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PERFORMANCE - ORIENTED SELECTION
CRITERIA FOR RURAL ENTREPRENEURS

by

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PERFORMANCE - ORIENTED SELECTION CRITERIA
FOR RURAL ENTREPRENEURS

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One of the aims of current developmental policy in India
consists of encouraging the scheduled and un-scheduled commercial
banks and other financial agencies, to expand their scope of
operation in order to remove financial bottlenecks confronted by
the small entrepreneurs, especially in the backward rural areas.
Several problems in this area assume importance e.g. how would
be a financial agency decide on rational basis, whether to
finance an applicant or not? On what causal factors the financial
agency could base their decision?

In case of organised urban sectors the financial agencies
direct the entrepreneurs to prepare a feasibility report which
itself involves considerable amount of managerial function. In un-
organised rural sector such a task cannot be enforced on the entrepre-
neurs, which implies that the financial agencies themselves have
to undertake this responsibility. However, assuming that the financial
agencies agree to do so under the implications of increased administra-
tive cost, what method they could employ to arrive at reasonable
solutions to the problem of selecting potential entrepreneurs?
The objective of the present paper is centred on analysing this
problem in detail.

Approach

The foregoing discussion clearly points to the critical importance of the ability of the financial agency to predict as accurately as possible the level of entrepreneurial competence that can be attained with each new entry into the entrepreneurial role. Several studies in past engaged in this general area. These studies seem to reflect that research on entrepreneurship involves considerable inter-disciplinary work with economic as well as socio-psychological concepts interacting frequently in the process of explaining the phenomena.

In the present paper we have adopted an interdisciplinary approach considering both economic as well as socio-psychological concepts. There are atleast two reasons for such an approach. First, in case of rural entrepreneurs it is not always possible to obtain reliable data on managerial functions because of lack of education, proper book keeping etc. As a result, these variables have often to be measured through response surveys, scored and quantified in order to use them analytically. Secondly, entrepreneurship has been conceived as a process of evolution of a particular socio-psychological environment, both at individual as well as societal level. The socio-psychological variables such as motivation, modernity and aspirations are some of the common concepts linked with entrepreneurial qualities. In this paper, an effort has been made to quantify these socio-psychological

variables with the help of available standardised tests[1] and then
relate both the economic and the socio-psychological concepts with
entrepreneurial performance, in order to develop appropriate selection
criteria.

Entrepreneurial functions and attainment of success

Several studies are available which provide insights into entrepre-
neurial functions.[2] In this paper we shall consider among entrepreneu-
rial functions the following: (a) ability to perceive an opportunity,
(b) managerial functions involving establishment and running an
enterprise. In other words, entrepreneurship is postulated here as
the function of generalised business experience, ability to anticipate
and plan, adaptability to changing business conditions and decisions
pertaining to the diversification of business. These entrepreneurial
functions are basically dependent on the socio-psychological orienta-
tions of the persons concerned in terms of their motivations,
aspirations and modernity. Conceptually all these variables are related
to entrepreneurial success. In the following we shall make an attempt
to empirically study the role of different entrepreneurial functions
in the attainment of business success.

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1   Motivations were measured by TAT (revised version of Murray's TAT)
     aspiration by Cantrill's Ladder test, and modernity by scoring
     responses on Overall Modernity Scale referred by Ashis Nandy,
     Ibid.

2   Brozen Yale, 'Determinants of Entrepreneurial Abilities'
     Social Research, Vol. 21, 1954, K.L. Sharma,, Entrepreneurial
     Performance in Role Perspective, Abhinav Publication, New Delhi,
     1975, Ashis Nandy, "Motives, Modernity, and Entrepreneurial
     Competence," Journal of Social Psychology, Vol.91, 1973, 127-136

2.1 The Data:- Information pertaining to the entrepreneurial function
for this technical note is drawn from the data obtained from sample
survey conducted for the project 'Rural Entrepreneurship and Investment
Decisions' sponsored by the Ministry of Food and Agriculture. The
survey was conducted in the rural areas of Anand taluka in Gujarat.
Anand is well known for high level of agricultural prosperity as well as
it forms an important business centre in Gujarat. Alongside Anand-
Vidyanagar belt, well developed industries are located including the
phenomenal development of Amul Dairy.

