DOI : 10.5958/2349-4433.2024.00114.6

J Krishi Vigyan 2024, 12(3) : 655-661

Satisfaction Level of the Farmers towards Quality of Videos on Crop Residue Management Technology

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ABSTRACT

Paddy straw management is a key barrier to paddy farming in northwestern India. For the long-term sustainability of agriculture and natural resources accurate and timely information is seen to be a key component for changing farmers' behavior. Information and communication technologies have been advanced as a promising way to address these problems by providing more timely and low-cost information services to farmers. Punjab Agricultural University, Ludhiana produced a diverse array of videos covering wide range of topics pertinent to farming. Among these, four videos were carefully chosen, addressing essential aspect of Crop Residue Management. Therefore, for this study, four videos on crop residue management were chosen in order to measure the farmers' degree of satisfaction. A sample of 180 farmers was selected from the three selected districts Ferozepur, Sangrur and Ludhiana of Punjab. Total 180 respondents (60 as control group and 120 as experimental group) were taken for the study. The results showed that most of the farmers were satisfied with the various aspects of the videos. i.e. mode of video screening, information in videos, language used, timing of videos, intent of motivation, graphics used, completeness of message, latest techniques. Small number of farmers were highly dissatisfied with duration of videos, graphics used. The study's overall satisfaction towards videos showed that over half (56.67 %) of the farmers had medium satisfaction level followed by (22.50%) low level category and (20.83) high satisfaction level category and significant relationship was found between socio-economic characteristics of the respondents and level of satisfaction regarding different aspects of videos.

Key Words: Graphics, Management, Motivation, Sustainability, Satisfaction level, Straw, Technologies, Video screening.

INTRODUCTION

The agricultural business plays an important part in the overall financial growth of the country. Adequate and quality information is necessary for the improvement of all aspects of agriculture. India generates on an average 500 Million tons (Mt) of crop residue per year. The generation of crop residues is highest in Uttar Pradesh (60 Mt), followed by Punjab (51 Mt) and Maharashtra (46 Mt). About 51% of farmers burn paddy straw to save money, 48% for time savings and 48% for lack of machine availability, while 11% of farmers burn paddy straw for other reasons. Adequate and quality information is necessary for the improvement of all aspects of agriculture (Sidhu *et al,* 2009).

There are several ICT tools used in modern day for the dissemination of information. ICTs has the abilities of reaching large number of people simultaneously, therefore have a greater role in the extension work. Extension services are required to improve agricultural productivity by providing farmers with requisite information helping them to optimize use of limited resources (Sharma *et al,* 2014).

ICTs can broadcast the precise and authentic information at right time to the farmers

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so that they can utilize it and get benefits. The decision support system through ICTs facilitate farmers for planning type of crops, practising good agricultural practices by providing timely, user-friendly, and cost-effective access to relevant information, facilitated by the assistance of extension personnel post harvesting and marketing their produce to get better results (Jeewan *et al,* 2021). Integrating ICT into agricultural extension services is seen as crucial to providing the necessary boost to the agricultural sector. The digitalization of communication networks has made information accessible to a large number of people quickly and economically (Shanmuka *et al*, 2022).

There are various communication tools are available, video is the most efficient means of presenting information in an engaging manner and effectively strengthening educational activities. (Rani and Rao, 2014). Identifying the appropriate media source can be assisted by knowledge of consumers' demands, attitudes, emotions, and preferences as well as their preferences for receiving particular types of messages (Webster and Ksiazek, 2012).

Videos, in particular, complement traditional extension tools, especially when extension workers do not have enough resources to perform their duties effectively. The effective use of these tools lies in their ability to encourage social learning (Karubanga *et al*, 2016). Zossou *et al* (2009) proved that videos work more effective training tools than direct face-to-face training approaches and that they can lead to innovation. Extension workers using videos report increased confidence in interacting with experienced farmers

As video joins both the verbal and visual communication which makes it helpful for specialized abilities and offers cost-effective way of delivering information to population (Palakkal and Chinnaiyan 2010). To create effective policies and programs for enhancing service availability and accessibility in rural areas, it is critical to comprehend the degree of satisfaction and accessibility to various services. (Sakthivel *et al*., 2011).

Client satisfaction or discontent is determined by the quality and quantity of services received in all relevant aspects. (Chaturvedani *et al*, 2016). There is a correlation between farmer's expectations and satisfaction. (Salehi and Heydari, 2012). In order to deliver services to farmers more effectively and efficiently, the study will offer helpful suggestions for creating instructive films and an extension strategy. It will also offer feedback for directing future research and system redesign.

