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## Factors influencing effectiveness of private extension service in sugarcane cultivation

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### Abstract

Agricultural extension is now recognized as an essential mechanism for transferring technologies and advice as an input into modern farming. Advancement of government policies and effectiveness of the extension methods play a major role in designing the extension approach to be followed in the transfer of technology. The function of agricultural extension remains the transfer of technologies through the combination of educational and communication methodologies and group technologies in promoting agriculture. In India number of extension agencies under various sectors like, government, quasi-government, private, NGO etc. were involved in the transfer of sugarcane technologies. This calls for the study of on various extension systems which are engaged in the transfer of sugarcane technologies. So, far no systematic study has been conducted in this area. Hence, it was felt very much necessary to study the relationship between characteristics of respondents and their perceived effectiveness of extension services. The study was undertaken to assess the attributes, perception, client satisfaction and effectiveness of transfer of sugarcane technologies and also to assess the constraints faced by the respondents in the transfer of sugarcane technologies. The study was carried out in 12 selected villages from six blocks of Cuddalore district. A total number of 240 farmers were selected as respondents using proportionate random sampling and they were the clients of both quasi-government and private extension agencies. Out of 240 respondents, 120 respondents were selected from the registered sugarcane farmers of M.R.K. Co-operative Sugar factory, Sethiathope and they were considered as the respondents of private extension agency. Out of fourteen characteristics considered for the study, three variables viz., educational status, scientific orientation and information source utilization had shown positive and significant association with the perceived effectiveness of private extension service at one per cent level of probability. The variables viz., experience in sugarcane cultivation, training received, extension agency contact and innovativeness also had significant association at five per cent level of probability.

**Keywords:** sugarcane, private extension, correlation and multiple regression

### Introduction

Agricultural extension is now recognized as an essential mechanism for delivering technologies and advice as an input into modern farming. When systematically and effectively provided extension is known to enhance not only agriculture but also social and economic development. Extension plays a major role in harvesting the full benefit of farm science research. The past experience of the extension system revealed that the communication of agricultural technologies was inefficient and ineffective leading to an increase in the gap between innovation in the lab and adoption in the field by the farmers. According to Gallagher (2002) <sup>[1]</sup> agricultural extension services in developing countries are currently facing difficulties in performing their role effectively and undertaking activities required for achieving agricultural growth and food security.

Sugarcane occupies a very important position among the major commercial crops in Indian agriculture and its economy. India by contributing 20.40 per cent area and 18.60 per cent production ranks second among sugarcane growing countries of the world in both area and production. Cane development is not getting greater attention of factory people, as the development of sugarcane in factory area is considered to be the function of government agency. The sugar factory staff mainly concerns themselves with the supply of cane to the sugar factory and gives little attention to cane development work. Sugarcane development agencies in any state follow a hierarchical pattern with the cane commissioner (or) his equivalent at the apex and the village level worker at the base. Success in transfer of technology (TOT) programmes depends largely on the working pattern of grass root level extension functionaries (Yadav *et al.*, 2005) <sup>[5]</sup>.

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## Research methodology

The study was undertaken to assess the association and contribution of the profile characteristics of farmer with perceived of the private with perceived effectiveness of transfer of sugarcane technologies of the private extension agencies on transfer of sugarcane technologies. The study was carried out in 12 selected villages from six blocks of Cuddalore district. A total number of 240 farmers were selected as respondents using proportionate random sampling and they were the clients of both quasi-government and private extension agencies. Out of 240 respondents, 120 respondents were selected from the registered sugarcane farmers of M.R.K. Co-operative Sugar factory, Sethiathope and they were considered as the respondents of private extension agency. Remaining 120 respondents were selected from the registered farmers of EID Pary (India) Pvt. Ltd.

Nellikuppam and they were considered as their respondents of private extension agency.

## Association and contribution of characteristics of respondents with the perceived effectiveness of private extension service in the transfer of technologies

This section gives the association and contribution of the characteristic variables with perceived effectiveness of private extension service. For studying the association and contribution of independent variables towards dependent variables, the statistical tools namely zero order correlation and multiple regression analysis were employed.

