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RELATIONSHIP BETWEEN ADOPTION OF MOBILE AGRO-ADVISORY SERVICES BY THE FARMERS WITH THEIR SOCIO-ECONOMIC AND PSYCHOLOGICAL CHARACTERISTICS

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ABSTRACT

In 2016-17 this study was conducted in the Udupi district of Karnataka. In this study, we had analysed the relationship in between independent variables of the study and adoption level of the farmers. For this research study selected thirteen independent variables, five variables *viz.*, achievement motivation, risk orientation, scientific orientation, extension participation, and innovativeness revealed positive and there was occurred significant relation at 1 % level of significance. Whereas, four variables *viz.*, education, extension contact, annual income, and mass media utilization were revealed positive and there was occurred significant relation at 5 % level of significance with adoption level. The remaining four variables namely, age, family type, size land holding, and occupation did not betray any significant relationship with adoption of mobile agricultural information.

Keywords: Mobile, ICT, Adoption, Mobile, Variable, Relationship and Significance.

Introduction

Information communication technologies (ICT) will facilitates by enabling extension agents to collect, store, retrieve and transfer huge information as needed by the farmers. Thus, transforming the new innovations from extension agents into knowledge workers. The emergence of knowledge workers certainly result in the realisation about bottom-up, demand driven technology generation, assessment, modification and dissemination. ICT enables the re-orienting of extension system towards the overall development of agricultural. With the pertinent knowledge, small-scale grower scan even have a combative edge over larger operations. When knowledge is exploited by strong organisations of small growers, for long run plans can be used to issue the storage facilities, least-cost inputs, improved transportation links, and collective negotiations with buyers.

An ICTs is any devices, tools, or applications that permits the exchange, share and assortment of data through interchanging or by conveying to others. ICT is a broad term that has something starting from radio up to digital era. These ICTs and others similar sources have secured attraction even in impoverished regions. The above definition states that, there are a huge ICT services, those can improve many operations in the agricultural and allied sector. Some examples embrace software used for supply chain management, mobile applications for farm work management, plenty of applications for agricultural land use, precision agriculture and other categories of ICT-facilitated services. The accessibility, affordability, and adaptability has improved and this resulted in their use within rural homesteads depending on agriculture. New, some small devices *viz.*, multifunctional mobile phones, infrastructure

namely, mobile telecommunications networks and cloud computing facilities, and especially applications (for example, that cash transfer or track an item of global supply chain) have proliferated. Many of the doubts of the farmers (*viz.*, how to increase yields of crops, marketing accessibility, and adapt to various climate and weather conditions) can now be answer fast, with easiest way, and enhance accuracy.

Materials and Methods

In 2016-17 this study was conducted in Udupi district. The phenomenon had already happened and the researcher cannot control over independent variables hence Ex-post-facto research design was used. The farmers, who were getting agricultural and allied messages to their mobile were considered as population in this study. The farmers those who had registered their contact number for receiving agricultural information through Agro meteorology centres, KVK Brahmavar, ZAHRS and some other sources were considered as respondents. In Udupidistrict, there are 4000 registered users in ZAHRS and around 1400 users in KVK. Among those 40 farmers were selected randomly from each existing taluk *viz.* Udupi, Karkala & Kundapur for the study. Thus, total 120 respondents were selected.

The term adoption means the adoption of information which is sent to the farmers through mobile messages. All the important operation messages were listed. A total number of 45 questions were listed by consulting with experts and were quantified, by giving '2' score to full adoption, '1' score to partial adoption and '0' score to non- adoption.

Based on the replies obtained, the adoption was measured and quantified by frequency and percentage.

Karl Pearson's product movement correlation coefficient (Simple correlation coefficient) was employed as to recognise the relationship between the variables.

The correlation coefficient was computed by using the following formula.

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{(n \sum x^2 - (\sum x)^2)(n \sum y^2 - (\sum y)^2)}}$$

Where,

r = Simple correlation coefficient

Sx = Sum of x values

Sy = Sum of y values

Sx² = Sum of square of x value

Sy² = Sum of square of y value

(Sy)² = Square of sum of y value

Sxy = Sum of xy values

n = Number of pair of observation

Results and Discussion

The relationship study was conducted between socio-economic profile of the sample farmers and adoption of mobile agricultural and allied information by the farmers has been conferred in Table 1.

With respect to Table 1 that, there were 13 independent variables in the research study, five variables *viz.*, achievement motivation, risk orientation, scientific orientation, extension participation, and innovativeness revealed positive and there was occurred significant relation at 1 % level of significance. Whereas, four variables *viz.*, education, extension contact, annual income, and mass media utilization were revealed positive and there was occurred significant relation at 5 % level of significance with adoption level. The remaining four variables namely, age, family type, size land holding, and occupation did not betray any significant relationship with adoption of mobile agricultural information.

Age and adoption

It was accounted from Table 1 that, Age of the sample farmers had non-significant relationship with adoption. The cause might be that, most of the sample farmers were comes under middle to young age group. The adoption level varies from young age to old age. Usually, youngster was more enthusiastic and efficient in their work, they actively involved in farm activities and have lot of physical vigour, these farmers have high risk bearing ability to adopt the technologies or information sent to them. The above outcome was match with the outcome of Savithramma (2011).

Education and adoption

With respect to Table 1 that, education was exhibited positive & significant relationship with adoption. Education helps the farmers to enhance their mental horizon and motivates the farmers for higher accomplishment in their life. In addition, the literate people are having higher information receptive capacity and always they curious for new information and technologies for grasping new ideas, certainly this will help them to improve their social as well as economic conditions. Further, the education enhances their conceptualization capacity with respect to information sent to them, which can be easily adopt by the farmers, those who were literate than illiterate. Therefore, farmers who had better education will acquire most of the innovations and

technologies, which leads to adoption of innovation. This outcome was match with outcome of Kharatmol (2006).

