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Personal, socio-economic and psychological characteristics of sugarcane growers in Vijayapura district of Karnataka

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Abstract

Agriculture stands as one of India's most pivotal economic sectors and it serves as the primary source of livelihood for nearly two-thirds of the country's population. Farming continues to play a big role in India's economy, even though its percentage in the total economic output has gone down. Farmers in India grow different types of crops like food crops, cash crops, and oilseeds. Among these, sugarcane is a crucial cash crop that is widely cultivated. In this backdrop, the present study was conducted in Vijayapura district of Karnataka in the year 2022-2023 A study was conducted to examine the personal, socio-economic, and psychological traits of 120 sugarcane growers using an ex-post facto research design. Data collection involved the utilization of a pre-tested personal interview method, followed by analysis using relevant statistical tools. The study revealed that, majorities of respondents were having middle age group (50.83%), one third of sugarcane growers were educated up to primary school, Majority of sugarcane growers were had medium level family size (77.50%), more than half (51.67%) and more than three fourth (79.16%) of the sugarcane growers belongs to medium annual income and nuclear family type category respectively, nearly two fifth (38.33%) of the sugarcane growers had more farming experience, majority of sugarcane growers had medium achievement motivation (44.16%), medium level of risk orientation (41.67%), medium economic motivation (31.66%), medium scientific orientation (40.83%), medium level of cosmopoliteness (37.50%), medium extension contact (45.83%), medium mass media exposure (40.83%) and significant number (37.50%) of sugarcane growers belonged to medium level of extension participation.

Keywords: Sugarcane growers, personal, socio-economic and psychological characteristics

Introduction

Sugarcane (*Saccharum officinarum*) belongs to family Gramineae (Poaceae) and is widely grown crop in India. The growth of the sugarcane industry in India could bring about great advantages to the economy, including foreign exchange savings, job creation, increased income, rural development and an enhanced standard of living for rural communities. Sugarcane is cultivated in more than 110 countries worldwide, including major producers like Brazil, India, China, Thailand, Mexico and Pakistan. Brazil is the world's largest producer of sugarcane, with an annual output of approximately 655 million tonnes, followed by India, China, Mexico and Thailand. India is the largest consumer and the second largest producer of sugar in the world and it occupies about 5.09 million hectares of area and produces 430.50 million metric tonnes with the productivity of 82.50 tonnes/hectare (Anonymous, 2021). Uttar Pradesh holds the leading position among sugarcane growing states in India, contributing to over 40% of the total cane area. Maharashtra follows closely, ranking second in cane area and taking the top spot in sugarcane production, while Karnataka, Tamil Nadu, and Bihar also play significant roles.

In India, Karnataka is third largest producer of sugarcane after Uttar Pradesh and Maharashtra. In Karnataka, sugarcane is grown in an area of 4.23 lakh hectares and the production is 420.9 lakh metric tonnes with the productivity of 96 tonnes/hectare. The major sugarcane growing districts are Belagavi, Bagalkot, Vijayapura, Mandya and Mysore (Anonymous, 2021). Karnataka benefits from favorable agro-climatic conditions and well-suited soils for sugarcane cultivation, supported by an abundance of perennial rivers along with infrastructure such as dams, reservoirs, bore wells, and open wells to provide water for cultivation.

Sugarcane is one of the important commercial crops being grown in Vijayapura district of Karnataka with an area of 38,920 hectares and the district has a sugarcane factory. It has a production of 4.32 lakh tonnes with the productivity of 79 tons/ha.

It is commonly observed that despite significant advancements in sugarcane research over the past few decades, many of the developed technologies remain confined to research stations and are not uniformly adopted by farmers. This lack of widespread adoption of available sugarcane technologies hampers the potential for increased production, resulting in lower yields and suboptimal economic performance for sugarcane growers, ultimately contributing to below-par average sugarcane yield and sugar recovery compared to the crop's inherent potential.