Apparently therefore, Anand taluka represents a region which
has twin advantages i.e. agricultural prosperity backed by industrial
developments in the large scale industries sector. The purpose of the
original bigger study was to measure the impact of development stimuli
on the entrepreneurship development in the surrounding rural areas.
To this extent the present paper gives a representative picture within
certain limitations. The rural entrepreneurs in this region function
'in an environmental complex which from the point of view of economic
development as well as entrepreneurial opportunities forms an advanced
response set for the potential entrepreneurs.

Thus within the environmental complex characterised as above,
the entrepreneurs selected for this study were all village-based
in the taluka where agriculture and farming is the main occupation of
the majority of the population. Only those entrepreneurs were
selected whose major sourc of income were from out of farm business
enterprises.

These entrepreneurs could be classified into three categories, detailed information about which is given in Appendix II. The first category consist of those who are engaged in manufacturing process. They either provide ancillary services to the major industrial units or else supply consumer goods directly to rural as well as urban areas. The second group of entrepreneurs are essentially engaged in the processing of various commodities (including agricultural commodities), who essentially maintain rural-urban trade relationship. The third category of entrepreneurs classified as service sector performing entrepreneurial functions related to supply of consumer goods or else consumer services to rural areas.

Information pertaining to a total of 94 entrepreneurs were utilised in this paper of which 37 are in manufacturing, 30 are in processing while the rest 27 are engaged in service sector.

Functional characteristics of the enterprise:

Business background of the entrepreneurs were reflected in terms of occupational structure since last two generations: whether the business is self started or inherited and finally the age of business currently owned by the sample entrepreneurs. Table 1 summarises the occupational history of the entrepreneurs.

Table 1 : Occupational history of the entrepreneur

Enterprise Classification	Total Sample	No. reporting same occupation as their father	No. of reporting same occupation as both father & grand father	Those reporting other than col.(3) and (4)
Manufacturing	37	4	15	18
Processing	30	1	9	20
Service Sector	27	1	8	18
Total	94	6	32	56

The data show that in manufacturing about half of the entre-
preneurs surveyed reported same occupation as their fathers and grand
fathers while the figure was about one third in case of processing and
agriculture services. The occupations, which usually continued over
two generations include such small village crafts like carpentry,
pottery, brick manufacturing, black smithy, weaving and tobacco
processing etc. It is significant to note that most of the manufacturing,
processing and service sector reflect self started entrepreneurship
which indicate a considerable sense of opportunities among the
entrepreneurs.

The pattern of ownership of the business is shown in table 2
below:

Table 2: Pattern of ownership of the business enterprise

Ownership	Enterprise Classification			
	Manufacturing	Processing	Service sector	Total sample
Individual Ownership	15	17	9	41
Joint Ownership	22	13	18	53
Total	37	30	27	94

In general more than half the entrepreneurs have joint
ownership thus indicating sharing of capital and risk along with
profit. The origin of joint ownership was found to be mainly associated
with the difficulties of raising the initial capital while starting

the business. In most cases the business partners are relatives
and friends of the entrepreneurs and they together contribute
to the initial capital invested in the business. Table 3 below shows
the age of the business run by the entrepreneurs.

Table 3: Frequency classification of business age
of sample entrepreneurs

Age of the business	Enterprise Classification		
	Manufacturing	Processing	Services Sector
Upto 2 years	9	7	13
2.1 - 5	10	8	5
5.1 - 10	5	2	3
10.1 - 15	6	4	3
15.1 and above	7	9	3
Total	37	30	27

The data in the table shows that in case of manufacturing and
processing about 50 per cent of the enterprises are not older than 5 years
while in case of service sector the percentage in this category is as much
as 66 per cent. In fact business not older than two years are as many
as 50% in case of service sector. Further in case of manufacturing
the percentage of entrepreneurs in other three age classes are
more or less uniform while in case of processing relatively
greater concentration can be observed in case of age class 15.1 years
and above.