An attempt has been made with the specific objective to identify the association of characteristics of the respondents of private extension agency with the perceived effectiveness of extension service. The results are presented in Table 1.

**Table 1:** Zero order correlation between profile characteristics of the respondents and their perceived effectiveness of private extension service

Var. No.	Variables	'r' value	Standardized regression co-efficient	Standard error	't' value
X <sub>1</sub>	Age	0.126NS	0.462	0.350	1.320NS
X <sub>2</sub>	Educational status	0.272**	2.426	0.800	3.032**
X <sub>3</sub>	Occupational status	0.019NS	-1.412	1.201	-1.175NS
X <sub>4</sub>	Area under sugarcane	0.142NS	0.916	0.811	1.129NS
X <sub>5</sub>	Experience in sugarcane cultivation	0.212*	0.512	0.250	2.048*
X <sub>6</sub>	Training received	0.239*	0.890	0.450	1.977*
X <sub>7</sub>	Social participation	0.149NS	-2.116	1.612	-1.312NS
X <sub>8</sub>	Extension agency contact	0.201*	3.162	1.862	1.698*
X <sub>9</sub>	Mass media exposure	0.182NS	0.200	0.152	1.315NS
X <sub>10</sub>	Scientific orientation	0.261**	0.700	0.350	2.000*
X <sub>11</sub>	Management orientation	0.159NS	-0.816	0.700	-1.165NS
X <sub>12</sub>	Information source utilization	0.271**	4.082	1.501	2.719**
X <sub>13</sub>	Innovativeness	0.199*	1.192	0.518	2.301*
X <sub>14</sub>	Extension service commitment	0.139NS	1.168	0.916	1.275NS
R <sup>2</sup> = 0.652		F = 8.192**		a = 7.737	

\* - Significant at 0.05 level of per cent NS – Non-Significant

\*\* - Significant at 0.01 level of per cent

The results in Table 1, exhibited that out of fourteen characteristics considered for the study, three variables *viz.*, educational status (X<sub>2</sub>), scientific orientation (X<sub>10</sub>) and information source utilization (X<sub>12</sub>) had shown positive and significant association with the perceived effectiveness of private extension service at one per cent level of probability. The variables *viz.*, experience in sugarcane cultivation (X<sub>5</sub>), training received (X<sub>6</sub>), extension agency contact (X<sub>8</sub>) and innovativeness (X<sub>13</sub>) also had significant association at five per cent level of probability.

The correlation values for the rest of the seven variables showed non-significant association with the perceived effectiveness of private extension agency.

Educational status had shown positive and significant association at 0.01 per cent level of probability. Most of the respondents educated. It would helps to broaden one's mental horizon and to seek more information on farming activities. Thus, it may be stated that the individual with high degree of educational status would aspire for more information about new and existing technologies. This might be the possible reason for educational status to have positive relationship with the perceived effectiveness of extension service. This finding is in line with the findings of Jayasundar (2011) [4].

There was positive and significant association between experience in sugarcane cultivation and perceived effectiveness of extension service at 0.05 per cent level of probability. A majority of the farmers were having high level of experience in sugarcane cultivation. This might have

influenced them to realize effective technology transfer in sugarcane cultivation. It may be stated that more experience in sugarcane farming would have enhanced them to perceive the indicators of effectiveness of extension service in a better way. This finding is in conformity with the findings of Murugan (2004) [3].

There was positive influence of training received with the perceived effectiveness of extension service of private extension agency. To gain knowledge about a technology, one has to expose himself to different experience provided by training received. It helps to raise their perception towards identifying their needs. Hence, the training received would have shown positive and significant association at 0.05 per cent level of probability. This finding derives support from the findings of Kalidasan (2008) [2].

Extension agency contact had shown significant association at 0.05 per cent level of probability with perceived effectiveness of private extension service. It could be inferred that most of the respondents had medium to high level of extension agency contact with the flexible extension service. This would have helped the farmers towards identifying the indicators of effective extension service.

