



ENTREPRENEURIAL BEHAVIOR OF POTATO GROWERS AND CONSTRAINTS FACED BY FARMERS IN PRODUCTION AND MARKETING OF POTATO AND THEIR SUGGESTION

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Abstract

The study was conducted in purposively selected block Morar of Gwalior district, Madhya Pradesh (India) during 2010-11 in order to know the entrepreneurial behaviour of potato grower in terms of their socio-personal, socio economic, communicational and psychological. The results of the study revealed that majority of the respondents exhibited medium level (65.00%) to high level (20.00%) of entrepreneurial behaviour, while very few of them exhibited low level (15.00%) of entrepreneurial behaviour. The study further revealed that among fifteen independent variables, three variables *viz.*, education, farming experience, socio-political participation, farming experience, socio political participation, area under potato, annual income, farm mechanization, irrigation potentiality, extension participation, mass media exposure, cosmo politeness, economic motivation, knowledge about potato production technology, scientific orientation and market orientation showed positive and significant relationship at 0.01 level of probability with entrepreneurial behaviour. Whereas, one variable *viz.*, family size did not establish any significant relationship with entrepreneurial behaviour.

Key words : Mass media exposure, economic motivation, entrepreneurial behaviour.

Introduction

The growing population and per capita income are pushing up the demand for food, which needs to be met through improved productivity per unit area and time. In this perspective significance of potato is noteworthy for several reasons. First, potato crop produces more edible energy and protein per unit area and time than many other food crops. Second, for small and marginal farmers, potato fit well into multiple well as intercropping systems due to its short duration and compatibility of its cultivation with other crops. Thirdly, the high profitability of potato as a cash crop has made, it a valuable commercial enterprise, and last, this crop is well suited in Indian conditions and enjoys a wide range of seasonal adaptability.

Potato is a multipurpose food, consumed by more than one billion people in all over the world. It is a staple food in Europe and vegetable in the developing countries.

In the world scenario there are one hundred fifty seven countries engaged in potato production. India is the third largest producer of potato in the world after china. Potato is a unique crop, which can supplement the food necessities of the world predominantly in the area of high human population density like Asia. As a crop it can yield up 40-50 tones/hectare.

Potato in India is now grown over 1.3 million hectares an annual production of 39.85 million tons. About 90 per cent total potato area is located in sub-topical plains, 6 percent in hills and 4 percent in plateau region of peninsular India.

Potato production has played a vital role in increasing vegetable production of the country with 25.6 per cent share in total vegetable production during 2002-03. The contribution of the country in world potato pool has increased from 6.4 per cent to 7.8 per cent during last decade. Potato utilization has become more diverse with processed products commanding a large share of the potato market.

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India possesses untapped potential of exporting off-session fresh table potatoes, as there is a shortage of fresh potato in northern hemisphere, when we harvest most of our produce.

The total potato production of the country was 1.5, million tons per year in 1949, which has reached up to 39.85 million tons per annum during 2012-13. This increasing trend in area and production of potato has also been observed in Madhya Pradesh, it is cultivated as a main vegetable crop. It is cultivated mainly in Indore, Jabalpur, Rewa, Sagar, Gwalior and Bhopal districts of Madhya Pradesh. The average yield of potato in the state is 11.73 tones/ hectare. Looking to the present increasing production scenario of the country, it can be predicted that potato will be important crop to satisfy the vegetable requirement of the country in coming day.

Currently potato market requirement revolve around availability of quality potatoes for export purpose. Potato having cookery properties suited to domestic consumers and quality raw material for processing. Thus table potatoes dominate the potato export from India contributing about 50 percent of total potato export followed by frozen potatoes (28%), seed potatoes (10%), chips fried (8%) and frozen preparation (3%). At present India is exporting table potato mainly to Sri Lanka, UAE, Nepal, Mauritius, Pakistan, Maldives, Singapore and Saudi Arabia, Establishment of Agri Export Zone (AEZ) for potato at Indore, Ujjain, and Dewas districts of Madhya Pradesh is a step to exploit this opportunity. The following specific objectives were formulated for study.

1. To know the attributes of potato growers.
2. To study the entrepreneurial behavior of potato growers.
3. To analyze the relationship between the attributes of potato growers and their entrepreneurial behaviour.
4. To identify the constraints in potato production and marketing perceived by potato growers and obtain suggestions to overcome the constraints.

