

# Empowering the Farmers of India: a case study of e-Choupal in Uttarakhand

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## Introduction

Agriculture has been and continues to be the backbone of the Indian economy as it contributes around 20 per cent to its GDP and about 70 per cent of the population is engaged in the agriculture sector. Although Green Revolution made the country self sufficient in the production of food grains, the recent stagnation, rather deceleration in agricultural production, has sent alarm bells ringing in the ears of our policy makers. In a globally competitive agrarian economy, Indian agriculture has to change its rationale and strategy to meet the expectations of a billion-plus population in the 21st century. This necessitates a paradigm shift in the perception of agriculture from 'mere subsistence level' to a market-led and demand-driven enterprise. In the prevailing technology environment, information has emerged as a key factor in the process of agricultural production. The premium placed on 'knowledge' in the contemporary society has led the policymaking in agriculture into a new domain. Knowledge networking is being promoted through various initiatives driven by Information and Communication Technologies (ICTs) leading to info-tech empowerment of the farming community.

A silent revolution is taking place in the communication systems in rural India. The farmers and farm families are browsing the internet and getting general, technical and market-related information from the information kiosks set-up by a number of pioneers across the country. The total coverage under such initiatives may be very small but the potential of ICTs and its consequences are being hotly debated within and outside the country (Sharma, 2003). Emerging Information systems and communication networks have redefined the way knowledge is shared, processed, stored and retrieved. Info-tech empowerment of farmers through ICTs is the need of the hour. Today, farmers are more inclined to the market demands and marketable surplus. They are raising crops after taking consumer preferences into consideration.

Farmers have a variety of information needs - from sowing time to harvesting of crop and then post-harvest operations and marketing. In order to cater to the diverse and

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varied needs of farmers in agriculture, a strong information and communication support system is required. Quick dissemination of technological information from researchers to the end users and feedback to the scientist are critical to the transfer of agriculture technology. Agricultural extension has played a catalytic role in extending research from the laboratory to the farmers for their adoption. However, due to the weak linkages among extension, research, marketing network and farmers, the effectiveness of research and extension contribution to agricultural and rural development has been limited.

Today, it is possible to find solutions to this situation by using the potential of Information and Communication Technologies (ICT) to meet location-specific and crop-specific information needs of farmers. ICTs are opening-up new avenues for communicating and exchanging information and knowledge. ICT has connected the world by realizing its potential and strengthening their network and capacity. We can now utilize ICT in virtual extension mode to advise the farming communities to enhance agricultural production and productivity. Broad based agricultural extension activities, developing farming system research and extension having location-specific module of research and extension and promoting market extension, sustainable agricultural development, participatory research etc. are some of the numerous areas where ICT is playing an important role.

The fortunate part of such advancement is that if the body of knowledge is expanding fast on one hand, the approaches, tools and techniques to disseminate this knowledge are also advancing. Information and communication technology (ICT) in the present context has to spread into every nook and corner of the society and gradually replace the traditional modes of communication. It has a diverse set of technological tools and resources to create, disseminate, store, bring value addition and manage information. In other words, ICT can play a spectacular role in the societal transformation to realize the concept of "knowledge society".

In spite of the huge potential of ICT that can be harnessed for agricultural and rural development, only a few isolated projects have been initiated in India and a few in other parts of the world. Many of these projects have been initiated by private organizations, cooperative bodies and government for agricultural and rural development. This shows that development depends upon the ability to readily incorporate ICTs in day-to-day activities. It is time to reckon that "no longer does it hold well that what happens in the west today is only possible in India in a decade or two".

Presently there is a gap between what farm families need by way of generic and dynamic information and what the conventional extension agencies are able to provide. Therefore, to satisfy the information and knowledge needs of the farmers, the use of Information and Communication Technology would be very effective.

Most of the ICT initiatives in India are location specific and isolated, providing services for a specific aspect of agricultural development. With the emerging role and broad prospective of ICT in agricultural development, it seems as if only very little has been done to realize the full potential of ICT in agriculture.

Hence, there is an urgent need to ensure access to ICT in rural areas and among disadvantaged communities. Entry of the private sector in catering to the information needs of the farmer is a positive sign and they are doing it through the network of rural knowledge centres across the country that focuses on skill development and capacity building at the local level. Info-tech empowerment of the farming community with the help of information and communication technology would go a long way in ensuring the quality, productivity and competitiveness of Indian agriculture.

