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Utilization of Information Disseminated through Mobile Telephones by Farmers in Tamil Nadu

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ABSTRACT

Farmers need dynamic information relating to agriculture and rural development. Reuters Market Light (RML) offers information services via mobile phone-based Short Message Service (SMS) primarily aimed at satisfying the information needs of farmers. The study was carried out in the Erode district of Tamil Nadu state. The results revealed that three-fourths of the respondents had medium degree of RML information utilization behaviour and farm size had a negative and significant relationship with RML information utilization behavior.

Keywords : *Mobile phone; Reuters Market Light; Short Message Service; Information Utilization Behaviour*

INTRODUCTION

Reuters Market Light (RML) is a unique, "bottom of the pyramid", mobile-based information service for farmers in certain states of India from Thomson Reuters. Launched in October 2007, it provides individual farmers with "customised, localised and personalised" weather forecasts, local crop prices, agricultural news and relevant information (i.e. crop advisory) – in the form of SMS (Short Message Service) sent to their mobile phones in their local language.

This allows subscribing farmers to plan irrigation, application of fertilisers, and harvest – thus, managing some of their risks, as well as to decide when and where to sell their produce to maximise profit.

Since its launch in 2007, over 200,000 farmers in 15,000 villages across 13 states in India have subscribed to RML. It provides localized and personalized information via SMS text messages on weather, market prices, local and international agriculture and commodity news, and crop advisory tips enabling farmers to make informed decisions, reduce waste and maximize their profits.

RML has, at present, three channels for sales: through agri retailers

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to farmers (RML Direct); bulk sales to agri input companies/NGOs/large groups; bulk sales to mobile operators. In the latter two cases, intermediaries – those with well-developed distribution networks – are used to sell individual subscriptions.

The current revenue model for RML's service is 'subscription' and the service is available through major mobile networks. Currently, RML carries out all activities – from content sourcing to customer support and accounting – in connection with the service that customers receive, other than operating a mobile network.

To mobilize the convergence of ICT in agriculture, there is a need to investigate various researchable issues to delineate the pre-requisites of a sound strategy of ICTs in agriculture. Hence, it becomes important to know the information utilization behavior of farmers with regard to m-extension for overcoming the challenges faced by the farmers. The present study was conducted with the following objectives:

To study the pattern of information utilization by the farmers using Reuters Market Light.

To analyze the association and relationship of identified variables towards the information utilization behaviour of RML - Short Message Service (SMS) availing farmers.

METHODOLOGY

The study was carried out in the Erode district of Tamil Nadu state. Among the 32 districts of Tamil Nadu, Erode district was identified as the study area of this district as it constituted a major group of beneficiaries of Reuters Market Light (RML) through mobile telephones. In Erode District of Tamil Nadu, Reuters Market Light (RML) utilizes Pallavan Grama Bank (Rural Bank which is sponsored by Indian Bank) to distribute the messages. RML gets the farmers' database from the Pallavan Grama Bank and sends the messages to farmers. There are fourteen Pallavan Grama Banks functioning in Erode District. All the fourteen banks were selected for the study. From these fourteen banks, 180 respondents were drawn by using the Stratified Random Sampling with Proportional allocation method. Then Simple Random Sampling without replacement procedure was adopted, with the help of random number table. Those respondents who availed the Reuters Market Light (RML) service through the mobile phone Short Message Service (SMS) were selected for the study. The collected data were analyzed with appropriate statistical tools (SPSS) and techniques.

FINDINGS AND DISCUSSION

Information Utilization Behaviour of Farmers

The RML information utilization behavior of the respondents was studied.

Ten items were identified namely; possession of media, use of media, place of use, purpose of use, frequency of use per day, information preference, decision on information, forwarding information to others, cross checking and satisfaction level of using RML.

About three-fourths of the respondents (70 per cent) had medium degree of Reuters Market information utilization behaviour followed by low (16.7 per cent) and high (13.3 per cent)

The RML project is operational in the selected study area for the previous two years and majority of the respondents are utilizing its services only for the last two years, which might be the reason for the medium level of RML information utilization behavior.

Pattern of RML Utilization Behaviour of the Respondents

The various aspects of Reuters Market Light (RML) information utilization behaviour of the respondents are furnished in Table 1.

All the respondents (100.00 per cent) possessed mobile phones as the medium for receiving and forwarding the Reuters Market Light (RML) information.