Materials and Methods

The study was conducted in Morar block of Gwalior district. Morar block has been purposely selected for the study because of the highest potato production and also as per the familiarity of the researcher with study area. Morar block is situated in gird region Sandy loam, clay loam soils are found in the area. The soils are moderate in fertility status. The total geographical area is 85794 ha. Out of which 60643 hectare is under cultivation and 22151 ha cultivated area 41.59 percent is under irrigation

and 10 percent is under rainfed farming. The important crops grown in the area are mustard, wheat, barley and potato. In Morar block, totally there are 169 villages. Out of these villages the potato crop is growing in 31 villages. Out of these 31 potato growing villages, 10 villages were selected based on highest potato area.

List of farmers growing potato was prepared for each of the selected villages with the help of RAEOs. Twelve farmers were selected from each village. Thus, a total of 120 farmers has been formed the sample for the study.

Results and Discussion

The coefficient of correlation of each of the socio personal characteristics with their entrepreneurial behaviour of potato farmers has been furnished in Table 2. It could be revealed that among fifteen independent variables, three variables *viz.*, education, farming experience, socio- political participation, farming experience, socio political participation, area under potato, annual income, farm mechanization, irrigation potentiality, extension participation, mass media exposure, cosmo politeness, economic motivation, knowledge about potato production technology, scientific orientation and market orientation showed positive and significant relationship at 0.01 level of probability with entrepreneurial behaviour. Whereas, one variable *viz.*, family size did not establish any significant relationship with entrepreneurial behaviour.

The glance of data revealed that out of fifteen variables taken for analysis of regression, six variables namely family size, farming experience, socio- political participation, farm mechanization, irrigation potentiality and scientific orientation were found to have significant contribution to entrepreneurial behaviour of potato growers.

Table 2 also revealed that the coefficient of determination R^2 was 0.48 which indicates that 48 per cent variation in entrepreneurial behaviour was explained by fifteen independent variables selected for study.

Entrepreneurial behavior of potato grower

The perusal of data in table 3 shows that the distribution of potato grower according to their entrepreneurial behaviour. It is apparent from the data that majority (65.00%) of dairy farmers were found to have medium level of followed by high (20.00%) and low (15.00%). These findings are in accordance with the findings of Patel Pooja *et al.* (2014). However, the potato grower should have high level of entrepreneurship.

Hence, special consideration is required to develop the entrepreneurship in potato production because potato production has one of the promising sectors of entrepreneurship development in India.

Table 1 : Distribution of the respondents according to their socio-personal, socio economic, communicational and psychological attributes.

S. no.	Characteristic	Categories	Frequency	Percent	Mean	S.D.
1	Education status	Illiterate	24	20	1.77	1.25
		Primary education	25	20.8		
		Middle education	38	31.66		
		High school	20	16.66		
		Above high school	13	10.83		
2	Family size	Small (<5 Member)	33	27.5	1.983	0.733
		Medium (6 to 9 Member)	56	46.66		
		Large (>9 Member)	31	25.83		
3	Farming Experience	Low (<9years)	20	16.66	14.80	5.82
		Medium (9 to 20.6 years)	87	72.5		
		High (>20.6 years)	13	10.83		
4	Socio-Political Participation	Low (< 1 score)	31	25.83	1.4	1.1
		Medium (1 to 2 score)	62	51.66		
		High (>2 score)	27	22.5		
5	Area under potato	Small (<55.80%)	25	20.83	74.46	20.66
		Medium (55.80-97.122%)	54	45		
		Large (>97.122%)	41	34.16		
6	Annual income	Low (<1.68 score)	31	25.83	2.80	1.12
		Medium (1.68-3.92 score)	68	56.66		
		High (>3.92 score)	21	17.5		
7	Farm mechanization	Low (< 31.75 score)	13	10.83	59.92	28.17
		Medium (31.75-88.09 score)	85	70.83		
		High (>88.09 score)	22	18.23		
8	Irrigation potentiality	Low (<57.98%)	19	15.83	76.05	18.51
		Medium (57.98 - 95.01%)	69	57.5		
		High (>95.01 %)	32	26.67		
9	Extension participation	Low (<25.8 %)	26	21.66	50.24	24.74
		Medium (25.8-75.2%)	73	60.83		
		High (>75.2%)	21	17.5		
10	Mass media exposure	Low (< 6.62 score)	25	20.83	10.25	3.63
		Medium (6.62 - 13.88 score)	71	59.16		
		High (>13.88 score)	24	20		
11	Cosmopolitaness	Low (< 3.85 score)	17	14.16	5.94	2.09
		Medium (3.85 - 8.03 score)	91	75.83		
		High (>8.03 score)	12	10		
12	Economic motivation	Low (< 14.65 score)	29	24.16	18.48	3.83
		Medium (14.65-22.31 score)	77	64.10		
		High (>22.31 score)	14	11.66		
13	Knowledge about potato production technology	Low (<11.88 score)	16	13.33	16.53	4.65
		Medium (11.88-21.18 score)	79	65.83		
		High (>21.18 score)	25	20.88		
14	Scientific orientation	Low (<15.24 score)	28	23.33	19.09	3.82
		Medium (15.24-22.94 score)	70	58.33		
		High (>22.94 score)	22	18.33		
15	Market orientation	Low (<13.5 score)	18	15	16.84	3.34
		Medium (13.5-20.18 score)	89	74.16		
		High (>20.18 score)	13	10.83		

