P-ISSN 2322 - 0678 & E-ISSN 3048 - 9946
https://doi.org/10.56572/gjoee.2024.38.2.0032 Gujarat Journal of Extension Education Vol. 38 : Issue 2 : December 24

A STUDY OF PROFILE CHARACTERISTICS OF SUGARCANE GROWERS ON THEIR CRISIS AWARENESS

Sanjay V. C.[1], Sabita Mondal[2] and P. N. Patel[3]

1 & 3 Ph. D. Scholar, Department of Agricultural Extension & Communication, N. M. College of Agriculture, Navsari Agricultural University, Navsari, Gujarat - 396450
2 Assistant Professor, Department of Agricultural Extension, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch behar, West Bengal - 736165
Email : sanjayvcappu@gmail.com

ABSTRACT

In light of the fact that sugarcane, despite playing a significant role in the agro economy of the country, facing a decline in both area and production as the crop is being affected highly due to various crisis like natural vagaries, low price, low sugar content etc in the recent past. Thus, it's important that sugarcane growers are well aware and leaned about these crises. The present study is done to find out the correlation and effect of various profile characteristics of the sugarcane growers with their crisis awareness, as profile characteristics of an individual are believed to have an impact on his awareness, perception etc using path analysis. The study was conducted in Mandya and Mysore districts of Karnataka, selected purposively. Two talukas from each district, two villages from each taluka and 15 farmers from each village were randomly selected. Randomly, 120 respondents were taken. Data was collected with structured interview schedule through personal interviews method. Path analysis was used as statistical tool to analyse the data. Software namely OPSTAT, MS Excel and SPSS were used to draw conclusion. The study revealed that the independent variables like annual income, scientific orientation and land holding of sugarcane growers were the key variables in exerting considerable direct, indirect and substantial effect on the dependent variable crisis awareness among the sugarcane growers. Annual income and scientific orientation are positively and significantly related with crisis awareness at one per cent significance level whereas age is positively significant with the crisis awareness at five per cent significance level.

Keywords *: awareness, crisis, direct effect, indirect effect, substantial effect, sugarcane cultivation*

INTRODUCTION

Sugarcane is a major crop grown across all the states in India, except hilly and desert terrains which supports food and bioenergy sector (Viswanathan, 2022). It provides employment to over a million people directly or indirectly besides contributing significantly to the national economy. India is the second leading producer of sugarcane in the world with an area of 5.8 Mha, production of 494.2 million tons and productivity of 84.48 tons/ha. In India, Karnataka stands third in area, production and productivity with an area of 694,000 ha area, and production of 62.4 million tons and Productivity of 90 tons/ha (Anonymous 2022-23).

Mandya and Mysore district are the two major sugarcane producing districts of southern region of Karnataka. Mandya district popularly known as 'Land of Sugar' due to its higher sugarcane production in Karnataka and is a prominent agricultural district where paddy and sugarcane are the major crops cultivated in irrigated region (Ashwini, 2009)

Sugarcane is affected by various crisis. India is witnessing various crisis like price crisis, floods, droughts, hikes in input cost, pest and disease outbreaks, severe usage of chemical fertilizers and prolonged irrigation has led to the decrease in cane yield (Chigadolli, 2022). High cost of farm inputs, shortage of labours, unavailability of plant protection appliances, lack of knowledge about disease control, fluctuation in the price, unavailability of inputs in time were the major constraints faced by sugarcane growers (Patel, A. G, 2014).

According to the second advance estimate of Agriculture Ministry, there is a possibility of production of 44.64 crore tonnes of sugarcane in the country in the year 2023-24 whereas in 2022-23, the production of sugarcane in the country was 49.05 crore tonnes. Thus, sugarcane production has declined by about 9 percent. In the year 2023-24, the area under sugarcane sowing in the country had decreased to 56.48 lakh hectares which was 58.85 lakh hectares in the previous year. The main reasons behind this are the reduction in the area under sugarcane sowing and the impact of weather and diseases on the crop.

The farming community has been impacted by varying levels of crisis, affecting them mentally, financially, and socially, as well as challenging their ability to cope. A stark reflection of these hardships is the higher incidence of farmer suicides, particularly in sugarcane-growing regions such as Belagavi and Mandya (Anonymous, 2019).

The major crisis affecting sugarcane production need to be tackled to minimise losses. Farmers must be aware of the major crises affecting sugarcane production (Sanjay et al., 2024, Chigadolli et al., 2022, Kumbhani et al., 2024). Awareness is the first crucial step, followed by knowledge about the crisis, which ultimately leads to effective crisis management to safeguard sugarcane production. It is important to understand the factors affecting the crisis awareness level among sugarcane growers both directly and indirectly. So, a study was conducted to find out the direct, indirect and substantial effects of the sugarcane growers' profile and their crisis awareness of Southern Karnataka using Path analysis.