Most of the private sector ICT initiatives in agriculture are gaining momentum and many of them are producing good results. Hence, it becomes increasingly important to study the degree of satisfaction of the users and examine the various services provided by these initiatives, which are attracting and catering to the needs of farmers.

### **ITC's e-Choupal: An innovative ICT initiative**

ITC group is one of India's foremost private sector business houses with a market capitalization of around US\$ 4 billion and annual revenues of US\$2 billion. ITC has a diversified presence in tobacco, hotels, paperboard, specialty paper, packaging, agri-business, branded apparel, packaged foods and other fast moving consumer goods.

Launched in June 2000, 'e-Choupal' has already become the largest ICT initiative among all Internet-based interventions in rural India. 'e-Choupal' services today reach out to more than 3.5 million farmers growing a range of crops- soybean, coffee, wheat, rice, pulses - in over 38,500 villages through nearly 6500 kiosks across nine states viz., Madhya Pradesh, Haryana, Uttarakhand, Karnataka, Andhra Pradesh, Uttar Pradesh, Maharashtra, Rajasthan and Kerala.

E-Choupal delivers real-time information and customized knowledge to improve the farmer's decision-making ability, thereby better aligning the farm output to market demands; securing better quality, productivity and improved price recovery. The model helps aggregate demand in the nature of a virtual producers' co-operative, in the process facilitating access to higher quality farm inputs at lower costs for the farmer. The e-Choupal initiative also creates a direct marketing channel, eliminating wasteful intermediation and multiple handling, thus reducing transaction costs and making logistics efficient. The e-Choupal model has been specifically designed to tackle the challenges posed by the unique features of Indian agriculture, characterized by fragmented farms, weak infrastructure and the involvement of numerous intermediaries, among others.

The e-Choupal project has already benefited over 3.5 million farmers. Over the next decade, the e-Choupal network is expected to cover over 100,000 villages, representing 1/6th of rural India and create more than 10 million e-farmers. Real-time information and customized knowledge provided by 'e-Choupal' enhance the ability of farmers to take decisions, align their farm output with market demand and secure quality and productivity. The aggregation of the demand for farm inputs from individual farmers gives them access to high quality inputs from established and reputed manufacturers at fair prices. As a direct marketing channel virtually linked to the 'mandi' system for price discovery, 'e-Choupal' eliminates wasteful intermediation and multiple handling. Thereby, it significantly reduces transaction costs.

### Objectives

Hence, against this backdrop and to answer the above questions, the present research study was undertaken with the following objectives:

1. To study the socio-economic and personal profile of users of e-Choupal.
2. To document various services being provided through e-Choupal in Uttarakhand.
3. To ascertain users' satisfaction with services and facilities provided by e-Choupal.

### Research Methodology

The study was conducted in Udham Singh Nagar district of Uttarakhand as presently e-Choupal services are available only in this district of the state. Of the seven CD blocks in the district, three blocks were randomly selected i.e. Rudrapur, Sitarganj, Khatima. From every selected block, two e-Choupals were selected on the criteria of high performance (as assessed by ITC). The selected e-choupals were in the villages viz., Malsi, Navgaon (Rudrapur block), Katangiri, Nakhanaya (Sitarganj block), Nausar, Jamor (Khatima block). Finally, 20 farmers from each e-Choupal village were randomly selected making the total sample size of 120.

Socio economic and personal characteristics studied include age, education, caste, land holding, occupation, mass media exposure, information sources, information needs, and frequency of contact. The full range of services provided by the e-Choupal were also scrutinized and documented. Further, the users satisfaction as well as other features of e-Choupal such as accessibility convenience, reliability, immediacy of feedback, comprehension of message, extent of knowledge gain, credibility were also studied.

### Research Findings

1. **Profile of e-Choupal Users.** Table-1 presents the profile of e-Choupal users in terms of

age, education, caste, sex, land holding, occupation, information sources and information needs of the farmers, etc.