Table 2 : Relationship between selected Socio-personal, socio economic, communicational and psychological attributes of potato growers with their entrepreneurial behaviour

S. no.	Characteristics	Coefficient of correlation (r)	Regression coefficient "b"	"t" value
1.	Education	0.46**	-0.69	-0.33 ^{NS}
2.	Family Size	0.17 ^{NS}	4.288	2.05*
3.	Farming experience	0.33**	0.702	2.71**
4.	Socio political participation	0.24**	3.425	2.40*
5.	Area under potato	0.30**	-0.08	-0.85 ^{NS}
6.	Annual income	0.24**	-0.25	-0.15 ^{NS}
7.	Farm mechanization	0.28**	0.139	2.32*
8.	Irrigation potentiality	0.27**	0.231	2.46*
9.	extension participation	0.24**	0.07	1.05 ^{NS}
10.	Mass media exposure	0.42**	0.249	0.46 ^{NS}
11.	Cosmo politeness	0.30**	0.778	0.98 ^{NS}
12.	Economic motivation	0.33**	0.409	0.89 ^{NS}
13.	Knowledge about potato production technology	0.38**	0.804	1.79 ^{NS}
14.	Scientific orientation	0.34**	0.921	2.07*
15.	Market orientation	0.33**	0.895	1.81 ^{NS}
R ² =0.48 F value=6.51 with 15 and 104 DFS.				

* Significant at 0.05 level of probability. ** Significant at 0.01 level of probability. NS : non-significant.

Constraints faced by potato growers with regards to production

The perusal of the data presented in table 4 revealed that "high cost of fertilizer, chemical and insecticide was major constraints faced by three fourth (78.33%) of the potato growers and was ranked first. This was followed by non- availability of improved varieties and good quality of seed as reported by (72.5%) of potato growers was ranked second. The constraint *viz.*, high incidence of pest and diseases (60.83%) obtained third rank while, high wages of labour (60.33%), lack of knowledge (45.83%) and non- availability of fertilizer in time (40.83%) secured fourth, fifth and sixth rank, respectively.

Thus, it can be concluded that high cost of fertilizer, chemical and insecticides, non- availability of improved varieties and good quality of seed and high incidence of pest and diseases were the major constraints faced by majority of the potato growers.

Constraints faced by potato growers in marketing

A perusal of data furnished in table 5 revealed that the inadequate marketing facility was major problem faced by about three fourth (76.66%) potato growers. This may be due to the fact that three are very less numbers of

Table 3 : Entrepreneurial behavior of potato grower.

Categories	Frequency (N=120)	Percentage
Low	18	15.00%
Medium	78	65.00%
High	24	20.00%
Mean = 40.00		S.D. = 33.045

processing units nearby the study area. The second major problem was un- remunerative market price for the produce faced by about 72.5 per cent of the potato growers. The third major problem faced by potato growers was lack of sufficient cold storage facilities faced by 69.16 per cent of the potato growers.

The constraint *viz.*, price instability of potato (51.66%) obtain fourth rank while unavailability of labour (45.83%), lack of awareness about marketing trend (35%) and limited knowledge about processing (33.33%) received fifth, sixth and seventh rank, respectively.

Thus, it can be concluded the constraints *viz.*, inadequate marketing facilities, un- remunerative market price for the produce and lack of sufficient cold storage facilities were the major constraints faced by majority of potato growers.

Table 4 : Distribution of the potato growers according to constraints faced by them in production.

