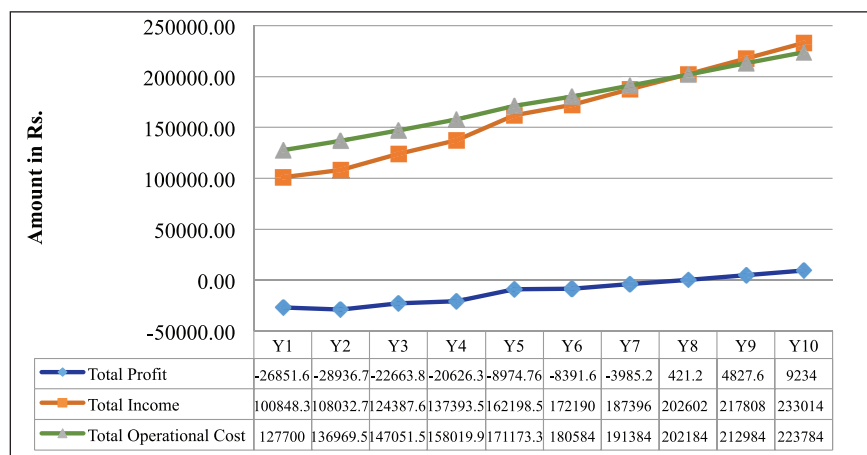
Figure 2: Break-even Point for CSP Against the Kiosk Mode of Operation

Notes:
Regression Line for Profit Function y = 4,406.4x − 34,830
Regression Line for Income Functiony = 15,206x + 80,954
Regression Line for Operational Cost Function y = 10,800x + 115,784
(Where x = Number of Years, From 1 to 10)

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Table 9: Five-year Profit Projection of CSPs Operating the Kiosk Model (Proposed Model)

Sl. No	Outreach	Year 1 Quantity	Year 2 Quantity	Year 3 Quantity	Year 4 Quantity	Year 5 Quantity
1	Number of SSA covered	1	1	1	1	1
2	Average number of HH in the area	1,299	1,316	1,333	1,350	1,368
3	Percentage of HH enrolled with CSP/Average number of HH to be enrolled (%)	100	100	100	100	100
4	Number of HH to be enrolled per year	0	16.9	17.1	17.3	17.6
5	Average number of clients enrolled per HH	2	2	2	2	2
6	Total number of accounts in the area	2,597	2,631	2,665	2,700	2,735
7	Total A/c to be enrolled per year	0	33.77	34.21	34.65	35.10
8	Average % of enrolled HH maintaining active accounts (deposit, withdrawal, remittance and credit transactions). Additional forecasting of 15% growth of HH every year against the previous year percentage of active HH from year-to-year.	260	303	353	411	478
9	Average number of clients maintaining active A/c	519	605	705	821	957

Table 10: Outreach and Commission Structure for Offering Banking Operation Products Through Kiosk Model

