RESEARCH PAPER

Effectiveness of different digital formats on symbolic adoption of sugarcane cultivation practices among the farmers

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Abstract: The present study was conducted in Athani taluk of Belagavi District in Karnataka state. 'Before-After' without control group experimental design was used to determine the effectiveness of different digital formats in terms of symbolic adoption of sugarcane cultivation practices among farmers. Formats was developed on "Sugarcane cultivation practices" was the subject matter selected for the study. Different digital formats, namely Mobile App, Video and WhatsApp message, all three having almost the same content were developed and tested for their effectiveness. These formats acted as treatments for the study and all the treatments were administered to the growers within 15 days. Three villages were selected randomly. From each village, 50 sugarcane growers were selected for each treatment on the basis of random sampling. Thus, the total sample size is 150. The effectiveness was studied in terms of symbolic adoption for different digital formats. The results revealed that Video was effective (39.60) with respect to symbolic adoption followed by Mobile App (35.30) and WhatsApp message (34.50) and all the formats were effective in terms of symbolic adoption with considerable variation in their effectiveness. There is significant difference between the symbolic adoption due to different digital formats. Hence, Video could be used as an effective format for the dissemination of farm technologies to farmers

Key words: Different digital formats, Effectiveness, Sugarcane cultivation practices, Symbolic adoption

Introduction

Sugarcane (*Saccharum officinarum* L.) is an important commercial crop of the world and is cultivated in about seventy five countries, the leading countries being Brazil, India, China and Thailand. The sugar industry plays an important role in the agricultural economy of India. Today, sugarcane cultivation and sugar industry stands as supporting pillars of Indian economy. India occupies the second rank in production of sugarcane in the world. The area under sugarcane in India is 46.02 lakh hectares during the year 2019-20 and production of 370.50 million tonnes and yield is 80497 kg/hectare. India's annual consumption of sugar is around 28.00 million tonnes. (Anonymous, 2019-20). Karnataka is blessed with a favourable climatic conditions for the cultivation of sugarcane, hence the area under sugarcane has expanded to 6.91 lakh ha with a production of 381.81 lakh tonnes and productivity of 89000 kg/ha (Anonymous, 2019-20). The leading sugarcane growing districts are Belagavi, Bagalkote, Mandya and Kalaburagi. Belagavi being one of the leading sugarcane growing district in Karnataka has an area of 2.21 lakh ha under sugarcane with production of 15.33 lakh tonnes and productivity of 102 t/ha. (Anonymous, 2017-18).

Agriculture continues to be the occupation and way of life for more than half of Indian population even today, making single largest contribution to the GDP of our nation. Sustainable prosperity of the farmers and the agricultural labourers holds the key for improving the overall human resource development scenario in the country. Indian agriculture had been on traditional lines till the first waves of green revolution in the late 1960s. The green revolution gave a sudden boost to the production and productivity by making India self sufficient.

Though India has achieved self sufficiency in food grain production, we cannot be complacent with the increasing population. There is a need to increase production and productivity of agriculture. Hence, the Indian farmers need to be updated with the latest knowledge about new techniques of farming, new cultivars, farm machinery, market and trade situation, *etc*. The extension personnel of the department of agriculture disseminated the technologies and messages to the farmers through various extension methods. But these approaches have not been able to reach the majority of the farmers spread across the country as the ratio between farmer and extension worker is 1000:1(Chitra and Shankaraiah, 2012). This gap remains a challenge for extension system even today. To reach 120 million farmers spread over more than 500 districts is an uphill task. The diversity of agro-ecological situations adds to this challenge further. Farmers' needs are much more diversified and the knowledge required to address them is beyond the capacity of the grass root level extension functionaries In this context, different digital formats plays an important role in reaching the unreached, supplement and reinforce the extension efforts. Keeping this in view, the present study was conducted with a specific objective is effectiveness of different digital formats on symbolic adoption of sugarcane cultivation practices among the farmers.