None of the respondents possessed computer with internet, due to its high cost and lack of computer and internet skills.

Use of Media

Majority of the respondents used the mobile telephones for general communication purposes other than using it for getting SMS' from RML. All the respondents used the media for the purpose of Agricultural activities only. Since their major occupation was agriculture, the sharing of information was predominantly on various aspects of agriculture like information sharing on inputs, crop management practices, communicating with experts in various institution, information sharing on market prices, information gathering on market arrivals and demand etc.,

Possession of Media

It is inferred from Table 1 that 18.88 per cent of the respondents used the mobile phone for entertainment purposes like hearing music, watching video clips and playing games installed in the mobile phone. Though many of the respondents were aware of the entertainment and academic utilities of mobile phones, they did not find leisure time and interest to use them.

Place of Use

Mobile telephones being a handy portable device it is obvious that all the respondents (100 per cent) used the mobile phones at their home, farm and market. This might also be the reason for higher level of penetration of mobile phones in rural areas.

Frequency of Use per day

Data in Table 1 reveal that nearly sixty per cent of the respondents used to view at the SMS' sent through RML

Table 1.
Distribution of Respondents based on Various Aspects of RML Utilization Behaviour

(n=180)

Sl.No	Particulars	Number	Percentage
1.	**Possession of Media**		
	Mobile	180	100
	Computer with Internet	0.0	0.0
2.	**Use of Media**		
	General	146	81.11
	Entertainment	34	18.88
3.	**Place of Use**		
	All (home, farm & market)	180	100
4.	**Frequency of Use per day**		
	Twice	105	58.3
	More than twice	75	41.6
5.	**Information Preference**		
	Price	62	34.4
	Market	50	27.7
	Traders	68	37.7
6.	**Decision on Information**		
	Where to sell	113	62.7
	When to sell	67	37.2
7.	**Forwarding to others**		
	Yes	112	62.2
	No	68	37.7
8.	**Cross checking**		
	Yes	130	72.2
	No	50	27.7
9	**Satisfaction**		
	Yes	120	66.6
	No	60	33.3

information twice a day followed by 41.6 per cent of respondents using it for more than twice a day. This result further showed that reinforcement and retention of information is possible when it is sent through short messaging service (SMS).

Information Preference

It is interpreted from the table that

37.7 per cent of respondents preferred to get information about Commodity Specific Traders from various markets followed by 34.4 per cent of respondents who preferred market price information for more than one crop. About 24 per cent of respondents preferred to get information about various markets near their locality.

During the study, the respondents expressed that the need to know about potential traders in the nearby markets was very important to them so that they might make an attempt to bypass the exploitative middlemen in the market. Further, they preferred to get market price information for more than one crop because all the respondents in the study area cultivated more than one crop at a time and so they innovative in use of ICT tools and old farmers were more conventional and highly resistant to change.

Decision based on Information

Around 62 per cent of the respondents made decisions on where to sell their produce after getting the information from RML followed by 37.2 per cent who decided on when to sell the produce.

The reason attributed to this result was; based on the price information given by RML about a commodity in various markets, the respondents made the decision on where (*i.e.* which market) to sell the produce. Obviously their choice of selecting the market was based on high prices for the produce, distance of the market, transport, and infrastructure facilities available with the market.

Forwarding to others

More than three-fifths (62.2 per cent) of the respondents used to forward the messages received from RML to their fellow farmers and friends who were not registered with RML or receivers of information about some other crop other than the information forwarded for a crop based on SMS.

It is followed by 37.7 per cent of respondents who did not forward the messages to other farmers probably because all the other known farmers were already registered users of RML.

Cross-checking

Nearly three-fourths (72.2 per cent) of the respondents used to cross check the information provided by RML with other sources like traders in various markets, commission agents and other farmers. They expressed that the information provided by RML is credible and useful.

Satisfaction

All the respondents for this study expressed a high level of satisfaction regarding the overall utility of Reuters Market Light (RML) information disseminated through mobile telephone.

It was also observed by the researcher that respondents who were

using modern electronic gadgets in home were more likely to use mobile phones frequently in their office.

The findings are supported by the findings of Balasubramaniam (2010). Who observed that the respondents who were using modern electronic gadgets in home were more likely to use them frequently in the office.