**Table 1. Distribution of Respondents according to Socio-economic and Personal Characteristics**

Sl. No.	Category	No. of Respondents	Percentage
<b>1.</b>	<b>Age</b>		
	Young (less than 35 years)	29	24.16
	Middle (35-45 years)	60	50.01
	Old (more than 45 years)	31	25.83
<b>2.</b>	<b>Sex</b>		
	Female	0	0
	Male	120	100
<b>3.</b>	<b>Education</b>		
	Illiterate (can't read and write)	32	26.66
	Primary (1-5 standard)	34	28.33
	Middle (6-8 standard)	22	18.33
	Up to Intermediate (9-12 standard)	21	17.50
	Graduate (more than 12 standard)	11	9.16
<b>4.</b>	<b>Caste</b>		
	General	32	26.66
	OBC	71	59.16
	SC	13	10.83
	ST	4	3.33
<b>5.</b>	<b>Occupation</b>		
	Farming only	35	29.16
	Farming and service	35	29.16
	Farming and business	50	41.66
<b>6.</b>	<b>Land holding</b>		
	Marginal (less than 2.5 acres)	15	12.5
	Small (2.5-5.0 acres)	35	29.16
	Medium (5.0-10 acres)	45	37.5
	Large (more than 10 acres)	25	20.83

### 1.1 Socio Economic and Personal Characteristics

- a. Maximum number of respondents (50 per cent) belonged to middle age group followed by old (25.83 per cent) and young (24.16 per cent). The average age of the respondents was 40 years.

- b. All the respondents were male (100 per cent) and there were no female users of e-Choupal in the sample studied. Further, the respondents used all the available services of e-Choupal.
- c. Maximum number of respondents were educated up to primary level (28.33 per cent) followed by illiterate (26.66 per cent). Further, 18.33 per cent of the respondents had passed middle school whereas 17.50 per cent of respondents had education up to intermediate level.
- d. Majority of respondents (59.16 per cent) belonged to OBC category followed by General category (26.66 per cent), SC (10.83 per cent) and ST (3.33 per cent).
- e. Majority of e-Choupal users had 'farming and business' as their main occupation (41.66 per cent) followed by 'farming and service' (29.16 per cent) and 'farming only' (29.16 per cent).
- f. Majority of the farmers who used e-Choupal services had medium land holding (37.50 per cent) followed by small land holding (29.16) and large land holding (20.83).

## 1.2 Information Needs

It is a fact that farmers use a variety of extension services according to their information needs in agriculture and allied subjects. E-Choupal, an innovative ICT-based information delivery system provides customized information on various aspects of agriculture. An attempt was made to enlist the areas on which farmers seek information frequently. The farmers were asked to mention the areas on which they usually needed information. The type of information required by farmers is given in Table-2.

A large majority of the farmers (96.16%) sought weather information, while 82.5 per cent reported that they need information about new/improved seed variety whereas, 79.16 per cent farmers said that they need information related to market rate. Further, 78.33 per cent of the farmers desired to have information related to mandi rate followed by insecticide/agriculture related chemical information (71.66 per cent), and 68.33 per cent information related to new techniques of farming. Other areas of information required by farmers were related to common crops (65 per cent), irrigation (28.33 per cent), storage (21.66 per cent) and others (23.33 per cent) respectively.

**Table 2. Distribution of Respondents according to Information Needs**

(N = 120)

Sl. No.	Information needs	No. of Respondents	Percentage
1.	Crop related information	78	65.0
2.	New seed variety related information	99	82.5
3.	New techniques of farming	82	68.3
4.	Insecticides/ Ag. Chemicals	86	71.7
5.	Irrigation	34	28.3
6.	Storage	26	21.7
7.	Weather	83	96.2
8.	Market rate	95	79.2
9.	Mandi rate (Nearest)	94	78.3
10.	General information	24	20.0
11.	Others	28	23.3

The result reveals that farmers are more concerned about weather forecast as most of the farm activities are totally dependent on the weather conditions. Besides, farmers also want productivity enhancements through adoption of new/improved seeds and are equally concerned about the prices that they get. Singh and Hansra (1992) reported that farmers need more information on plant protection measure followed by improved varieties, farm machinery and agronomic practices. They also found that there is a big gap in information supplied and information needs of the farmers. Therefore, programmes should be prepared after assessing needs of the farmers. Further, Singh (1997) also concluded that important areas in which information was needed were high yielding varieties, field preparation and crop production in case of agriculture, immunization and family planning for family welfare, body cleanliness for health and hygiene, procedure to improve nutritional quality in diet, plantation and population.