A	Banking Operations	Outreach	Year 1		Year 2		Year 3		Year 4		Year 5	
			Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)
	No-frill account (NFA)	NA	0	0.00	34	507	34	513	35	520	35	527
1	A/c opening — Initial minimum deposit of Rs. 100	NA	24	384	36	576	48	768	60	960	72	1,152
2	Cash deposit @ 24 nos./year per active A/c	24	12,468	12,468	37,404	14,524	43,573	16,920	50,761	19,711	59,134	22,963
3	Cash Withdrawal @ 36 nos.-/year per active A/c	36	18,702	18,702	56,105	21,787	65,360	25,380	76,141	29,567	88,701	34,444
4	Opening of RD @ 5% of active A/c per year	10%	52	52	519	66	657	77	771	90	898	105
5	Opening of FD @ 5% of active A/c per year	5%	26	26	390	33	493	39	578	45	674	52
6	A/c to A/c Remittance–Home branch A/c	50%	260	260	779	303	908	353	1,058	411	1,232	478
7	Tatkal remittance (non-home branch A/c) — Deposit to core by cash	10%	52	1,299	61	1,513	71	1,763	82	2,053	96	2,392
	Deposit to core by transfer	10%	52	519	61	605	71	705	82	821	96	957
8	IMPS transaction — By cash	0%	0	0	0	0	0	0	0	0	0	0
	By Transfer	0%	0	0	0	0	0	0	0	0	0	0
9	Average balance maintenance fee for NFAs (in % per annum) — For average balance 500	70%	364	109	424	127	494	148	575	172	670	201
	For average balance >501 & ₹1,000	20%	104	104	121	121	141	141	164	164	191	191
	For average balance >1,001 & ₹5,000	8%	42	83	48	97	56	113	66	131	77	153
	For average balance >5,001	2%	10	31	12	36	14	42	16	49	19	57
10	Average balance maintenance fee for non-zero A/c (in % or Rs. per annum) — For average balance <50%	70%	364	0	424	0	494	0	575	0	670	0
	Between 50% and 75%	20%	104	3,117	121	3,631	141	4,230	164	4,928	191	5,741
	Between 75% and 100%	10%	52	3,117	61	3,631	71	4,230	82	4,928	96	5,741
	Total A		**32,674**	**103,961**	**38,114**	**121,835**	**44,402**	**141,961**	**51,725**	**165,366**	**60,254**	**192,598**

Note: The amount is in Indian rupee (₹).

Table 11: Outreach and Commission Structure for Offering Banking Operation Products Through Kiosk Model

Particulars		Outreach	Year 1		Year 2		Year 3		Year 4		Year 5	
B	Loan and Overdraft		Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)	Quantity	Amt (in ₹)
1	Loan processing @ average 2%–3% per year	3%	16	312	18	363	21	423	25	493	29	574
	Micro loan disbursement	1.00%	5	519	6	605	7	705	8	821	10	957
2	Repayment to loan A/c (average 12 numbers per year)		62	312	73	363	85	423	99	493	115	574
3	Commission earned on recovery of NPAs @ average collection amount = ₹500	500	6	300	12	600	12	600	24	1,200	24	1,200
4	Over draft per year — At the time of availing	20	0	6	121	14	282	25	493	38	765	765
	On Repayment (against Int./Amt.)	5	0	36	182	85	423	148	739	230	1,148	1,148
5	Other	0	0	0	0	0	0	0	0	0	0	0
	Total B		89	1,443	151	2,234	224	2,856	328	4,239	445	5,218

Table 12: Outreach and Commission Structure for Offering Banking Operation Products Through Kiosk Model

Particulars		Outreach	Year 1		Year 2		Year 3		Year 4		Year 5	
C	Social Security Products		Qty	Amt (in ₹)	Qty	Amt (in ₹)	Qty	Amt (in ₹)	Qty	Amt (in ₹)	Qty	Amt (in ₹)
1	PMJJBY: Life insurance	30%	156	3,117	242	4,841	353	7,050	493	9,856	670	13,395
2	PMSBY: Accidental insurance (non-life)	30%	156	156	242	242	353	353	493	493	670	670
3	APY: New enrolment	5%	26	260	61	605	106	1,058	164	1,643	239	2,392
4	On collection of monthly instalment @ Atal pension	0%	0	0	312	935	726	2,179	1,269	3,807	1,971	5,913
5	Third party life insurance — On enrolment	3%	16	468	18	545	21	635	25	739	29	861
	Premium (4 nos./year)	4	62	187	75	218	85	254	99	296	115	344
6	Third party GI — On new enrolment	0%	0	0	7	132	27	533	54	1,080	82	1,641
	On renewal	0%	0	0	0	0	7	66	33	332	87	872
7	Others	0%	0	0	0	0	0	0	0	0	0	0
	Total C		416	4,187	954	7,518	1,676	12,126	2,629	18,245	3,863	26,089

