

Research Paper

Farmer Buying Behaviour toward Major Agri-inputs-Finding from Fazilka District of Punjab

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ABSTRACT

The present study was carried out in Fazilka district of Punjab. The aim of the study is to investigate farmers' buying behaviour and factors affecting farmers' buying behaviour towards agri-inputs. The primary data was collected with the help of pre-structure and a pre-tested schedule. The findings revealed that farmers buy agri inputs based on their own decisions. Purchase decisions, quality and advertisements are the important factors affecting farmers' buying behaviour. Purchase behaviour, quality of the products, price and brand was found to be important factors for buying agricultural input. Farmers mostly buy agri inputs from the local market. Descriptive statistics like mean, percentage, t- test were used to achieve specific objectives of the study. Factor analysis was run for data reduction and to find out the important factors which affect farmers' buying behaviour towards agri-input.

HIGHLIGHTS

- Purchase decision, quality and advertisement are the important factor affect farmers buying behaviour
- Purchase behaviour, quality of the products, price and brand are found important factor while buying agricultural input

Keywords: Farmers, Agri-inputs, Factors, Buying-behaviour

Agricultural input plays an important role in enhancing the yield of the crops. There are two important types of agricultural inputs. Consumables are those inputs that provide productive services to the firm for a single time period, which include seeds, fertilizers, agrochemicals, oils, and lubricants, whereas durables are those inputs that provide productive services to the firm for more than a single time period, which include farm machinery (Dogra & Ghuman, 2007). Growers in India must be up to date on the latest developments in this industry (Momin & Shaikh 2019). In nominal terms, the strategy involved an increase in better technology and varieties, and increased use of quality seed, fertilizer, irrigation and agro chemicals (Kushwaha & Parmeshwar, 2018). Insect-specific chemicals and biological insect controls are now used instead of broad-spectrum pesticides, which

are accomplished by matching inputs based on real yields (Rehman, 2016). Seed is a critical input and a dynamic tool for increasing agricultural output. Among the various critical inputs used in the process of agricultural production, quality seeds hold the key position, contributing nearly 15 to 20 per cent more to agricultural production on its own (Benakatti, 2014). Efficient use of other inputs such as irrigation and high yielding varieties in developing countries' actual fertilizer use is usually below the economic potential (Mala, 2013). Consumer behavior is comprised of several processes. Many factors and characteristics influence

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the individual in who he is, as well as the consumer in his decision-making process, buying behavior, the brands they buy, and the retailers they visit. All buys are affected by family individuals (Haidery *et al.* 2021). Every one of these factors contributes to a purchase decision. Agri-input helps in meeting the growing demand for food in the world. So, it is important to understand the behavior of the farmers towards agri-input. Understanding the behavior of the farmers towards agri-input can help to fill the gap between the needs of the farmer and the product offered in the market. This also helps in knowing which type of input is demanded in the market and which type of product is outdated in the market. There are lots of agri-inputs in the market but there is a need to understand the buying behavior of the farmers to sell the products. Also, there is little study on farmer buying behavior especially in Fazilka district, so this study is helpful to know the farmers' buying decisions and the factors affecting buying of agri-inputs.

LITERATURE REVIEW

The majority (75 per cent) of the farmers had a moderate perception towards Custom Hiring Centre (Upali *et al.* 2022). Significant differences in knowledge level of farmers pertaining to the most suitable period of sowing sunflower crop (Chandhana *et al.* 2022). More than two-thirds of the farmers (68.33 per cent) had a high level of knowledge about the Drip Irrigation System (Kumari *et al.* 2022). The Heckman selection model showed that the factors such as years of education, farm size, farm income, membership and occupation were the major factors for access to credit (Prakash *et al.* 2022). Various sources are available to disseminate a new technology in agriculture, such as mass media like radio, television, newspapers, magazines, posters, literature, meetings and extension agencies (Shanthy *et al.* 2021)