S. no.	Constraints	Frequency (N=120)	Percentage	Ranks
1.	High cost of fertilizer, chemical and insecticides	98	78.33	I
2.	High wages of labour	73	60.33	IV
3.	Lack of knowledge about improved about potato production technology	55	45.83	V
4.	Non availability of improved varieties and good quality of seed	87	72.50	II
5.	High incidence of pest and diseases	73	60.83	III
6.	Non ability of fertilizer in time	49	40.83	VI

Table 5 : Distribution of the potato growers according to constraints faced by them in marketing.

(n=120)

S. no.	Constraints	Frequency	Percentage	Ranks
1.	Lack of awareness about marketing trend	42	35.00	VI
2.	Price instability of potato	62	51.66	IV
3.	Lack of sufficient cold storage facilities	83	69.16	III
4.	Inadequate marketing facilities	92	76.66	I
5.	Limited knowledge about processing	34	28.33	VII
6.	Unavailability of labour	55	45.83	VI
7.	Un-remunerative market price for the produce	87	72.50	II
8.	Malpractices exercised by trader	51	42.50	X
9.	High cost of storage	59	49.16	IX
10.	Lack of transportation facilities	31	25.83	VIII

Suggestions of potato growers to overcome the constraints of production.

The result presented in table 6 revealed that, vast majority (81.66%) of the potato growers suggested that the cost of fertilizer should be reduced. The majority

Table 6 : Distribution of the respondents according to their to overcome the constraint of production.

(n=120)

S. no.	Suggestions	Freq.	Percentage
1.	The cost of fertilizer should be reduced	98	81.66
2.	Imparting training to the potato growers regarding scientist potato production	78	65.00
3.	Supply of sufficient good quality of seed by government agencies	82	68.33

Table 7 : Distribution of the respondents according to their to overcome the constraint of marketing.

(n=120)

S. no.	Suggestions	Freq.	Percentage
1.	Supply sufficient seed by government agencies	76	66.33
2.	Stabilize more cold storage	83	69.16
3.	Ensuring growers to get proper price of produce	93	77.50
4.	Information should be provided to growers about marketing trends.	65	54.16
5.	Imparting training to the potato growers regarding processing and arrangement for exporting the potato to neighbouring countries	50	41.66
6.	Malpractices should be stoped	45	37.5

(68.33%) of the potato growers suggested that sufficient and good quality of seed should be supply by the government agencies and about three fourth (65%) of them suggested that the training should be imparted regarding scientific potato production technology.

Hence, it can be concluded that to overcome the problem of production the majority of the potato growers suggested that the cost of fertilizer should be reduced, the good quality of seed should be supplied by government agencies and training should be provided to potato growers regarding scientific potato production technology

Suggestion offered by potato produces to overcome the constraints of marketing

The result depicted in table 7 revealed that more than three fourth (77.5%) of the potato growers suggested that the proper price of produce should be ensured.

whereas the majority (69.16%) of them suggested that the more number of cold storage should be established. About 66.33 per cent of the potato growers suggested that the proper marketing facilities should be provided.

Thus, it can be concluded that to overcome the constraints of marketing the price of potato should be ensured, more number of cold storage should be established and proper marketing facilities should be provided by government.

Conclusion

The study was concluded that among fifteen independent variables, three variables *viz.*, education, farming experience, socio-political participation, farming experience, socio-political participation, area under potato, annual income, farm mechanization, irrigation potentiality, extension participation, mass media exposure, cosmopolitaness, economic motivation, knowledge about potato production technology, scientific orientation and market orientation showed positive and significant relationship at 0.01 level of probability with entrepreneurial behaviour. Whereas, one variable *viz.*, family size did not establish any significant relationship with entrepreneurial behaviour.

The constraints faced by potato growers in production that high cost of fertilizer, chemical and insecticides, non-availability of improved varieties and good quality of seed and high incidence of pest and diseases were the major constraints faced by majority of the potato growers and the constraints faced by potato growers in marketing that *viz.*, inadequate marketing facilities, un-remunerative market price for the produce and lack of sufficient cold storage facilities were the major constraints faced by majority of potato growers.

The suggestions that to overcome the problem of production the majority of the potato growers suggested that, the cost of fertilizer should be reduced, the good quality of seed should be supplied by government agencies

and training should be provided to potato growers regarding scientific potato production technology and suggestions that to overcome the constraints of marketing the price of potato should be ensured, more number of cold storage should be established and proper marketing facilities should be provided by government.

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