Table 13: Outreach and Commission Structure for Offering Value-added Banking Services Through Kiosk Model

D	Value-added Services	Outreach (in %)	Commission (in ₹)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
1	e-KYC verification	5	1	26	26	132	132	133	133	135	135	137	137
2	Aadhar seeding	5	1	26	26	132	132	133	133	135	135	137	137
3	Inputting valid contact number	5	1	26	26	132	132	133	133	135	135	137	137
4	Fixed incentives for CSPs per month	0	0	0	0	12	0	12	0	12	0	12	0
	Total D			**78**	**78**	**407**	**395**	**412**	**400**	**417**	**405**	**422**	**410**

Note: All the amounts are in Indian ₹.

Table 14: Year-wise Income Analysis

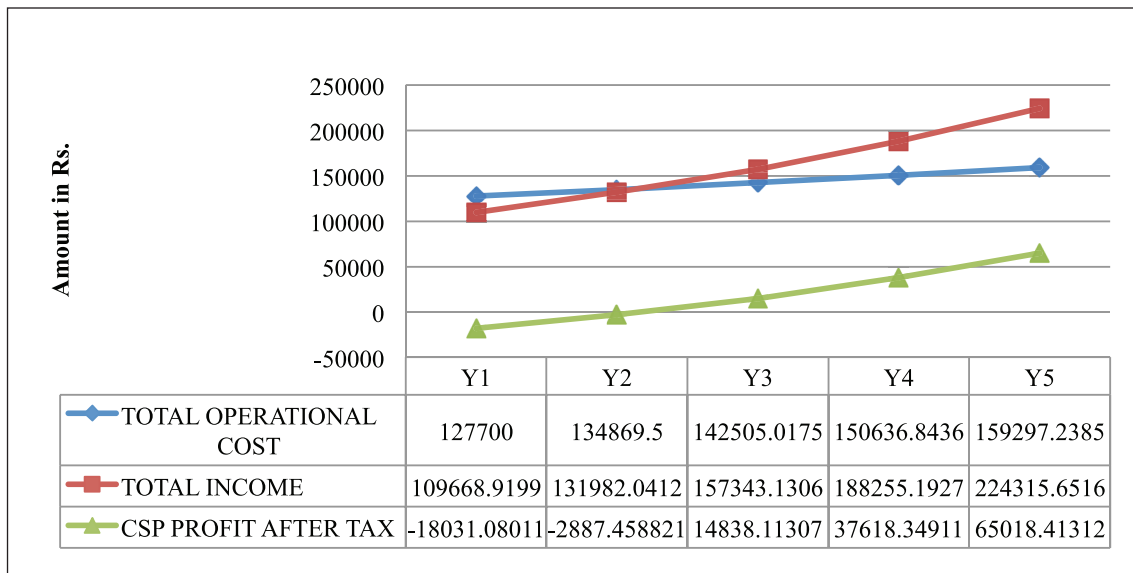| Particulars	Y1	Y2	Y3	Y4	Y5
Total capital cost (one time)	107,000				
Total operational cost	127,700	134,870	142,505	150,637	159,297
Total income	109,669	131,982	157,343	188,255	224,316
Profit before tax	−18,031	−2,887	14,838	37,618	65,018
Tax	0	0	0	0	0
Profit after tax	(18,031)	(2,887)	14,838	37,618	65,018