Materials and Methods

The study was conducted in Vijayapura district of Karnataka in 2023. It is one of the leading producers of sugarcane in Karnataka. sugarcane cultivation is being taken up in almost all the taluks of the district. *viz*., Vijayapura, Basavana Bagewadi, Indi, Muddebihal and Sindagi. Out of which two taluks *i.e.*, Indi and Sindagi taluks were purposefully selected for the study, From each taluk, three sugarcane growing potential villages were selected. Further, from each village, 20 sugarcane farmers were selected. Thus, the total sample size from these villages is 120. Ex-post facto research design was adopted. The data were collected by personal interview method through structured interview schedule of analysed by employing suitable statistical tools like arithmetic mean, standard deviation, frequencies & percentage. The findings were meaningfully interpreted and relevant conclusion were drawn.

Results and Discussion

Personal, socio-economic and psychological characteristics of sugarcane growers

Personal characteristics of sugarcane growers

Age: The data presented in Table1 shows that, half (50.83%) of the sugarcane growers comes under middle age category followed by young age (30.00%) and old age category (19.17%), respectively. This trend can be attributed to the fact that middle-aged sugarcane growers often have greater financial autonomy and the capacity to make independent decisions to implement their ideas. Middle-aged sugarcane growers tend to be more enthusiastic, physically robust, and efficient in their work compared to both older and younger growers. This finding was supported by the findings of Anil (2020).

Education

The data in Table 1 showed that, showed that, one third (36.66%) of sugarcane growers were educated up to primary school, followed by 33.33 percent, 20.84 percent and 5.84 percent of them had high school, PUC, Graduation and above level, respectively and only 3.33 percent of them were illiterate. The likely cause of limited access to higher education among sugarcane growers is attributed to their moderate annual family income and the absence of educational facilities within their nearby villages, necessitating travel to taluk headquarters for pursuing advanced studies. Illiteracy among this demographic may stem from factors such as disinterest, inadequate support from family members, and constrained economic circumstances. This investigation result is in line with the studies of Kumar *et al.* (2020) [8].

Family size: It was elucidated from Table 1 that, more than three-fourth (77.50%) of sugarcane growers had medium size family followed by large size (17.50%) and small size family (5.00%). A medium family size provides the flexibility to take calculated risks in development activities while encourage effective division of labor and the exchange of ideas. Larger families may struggle with resource allocation for investments, while smaller families may face limitations due to resource scarcity. Therefore, a medium sized family is seen as optimal for fostering growth. The findings support that of Anil (2020) [8].

Annual income: The data in Table 1 showed that, more than half (51.67%) of the sugarcane growers belonged to medium income category. Whereas, 28.33 percent and 20.00 percent falls under low and high income category, respectively. The probable reasons for this trend could include factors such as average productivity levels, the need to sell their produce immediately to obtain price, lower prices received for their agricultural products, and the presence of medium sized land holdings. The findings of this study were supported by the result of study conducted by Chavhan *et al.* (2018) [5].

Family type: It was found from Table 1 that, more than three fourth (79.16%) of sugarcane growers falls under nuclear family type and 20.84 percent of respondents are under joint family. This is due to transition of the majority of respondents from agrarian and rural societies to modern urban environments has played a significant role in the prevalence of nuclear families. The findings support that of Abhimanyu Godara (2019) [1].

Farming experience

It was found from table 1 that, nearly two fifth (38.33%) of the sugarcane growers belonged to more farming experience category followed by less farming experience (31.67%) and moderate farming experience category (30.00%). The observed trend can be attributed to the fact that sugarcane growers with more experience in sugarcane cultivation tend to have a better understanding and perception of the crop, enabling them to adopt improved practices more accurately and effectively. Their knowledge and familiarity with sugarcane farming contribute to their ability to make informed decisions and address challenges efficiently. These findings are supported by Khandre *et al.* (2020) [7].

Table 1: Personal characteristics of sugarcane growers (n=120)

Sl. No.	Characteristics	Category	Total n=120	
			No.	%
1.	Age	Young (< 35 years)	36	30.00
		Middle (35 to 50 years)	61	50.83
		Old (>50 years)	23	19.17
2.	Education	Illiterate	04	3.33
		Primary school	44	36.66
		High school	40	33.33
		PUC	25	20.84
		Graduation and above	07	5.84
3.	Family size	Small (1-3 members)	06	5.00
		Medium (4-6 members)	93	77.50
		Large (> 7 members)	21	17.50
4.	Annual income Mean= 361083 SD= 179775	Low (<271196)	34	28.33
		Medium (271196- 450971)	62	51.67
		High (> 450971)	24	20.00
5.	Family type	Nuclear	95	79.16
		Joint	25	20.84
6.	Farming experience Mean= 23.59 SD= 11.22	Less (<17.97)	38	31.67
		Moderate (17.97-29.20)	36	30.00
		More (>29.20)	46	38.33

