Level of Satisfaction of Farmers from the Services Provided by Agricultural Technology and Information Centre (ATIC) Run by Punjab Agricultural University

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Abstract

ATIC is a “single window” support system linking the various units of research institutions with end users (farmers) in decision making and problem solving exercises. An attempt was made to assess the level of satisfaction of beneficiaries from different services provided by Agricultural Technology and Information centre (ATIC) run by Punjab Agricultural University. A sample of 200 farmers was selected from the two purposively selected districts (Ludhiana and Fazilka) of Punjab from where maximum number of farmers had visited ATIC during the period of June 2011 to December 2013. The findings revealed that a large majority of the farmers were satisfied with the various aspects under the advisory/diagnosis services i.e. experts behaviour, communication skills of experts, sample diagnosis, technical knowledge of the experts, interest of experts in advisement, time taken to solve problem, expert guidance and language of experts. Majority of the respondents were satisfied with farm literature/publications services, helpline services and technological products provided by the ATIC. Small number of farmers were not satisfied with timing of helpline, price of seed, availability of seed/planting material. Regarding the overall satisfaction towards ATIC services, findings of the study revealed that more than half (54.5%) of the farmers had “high” level of satisfaction while one third (33%) of the farmers had “medium” level of satisfaction. These findings will provide useful guidance to the ATIC for designing effective extension strategy for delivering the services to the farmers in better and efficient way.

Keywords: Agricultural technology and information centre (ATIC), satisfaction, services

1. Introduction

The research-farmer linkages mediated by the extension system played a crucial role in the advancement of food security through the green revolution in India in the 60s and 70s (Chaudhary et al., 2011). In India, special attention was paid to development of an agricultural research infrastructure immediately after independence. The Indian Council of Agricultural Research (ICAR) acts as a repository of information and provides consultancy on agriculture, horticulture, resource management, animal sciences, agricultural engineering, fisheries, agricultural extension, agricultural education, home science, and agricultural communication (Malhan and Rao, 2007). But a gap between extension and farmers is becoming broader due to lack of basic infrastructures and facilities, trained human resource, and funding for operating costs (Elias et al., 2016). For

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research to be more relevant to the farmers there is a need to create a participatory approach that emphasizes agricultural research and extension linkage and allows farmers to choose appropriate technologies from research stations, thereby eliminating the perception that extension system is separate from the research system (Thomas, 2012). Linking agricultural extension service to farmers can be defined as relations that bring into play a service provider and a farmer, for the purpose of transforming the state of a medium that does not belong to the service provider (Laurent et al., 2006). Some studies revealed that the linkages among the stakeholders were not strong enough and their participation in the existing linkage mechanisms was also less leading to adoption gaps in the recommendations on various technologies (Kaur and Kaur., 2013). It is possible to find a solution to this situation by using the potential of information and communication to meet the location specific information needs of the farmers (Santha et al., 2011). So increase the linkages between farmers and scientists, ATIC was established in 1999 with the aim to deliver technology to farmers under “Single Window Delivery System” in Punjab Agricultural University (PAU). The Agricultural Technology Information Centre (ATIC) is a single window support system linking the various units of research institution with both the intermediary users and end users (farmers) with decision making and problem solving exercise (Anonymous, 2019a). Timely and efficacy supply of quality inputs and services to farmers is a pre-requisite for increasing production (Chaturvedani et al., 2016). In general, the evidence on the impact of extension services on farmer’s productivity and technological adoption is positive (Cerdán-Infantes et al., 2008).

Farmers visit ATIC for redressal of their field problems and bring plant samples for diagnosis. The experts from entomology, plant pathology, soil science and agronomy provide advisory service regarding their respective fields in the centre. Agricultural advisory services are a vital element of the array of market and non-market entities and agents that provide critical flows of information that can improve farmers’ and other rural peoples’ welfare (Anderson, 2008). The activities undertaken at ATIC include advisory services, sale of technological products, farm literature, plant clinic services and helpline (Anonymous, 2019b). Besides diagnosis of sample, these center provides package of recommendations to farmers, delivering remedial measures in diverse plant health problems based on actual diagnosis of plant samples, popularizing the integrated pest management technology among farmers, carrying out field visits for ‘On the Spot’ diagnosis of complex field problems and issuing press releases suggesting remedies to combat the outbreaks of pests/diseases and nutritional disorders. In addition clinic is responsible for reorientation of research programmes by providing feedback to scientists regarding the appearance of new plant disorders and regarding the extent of implementation of technologies at the farmers’ fields (Pandey and Solanki, 2014). Understanding the satisfaction and

extent of access to various services is important to develop appropriate policies and programs for improving service availability and accessibility in rural areas (Sakthivel et al., 2011). An attempt was made in this study to assess the level of satisfaction of beneficiaries from different services provided by ATIC run by Punjab Agricultural University. Satisfaction or dissatisfaction is client’s judgment on quality/quantity of service in all its aspect (Chaturvedani et al., 2016). Farmer’s satisfaction and expectations are correlated with each other (Salehi and Heydari, 2012). The findings of the study will provide useful guidance to the ATIC for designing effective extension strategy for delivering the services to the farmers in better and efficient way and a feedback to orient the research as well as extension system of Punjab Agricultural University. The study will also be helpful in bringing improvements in the provision of services and guidance by the scientists of ATIC.