Figure 3: Break-even Point for CSPs Operating the Kiosk Model

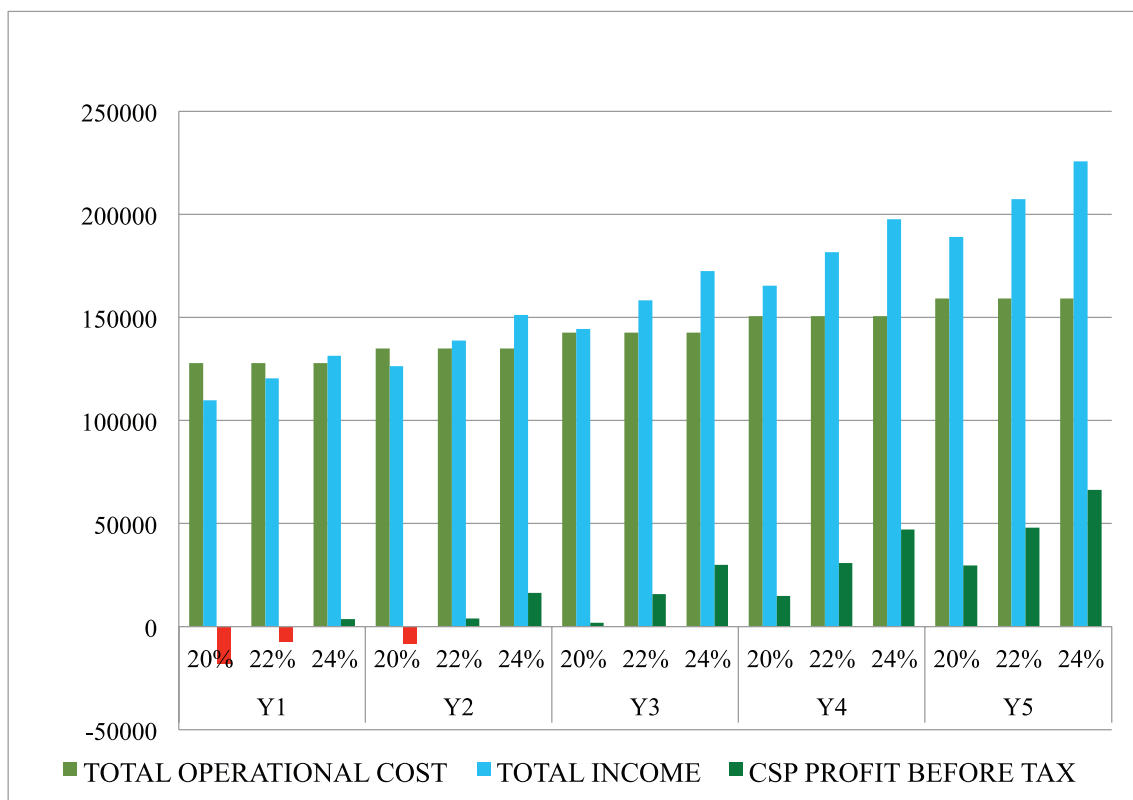**Note:** It is assumed that an average of 20% of enrolled clients maintain active accounts.

	Y1	Y2	Y3	Y4	Y5
TOTAL OPERATIONAL COST	127700	134869.5	142505.0175	150636.8436	159297.2385
TOTAL INCOME	109668.9199	131982.0412	157343.1306	188255.1927	224315.6516
CSP PROFIT AFTER TAX	-18031.08011	-2887.458821	14838.11307	37618.34911	65018.41312

Figure 4: Year-wise Presentation of Income vs. Cost vs. Profit Analysis at Different Percentages of Enrolled Clients Maintaining Active Accounts per SSA

FINDINGS AND RECOMMENDATIONS

Broadly, the findings from the study show that the commercial viability of the BC model from the CSP agent perspective pose a serious challenge with a threat to its very existence. At present, most of the agents operate in rural areas and struggle to generate the volume of business as well as profitability for their existence. As revealed by the outcome of the existing model as shown in Table 8 and Figure 2, a CSP agent can achieve its break-even only after seven years through the existing kiosk model of operation. The major challenges in the kiosk model are the high cost and low volume of transaction.