### 1.3 Information Sources

Modern agriculture is marked by product quality and competition. Information has come to be recognized as a critical factor of production. It influences farmers' decision making process such as which crop/variety to be grown, level of agri-inputs applied and where to sell the farm produce. In the contemporary society everyone be it in rural or urban areas, is exposed to a number of information sources ranging from internet and television to farm magazine and paid advisory services of private agribusiness firms.

Therefore, in the present study, an attempt is made to find out the information sources used by farmers. The results may be seen in Table -3.

**Table 3. Distribution of Respondents according to Information Sources**

N = 120

Sl.No.	Information source	No. of respondents	Percentage
1.	Mass media	63	52.50
2.	Fellow Farmers/relatives	112	93.33
3.	e-Choupal	97	80.83
4.	Others (Pantvarsity)	44	36.66

It is evident from Table 3 that majority of farmers (93.3 per cent) consult 'fellow farmers/relatives' for any/new information regarding farming, followed by e-Choupal (80.8 per cent). Mass media, as source of information to farmers accounted for 52.5 per cent farmers followed by other sources of information (36.6 per cent). Surprisingly no farmers reported 'KVK' as a source of information. This indicates that either farmers do not trust KVK as a source of information or the KVK fails to meet the information needs of the farmers. About 81 percent farmers got valuable and useful information from e-Choupal, an ICT initiative launched by ITC, a private company.

## 2. Services provided by e-Choupal

An attempt was made by the researcher to scrutinize and prepare an inventory of various services being provided by the e-Choupal. The same is given hereunder.

- (i) **Selling Consumer Products (FMCG /Non FMCG):** A number of consumer goods produced by ITC were being sold at all the e-Choupals. Various FMCG (Fast Moving Consumer Goods) products like - biscuits (Sunfeast), agarbatti (Mangaldeep), salt (Ashirwad), cigarette, match stick (Aim), candy, washing powder (Fena), cake, nip bar, torch and battery (Everready), CFL (Philips), hair oil, tea (Dunkans), fairness cream (Emami), tooth paste (Colgate), etc. were put-up on display. Further, non FMCG ( non fast moving consumer good) products like-seed (TDC, Bayer), tractor (Mahindra), motorbike (TVS), weather insurance, mob oil (trade name Max), fertilizer (Kribhco) were also up for sale at e-Choupals. The farmers, or for that matter anybody living in the vicinity, can buy them as per their requirement.
- (ii) **Weather Forecasts:** Uncertain and erratic weather condition plays a crucial role in successful and profitable farming. e-Choupal provided updated weather information about their areas/zones. Users of e-Choupal can select their district of interest by clicking on the appropriate region of a map on the computer kept at e-Choupal. Localized weather information is presented on selected regions within a 25 kilometer range.

Typically, 24-72 hour weather forecasts were available along with an advisory. These advisories are pieces of information directly related to the farmer, which he can put to use. For instance, during the sowing season, a weather forecast for days following heavy rains may include an advisory that instructs the farmer to sow seeds while the soil is still wet. Weather data was obtained from Indian Meteorological Department, which has a presence even in small towns and can provide location-specific forecasts for rural areas.

- (iii) **Agri-inputs:** The e-Choupal provides a number of agri-inputs like seeds, fertilizers, insecticides/pesticides. The e-Choupal tries to provide best quality seeds of major crops as per their demand/requirement. This helps the farmers to get good crops. Besides providing these inputs, the farmers also get 'how to use' kind of information and recommendations. Testing of soil sample brought by the farmers is also done free of cost by e-Choupal.
- (iv) **Best practices:** Farmers, by virtue of their long farming experience and understanding of the local situation, have a number of good practices, which remain undocumented. The e-Choupal can help share and document these crop specific and location specific traditional wisdom. Some action based information can be circulated among the farming community in the form of best practices. It was found that e-Choupal facilitated circulation of this traditional wisdom in the form of crop-specific best practices.
- (v) **Question and Answer:** This feature enables the farmers to pose their specific questions to experts and seek solutions to their problems. The e-Choupal facilitator helped in sending e-mail (of the questions/problem faced by farmers) to scientists who, after careful examination and assessment, provided specific solutions. Depending upon the ICT infrastructure available, teleconferencing facilities could also be offered.
- (vi) **Pricing:** The e-Choupal Website displays both the ITC procurement rate and the local mandi rates for various commodities. ITC's next day rates are also published every evening. The prices are displayed prominently on the top of the Web page on a scrolling ticker. The farmer can make use of the latest price information and decide where he should sell his produce to get high profit. Sometimes, if there are large stocks of a commodity, say wheat or rice, the ITC/e-Choupal sanchalak can arrange to procure it right in the village itself. This helps farmers save on transportation costs thereby increasing their profitability/net income.
- (vii) **Purchase of farmers' produce:** The e-Choupal purchased the harvested produce of farmers. Although it was not mandatory for e-Choupal users to offer their produce, many farmers found it profitable and hassle-free. The payment by ITC was also quick and straightforward.