METERIALS AND METHODS

The study was conducted in Ferozepur, Sangrur and Ludhiana district of Punjab. In this study multistage sampling was followed in which two blocks have been selected randomly from each district. From these selected blocks, three villages from each block, one as control and two as experimental villages were randomly selected. Thus, a total of eighteen villages were selected for the study. From each selected village, ten (10) paddy growers were selected randomly, thus a total of 180 respondents were selected 120 respondents as experimental and 60 respondents as control group for the study. The study was carried out in the year of 2020 to estimate satisfaction level of informative video of the farmers. Punjab Agricultural University (PAU) in Ludhiana has taken proactive steps to promote agricultural innovation and disseminate vital information among farmers through a variety of video resources. In an effort to measure the satisfaction levels of farmers, a targeted selection process was undertaken, resulting in the identification of four key video topics such as basic crop residue management techniques, in-situ residue management, ex-situ residue management and fertilizer application were selected as treatment to conduct this experimental study. These videos were carefully curated to address critical aspects of crop residue management techniques and to provide practical guidance on best practices and techniques.

To quantify the satisfaction levels, a structured assessment was conducted on a three-point continuum, wherein respondents were categorized as, highly satisfied, satisfied, highly

Table 1. Distribution of respondents according to their level of satisfaction with the different aspects of the informative videos.

Sr.No.	Category	Experimental group (n=120)		
		Highly Satisfied	Satisfied	Highly Dissatisfied
		Frequency (%)	Frequency (%)	Frequency (%)
1.	Mode of video screening	32 (26.67)	76 (63.33)	12(10.00)
2.	Information in videos	46 (38.33)	59 (53.17)	15 (11.90)
3.	Language used	43 (35.83)	64 (53.34)	13 (10.83)
4.	Timing of videos	27 (22.50)	73 (60.83)	20 (16.67)
5.	Duration of videos	18 (15.00)	68 (56.67)	34 (28.33)
6.	Quality	38 (31.67)	61(50.83)	21 (17.50)
7.	Intent of motivation	33 (27.50)	69 (57.50)	18 (15.00)
8.	Graphics used	21 (17.50)	80 (66.67)	19 (15.83)
9.	Practicability	30 (25.00)	73 (60.83)	17 (14.17)
10.	Latest techniques	24 (20.00)	75 (62.50)	21 (17.50)
11.	Sound quality	48 (40.00)	53 (44.17)	19 (15.83)
12.	Completeness of message	23 (19.17)	82 (68.33)	15 (12.50)

dissatisfied corresponding to scores of 2,1 and 0 respectively. Chi-square test was employed to measure relationship of socio-economic characteristics of the respondents and level of satisfaction regarding with different aspects of videos

RESULTS AND DISCUSSION

Mode of video screening

The data (Table 1) revealed that majority of the respondents (63.33%) were found to be satisfied and 26.67 percent were highly satisfied with the mode of video screening whereas, 10 per cent of the respondents were found to be highly dissatisfied with the mode of video screening. In case of information in videos data observed that 53.17 percent respondents were found to be satisfied and 38.33 per cent of the respondents were highly satisfied. However, 11.90 per cent of respondents were found to be highly dissatisfied with the information in videos.

Language used

Further the results indicated that 53.34 per cent of the respondents were satisfied and 35.83 per cent were highly satisfied with the language used in videos. While, rest of the respondents were found to be highly dissatisfied with the language used in videos. Also, it was evident that majority of the respondents (60%) were satisfied and 22.50 percent were highly satisfied with the language used in the videos. However, 16.67 percent of respondents were found to be highly dissatisfied with the language used in the videos.

Duration of the videos

In case duration of the videos more than half of the respondents (56.67%) were found to be satisfied and 15 per cent highly satisfied whereas, 28.33 per cent of the respondents were highly dissatisfied with duration of video. Further, the results indicated that nearly half of the respondents were satisfied and 31.67 per cent were highly satisfied with the quality of videos. However, 17.50 per cent of the respondents were found highly dissatisfied with the quality of videos. Therefore, 57.50 % were satisfied with the intent of motivation in the video followed by

Table 2. Distribution of respondents according to overall satisfaction level regarding the informative videos.