In contrast to the existing kiosk model of CSP operation—the proposed model and as depicted in Tables 9–14 and Figures 3 and 4—a CSP agent takes three years to break-even under the same condition as that of the existing model. This achievement in the proposed model is due to the increase in the product range and the outreach plan for each CSP therefore addressing the volume of transactions issue, which further contribute to the economies of scale. Moreover, as shown in Table 15, the break-even can be achieved even in the first year of the inception of the CSP when the active account coverage is increased to 24 per cent. Regarding the income-sharing pattern among the bank, corporate BC and the CSP agent, the bank normally retains 10 per cent to 20 per cent of the charges collected from the customers. The bank shares the remaining with the corporate BC. The cost of BC operation has three major components such as payment to CSP agents, the cost of technology and supervisory/managerial cost. The corporate BC usually pays 60 per cent to 75 per cent of its earning to its CSP agents. Therefore, the earnings of the CSP agents depend upon the volume of business and transaction with the beneficiaries at the designated SSAs. Therefore, until the BC model builds up enough volume such as active accounts and the number of transactions, the CSP agents in rural areas would continue to lose money, for example, more than seven years to meet the break-even (refer to Figure 2). Therefore, the challenge before the system is to keep the CSPs active until they achieve financial viability. The study identified the CSP as the weakest, as well as the most critical link in the BC chain, which needs immediate strengthening.

Another challenge is that the number of new CSPs are increasing every day. On the other hand, while existing CSPs are going dormant. The prime reason for inactive CSPs is that the existing BC model is not viable, which is a serious challenge for the policymakers. Therefore, individuals with an entrepreneurial quality should be appointed as CSP agents. Apart from knowing the basics of banking, the CSP agents need to imbibe the cultural ethos of the bank. It is found that the morale of the CSP agents is low due to delayed or poor remuneration, poor knowledge of banking norms, lack of technical knowhow, the absence of an effective grievance redressal mechanism, frequent technical difficulties, low-cash holding capacity and frequent changes in rules among others. While dealing with the beneficiaries or the end users, the study observed the inadequacy of financial literacy and customer education programme, which plays a significant role in the success of the financial inclusion drive in a sustainable manner. In fact, at the field level, the CSPs rarely get in touch with any NFA holders on a regular basis. There is an absence of a continuous and sustainable effort to maintain regular transaction with the NFA holders by the BC and banks or both.

Table 15: Year-wise Total Cost, Revenue and Profit Forecasting at Different Rate of Active Account in a Sub Service Area

Years	Rate of Active Accounts (%)	TOC (in ₹)	TI (in ₹)	PBT (in v)
Year 1	20	127,700	109,669	−18,031
Year 1	22	127,700	120,567	−7,132
Year 1	24	127,700	131,466	3,766
Year 2	20	134,869	126,384	−8,485
Year 2	22	134,869	138,802	3,932

(Table 15 continued)

(Table 15 continued)

Years	Rate of Active Accounts (%)	TOC (in ₹)	TI (in ₹)	PBT (in v)
Year 2	24	134,869	151,219	16,350
Year 3	20	142,505	144,299	1,794
Year 3	22	142,505	158,441	15,936
Year 3	24	142,505	172,583	30,078
Year 4	20	150,637	165,471	14,834
Year 4	22	150,637	181,568	30,931
Year 4	24	150,637	197,666	47,029
Year 5	20	159,297	188,952	29,655
Year 5	22	159,297	207,267	47,970
Year 5	24	159,297	225,582	66,285

Notes: TOC: total operational cost; TI: total income; PBT: profit before tax.