(viii) **Other Services:** These include information regarding loans/ credits (e.g. crop insurance) available from various financial institutions, insurance services, market prices of various commodities, education related services such as results declared, admission notifications, and other general interest utility services. Farmers in villages are often not aware of such services being provided by various institutions.

Sharma (2003b) observed that “village information kiosks” could be self-sustainable enterprises, if e-governance services are integrated with the information network. Rural people are willing to pay for the information services, provided the services are a little more exhaustive and improve their livelihoods. Moreover, FAO (1998) also reported that there is sufficient evidence that info-kiosks have played a major role in mobilizing communities to address their development problems. Info-kiosk can be used as information hubs that capture, repackage and disseminate information to rural communities.

### 3. User's satisfaction with e-Choupal facilities

**3.1 User's Satisfaction:** The e-Choupal represents an innovative experiment of the ITC group aimed at harnessing the potential of Information and Communication Technologies in the agriculture sector. It is a need-based, client-focused, demand-driven and user-friendly model of information networking and communication providing a host of services and facilities to the farming community.

An attempt was made to find out the degree of satisfaction among the e-Choupal users. The results thus obtained, are presented in table 4.

**Table 4. User's satisfaction with e-Choupal**

(N=120)

Sl. No.	Degree of satisfaction	No. of Respondents	Percentage
1.	Highly satisfied	62	51.67
2.	Moderately satisfied	47	39.67
3.	Not satisfied	11	9.16

It is evident from the above table that a large majority of e-Choupal users (90.8%) were satisfied with the services and facilities provided by the e-Choupal. About 52 percent were highly satisfied and 39.17 percent were moderately satisfied. However, 10 percent of the e-Choupal users were not satisfied.

It may therefore be concluded that e-Choupal has been able to successfully meet the information needs of farmers. This model of e-Choupal may further be replicated in other parts of Uttarakhand.

**3.2 Cost of Services:** Cost is an important determinant for the use of any service or facility. The farmers were asked to mention the cost incurred in using the e-Choupal services.

The results indicated that all the farmers under study were not required to pay any amount for the services of e-Choupal. This is also one of the reasons for the number of e-Choupal users increasing day by day, as it is not only a reliable source but also free of cost. Thus, from the above results it can be concluded that the cost of the services of e-Choupal is an important factor for utilization of services. However, it would be interesting to study the utilization pattern if 'some fee' is charged for the services of e-Choupal. At the moment, farmers are enjoying the free services.

**3.3 Accessibility:** Accessibility was operationally defined as "the ease of reaching the e-Choupal by respondent" in terms of distance to be traveled, transportation facilities available, etc. The results are presented in table-5.

More than half of the respondents (57per cent) told that e-Choupal was easily accessible to them. For 42.5 per cent farmers it was moderately accessible and nobody said it was difficult to access. The study revealed that most of the farmers found the e-Choupal easily accessible.

**Table 5. Distribution of the Respondents according to Accessibility**

(N = 120)

Sl. No.	Accessibility	Respondents	Percentage
1.	Easily accessible	69	57.5
2.	Moderately accessible	51	42.5

It is the policy of ITC to install e-Choupal at the village level by forming a hub of 4-6 villages. This way it becomes much easy and the farmer has to travel less distance to reach there.

**3.4 Reliability:** Reliability refers to the degree of correctness of the information provided by the e-Choupal. It is a subjective perception of the farmers about services of e-Choupal. Farmers' perception was based on results that the respondents obtained after using the information provided by e-Choupal.

The results in Table-6 indicate that majority of the farmers (58.3 per cent) felt that the services of the e-Choupal were reliable. However, 33.33 percent felt that the information was less reliable whereas only 8.33 per cent said that it is unreliable. It may therefore be concluded that a large majority of farmers found the services of e-Choupal to be reliable.