Family type and adoption

It was elucidated from Table 1 that, family type and adoption by the sample famers were occurred non-significant relationship between them. As mobile phone possession is not depending on the type of the family. Hence, adoption of the information sent to them might not be depends on type of family. The above outcome was match with the outcome of Puneet (2016).

Occupation and adoption

With respect to Table 1 that, occupation was occurred non-significant relation with the adoption. The farmer's allied occupation can't anticipate the adoption of the innovations. This result might be since, the respondents with other various occupations like business, dairy and labourer may use more messages when compared to the farmers with main occupation as agriculture. The above outcome was match with outcome of Puneet (2016).

Size of land holding and their adoption

It was accounted from Table 1 that, the size of land holding of the farmers had non-significant relationship with adoption. The possible cause might be that, the messages were sending to every farmer irrespective of their crops and size of land holding. Since, in Udupi district majority were small size of land holding farmers. Further, the most of the farmers were growing commercial crops and have better socio-economic condition, so they might have try to adopt the technology sent to them irrespective of land holding. The above outcome was in line with the outcome of Savithramma (2011).

Annual income of the farmers and their adoption

It was elucidated from Table 1 that, the annual income had occurred positive and significant relationship with adoption. The cause for this result might be that, the farmers who comes under high income might bears high risk and they can afford new technologies and information sent to them. Those farmers were like innovators in adoption of the innovation. The outcome was conformity with the outcome of Savithramma (2011).

Scientific orientation of the farmers and adoption

It was elucidated from Table 1 that, scientific orientation of the sample farmers and adoption level had occurred positive and there was significant relationship. This might be because, respondents in the sample area are highly educated. However, scientific methods require much skill and knowledge for its application, respondents with higher scientific orientation would be willing to try latest technologies and try to collect more information about them. The above outcome was conformity with outcome of Neha (2015).

Extension contact and their adoption

It was inferred from Table 1 that, extension contact and adoption of mobile agricultural information was occurred positive and significant relationship. Farmer's constant contact with the extension personnel of various organizations might have assisted them to get updated information about innovation, apart from this regular contact with experts, the mobile messages helped the farmers to get correct

information about innovation in every stage to get better income. This outcome was in line with outcome of Mavinakatti (2013).

Extension participation and their adoption

It was elucidated from Table 1 that, the extension participation of the farmers and mobile agricultural information adoption had occurred positive and there was significant relationship between them. This sort of trend may be due to, the farmers who were participated in various agricultural activities, and they may come in direct contact with extension experts and progressive farmers which helped them to get practical knowledge about the new innovations and technologies sent to them. This result was in line with the result of Sowjanya (2014).

Mass media utilization and their adoption

It was inferred from Table 1 that, adoption of mobile agricultural information and mass media utilization had positive significant relationship. The greater level of exposure to digital media by the farmers would encourage them to develop habits of collecting more information regarding new innovations through mobile phone, radio, television, newspaper and other sources of agriculture. Exposure to mass media leads to modern orientation among the farmers, make them more efficient in obtaining information regarding newly invented technologies and to adopt the new technologies. The above result found to be in line with the result of Savithamma (2011)

Innovativeness and adoption

From Table 1 it could be elucidated that, innovativeness and adoption had positive as well as significant relationship. Innovativeness is the interest and can increase enthusiasm among the farmers priority to changes and try new ideas in the existing farming systems, the innovative farmers generally will have greater orientation towards innovation decision process eventually it requires knowledge as the first step for adoption of any new technologies. The above result found to be in line with the result of Mouli (2005).

Achievement motivation and adoption

It was inferred from Table 1 that, achievement motivation and adoption of mobile agricultural and allied information had positive and there is significant relationship between them. The reason is that, achievement motivation is required character which motivates and facilitates farmers to do anything new. It is a psychologically internalized state of mind which moves an individual to aspire for greater level of learning and living. This might be the cause for above result. The above result was in contrast with the result of Mouli (2005).

Risk orientation and their adoption

It was inferred from Table 1 that, risk orientation of the sample farmers and adoption of mobile agricultural information was occurred positive and there was significant relationship between them. The cause behind this outcome might be that, the farmers had greater interest to take risk of adopting new and improved technologies as they have better socio-economic condition could be the reason for adopt technologies. The above outcome was in confirmative with the outcome of Chandrakala and Eswarappa (2001).

Table 1 : Relationship between selected independent variables and adoption of agricultural information by the farmers (n=120)

Sl. No.	Variables	r- value
1	Age	0.115 ^{NS}
2	Education	0.226 [*]
3	Family type	0.120 ^{NS}
4	Occupation	0.086 ^{NS}
5	Land holding	0.164 ^{NS}
6	Annual income	0.221 [*]
7	Scientific orientation	0.276 ^{**}
8	Extension contact	0.204 [*]
9	Extension participation	0.313 ^{**}
10	Mass media participation	0.215 [*]
11	Innovativeness	0.279 ^{**}
12	Risk orientation	0.246 ^{**}
13	Achievement motivation	0.302 ^{**}

* Significant at 5% level of probability

** Significant at 1% level of probability

NS- Non-Significant

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Conclusion

The dispersal of agrarian and associated information by ICT devices in agricultural nations gives a lot of occasion to move information by government and different organizations. Utilization of ICTs in rural expansion exceptionally portable administrations inside the rural area has given information on market, climate, transport and agricultural information to contact with concerned offices and separate office. ICT devices could assume urgent and possible function in expanding the scope to the remote areas. Presently cell phones are embraced by rustic networks in India to encourage information about agribusiness also climate gauge information.

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