METHODOLOGY

The present study was carried out in Fazilka district of Punjab. Primary data was collected to achieve the objectives of the study. A well-structured and pre-tested interview schedule was used to collect primary data. A multistage sampling method was used for the selection of respondents. A total of 100 farmers were interviewed randomly, consisting

of 20 farmers from each block (Arniwala, Abohar, Fazilka, Jalalabad, Khuyansarawar). A factor is simply a variable or construct that is not directly observable but needs to be inferred from the input variables. The Kaiser-Meyer-Olkin (K-M-0) measure of sampling adequacy is an index used to examine the appropriateness of factor analysis. Factor analysis was executed with the help of a SPSS software package. A t-test is used to test hypotheses about the mean value of a population from which a sample is drawn. A one-sample t-test was used to compare the mean value of a sample with a constant value of 3.0.

$$t = \frac{(\bar{x} - \mu)}{\frac{s}{\sqrt{n}}}$$

Where, \bar{x} = mean of sample, n = number of respondents, S = standard error, μ = assumed mean
 As survey method was employed to carry out the study, so it suffers all limitations of the survey method. Limited sample size was selected due to shortage of time and resources

RESULTS AND DISCUSSION

The demographics of the respondents are presented in the table 1 below and it is revealed that the majority of the farmers (30 per cent) belong to the age group of 26-35 years, followed by (28 per cent) 36-45-year (27 per cent) the age group of 18-25 year and (11 per cent) 46-55 year only (4 per cent) farmers age group was 55 years.

Table 1: Demographic profile of the farmers (n=100)

Sl. No.	Particular	Frequency
1. Age of the farmer		
(i)	18-25 year	27
(ii)	26-35 year	30
(iii)	36-45 year	28
(iv)	46-55 year	11
(v)	More than 55 year	4
2. Education of the farmers		
(i)	Illiterate	1
(ii)	Primary	8
(iii)	Middle	11
(iv)	High school	20
(v)	Higher secondary	21
(vi)	Graduate and above	38

3. Income of the farmers in (₹/annum)		
(i)	Less than 50000	2
(ii)	50000-100000	9
(iii)	100000-150000	17
(iv)	150000-200000	31
(v)	More than 200000	41
4. Family size of the farmers (numbers)		
(i)	2-4 Members	34
(ii)	4-6 Members	46
(iii)	6-8 Members	15
(iv)	More than 8 Members	5
5. Land holding of the farmers (ha)		
(i)	Small (less than 2)	31
(ii)	Medium (2.5-10)	33
(iii)	Large (more than 10)	36

The table 1 shows that the majority of 38 per cent of farmers graduated or above, followed by 21 per cent educated up to higher secondary, 20 per cent of farmers up to high school (11 per cent) up to middle level (8 per cent) up to primary and only (1 per cent) were illiterate. 'Majority of the farmers' (41 per cent) income were more than ₹ 2,00,000 followed by (31 per cent) farmers income were ₹ 1,50,000-2,00,000. The majority of respondents said that (46 per cent) farmers' family member's size was 4-6 members followed by (34 per cent) 2-4 per cent members. The majority of the farmers' land holdings were large, followed by (33 per cent) farmers' land holdings, which were medium, and 30 per cent of land holdings were small.

Source of information for buying agri-input

The respondents were asked about the source from where they purchased the agri-inputs. The responses are given in the Table 2.

Table 2: Source of information, purchase point, mode of payment, purchase point and preferred brand of agri-input (n=100)

Sl. No.	Particular	Frequency
1. Source of information for buying agri-input		
(i)	Mass media	18
(ii)	Dealers and retailers	44
(iii)	Relatives and friends	29
(iv)	Extension officer	9
2. Purchase decision for agri-input		
(i)	Self-decision	43
(ii)	Friends and relatives	33
(iii)	Advertisement	2

(iv)	Retailers and dealers	21
(v)	Others	1
3. Mode of payment		
(i)	Cash	60
(ii)	Credit	34
(iii)	Digital	5
(iv)	Other	1
4. Purchase point of seed		
(i)	Local market	85
(ii)	Govt. agency	9
(iii)	Cooperative society	5
(iv)	Other farmers	1
5. Preferred brand of fertilizer		
(i)	IFFCO	49
(ii)	KRIBHCO	9
(iii)	Other	42

The table 2 shows that the source of information of the majority (44 per cent) of farmers through dealers and retailers followed by 29 per cent through relatives and friends, followed by 18 per cent through mass media and only 9 per cent from source of information through extension officers.