To overcome the constraints and weaknesses of the BC model identified by the research team, strategic interventions by regulators, commercial banks and the CSP agents themselves is essential. There should be a concentrated effort on making the BC model more viable, sustainable and financially attractive to all stakeholders. The proposed business model, as depicted in Table 15, indicates that under optimal circumstances, with different percentage of coverage of active accounts such as 20 per cent, 22 per cent and 24 per cent, an average time period of 3 years, 2 years and 1 year, respectively, is required by the CSP agents to break-even. The challenge, therefore, is to sustain the CSP until the break-even point. Break-even has been achieved due to the increase in the product range and the outreach plan for each CSP. Therefore, it is important that at the bank level, an increase in the product range as well as restructuring the outreach plan at each SSA level be undertaken. By increasing the range of banking products, both bank as well as the CSP agents are benefited. A primary reason for the banks not offering a basket of products is the lack of confidence in the BC system. The bank feels that managing the operational risk in the form of frauds, malpractices and non-adherence to the banking system and the operational process at CSP level is a major challenge. The problem can be addressed by strengthening the systems and procedures at the CSP level with the active support of the bank. In addition to this, the CSPs, which are active at a grass root level, needs to be well informed and should be competent in facing customers. Hence, the banks, as well as the corporate BCs need to concentrate on capacity-building of CSP agents on an ongoing basis by creating separate internal facilities and programmes.

CONCLUSION

The study highlights the need for measures to accelerate the pace of the BC model with quality, accuracy and cost effectiveness to address the financial inclusion programme. This concern has been shared by the Ex-RBI Governor (Bhakta, 2016). The proposed BC model for business sustainability depicts that increasing the financial product range and inducing more coverage and improvised quality of service delivery can help the BC operation in reaching the break-even point in less duration. The model can be a beneficial tool for the lead banks in a specific region for their BC operation towards achieving the financial inclusion goal. Besides, new business opportunities for the banks may be explored through the BC channel of financial inclusion for better market penetration and new market expansion for different banking products.

This research can further be extended to investigate the viability of the BC model from the banks' return on investment perspective. Future research can focus on both the demand and supply side of the BC operation. For instance, the understanding of different stakeholder's perceptions about the status of financial inclusion

can be a potential avenue for research from the governance perspective (Behera, Pratihari, & Mohapatra, 2013; Uzma, 2016); and macromarketing perspective for the well-being of the society as a whole (Aiyar & Venugopal, 2019). Besides, banks can engage and utilize the local network and resources of the channel members with different value co-creation activities such as the implementation of different corporate social responsibilities (CSR) initiatives in the target markets (Perez, Rodriguez, & Bosque, 2014; Perez & Bosque, 2015; Pratihari & Uzma, 2018). The efforts of the BC as an active channel member may be incentivized by the link-bank branch of the BC operation. As an outcome, a culture of trust and responsiveness may be developed among the members of the value chain, which can be a motivating factor for better productivity (Arora & Kazmi, 2012; Pratihari & Uzma, 2019). The study can also be applied in the domain of bottom of the pyramid (BOP) marketing. Whereas, the notion of BOP marketing lies with the philosophy of profitability with poverty alleviation (Jaiswal, 2008; Prahalad, 2005). In contemporary literature, the apprehension of serving the BOP and the imperatives of value creation has shifted the phenomena of BOP marketing by treating BOP as customer or the beneficiaries (BOP 1.0) to BOP as business partner (BOP 2.0) and BOP as producer (BOP 3.0) (Dembek, Sivasubramaniam, & Chmielewski, 2019), where BC operation for financial inclusion may not be an exception. The robustness of the model may be tested in a different time and geographical contexts in different economies and cross-cultural contexts. The geographical scope of the study is limited to only a representative state of India, and further investigation may be invited to test the feasibility of the CSP agents, who act as micro-level entrepreneurs in the BC model of financial inclusion in other states of India and other emerging and developing economies.

ACKNOWLEDGEMENT

APPENDIX

Summary of Data Sources

The majority of the input data used in the financial modelling for the BC sustainability is dynamic. Therefore, a cross-section of the available data has been taken to test the model during 2016 in Odisha's context. Some other dynamic data include the incentive and commission structure of different products, which changes according to different factors such as the policy framework of the regulator, public federations and societies, the supplier (bank) and the market among others. Therefore, the application of the model depends on the time factor. Therefore, the output of the model will depend on the magnitude of different inputs as variables and their value at that particular time and context. Listed below are some of the latest available data sources in the Indian context from reliable government and public sources.