Managerial functions: Managerial functions related to a business enterprise has both internal as well as external dimensions. In typically small rural business enterprises internal managerial functions e.g. selecting product, mix, labour management etc. do not frequently form serious problems in relation to the overall-entrepreneurial objectives. It is the external managerial role that assumes crucial importance particularly in relation to the procurement of finance, raw materials, marketing of products etc. These are the aspects which essentially determined both the expansion as well as the ultimate success of the business. It is important to note that the external managerial role is to be viewed against particular environment presetting the overall entrepreneurial opportunities available. To this extent support system for developing entrepreneurial capabilities assume considerable importance.[3] In the present paper, we have considered responses with regard to managerial functions corresponding to three specific items in the survey schedule. These are entrepreneur's opinion on what constitutes successful management of an enterprise, responses pertaining to innovativeness, and limitations of business expansion or diversification.

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3   T.K. Moulik, "Support System for Entrepreneurs", _Technical Report No._ 135, 1976, Indian Institute of Management, Ahmedabad.

Table 4 below summarises the response pattern for first of the
above three dimensions.

Table 4: Opinion on successful management of enterprise

Enterprise Classification	Interest in business	General managerial abilities		Exercising specific managerial decisions
		procurement of finance	Others (e.g. raw materials etc.)	
Manufacturing	16	29	55	24
Processing	20	12	44	11
Service Sector	21	19	45	14

In table 4, the column 'others' indicate in general, manage-
rial abilities which include responses on such aspects as planning
and decision making, business experience, salesmanship and
marketing of product and personal supervision in business matters,
while column 5 represents such opinions as maintaining the quality
of product, pricing policy, innovativeness and effective credit
and labour management.

The table shows that different types of managerial
abilities alongwith procurement of finance assume considerable
importance in successfully running a business. Responses

pertaining to innovativeness is presented in table 5 below:

Table 5 :   Responses on adoption of innovations

Enterprise classification	Responses on innovations		
	New product	new sales techniques	new technology
Manufacturing	10	5	2
Processing	3	8	1
Service sector	5	8	2

Data in table 5 shows a pattern quite expected for different categories of enterprise. Relatively greater response can be observed with regard to introduction of new products in case of manufacturing in comparison to other enterprises. Whereas in case of both processing and service sector the introduction of new sales technique appeared to have gained favour. Surprisingly, introduction of new technology did not appear to have gained interest of any of the three categories of entrepreneurs. This in fact hints at what was noted earlier, e.g. the entrepreneurs in Anand have keen perception on external managerial functions including such aspects as procurement of capital, raw material, finance etc. and are less bothered about internal readjustment as such.

Finally, table 6 reports the responses of the sample
entrepreneurs with respect to various limitations for business
expansion.

Table 6 :   Limitations for business expansion as reported
by the entrepreneurs

S.No.	Reported difficulties associated with business expansion.	Enterprise Classification		
		Manufac- turing	Processing	Service sector
1.	Finance : Fixed Capital	14	–	2
	Working Capital	13	18	12
2.	Inputs : Material	49	37	20
	Labour	7	1	–
3.	Marketing of product	6	6	11

Data in table 6 clearly reflect the nature of difficulties
experienced by the netrepreneurs with regard to short-term finance
for working capital, procurement of material inputs and in marketing
of products. On a relative basis procurement of raw materials
assume maximum importance in manufacturing while in case of
processing industries short term finance is a greater limitation.
The later aspect can be easily explained as in the case of
processing industry reinvestment and turnover is more as compared
to manufacturing. The difficulties experienced by service sectors
in marketing their product is worth noting.

Finally to elaborate the financial aspect of business limitations, we present in table 7 below the various sources from which the sample entrepreneurs procured finances.

Table 7 :   Sources of Finance

Enter-prise Classi-fication	Number reporting particular Fixed Capital				source of finance working Capital			
	Own fund	Banks	Finan-cial instt.	Other Govt. agencies	Own Fund	Banks	Finan-cial instt.	Other Govt. agen-cies
Manufactu-ring	31	3	1	–	19	12	4	1
Processing	28	1	–	1	29	–	–	–
Service sector	27	1	–	–	20.	4	–	2

The table shows that so far as fixed capital is concerned only few entrepreneurs in manufacturing obtained financial assistance from commercial banks. The table further shows that none of the processing industry entrepreneurs got financial assistance for working capital from any of the financial agencies. Plausibly this is because business stability was much less in case of processing industries as compared to other enterprises.