Material and methods

The present experimental study was conducted in Athani taluk of Belagavi District in Karnataka state. The 'Before and After' experimental design with no control group was used to examine the impact of various digital formats in terms of symbolic adoption of sugarcane growing practises among farmers.

Table 1. Mean symbolic adoption of sugarcane growers after exposure to different digital formats (N=150)

Treatments	Mean symbolic adoption score
Mobile App (n=50)	35.30
Video (n=50)	39.60
WhatsApp Message (n=50)	34.50

Formats was developed on "Sugarcane cultivation practices" was the subject matter selected for the study. Different digital formats, namely Mobile App, Video and WhatsApp message, all three having almost the same content were developed. These formats acted as treatments for the study and administered to growers in 15 days. Hence, different digital formats were used as treatments. Three villages were selected randomly for the study. Random sampling was used to select the 50 sugar cane growers from each selected village. Thus, the total sample size was 150. The standardized interview schedule was used for the data collection which was done through personal interview technique. Collected data were tabulated and analyzed using mean, ANOVA and Techniques.

Results and discussion

It was clear from the results presented in Table 1 that, Video was highly effective (39.60) with respect to symbolic adoption towards 'Sugarcane cultivation practices' followed by Mobile App (35.30) and WhatsApp Message (34.50). The calculated 'F' value (25.07) was found to be significant indicating (Table 2), all the selected digital formats were significantly different from each other in influencing the growers towards mental adoption of selected topic. Video motivates the growers to mentally accept an innovation. The gain of knowledge was more in Video treatments, which might have contributed for good amount of symbolic adoption of the respondents. A strongly motivated learner tends to analyse the situation and looks for key factors to consider various possibilities in order to scrutinize, criticize and clarify his own responses. By this the individual makes up his mind to accept or reject an innovation. Even though all the formats were effective in influencing respondent's adoption behaviour with variation in their effectiveness, none of the formats succeeded in influencing the behaviour of respondents by cent per cent from a particular format. Symbolic adoption is a phenomenon influenced by factors other than the nature of communication methods used. Adoption is an important mental decision which makes people to seek reinforcement or reassurance from trusted associates in order to avoid a feeling of dissonance, which is especially needed when all the alternatives felt were important. Similarly,

Table 2. Analysis of variance for symbolic adoption of sugarcane growers on different digital formats

Source of variation	SS	df	MSOS	F	F critical value
Between treatment	752.333	2	376.166	25.07**	3.057
Within treatment	2205	147	15		
Total	2957.333	149			

** Significant at 1% level

Table 3. Comparative effectiveness of different digital formats on symbolic adoption

Treatments	Mean symbolic adoption score	F value	Critical Difference
T1 Mobile App (n=50)	35.30	25.07**	1.53
T2 Video (n=50)	39.60		
T3 WhatsApp Message (n=50)	34.50		

** Significant at 1% level

for activities that involve certain amount of expense and time, people tend to rely most on interpersonal channel of communication from whom they get reassurance as to the worthiness of a practice they are engaged in. The results are in conformity with the Mohanakumar (2018).

The results revealed from Table 3 that Video format was found to be most effective in symbolic adoption when compared to the other formats. All the formats were effective in symbolic adoption with considerable variation in their effectiveness. Moreover, the 'F' value for symbolic adoption was significant at 1% indicating that there is significant difference between the symbolic adoption due to different digital formats and critical difference shows that the Video- Whats App Message formats was highest significant difference and Mobile App – WhatsApp Message formats was found non significant difference between the symbolic adoption due to different digital formats.

Conclusion

The study can be concluded that the Video (T2) format had high mean symbolic adoption score followed by Mobile App (T1) and WhatsApp Message (T3). From the results, it is evident that video could be used as an effective format for the dissemination of farm technologies to farmers. The similar type of studies may be undertaken in other modes of presentation with other advanced software to make it interactive.

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