**Table 6. Distribution of the Respondents according to Reliability**

(N = 120)

Sl. No.	Degree of Reliability	Respondents	Percentage
1.	Highly reliable	70	58.3
2.	Moderately reliable	40	33.33
3.	Unreliable	10	8.33

**3.5 Immediacy of Feedback:** This was operationally defined as the length of time, in days, taken by the e-Choupal to respondents to the queries of respondents. The results, thus obtained, are presented in Table-7.

**Table-7. Distribution of the Respondents according to Immediacy of Feedback**

(N = 120)

Sl. No.	Time taken in feedback (in days)	Respondents	Percentage
1.	Within a week	80	66.7
2.	After one week	40	33.33

Majority of the farmers (66.7 per cent) felt that they obtained a reply to their questions in one week's time. However, 33.33 per cent of farmers said that they got the reply after one week.

Hence, it may be concluded that e-Choupal is very quick in responding to the queries of their target clients as most of the farmers get feedback within a week's time. This is an indication of the efficient functioning of the information management system at e-Choupal.

**3.6 Frequency of contact:** This refers to the number of times information was provided by e-Choupal in response to a single question of the respondents during the last 3 months. The results are presented in Table-8.

**Table 8. Distribution of the Respondents according to Frequency of Contact**

Sl. No.	Frequency of contact (last 3 months)	Respondents	Percentage
1.	One time	38	31.66
2.	Two times	43	35.83
3.	Three times	15	12.5
4.	Four times	6	05.0
5.	More than four times	15	12.5
6.	Never	3	02.5

It is evident from the table that 35.83 per cent of the farmers felt that they got information two times and 31.66 per cent of farmers reported to have got the information only once. However, 12.5 per cent of the farmers got information three times, and an equal number of farmers got information four times. Further, 5 per cent of farmers got the information four times. About 2.5 per cent of farmers got no information during the last 3 months.

Results presented above are totally dependent on the specific query of the respondent and the number of times he approached the e-Choupal for that particular query. Results are highly subjective in nature as it is based on recall method. However, it indicates the degree of popularity of e-Choupal amongst the farming community as an alternative source of information.

Meera et al (2004) studied the performance of three ICT projects in India. The projects had different origins and purposes, but all were concerned with improving the delivery of information to farmers and other rural dwellers. One project was managed by the government as part of an exploration of e-governance. The second was run by a cooperatives and the third was an experiment by a large private agriculture input supplier to provide information to farmers. The projects studied varied with respect to the type of services provided.

In the government project, users most valued access to market information, land records and information about rural development programmes. In the cooperative project, question and answer services, accounting and farm management information were valued most. In the private company experiment, participating farmers valued various types of information on practices, management of pests and diseases and rural development programmers.

Policy implications are that the ICT projects, to serve resource poor farmers, require qualified and well motivated staff to serve as an interface with computer systems. Efforts should be made to ensure that farmers have the faith in the ICT projects personnel and that they are committed to ensure that the goals of the project are met. Before the project is established in a region, a rapid rural appraisal should be done to assess the type of information mostly in demand and the government should re-orient its policies in order to harness ICTs potential for contributing to agriculture development.

## Conclusion

The present study on e-Choupal was undertaken in a district of Uttarakhand. The profiles of the respondents show that males have dominance and control over agricultural activities. The user's profile indicate that most of the respondents had education upto

primary level, majority belonging to OBC caste and 'farming combined with business' was found to be major occupation. The e-choupal users had medium land holding and a large majority wanted information regarding weather conditions and forecast.

Results further indicated that most of the respondents consulted fellow farmers/relatives for any/new information regarding farming. Most of the respondents got valuable information from e-Choupal.

The study also documented services and facilities provided by e-Choupal. Information regarding weather, insurance, product pricing are valuable services provided by e-Choupal. Best practices available in the market, Agri-input and their delivery are facilitative services, which are valuable for the farmers. It also serves the entertainment, education, communication function too.

It can be concluded that most of the respondents were satisfied with the services and facilities provided by the e-Choupal. Most of the services and facilities of e-Choupal were free of cost, which could be one of the reasons for the user's satisfaction. E-Choupals were easily accessible providing information to the farmers, which was found to be reliable, and the feedback was also immediate.

Thus, it can be safely concluded that e-Choupal is emerging as a credible and innovative agricultural information system in rural India, which is capable of meeting the information and communication needs of the farmers.

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