2. Materials and Methods

A multistage sampling design was used for the selection of the respondents. A list of farmers who visited Agricultural Technology Information Centre/Farmers Service Centre, PAU Ludhiana during the period of June 2011 to December 2013 was collected from the office of Directorate of Extension Education PAU, Ludhiana. A district wise list of the farmers who visited the ATIC was prepared. The total number of farmers who visited the Plant Clinic was 5359. Two districts were selected purposively from where the maximum number of farmers had visited the ATIC i.e. Ludhiana (1484) and Fazilka (396). A total sample of 200 farmers was selected from the selected districts based on the probability proportional to number of the farmers visited from each district. All the four scientists and four service providers were also included in the sample. For the present study services referred to the various types of services (advisory/diagnosis services, sale of technological products, farm literature, plant clinic services and helpline facility) provided by ATIC. Satisfaction was operationalized as the extent to which the farmers were satisfied with the various services provided by ATIC. It measured on a three point continuum i.e. satisfied, somewhat satisfied, not satisfied and score of 2, 1 and zero were assigned respectively.

3. Results and Discussion

3.1. Satisfaction of the farmers regarding the advisory/diagnosis services

Data in Table 1 revealed that more than 90% of the farmers were satisfied with the various aspects under the advisory/diagnosis services i.e. expert behaviour (100%), communication skills of expert (98.44%), sample diagnosis (94.81%), technical knowledge of the expert (93.75%), interest of expert in advisement (93.23%), time taken to solve problem (92.19%), expert guidance (90.63%) and language of expert (90.10%). While in the case of availability of experts, 80.73% of the farmers were satisfied and 19.27% were somewhat satisfied for the same.

Table 1: Satisfaction of the farmers regarding advisory/diagnosis services of ATIC, (n=192)

Sl. No.	Advisory/diagnosis Service	Satisfied		Somewhat satisfied		Not satisfied	
		f	% age	f	% age	f	% age
1.	Technical knowledge of the expert	180	93.75	12	6.25	-	-
2.	Communication skills	189	98.44	3	1.56	-	-
3.	Time taken to solve problem	177	92.19	15	7.81	-	-
4.	Availability of expert	155	80.73	37	19.27	-	-
5.	Interest of expert in advisement	179	93.23	13	6.77	-	-
6.	Expert guidance	174	90.63	18	9.38	-	-
7.	Expert behaviour	192	100	-	-	-	-
8.	Language of expert	173	90.10	19	9.90	-	-
9.	Sample diagnosis	182	94.80	10	5.21	-	-

It indicated that most of the farmers were satisfied with the various aspects of advisory/diagnosis services. The results were in track with the findings of Kalra and Kumar (1995), Sharma (1999) and Bansal (2009).

3.2. Satisfaction of the farmers regarding the farm literature/publications

The data in Table 2 indicated that majority (94%) of the farmers were satisfied with the content of farm literature whereas 88% were satisfied with the usefulness of the content.

In case of importance of subject matter about 78% of the farmers were satisfied while 16.5% were somewhat satisfied. A large majority of the farmers (92.5%) were satisfied with

Table 2: Satisfaction of the farmers regarding farm literature/publications supplied by ATIC

Sl. No.	Farm Literature	Satisfied		Somewhat satisfied		Not satisfied	
		f	% age	f	% age	F	% age
1.	Content of farm literature (n=200)	188	94.00	2	1.00	10	5.00
2.	Usefulness of content (n=200)	176	88.00	14	7.00	10	5.00
3.	Importance of subject matter (n=200)	157	78.50	33	16.50	10	5.00
4.	Suitability of content and title (n=200)	185	92.50	5	2.50	10	5.00
5.	Timely delivery of publication (n=98)	66	67.34	6	6.12	26	26.53
6.	Periodicity (n=98)	90	91.83	8	8.16	0	0.00

suitability of content and title of the publication. The data further revealed that 67.34% of the farmers were satisfied with timely delivery of publications while 26.53% were not satisfied. It may be due to untimely reach of publication of monthly magazines to the farmers. Majority of the farmers (91.83%) were found satisfied regarding the periodicity of the monthly magazine. The findings of the study were in conformity with those of Hnumanaikar et al. (2011).

3.3. Satisfaction of the farmers regarding the helpline Services

The data presented in Table 3 indicated that all the farmers were satisfied with the helpline service provided by ATIC. An equal percentage of the farmers (96.26%) were satisfied with the time taken to solve the problem through helpline service, knowledge of expert, understandability of advice given by experts and availability of experts on the helpline. The data further revealed that 82.24% of the farmers were satisfied with the language of the expert through the helpline service while 17.76% were somewhat satisfied. In case of timing of helpline service, 57.27% of the farmers were satisfied while

37.61% were somewhat satisfied and 5.13% of the farmers were not satisfied. The findings are in line with the study of Anupama (2005).