Factors Influencing the Reuters Market Light (RML) Information Utilization Behaviour of the Respondents

In order to determine the factors affecting the Reuters Market Light information utilization behaviour of the respondents, Co-efficient of correlation was calculated by finding out the relationship of Information utilization behavior with select independent variables.

Table 2.
Correlation of Characteristics of RML Users through Mobile Phones with their Information Utilization Behaviour

(n=180)

Sl. No.	Independent variables	'r' value
1.	Age	0.105*
2.	Educational status	0.332**
3.	Family status	0.084
4.	Annual income	0.106
5.	Farm size	-0.223*
6.	Farming experience	0.181*
7.	Source of irrigation	0.179*
8.	Cropping pattern	0.166
9.	ICT awareness and utilization behaviour	0.182*
10.	Market information seeking behaviour	0.242**
11.	Market information processing behaviour	0.435**
12.	Attitude towards market	0.306**
13.	Preference of market channel	0.081
14.	Perception towards mobile phone in farming	0.344**
15.	Gratification towards RML	0.356**

*Significant at 5 per cent level **Significant at 1 per cent level

It was found that age had a positive and significant relationship at five per cent level with information utilization behavior It might be because young farmers are more innovative in use of ICT tools and old farmers were more conventional and highly resistant to change.

It was found that educational status had a positive and significant correlation at one per cent level with the Information Utilization Behaviour. It might be due to the reason that respondents with higher education always know the significance of any valuable information provided to them. Particularly in RML, the information is sent to the respondents through mobile phones and SMS' sent to the farmers both in English and in the local language, Tamil, based on their interest. Interpretation and application of such information could be accomplished effectively by the educated farmers only.

Farming experience was also found to have a positive and significant correlation at five per cent level with information Utilization Behaviour. It might be because an experienced farmer always knows the importance of marketing his/her produce and the need of relevant market information. It can be interpreted that more the number of years of farming experience higher will be utilization behavior.

It was found that Source of Irrigation had a positive and significant correlation at five per cent level with Information Utilization Behaviour. A farmer with an assured and adequate irrigation source is always expected to produce more and try different patterns of cropping to derive more income out of their occupation. For effective disposal of their produce in market the Utilization Behaviour of the respondents with good irrigation source was also high.

ICT awareness and utilization behaviour was found to have a positive and significant correlation at five per cent level with Information Utilization Behaviour. The frequent exposure of the respondents towards various ICT tools had resulted in increased the confidence of the respondents in utilizing them effectively. It was found that Market information seeking behaviour had a positive and significant correlation at one per cent level with Utilization Behaviour because, the farmers with high level of market information seeking behavior were expected to obtain more information, which farmers could apply in changing market conditions which ultimately result in the increased Information Utilization Behaviour of the respondents.

Analysis revealed that Market information processing behaviour had a positive and significant correlation at one per cent level with Information Utilization Behaviour. It might be because the farmers with high level of market

information processing behaviour would possess superior skills of interpreting any information related to market and utilized the market information to maximum possible extent. Farmers' attitude towards market was also positively and significantly correlation at one per cent level with Information utilization behaviour. The farmers with highly favourable attitude towards market would collect extensive information about various aspects of market and marketing. These farmers always preferred to act upon the collected information so as to accomplish maximum utilization of it. Perception towards use of mobile phone in farming was found to have positive and significantly correlation at one per cent level with information utilization behaviour. As farmers used mobile phone for seeking information from RML it might be the reason for this. It was found that gratification towards RML had a positive and significant correlation at one per cent level with Reuters Market Light (RML) Information utilization behaviour. It is because as the majority of the respondents were found to be high on gratification. The variables such as farming experience, source of irrigation and exposure towards ICT tools were significant at five per cent level and other variables like educational status, market information seeking behaviour, market information processing behaviour, attitude towards market, RML gratification and perception towards mobile phone in farming were significant at one per cent level. The result revealed that farm size had a negative and significant relationship at one per cent level with information utilization behavior. Those with less farm size usually go for intensive cultivation putting in earnest efforts in getting agricultural information. This might be the season behind this finding.

CONCLUSION

The study has shown that information disseminated through mobile phones has been effective. The satisfactory level of the farmers using this facility was also high. The public extension system should take the results of the study into account & incorporate them appropriately in their extension programmes. The business concept model of RML, through its information and advisory services to farmers and others, would contribute to the vertical integration of the agriculture sector with the increasingly organizing retail and other industry sectors and also to the value additions to the agri-production activity.

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