OBJECTIVE

To study the correlation and effect of profile characteristics of the sugarcane growers on their crisis awareness using a path analysis.

METHODOLOGY

The present study was conducted in Mandya and Mysore District of Karnataka purposively as they are the prominent sugarcane producing districts in the southern Karnataka region. Ex-post facto research design was employed in the present investigation. Mandya and Maddur blocks in Mandya district and Nanjanagud and Narasipura blocks in Mysore district were randomly selected for the study. Two villages from each block and 15 farmers from each village with minimum five years of experience in sugarcane cultivation were randomly selected as respondents for the study making a sample size of 120 respondents. Blocks, villages and respondents are selected through multistage simple random sampling. Structured and pretested interview schedule was used for data collection. Data was collected through personal interviews, involving farm and home visits, conducted during the months of October 2022 to February 2023. In addition to primary data, secondary data for the study were gathered from reference books, research papers, journals, reports, postgraduate thesis etc related to sugarcane. OPSTAT, MS Excel and SPSS software were used for data entry and for data analysis and path analysis was used as statistical tools to draw conclusion

RESULTS AND DISCUSSION

Table 1: Contribution of profile characteristics of the sugarcane growers on their crisis awareness (n=120)

Sr. No.	Variables	Total Direct effect	Total indirect effect	Substantial indirect effect
X_1	**Age**	0.231*	0.206	0.076 (X_2)
X_2	**Farming experience**	0.157	0.191	0.113 ($X_{1)}$
X_3	**Formal Education**	-0.019	0.156	0.067 ($X_{5)}$
X_4	**Land Holding**	-0.054	0.101	0.115 (X_5)
X_5	**Annual income**	0.298**	0.083	0.047 (X_{11})
X_6	**Credit Support**	0.089	-0.047	0.013 (X_{12})
X_7	**Information seeking Behaviour**	0.108	0.112	0.066 (X_{11})
X_8	**Cosmopoliteness**	0.147	0.184	0.059 (X_{11})
X_9	**Social Participation**	0.034	-0.081	0.007 (X_5)
X_{10}	**Innovativeness**	0.053	0.169	0.041 (X_5)
X_{11}	**Scientific Orientation**	0.239**	0.210	0.058 (X_5)
X_{12}	**Farming Commitment**	-0.048	0.029	0.038 (X_5)
X_{13}	**Self Confidence**	0.002	-0.070	0.026 (X_{11})
X_{14}	**Deferred Gratification**	-0.034	0.105	0.043 (X_5)
X_{15}	**Perception towards crisis**	0.023	0.036	0.034 (X_{11})
X_{16}	**Attitude towards crisis**	0.089	0.114	0.038 (X_{11})
*5% significance level ** 1% significance level				