Level of satisfaction	Experimental group (n=120)	
	Frequency	Percentage
Low (= 20)	27	22.50
Medium (21-28)	68	56.67
High (= 29)	25	20.83

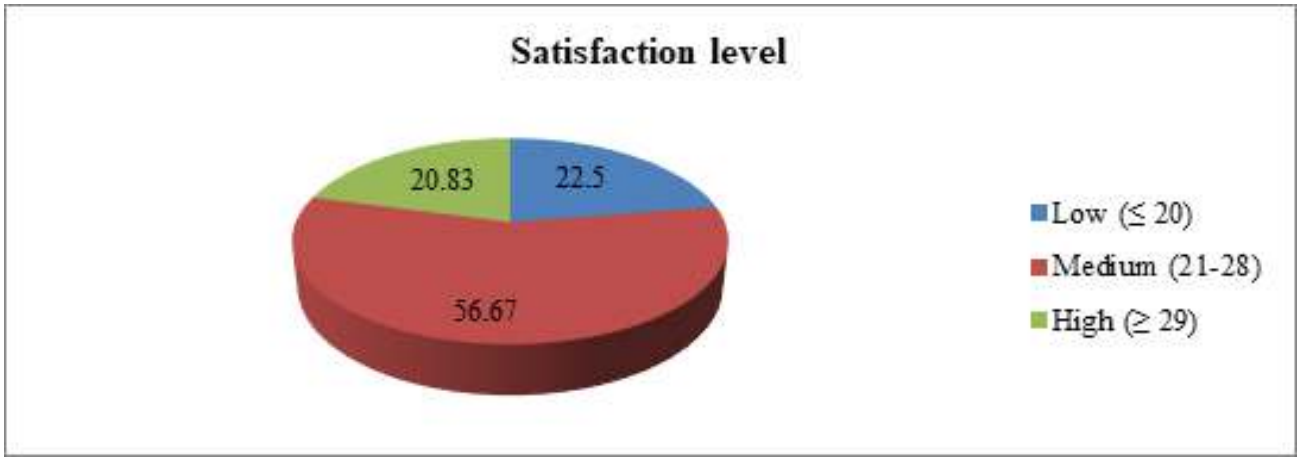

Figure 1: Graphical representation regarding level of farmers satisfaction on different aspect of informative videos

27.50 percent were highly satisfied and 15 per cent were highly dissatisfied with the intent of motivation in the videos.

Use of graphics

It was evident that 66.67 per cent of the respondents were found to be satisfied and 17.50 per cent were highly satisfied with the aspect graphics used while, 15.83 per cent of the respondents were highly dissatisfied with graphics used in videos. Thus, 60.83 per cent of the respondents were found to be satisfied and about 25 per cent were found to be highly satisfied with practicability of videos.

About, 14.17 per cent highly dissatisfied that the videos were having practicability. Moreover, about 62.50 per cent respondents were found satisfied with latest techniques in the videos followed by 20 per cent of the respondents were found to be highly satisfied. While, 17.50 per cent were highly dissatisfied with the latest techniques in videos.

Sound quality

The results indicated that 44.17 per cent of the respondents were found to be satisfied and 40 per cent were highly satisfied and 15.83 percent highly dissatisfied with the sound quality of videos. Finally, in case of completeness of message reveals that 68.83 per cent of the respondents were found to be satisfied and 19.17 per cent were highly satisfied with the completeness of message in the videos. However, 12.50 percent highly dissatisfied with the completeness of message in videos.

The data (Table 2) showed that 56.67 per cent of the respondents had high level of overall satisfaction regarding informative videos whereas, 22.5 per cent and 20.85 per cent of the respondents had medium and low level of satisfaction respectively. The results were in line with Kumar (2013) who revealed that most respondents were satisfied with the use of videos as a learning tool.

Relationship of socio-economic characteristics of the respondents and level of satisfaction regarding with different aspects of videos

Association of age with the satisfaction level of respondents towards videos

Table 3. Distribution of respondents according to the association of satisfaction level with the age and education of the respondent.

Level of satisfaction	Age			Total	Chi² test
	Young	Middle	Old		
Low	7(5.84)	13(10.83)	7(5.83)	27(22.50)	14.52*
Medium	16(13.33)	43(35.84)	9(7.50)	68(56.67)	
High	11(9.17)	5(4.16)	9(7.50)	25(20.83)	
Total	34(28.34)	61(50.83)	25(20.83)	120(100.0)	
	Education			**Total**	**Chi² test**
	Up to middle	**10 to 12**	**Graduation and above**		
Low	5(4.17)	7(5.83)	15(12.50)	27(22.50)	17.40*
Medium	14(11.67)	37(30.83)	17(14.17)	68(56.67)	
High	10(8.33)	4(3.34)	11(9.16)	25(20.83)	
Total	29(24.17)	48(40.00)	43(35.83)	120(100.0)	

* Significant at 0.05 level

Table 4. Distribution of respondents according association of satisfaction level with the operational land holding and mass media exposure.