Measures of Performance: In measuring business success we have used average annual (simple) growth rate of fixed capital and

working capital.[4]   Table 8 below shows the level of business

success achieved by entrepreneurs of different categories:

· Table 8:   Growth of fixed capital, Turnover and average
number of years in business of sample entrepreneurs

Average annual per increase of fixed capital	Performance indicators								
	Manufacturing			Processing			Service sector		
	Fixed Capital	Turn-over**	Any	Fixed capital	Turn-over	Any*	Fixed Capital	Turn-over	Any*
Unsuccessful									
Closed	−	−	−	1	−	−	3	−	−
Suffered Losses or Showing No increase	6	−	−	3	−	−	2	−	−
Successful									
Upto 25%	18	26	12.88	16	10	17.43	7	6	11
25.1 - 50%	7	6	7.42	3	5	7	6	5	8.33
50.1 - 75%	1	1	10	2	4	8	2	2	1.50
75% and above	5	4	12.60	5	9	5.60	7	10	6.57
Total	37	37		30	28		27	23	

Abbreviation: * Any: Reflects the average number of years for which the
business is functioning corresponding to average annual
percentage increase in the fixed capital

**Figures in the 'turnover' column represent frequencies
corresponding to the successful entrepreneurs only.

4   Only objective measures of performance is considered in this
paper. The relationship between these performance variables
and the ultimate goal of the entrepreneurs need not be
stretched too far since such conflicting goals as profit
making against a 'quite life' may as well coexist in reality.

The table shows that the growth of fixed capital and increase in turnover are not much different for different classes of entrepreneurs. Considering fixed capital alone we find that in manufacturing as well as in processing, maximum frequency happens to fall in upto 25% growth level. The situation however is quite different in case of service sector where the sample entrepreneurs are distributed more or less evenly among different groups of annual increases in percentage growth of fixed capital.

On developing selection criteria:

The development of selection criteria is based on the foregoing analytical discussion on the factors affecting attainment of success in the business enterprise by the entrepreneurs. The basic approach in developing selection criteria consist of establishing a relationship between factors affecting business success achieved, with that of the indicators of success i.e. the performance variables discussed earlier.

Specifically, developing a selection criteria would involve: (a) identifying and quantifying the initial selection variables; (b) a method that correlate the initially hypothesized selection variables with the performance variables, and (c) determine relative weights on the basis of which the selection variables can be ranked, so as to predict business performance as accurately as possible from the data. In the following we shall discuss these methods in detail.

3.1   Selection Variables: The selection variables in relation
to the functional role of the entrepreneurs which are
postulated to be responsible for attainment of business
success were discussed in section 2. These could be categorised
into two.

A) Economic cum Managerial functions: In this category the
selection variables appear under two sub categories viz.
variables characterising the starting condition of the
business and variables characterising the managerial
function associated with the successful running of a business.

    A.1)   Starting conditions

        A.1.1) Business experience

        1.1.1) whether business is self started or
                inherited

        1.1.2) whether occupation is same as fore
                fathers or different

        1.1.3) Age of business currently owned

        A.1.2) Initial capital

        1.2.1) Owned fixed capital

        1.2.2) Initial total capital

    A.2)   Managerial functions

        A.2.1) Responses on limitation of business
                expansion

        A.2.2) Responses on adoption of innovations

Selection variables pertaining to business experience.
and managerial functions were scored and quantified. Further
aggregate scores were used for items A.1.1.1 and A.1.1.2 in
business experience while in case of managerial function individual
scores on items A.2.1 and A.2.2 were used for empirical analysis.

B.   Socio-psychological:

    B.1) Educational background

    B.2) Motivations[5]

        1 n-Achievement

        2 n-Power

        3 n-Affiliation

        4 n-Extension

    B.3) Aspirations

    B.4) Overall Modernity

3.2 Performance variables: Among the set of performance variables, in
all three variables appear and they are, growth in fixed capital,
average gross turnover, and index of diversification. The use of
turnover instead of working capital is based on using the additional
information pertaining to how many times the capital is ploughed back
for investment. This has substituted the concept of reinvestment
of profit about which reliable figures are not available. The only
additional variable i.e. index of diversification was quantified
by scoring the open ended question pertaining to the nature of
diversification perceived by the entrepreneur.