Table 3: Farmers buying decision towards buying agri-input (n=100)

Variables	Mean Score	Std. Deviation	t-value	p-value
Is brand effects on your purchasing decision	1.80	0.93	-12.8*	<.0001
Price matters while buying	1.62	0.85	-16.2*	<.0001
Is advertisement affect you	2.02	1.01	-9.65*	<.0001
Is durability of tractor important for you	1.51	0.78	-18.9*	<.0001
Do you check efficiency of tractor while purchasing	1.72	0.99	-12.8*	<.0001
Is resale value matters for you	2.06	1.07	-8.77*	<.0001
Availability affects the purchasing behaviour	2.06	1.00	-9.37*	<.0001
After purchase service cost matters your purchasing behaviour	1.77	0.94	-13.0*	<.0001
Relatives and friends influence you	1.95	0.91	-11.4*	<.0001
Is new technology effects your purchasing decision	1.80	0.80	-14.9*	<.0001

*p< 5% level of significance.

The table 3 shows that the resale value matters to farmers ($p < .001$) at 5% level of significance. From the above table the farmer also said that the availability also effects the purchasing behaviour of farmers ($p < .001$) at 5% level of significance and advertising also affect the buying decision. It had statistically significant influence ($p < .001$). Table 3 also show that farmers also influenced through relatives and friends ($p = .001$). The brand and new technologies influence the buying behaviour of farmers ($p < .001$). After purchase service were also matter for the farmers ($p < .001$). It also shows that farmers also check the efficiency of tractor while purchasing ($p < .001$). Price was also matter while purchasing the agri-inputs ($p < .001$). Durability of the tractor also matter for the farmers ($p < .001$). All the statements were found significant at 5% level of significance.

Factor analysis

Factor analysis was run to finding out the principal dimension on which the information was sought by the respondents. The table 4 presents the result of factor analysis. The value of Kaiser-Meyer-Olkin (KMO) came out to be 0.601. This value indicates adequacy of sample size. Value of chi-square for bartlett’s test of sphericity came out to be 45.965. The value was found to be significant. Value of KMO and results of bartlett’s test of sphericity indicated factor analysis could be performed on the given data set.

Table 4: Factor extracted

Factor name	% of variance	Items	Item loadings
1. Purchase behaviour	14.54	Is advertisement effect you	0.76
		Availability effects the purchasing behaviour	0.69
2. Quality	14.50	Do you check efficiency of tractor while purchasing	0.52
		Is resale value matters you	0.66
		After purchase service cost matters your purchasing behaviour	0.56
3. Price	12.89	Price matters while buying	0.70
4. Brand	11.05	Is brand effects on your purchasing decision	0.82

Factor definition

Four factors were obtained from principal component

analysis after data reduction. These factors were able to explain 52.98 variance in the data set. Factor loading and variance have been presented in table 4. Factor definitions for the abstracted factor have been provided as follows:

Purchase behaviour: These factor deals with is advertisement effect you and availability effects the purchasing behaviour. These factors explains 14.54 per cent variance primarily these factors represent purchase behaviour information sought by consumer respondent.

Quality: These factors deal with do you check efficiency of tractor while purchasing is resale value matters you and after purchase service cost matters your purchasing behaviour. These factor explains 14.50 per cent variance.

Price: These factor deals with price matters while buying. These factors explain 12.89 per cent variance.

Brand: These factor deals with the Is brand effects on your purchasing decision. This factor explains 11.05 per cent variance.