The positive and significant relationship of scientific orientation with the perceived effectiveness of private extension service at 0.01 per cent level of probability. This might be due to the fact that most of the respondents had high level of scientific orientation. This would also tend to create high level of perception towards the effectiveness of

extension service. This findings is in accordance with the finding of Jayasundar (2011) [4].

The positive and significant association of information seeking behaviour towards perceived effectiveness of private extension service at 0.01 per cent level of probability is understandable. As majority of the respondents had medium to high level of information seeking behaviour, their interest to obtain more information through various sources with regard to sugarcane technologies might may be the reason for the above relationship.

Innovativeness had showed a positive and significant association with the perceived effectiveness of private extension service at 0.05 per cent level of probability. This might be due to the fact that majority of the respondents were educated, had more experience in sugarcane cultivation and were with high level of scientific orientation. This would have resulted with increased innovativeness of the respondents in sugarcane cultivation. The innovativeness of farmers may influence their perception to identify the indicators on effectiveness of transfer of technologies. This result is in agreement with the findings of Murugan (2004) [3].

#### **Contribution of characteristics of respondents towards effectiveness of private extension service**

Multiple regression analysis was carried out between the characteristics of respondents of private extension service and their effectiveness of extension service.

The  $R^2$  value was 0.652 which implied that 65.20 per cent variation in the transfer of technologies of sugarcane cultivators was explained by the characteristics included in the study. Since the 't' value was significant at one per cent level of probability, the prediction equation was fitted for effectiveness of extension service. There existed a linear functional contribution between the characteristics of respondents and effectiveness of extension service.

$$Y = 7.732 + 0.462 (X_1) + 2.426 (X_2) - 1.412 (X_3) + 0.916 (X_4) + 0.512 (X_5) + 0.890 (X_6) - 2.116 (X_7) + 3.162 (X_8) + 0.200 (X_9) + 0.700 (X_{10}) - 0.816 (X_{11}) + 4.082 (X_{12}) + 1.192 (X_{13}) + 1.168 (X_{14})$$

It could be seen from the above equation, that the regression co-efficient of variables, viz., educational status, scientific orientation and information seeking behaviour was found to be positive and significant contribution towards the effectiveness of private extension service at 0.01 per cent level of probability. The remaining four variables had shown positive and significant contribution with effective extension service of private extension service at 0.05 per cent level of probability. They were experience in sugarcane cultivation, training received, extension agency contact and innovativeness.

It can be inferred that when all the variables were kept at constant level, a unit increase in educational status ( $X_2$ ), experience in sugarcane cultivation ( $X_5$ ), training received ( $X_6$ ), extension agency contact ( $X_8$ ), scientific orientation ( $X_{10}$ ), information seeking behaviour ( $X_{12}$ ) and innovativeness ( $X_{13}$ ) *ceteris paribus* would result respectively in an increase of 2.426, 0.512, 0.89, 3.162, 0.700, 4.082 and 1.192 units of transfer of sugarcane technologies. This meant that the respondents with more educational status, more experience in sugarcane cultivation, high level of training received, more extension agency contact, more information seeking behaviour, more scientific orientation and high level innovativeness would perform better and their transfer of technologies would also be better. This finding is in

accordance with that of Murugan (2004) [3].

The other seven variables did not show any significant effect on the effectiveness of extension service of private extension agency.

The results reject the null hypothesis that there existed no relationship in the characteristics of the respondents with effectiveness of extension services of quasi-government and private extension agencies as there existed significant relationship in the characteristics viz., educational status, experience in sugarcane cultivation, training received, extension agency contact, scientific orientation, information source utilization and innovativeness.

#### **Conclusion**

Age, occupational status, area under sugarcane, social participation mass media exposure, management orientation and extension service commitment are not show any significant effect on the effectiveness of extension service of private extension agency. The characteristics of respondents such as, educational status, experience in sugarcane cultivation, training received, extension agency contact, scientific orientation, information source utilization and innovativeness were found to be positively and significantly associated towards their perceived effectiveness of extension service of private extension agency. Therefore these factors must be taken care of in designing further programmes and the respondents having the above characters may be treated as contact persons and they may be involved more in the dissemination of technologies.

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