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[5] The pioneering work on the relationship of entrepreneurship with
n-Achievement, n-Power and n-affiliation was done by D.C.Melelland,
The Achieving Society, Van Nostrand, 1961, The concept of n-Extension
was propounded by U.Pareek "A Motivational Paradigm of Development"
Journal of Social Issues, Vol.24, 1968, pp 115-122.

.3 Statistical methods: We have noted that the selection
variables initially postulated are fourteen in all, while
there are three measures of business performance of the entre-
preneurs. It is useful to note that statistically both the
selection and performance variables, set can be regarded as multi-
dimensional variables. Further the selection variables set, by
nature are ex-ante type while the performance variables are ex-post
type, the later (performance) set cannot be observed while using the
selection criteria for selection of new entrants.

The statistical method consist of expressing each of the multi-
dimensional variables (i.e. the selection and performance variables
set) in terms of linear-combination of the original variables and
then maximising the correlation between the two sets. This is
known as the _canonical_ correlations. Table 9 below shows the canonical
correlations, estimated weights and the rankings of the performance
variables.[6]

Table 9: Rankings and estimated weights of the performance variables

Performance Varaiables	Relative weights of performance variables					
	Manufacturing		Processing		Service sector	
	weights	Rank	Weights	Rank	Weights	Rank
Average annual perc. increase in fixed capital	0.39845 (0.33774)	3	0.45719 (0.41520)	2	-0.34140 (-0.28041)	2
Average perc. change in gross turnover	-0.97865 (-0.81243)	2	-0.08419 (-0.07757)	3	1.23947 (1.01804)	1
Index of Diversi- fication	-1.09900 (-0.21235)	1	1.23215 (1.11189)	11	0.25654 (0.21071)	3
Canonical Correla- tion	0.83016		0.90815		0.82135	

6 The weights relates to the maximum correlation between the canonical
   variables i.e. the selection and performance variables set, see
   e.g. H. Hotelling, 'Relations between two sets of variables,'
   Biometrika, Vol. 28, pp 321 ff.

The table shows that both in case of manufacturing and processing the best measure of performance consist of index of diversification. While turnover is ranked second in case of manufacturing, percentage increase in fixed capital gets the same rank in case of processing industries. This tends to suggest that in case of manufacturing best performance indicators are more short run in nature involving greater number of product lines and greater circulating capital. The implications of these to the finan-cial agencies are self evident. In case of processing industries investment and growth in fixed capital assumes importance which involves better processing plant as well as storage facilities. In case of service sector the ranking of performance variables show that turnover involving working capital followed by fixed capital assume importance.

The selection criteria developed from the empirical analysis of the data is summarised in respective tables 10 to 12 (See Appendix I for detailed information).

Table 10:   First five ranks of the selection variables in case of manufacturing firms

Selection Variables set	Index	Rankings and Estimated Weights	
		Rank	weights
Education	$z_{1.12}$	1	1.0
Power motivation	z_{17}	2	0.97264
Age of business	z_{12}	3	-0.38186
Business limitations	z_{16}	4	-0.33236
Initial own capital	z_{13}	5	-0.31782

The first five ranks in case of manufacturing firms are shown in table 10 above. Of these, first two ranks belong to positive sign

while the last three ranks consisting of age of business, limitation for expansion of business and initial own capital show negative weights. Since the weights are computed from the largest root of the determintal equation formed for calculating cannonical correlation, ranks have been given irrespective of the sign of the variables. These ranks match well with the performance variables i.e. index of diversification and turnover of the business. In fact index of diversification reflect entrepreneurial qualities with respect to creation of new products or adoption of new methods of production, hence a strong correlation between these with the selection variables getting first five ranks is self-evident.