Kshama & Santha, (2019) found cost of cultivation and non-farming operations influence more on the credit requirement of the respondents. Badekhan & Devi, (2018) noticed that per hectare expenses on pesticide was highest for small farmers as compared to large and medium farmers.

To study the factor affecting buying decision of agri-inputs, farmers were asked to rate various statements on 5 point likert scale where 1 strongly agree, 2 agree, 3 neither agree nor disagree, 4 disagree and 5 strongly disagree. These statements were developed with the help of previous literature. Mean and standard deviation have been calculated overall and is showed in the table 5 and shows that farmers perceived that advertisement impact the buying behaviour. It had statistically significant influence ($p < .001$). Farmers also said that retailer preference affect the purchased decision, ($p < .001$) and dealer preference also affect the purchased decision ($p < .001$), farmer also influenced from the relatives and friends ($p < .001$), availability of the agri-inputs also influence the buying behaviour of farmer ($p < .001$). Farmer also check the quality of agri-inputs while purchasing ($p < 0.001$), price matters while buying the seed, fertilizers and pesticides ($p < .001$).

Table 5: Factor affecting buying decision of agri-input (n=100)

Variables	Mean	Std. Deviation	t-value	p-value
Is brand effects on your purchasing behaviour	1.83	1.09	-10.71*	<.0001
Price matters while buying	1.63	0.78	-17.40*	<.0001
Is advertisement impact you	2.48	0.98	-5.25*	<.0001
Relatives and friends influence you	2.04	0.86	-11.11*	<.0001
Availability effects the purchasing behaviour	1.99	0.82	-12.27*	<.0001
Do you check quality while purchasing	1.80	1.01	-11.82*	<.0001
Is dealer preference affects the purchasing decision	2.20	0.97	-8.21*	<.0001
Is retailer preference affects the purchasing decision	2.23	1.01	-7.59*	<.0001

* $p < 5\%$ level of significance.

Table 6: Factor loading

Factor	Factor name	% of variance	Items	Item loadings
1	Purchase decision	22.87	Relatives and friends influence you	.76
			Is dealer preference affects the purchasing decision	.63
			Is retailer preference affects the purchasing decision	.74
2	Quality	18.27	Availability effects the purchasing behaviour	.65
			Do you check quality while purchasing	.57
3	Advertisement	17.24	Price matters while buying	.75
			Is advertisement impact you	.70

All statements were found statistically significant at 5% level of significance.

The value of Kaiser-Meyer-Olkin (KMO) came out to be 0.61. It indicate adequacy of sample size. Value of chi-square for bartlett's test of sphericity came out to be 129.10. The value was found to be significant.

Three factors were obtained after data reduction and extracted factors explain 58.38 per cent variance in the data set. Factor loading and variance have been presented in table 6. Factor definitions for the abstracted factor have been provided as follows.

Purchase decision: These factor deals with relatives and friends influence you, Is dealer preference affects the purchasing decision and Is retailer preference affects the purchasing decision. These factors explain 22.87 per cent variance, primarily these factors represent purchase decision information sought by consumer respondent.

Quality: These factors deal with availability affects the purchasing behaviour and do you check quality

while purchasing. These factors explain 18.27 per cent variance.

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These factor deals with price matters while buying and Is advertisement affect you. These factors explain 17.24 per cent variance. Availability of credit and discounts are incentives that keep farmers loyal towards buying seed Pandey *et al.*(2020). Kumar & Kapoor, (2017) reported quality consciousness for the farm implements like pump sets and farming experience for the purchase of tractors significantly affect the number conversation with suppliers.

CONCLUSION

The majority of the respondents got information from dealers and retailers regarding agri-inputs. They buy agri-inputs based upon their own decisions. Most of the respondents purchase seed from local markets and prefer buying certified quality and high yielding seed they like to buy.

The study also shows that most of the respondents prefer to purchase fertilizers from local markets. Relatives, friends or peer group, dealer, retailers influence the purchase decision of farmers.

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