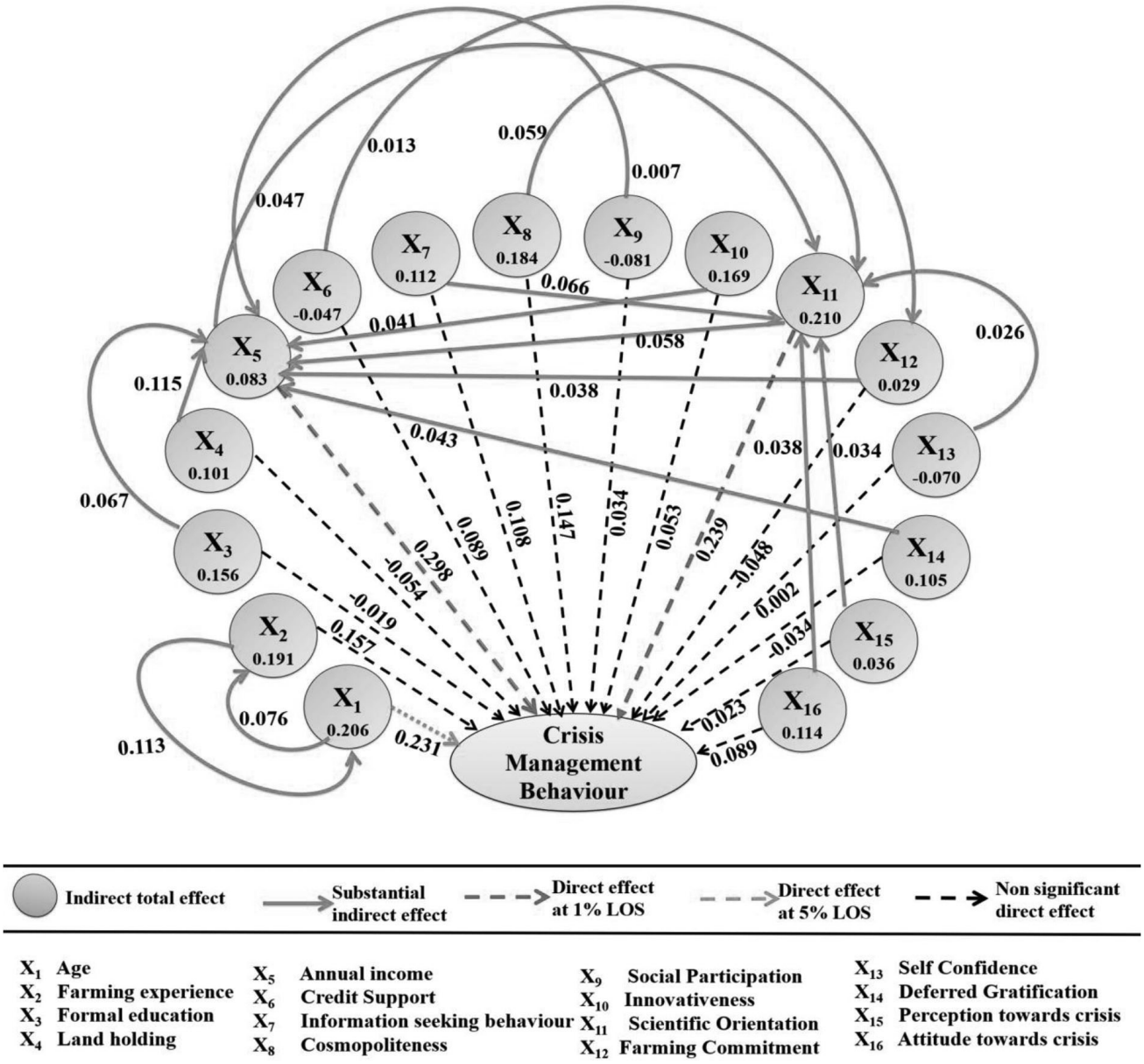

Fig. 1: Path analysis showing the direct indirect and substantial effect of profile of sugarcane growers with their crisis awareness

Direct effect

The data in Table 1 and fig1. revealed that out of sixteen independent variables twelve variables contributing the maximum direct positive effect and four variables contributing the maximum negative effect on crisis awareness. The annual income had exerted maximum direct positive effect (0.344) followed by scientific orientation (0.239), age (0.231), farming experience (0.157), cosmopoliteness (0.147), information seeking behaviour (0.108), credit support (0.089), attitude towards crisis (0.089), innovativeness (0.053), social participation (0.034), perception towards crisis (0.023) and self confidence (0.002). As far as negative direct effect is concerned land holding (-0.054) has exerted maximum negative effect, followed by farming commitment (-0.048), deferred gratification (-0.034), formal education (-0.019).

Scientific orientation and annual income are having positive significant with their crisis awareness at one percent significance level whereas age is positively significant with crisis awareness with five per cent significant level with the direct effect on the crisis awareness among the sugarcane growers. The findings are in line with the study of Vinaya et al. (2021).

Total indirect effect

So far, the total indirect effect is concerned, thirteen variables had a positive total indirect effect and three had a negative indirect effect on the crisis awareness among the sugarcane growers. Further, it can be observed that scientific orientation (0.211) has maximum indirect total positive effect followed by age (0.206), farming experience (0.191), cosmopoliteness (0.184), innovativeness (0.0.169), formal education (0.156), attitude towards crisis (0.114), information seeking behaviour (0.112), deferred gratification (0.105), land holding (0.101), annual income (0.083), perception towards crisis (0.036), farming commitment (0.029). Whereas, Social Participation (-0.081), self confidence (-0.070) and credit support (-0.047) had a negative total indirect effect on the crisis awareness.

Substantial indirect effect

It is revealed that out of 16 substantial indirect effects, seven routed through annual income, six each routed through scientific orientation, and one routed through farming experience, Farming Commitment and age on crisis awareness among sugarcane awareness. First substantial positive indirect effect on crisis management behaviour was put forth by land holding (0.115) of sugarcane farmers through annual income, followed by farming experience (0.113) through age, age (0.076) through farming experience, formal education (0.067) through annual income, information seeking behaviour (0.066) through scientific orientation, cosmopoliteness (0.059) through scientific orientation, scientific orientation (0.058) through annual income, annual income (0.047) through scientific orientation, deferred gratification (0.043) through annual income, innovativeness (0.041) through annual income, farming commitment (0.038) through annual income, attitude towards crisis (0.038) through scientific orientation, perception towards crisis (0.034) through scientific orientation, self confidence (0.026) through scientific orientation, credit support (0.013) through farming commitment and finally social participation (0.007) through annual income.