3.4. Satisfaction of the farmers regarding the technological products

The satisfaction level of the farmers regarding the technological products was observed under different categories seed, planting material, bio-products and food technology related products (Table 4). Regarding seed as a technological product the data revealed that nearly half of the farmers (47.64%) were satisfied with the availability of the seed. About 34.03 per cent and 18.32% of the farmers were somewhat satisfied and not satisfied respectively with the availability of the seed. It is due to the fact that pulses and vegetable seeds are less available at ATIC. About 75% of the farmers were satisfied with quality of the seed, while 20.94% were not satisfied with quality of seed mainly due to vegetable seeds.

As many as 87.96% of the farmers were satisfied and 10.47%

Table 3: Satisfaction of the farmers from helpline services of ATIC

Sl. No.	Helpline	Satisfied		Somewhat satisfied		Not satisfied	
		f	% age	f	% age	f	% age
1.	Time taken to solve problem (n=107)	103	96.26	4	3.74	-	-
2.	Knowledge of expert (n=107)	103	96.26	4	3.74	-	-
3.	Understandability (n=107)	103	96.26	4	3.74	-	-
4.	Availability of expert on helpline (n=107)	103	96.26	4	3.74	-	-
5.	Language of expert (n=107)	88	82.24	19	17.76	-	-
6.	Interest of expert in advisory (n=107)	107	100	-	-	-	-
7.	Behaviour of expert (n=107)	107	100	-	-	-	-
8.	Guidance provided (n=107)	107	100	-	-	-	-
9.	Timings of helpline service (n=117)	67	57.27	44	37.61	6	5.13

Table 4: Satisfaction of the farmers regarding the technological products provided by the ATIC

Sl. No	Technological Products		Satisfied		Somewhat satisfied		Not satisfied	
			f	% age	f	% age	f	% age
1.	Seeds (n=191)	Seed availability	91	47.64	65	34.03	35	18.32
		Quality of seed	142	74.34	9	4.71	40	20.94
		Price of seed	168	87.95	20	10.47	3	1.57
2.	Planting materials (n=73)	Availability of Planting materials	38	52.05	20	27.39	15	20.54
		Quality of Planting materials	67	91.78	6	8.21	-	-
		Price of Planting Materials	61	83.56	12	16.43	-	-
3.	Bio-products (n=48)	<i>Rhizobium/ Azotobacter</i> culture	48	100.00	-	-	-	-
	(n=50)	Mushroom spawn	50	100.00	-	-	-	-
	(n=18)	Bio-pesticide (<i>Trichoderma</i>)	11	61.11	7	38.89	-	-
	(n=9)	Bio-insecticide (<i>Trichogramma</i>)	8	88.89	1	11.11	-	-
4.	Food technology related products (n=85)	Quality of products	85	100.00	-	-	-	-
		Quantity of products	83	97.65	2	2.35	-	-
		Price of products	83	97.65	2	2.35	-	-

were somewhat satisfied with the price of seed. The data on planting material further revealed that little more than half (52.05%) of the farmers were satisfied with the availability of planting material while nearly one fourth (27.39%) of the farmers were somewhat satisfied. More than 20 per cent were not satisfied with availability of planting materials due to non-availability of seed sets and cuttings i.e. sugarcane and potato.

A large majority of the farmers (91.78%) were satisfied with the quality of planting material. More than eighty per cent (83.56%) of the farmers were satisfied and 16.44 per cent were somewhat satisfied with the price of planting material. All the farmers were satisfied with *Rhizobium/Azotobacter* culture and Mushroom spawn. As many as 88.89% and 61.11% of the farmers were satisfied with Bio-insecticide (*Trichogramma*) and Bio-pesticide (*Trichoderma*), respectively.

Regarding food technology related products all the farmers

were satisfied with quality of products whereas an equal percentage of the farmers (97.65%) were satisfied with the quantity and price of the products. The results were supported with the studies of Sekhon (2000), Ali (2011) and Khan et al. (2012).

3.5. Overall satisfaction of farmers

The data presented in Table 5 indicated that 54.5% of the farmers had high level of overall satisfaction regarding different services provided by ATIC, whereas 33% and 12.5% of the farmers had medium and low level of satisfaction, respectively. It is due to the reason that farmers visited ATIC got satisfactory advice from the experts for the solution of their farm problems. The findings of the study were in conformity with those of Sekhon (2000) and Kumar and Singh (2007), while in contradictory with Chaturvedani et al. (2016).

Table 5: Overall satisfaction of farmers to the services of ATIC

Sl. No.	Level of satisfaction	f	% age
1.	Low (1.54-1.80)	25	12.5
2.	Medium (1.80-1.93)	66	33
3.	High (1.93-2.05)	109	54.5

4. Conclusion

The study was an attempt to generate and compile data about satisfaction regarding services provided by Agricultural Technology and Information Centre (ATIC) run by Punjab Agricultural University. It can be concluded that high majority of the farmers were satisfied with advisory/diagnosis services, farm literature/publications services, Helpline Services and technological products provided by the ATIC. More than half and one third of the farmers had high and medium level of overall satisfaction, respectively towards ATIC services.

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