Table A1: Data Source

Input Data	Reference Table/Figure/Article	Source
Number of bank branches (rural/urban)	Bank-wise and population tier-wise number of functioning offices of commercial banks in India.	RBI (2019), Table 19-t https://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications#!17
	Bank-wise and population group-wise (rural, semi-urban, urban, metropolitan areas) number of functioning offices of commercial banks in India.	RBI (2019), Table 19-s https://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications#!17
No. of lead banks for BC operation (state-wise)	Table 2 (The number of operational BCs for a lead bank [of the area under investigation] may be crossed checked with the concerned lead bank authority for validity.	The lead banks can be accessed from the respective State Level Bankers' Committee (SLBC, 2019). https://slbcorissa.com/lead-banks-district-wise/
Total number of BC and CSPs (state-wise)		Indian Banks' Association: Business Correspondents registry (IBA, 2019) (https://www.iba.org.in/iba/home/HomeAction.do?doBCPortal=yes)
Commission & incentive structure	Table 5	Field survey from different stakeholders

(Table A1 continued)

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(Table A1 continued)

Input Data	Reference Table/Figure/Article	Source
Capital expenditure and operational cost of BCs	Tables 4 and 5	Market rate of the prescribed make (if any) of the product at that point of time.
BC outreach and product portfolio	Table 7	Field survey (empirical)

Note: The detail population and group-wise classification may be referred to the notes by RBI (2015a, 20015b).

Table A2: Total Numbers of Rural Branch Banking in India (Bank Type-wise)

Sl. No.	Type of Banks	Total No. of Bank Branches		
		March 2019	**March 2015**	**March 2011**
1	SBI and associates	7,755	7,438	5,793
2	Nationalized banks	21,075	19,487	13,119
3	Other public sector banks	350	74	44
3	Foreign banks	12	5	3
4	Private banks	6,839	3,841	1,118
5	Regional rural bank	12,079	10,067	8,494
6	Local area banks	14	24	12
7	Small finance banks	675	0	0
8	Payment banks	35	0	0
	Total	**48,834**	**40,936**	**28,583**

DECLARATION OF CONFLICTING INTERESTS

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NOTES

1 Pradhan Mantri Jan Dhan Yojana (PMJDY) is a national mission on financial inclusion encompassing an integrated approach to bring about comprehensive financial inclusion of all the HHs in the country. The plan envisages universal access to banking facilities with at least one basic banking account for every HH, financial literacy, access to credit, insurance and pension facility. The objective of PMJDY is to ensure access to various financial services such as availability of basic savings bank account, access to need based credit, remittances facility, insurance and pension to the excluded sections, that is, weaker sections and low-income groups. Refer to https://pmjdy.gov.in/

2 PMJJBY is an insurance scheme offering life insurance cover for death due to any reason. Retrieved from http://www.jansuraksha.gov.in/Files/PMJJBY/English/Rules.pdf]

3 Pradhan Mantri Suraksha Bima Yojana (PMSBY) is an accident insurance scheme offering accidental death and disability cover for death or disability on account of an accident. Retrieved from http://www.jansuraksha.gov.in/Files/PMSBY/English/Rules.pdf

4 Atal Pension Yojana (APY): A pension scheme for social security especially the poor, the underprivileged and the workers in the unorganised sector. Retrieved from http://www.jansuraksha.gov.in/Files/APY/English/Rules.pdf

5 Lead bank: The RBI introduced the 'Lead Bank Scheme' towards the end of 1969. To enable banks to assume their lead role, effective and systematic manner, all districts in the country, except the metropolitan cities of India, were allotted among the public sector banks and a few private sector banks. The lead bank role is to act as a consortium leader for co-ordinating the efforts of all credit institutions in each of the allotted districts for expansion of branch banking facilities and for meeting the credit needs of the rural economy. Retrieved from https://rbi.org.in/Scripts/BS_ViewMasCirculardetails.aspx?id=9077

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