The path analysis reveals that certain variables have both direct and indirect influences on crisis awareness among sugarcane growers. Annual Income with a significant direct effect on crisis awareness, highlighting that wealthier farmers have better access to resources that increase their awareness. Scientific Orientation emphasizing both directly and indirectly, the importance of knowledge and a scientific approach in understanding and anticipating crises. Age and Farming Experience play crucial roles in determining crisis awareness with older and more experienced farmers generally being more aware of potential crises. Indirect effects through scientific orientation and age of the sugarcane growers are common across many variables, indicating their criticality in enhancing crisis awareness. Age, farming experience, annual income, farming commitment and scientific orientation are the variables having a substantial effect. The results indicated the need to enhance the scientific orientation and income-generating opportunities for farmers to improve their crisis preparedness and awareness.

CONCLUSION

Independent variables like annual income, scientific orientation and land holding of the sugarcane growers are found to be the key variables in exerting considerable direct, indirect and substantial effect on the crisis awareness among the sugarcane growers. Annual income and scientific orientation are positively and significantly correlated with crisis awareness at one per cent significance level. Whereas, age is positively and significant related with the crisis awareness at five per cent significance level. Based on the findings, it is understood that necessary steps to be taken for improving their income and scientific orientation, as these variables found to have the strongest direct and indirect effects on the crisis awareness of the sugarcane grower of the study area. Extension services from educational, research and extension wings, exposure visits should prioritize regular workshops, field demonstrations and use of mass media to showcase best practices in sustainable sugarcane farming, helping growers adopt more efficient methods. Collaborating with local institutions and experts can further ensure that farmers receive up-to-date information and practical solutions tailored to their specific challenges, boosting both their scientific knowledge and financial stability.

CONFLICT OF INTEREST

There is no conflict of interest among any authors regarding publication of the research paper in the journal as well as in the content.

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to all the members of the research advisory committee and department of Agricultural Extension, Uttar Banga Krishi Viswavidyalaya, Cooch Behar, for their invaluable contributions to this manuscript in shaping the content & improving the quality of our work and we would also thankful to the sugarcane growers of selected villages and local administration.

REFERENCES

Anonymous. (2019). Accidental deaths and suicides in India. NCRB Report of India.

Anonymous. (2023). 3rd advanced estimates. Directorate of Economics and Statistics, Ministry of Agriculture & Farmers' Welfare, New Delhi.

Ashwini. (2009). An analysis of progressiveness of farmers in rainfed and irrigated areas in Mandya district of Karnataka. M. Sc. (Agri.) Thesis, University of Agricultural Sciences, Bangalore

Chigadolli, M. (2022). Crisis management by sugarcane growers of northern Karnataka: An analysis. Ph. D. (Agri.) Thesis, University of Agricultural Sciences, Bangalore.

Chigadolli, Mutteppa, Shivalingaiah, Y. N. and Lalitha, B. S. (2022) A scale to quantify the crisis management behaviour of sugarcane growers. *Gujarat Journal of Extension Education,* 34(2):140-149. https://doi.org/10.56572/gjoee.2022.34.2.0030.

Kumbhani, S. R., Timbadia, C. K. and Bhuva, R. M. (2024) Scale to measure the perception of farmers and researchers about crop crisis and its management in crops. *Gujarat Journal of Extension Education,* 37(2):38-42. https://doi.org/10.56572/gjoee.2024.37.2.0007.

Patel, A. G., & Vyas, H. U. (2014). Constraints faced by sugarcane growers in adoption of improved technology. *Gujarat Journal of Extension Education*, 25(1), 114–115.

Sanjay, V. C., Mondal, Sabita and Hui, Chandan Kumar (2024) Crisis mitigation mechanism and training need of sugarcane growers- An empirical study. *Gujarat Journal of Extension Education,* 37(1): 152-156. https://doi.org/ 10.56572/gjoee.2024.37.1.0026.

Vinaya Kumar H. M., and Shivamurthy, M. (2021) Factor influencing fishery-based farmers' perception and their response to climate-induced crisis management. *Environ. Dev. Sustain.,* 23, 11766–11791. Springer, https://doi.org/10.1007/s10668-020-01141-x

Viswanathan, R. (2022). Emerging diseases of sugarcane and new disease management strategies. *Journal of Sugarcane Research*, 12, 1–15. https://doi.org/10.37580/JSR.2022.1.12.1-15

Received : October 2024 : Accepted : December 2024