Level of satisfaction	Operational land holding			Total	Chi² test
	Upto marginal	Medium	Larger		
Low	10(8.33)	15(12.50)	2(1.67)	27(22.50)	13.48*
Medium	16(13.34)	46(38.33)	6(5.00)	68(56.67)	
High	2(1.67)	15(12.50)	8(6.66)	25(20.83)	
Total	28(23.34)	76(63.33)	16(13.33)	120(100.0)	
	Mass media exposure			**Total**	**Chi² test**
	Low	**Medium**	**High**		
Low	7(5.83)	7(5.84)	13(10.83)	27(22.50)	19.17*
Medium	17(14.17)	39(32.50)	12(10.00)	68(56.67)	
High	11(9.17)	13(10.83)	1(0.83)	25(20.83)	
Total	35(29.17)	59(49.17)	26(21.66)	120(100.0)	

* Significant at 0.05 level

It was apparent that young age (22-38 yrs) category that 13.33 per cent of the respondents had medium, 9.17 per cent had high and 5.84 per cent had low level of satisfaction; whereas in case of middle age (39-54 yrs) group 35.84 per cent had medium, 10.83 per cent had low and 4.16 per cent had high level of satisfaction. In case of old age (55-70 yrs) group, 7.50 per cent had medium level satisfaction, 7.50 per cent with high and 5.83 per cent had low satisfaction in regards to informative videos.

It was determined that the chi-square value of 14.52 was significant at the 0.05 probability level. Thus, it can be said that there was a strong association between the respondents' age.

Association of education with the satisfaction level of respondents towards videos

It was apparent that among respondents with a middle level of education, 11.67% reported medium satisfaction, 8.33 percent reported poor satisfaction, and 4.17 per cent reported high

satisfaction with videos.; whereas in case of respondents having educational level between 10 to 12 about 30.83 per cent had medium, 5.83 per cent had low and 3.34 per cent had high level of satisfaction. Regarding the informative videos, 14.17 per cent of respondents with graduation or above expressed medium satisfaction, 12.5 per cent expressed strong satisfaction, and 9.16 percent expressed low satisfaction (Table 3). It was determined that the chi-square value of was 17.40 significant at the 0.05 probability level. Thus, it can be said that there was a strong association between the respondents' education.

It was evident (Table 4) that in marginal operational land holding category, 13.34 per cent of the respondents had medium satisfaction, 8.33 per cent low and 1.67 per cent had high satisfaction. Whereas, regarding the category of medium operational land holding, 38.33. per cent reported a medium extent of satisfaction, while 12.50 per cent reported a low and high level of satisfaction, respectively. Regarding the videos, 5.00 per cent of respondents had medium satisfaction, 6.66% had high satisfaction, and 1.67 percent had low satisfaction in the case of the large operational land holding group. It was determined that the chi-square value of was 13.48 significant at the 0.05 probability level. Thus, it can be said that there was a strong association between the respondents' operational land holding.

Association of mass media exposure with the satisfaction level of respondents towards videos

It was cleared (Table 4) that in low mass media exposure category, 14.17 per cent of the respondents had medium satisfaction level, 9.17 per cent had high and 5.83 per cent had high level of satisfaction, whereas in medium mass media exposure, 32.50 per cent had medium, 10.83 per cent had high and 5.84 high level of satisfaction towards the videos. In case high mass media exposure, 10.83 per cent had low satisfaction, 10 per cent had medium and 0.83 per cent had high satisfaction regarding the informative videos. It was determined that the chi-square value of was 19.17 significant at the 0.05 probability level. Thus, it can be said that there was a strong association between the respondents' mass media exposure.

CONCLUSION

Many organizations in Punjab had tried a variety of alternative strategies to reduce straw burning. The study was an attempt to provide and gather information regarding respondents' satisfaction with different aspects on quality informative videos. These findings will provide useful guidance to the University for designing effective informative videos and extension strategy for delivering the services to the farmers in better and efficient way. The videos have the potential to improve awareness, knowledge and technology adoption. It can be concluded that majority of the farmers were expressed satisfaction with mode of screening, graphics used, latest technologies and completion of message. Therefore, continuous efforts should be taken up by the extension agents to disseminate knowledge about recommended scientific farming practices by using information and communication technology tools such as video to educate farmers, maximize profit and improve livelihood.

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Received on 15/6/2024 Accepted on 14/8/2024