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Research Note

Effectiveness of Extension Tools Among the Paddy Farmers of Tenkasi District of Tamil Nadu

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ABSTRACT

Information and communication technology (ICT) has many potential applications in delivering agricultural extension and can bring new information services to rural areas. It focuses on the enhancement of agricultural and rural development through improved information and communication processes. Present study was conducted to identify the knowledge level, skill acquisition and symbolic adoption behaviour of farmers by assessing the effectiveness of different extension tools viz., Expert system, Agri-tech portal and Extension literatures. Sixty farmers were selected from three different villages of Tenkasi District. Pretest and posttest were conducted to assess the gain in knowledge, skill acquisition and adoption of different technologies. Pretest revealed that in all the three extension tools, forty five per cent of the farmers were having high level of knowledge, while the post test results indicated that after exposure to expert system sixty per cent of the farmers acquired high level of knowledge. Similarly, 70.00 per cent of the farmers' exposure to expert system had high level of symbolic adoption behaviour. Expert system assisted farmers to take decisions to adopt different aspects of location specific crop management practices for increasing their productivity.

Keywords: Adoption behaviour, Expert system, Knowledge level, Skill acquisition

INTRODUCTION

Paddy is being cultivated around one lakh hectare in Tenkasi District. Most of the farmers have not adopted the scientific cultivation practices of Paddy. More than eighty percent of the farmers belong to the small and marginal farmers and their knowledge in scientific cultivation practices of paddy is low to medium. Low adoption level of different paddy cultivation practices is leading to low productivity. The farmers usually dependent on their large social network and took advice from fellow farmers' relatives or commission agents, pesticide dealers and friends (Sharma *et al.*, 2012). In the current scenario, Information and communication technologies (ICTs) are becoming important aspect of agriculture sector. Mobile phones and computers provide timely, cost effective and relevant information leading to changing agricultural scenario. Delivery of appropriate information can play an important role including technology delivery, improved access to advice, research, markets, credit, infrastructure, farmer organization development and business development services (Sulaiman, 2003). As the technological advances emerges in the arena of ICT, it is imperative to study the effectiveness of different extension methods.

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METHODOLOGY

The study was conducted in three village's namely; Vadakarai, Chinnathambinadanur and Velayuthaputhapuram of Tenkasi District of Tamil Nadu state. Sixty farmers were randomly selected for assessing the effectiveness of extension tools for transfer of agricultural information to the farmers. Based on the problems faced by the farmers, information related to production technologies were selected to disseminate through different extension modes. Three technological options were used to transfer production technologies of paddy as T1= Paddy expert system, T2= Agri-tech portal and T3= Extension literature. Pre and posttest were administered for these groups to identify the knowledge level before and after using the technological transfer mechanism. The scores gained in knowledge test were categorized as low (1-5 mark), medium (6-10 mark) and high (11-15 mark). Similarly, perception of paddy farmers about mobile application and adoption level of technology transfer mechanism was studied for these farmers.

RESULTS AND DISCUSSIONS

It is revealed from the Table 1 that majority of the farmers (45%) where the effectiveness of information towards knowledge gain in paddy Expert system shows high level of Knowledge (11-15) prior to treatment. This was followed by low level (1-5 score) and medium level (6-10 score) respectively. After the treatment, knowledge gain in paddy expert system shows the percentage of farmers in high knowledge category increased to 60.00 per cent. Similarly in case of Treatment 3, farmers gain knowledge through extension literature having the knowledge level increased from 20 per cent to 35 per cent.

The data showed that maximum gain in knowledge was in case of Paddy Expert system. The numbers of farmers having high knowledge level with knowledge score between (11-15) were 45.00 per cent before the treatment, and it was increased to 60.00 per cent after exposure to Expert system. Similarly, the effectiveness of treatment towards knowledge gain in Agri-tech portal, where twenty per cent of farmers were in high knowledge level category before the treatment and increased to twenty five per cent after treatment. The minimum change was observed in case of knowledge gain in Agri-tech portal. The results indicate that the gain in knowledge is prominent after exposure to Expert system over other extension tools may be due to adequacy of information, timeliness, cost effective and usefulness of information.