Table 11: First five ranks of the selection variables in case of processing firm

Selection Variable set	Index	Rankings and Estimated Weights	
		Rank	Weights
Modernity	z_{19}	1	1.0
Power motivation	z_{17}	4	0.52197
Initial total capital	z_{14}	2	-0.75003
Innovation	z_{15}	3	-0.63938
Achievement motivation	$z_{1.11}$	5	-0.35339

In case of processing industries the first five ranks of the selection variables consist of modernity, power motivation, initial total capital, achievement motivation and lastly business

background. The two variables showing negative weights are
initial total capital and achievement motivation. It is
interesting to note 'modernity' getting top rank in case of
processing firms. This is followed by initial capital and
power motivation suggests a consistent gradation of selection
variables in relation to the ranking of performance variables.

Table 12: First Five ranks of the selection variables in
case of service sector

Selection variables set	Index	Rankings and Estimated Weights	
		Rank	weights
Business background	z_{11}	1	1.0
Age of business	z_{12}	2	-0.88337
Initial own capital	z_{13}	3	0.80002
Extension motivation	$z_{1.10}$	4	0.56944
Innovation	z_{15}	5	-0.47373

The ranking of variables in case of service sector shows
business background, age of business and initial own capital got
first three ranks followed by extension motivation and innovative-
ness. Comparing these rankings with those of the performance
variables we find that they do not indicate much difference from
what is usually stipulated for this sector.

Conclusion:

The selection criteria developed in this paper are
obtained from the rankings of the selection variables which
were postulated on the basis of an inter-disciplinary approach
in the analysis pertaining to the factors affecting entre-
preneurial success. An important criteria not considered
exclusively in the present paper is the risk associated in
running a business. However, risk-taking is a variable which
is inherently and intimately linked with some of the managerial
functions and selection variables considered in the paper.
Entrepreneurial risk is a function of the environment and
individual perception of the environment. Selection variables
and managerial functions discussed in this paper are, in fact,
the means to minimise the perceived risk of the potential entre-
preneurs as well as the pointer towards developing support system
which could effectively share a part of the total risk involved
in running a business.

Appendix I : Estimated weights obtained for different variables
in the selection set

Selection variables set	Index	Estimated weights from canonical correlation		
		Manufacturing	Processing	Service
Economic cum Managerial Functions				
Business background	Z_{11}	-0.31514	-0.68049	1.0
Age of business	Z_{12}	-0.38186	-0.08264	-0.86337
Initial fixed capital (own)	Z_{13}	-0.31782	0.24264	0.80012
Initial total capital	Z_{14}	0.07183	-0.75003	0.32236
Opinion on innovation	Z_{15}	-0.20703	-0.63938	-0.47373
Opinion on business limitation	Z_{16}	-0.33236	0.18977	0.01648
Socio-psychological variables				
Power motivation	Z_{17}	0.97264	0.52197	0.41261
Aspiration	Z_{18}	-0.25274	0.14757	0.25295
Modernity	Z_{19}	-0.24556	1.0	-0.29310
Extension motivation	$Z_{1.10}$	0.03219	-0.25542	0.56944
Achievement motivation	$Z_{1.11}$	-0.09629	-0.35339	0.34192
Education	$Z_{1.12}$	1.00	0.16736	0.27098
Affiliation	$Z_{1.13}$	-0.13729	-0.01191	0.13254

Appendix II: Types of enterprises in manufacturing processing
and service sectors

A)   Manufacturing

S.No. 1.   Wooden furniture

2.   Iron cupboard manufacturing

3.   Water pump

4.   Tiles manufacturing

5.   Cement pipes

6.   Cement poles

7.   Lime works

8.   Brick works

9.   Floor Mill machinery

10. Agricultural implements

11. Liner production

12. Crackers

13. Plastic Industries

14. Soap materials

B)   Processing

1.   Saw mill

2.   Sugar Candy works

3.   Flour mill

4.   Poultry products

5.   Dairy products

6.   Shoe making

7.   Manufacture of threads & related products

8.   Pulse mills

9.   Tobacco processing

10. Packaging industry

C)   Service Sector

1.   Renting out irrigation water

2.   Tractor repairing & Servicing

3.   Dairy products

4.   Poultry products

5.   Insecticides

6.   Seed industries