It could be inferred from the Table 2 that the knowledge related to skill acquisition was maximum with forty per cent before the treatment and it was increased to fifty five per cent after exposure to Paddy Expert

Table 1: Effectiveness of treatment towards knowledge gain due to exposure to different extension tools

Knowledge level	T1= Paddy Expert System		T2= Agri -Tech Portal		T3= Extension Literature	
	Before (%)	After (%)	Before (%)	After (%)	Before (%)	After (%)
Low (1-5)	30	15	55	40	50	20
Medium (6-10)	25	25	25	35	30	45
High (11-15)	45	60	20	25	20	35

Table 2: Effectiveness of extension tools towards knowledge related to skill acquisition due to exposure to different extension tools

Knowledge level	T1= Paddy Expert System		T2= Agri -Tech Portal		T3= Extension Literature	
	Before (%)	After (%)	Before (%)	After (%)	Before (%)	After (%)
Low (1- 5)	25	15	60	40	50	25
Medium (6-10)	35	30	20	35	30	40
High (11-15)	40	55	20	25	20	35

system. This was followed by the percentage of knowledge related to skill acquisition before exposure to extension literature and Agri-tech portal was 20.00 per cent. After exposure to the treatment, the minimum change was observed in Agri tech portal was 25.00 per cent and extension literature shows 35.00 per cent increased after exposure to the treatment. The above results clearly indicate that all the three selected treatments were effective in imparting knowledge related to skill acquisition on paddy production technologies with consider variation in their effectiveness due to exposure to different extension tools. The farmers exposed to expert system acquired more skill due to order of the content, text, pictures and when the need based messages was presented in a multimedia form as an Mobile app in paddy production technologies, their level of understanding and usage increased which had enhanced their skill acquisition behaviour.

It could be observed from the Table 3 that more than half (70.00%) of the farmers exposure to expert system had high level of symbolic adoption behaviour, followed by medium and low level which accounted for 20.00 and 10.00 per cent of symbolic adoption behaviour respectively. Majority (45.00%) of the farmer's exposure to Agri-tech portal had low level of symbolic adoption behaviour, followed by 30.00 per cent medium and 25.00 per cent had low level of symbolic adoption behaviour. More than half (55.00%) of the farmers exposure to extension literature had high level of symbolic adoption behavior followed by 35.00 per cent medium and 10.00 per cent low level of symbolic adoption behavoiur. The high adoption percentage in case of expert system was due to the fact that the farmers felt that the technical and message component were more satisfactory and it can be used by end users anytime and from anywhere which will ultimately save money, time and effort. Paddy expert system will help to impart the scientific knowledge of paddy production technologies to farmers in local languages also which works at offline mode. The extension literatures distributed to the clients were also useful but some farmers misplaced the papers and thereby could not use the information in actual field situation. Karuppasamy *et al.* (2015) reported that the farmers symbolically accepted to adopt and follow the new innovations and technologies on paddy cultivation practices and allied aspects due to exposure the paddy expert system.

Table 3: Effectiveness of extension tools in terms of symbolic adoption behaviour

Treatments	Percentage
Paddy Expert System	
Low	10.00
Medium	20.00
High	70.00
Total	100.00
Agri -Tech Portal	
Low	45.00
Medium	30.00
High	25.00
Total	100.00
Extension Literature	
Low	10.00
Medium	35.00
High	55.00
Total	100.00

CONCLUSION

The present study clearly indicated that the farmers exposed to paddy expert system had high level of symbolic adoption behaviour which will guide them to take decision into different aspects of location specific crop management practices like soil preparation, seed selection, pest management, fertilizer management, weed control, irrigation management, nutrition management etc. Hence, Paddy Expert system can facilitate knowledge transfer to adopting different aspects of crop management practices for increasing the productivity and profit. Expert system shows a better option over traditional systems and offered as the second choice after expert on consultation.

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