Socio-economic and communication characteristics of sugarcane growers: Cosmopoliteness Table 2 indicated that, nearly two-fifth (37.50%) of sugarcane growers had medium cosmopoliteness followed by 32.50 percent , 30.00 percent had high and low market cosmopoliteness, respectively. Cosmopoliteness refers to the extent to which a farmer seeks information beyond their community. This is often attributed to their more favorable economic circumstances, which enable them to actively engage in extension activities such as tours, exhibitions, agricultural fairs, and similar events. Additionally, their increased social participation also contributes to their greater cosmopolitan orientation. The results were supported by the finding of Rajendra Prasad (2016) [9].

Extension contact From the Table 2, it could be seen that, more than two fifth (45.83%) of sugarcane growers were having medium level of extension contact, followed by low (28.33%) and high (25.84%) level of extension contact. This keen interest in extension activities plays a major role in enabling farmers to access up-to-date information about the latest innovations and technologies. Consequently, they can seek guidance from extension experts and subject matter specialists, which significantly enhances their knowledge and encourages the adoption of these practices. These findings are in accordance with the findings of Abhimanyu Godara (2019) [1].

Mass media exposure

It is found from Table 2 that, two fifth (40.83%) of sugarcane growers had medium level of mass media exposure, whereas 33.33 percent of respondents had high and low mass media exposure (25.84%). This is due to that, they heavily relied on mass media not only for news and information but also for entertainment and leisure and it is contributed to raising awareness levels among the farming population, facilitating access to the latest developments, which is indicative of the respondents' interest in staying informed. The results are in conformity with the findings of Dohre *et al.* (2019) [6].

Extension participation

It is clear from Table 2 that, significant number (37.50%) of sugarcane growers belonged to medium level of extension participation, followed by low (33.33%) and high (29.17%) level of extension participation, respectively. The above trend observed could be attributed to the respondents' enthusiasm in seeking solutions to their challenges through engagement with extension agents. Additionally, diminished interest in participating in extension activities due to time constraints may hinder their ability to access recent information and acquire practical knowledge about the utility of new technologies from extension workers. These findings are supported by Sajeev and Saroj (2014) [10].

Table 2: Socio-economic and communication characteristics of sugarcane growers, (n=120)

Sl. No.	Characteristics	Category	Total n=120	
			No.	%
1	Cosmopoliteness Mean= 4.99 SD = 1.01	Low (<4.48)	36	30.00
		Medium (4.48-5.49)	45	37.50
		High (>5.49)	39	32.50
2	Extension contact Mean= 5.74 SD = 1.74	Low (< 4.87)	34	28.33
		Medium (4.87-6.61)	55	45.83
		High (>6.61)	31	25.84
3	Mass media exposure Mean= 3.83 SD = 1.74	Low (<2.96)	31	25.84
		Medium (2.96-4.70)	49	40.83
		High (>4.70)	40	33.33
4	Extension participation Mean= 6.20 SD = 3.20	Low (<4.60)	40	33.33
		Medium (4.60-7.80)	45	37.50
		High (>7.80)	35	29.17

Psychological characteristics of sugarcane growers

Achievement motivation Table 3 indicated that, more than two fifth (44.16%) of sugarcane growers belonged to medium achievement motivation category followed by 32.50 percent and 23.34 percent of sugarcane growers comes under low and high achievement motivation category, respectively. variation in achievement motivation among sugarcane growers likely stems from psychological differences between individuals, influenced by organizational efforts among family members to reach shared goals. Those with lower levels of achievement motivation may be constrained by factors such as limited education, small land holdings, and challenging social and economic circumstances, hindering the development of a strong drive for achievement. These findings are supported by Rajendra Prasad (2016) [9].

Risk orientation

It is evident from the data reported in Table 3 that, more than two-fifth (41.67%) of the sugarcane growers had medium level of risk orientation, whereas 31.66 percent and 26.67 percent of the respondents had low and high level of risk orientation, respectively. The respondents' modest economic conditions, coupled with uncertainties surrounding both yield outcomes and market prices for their agricultural produce, likely contribute to their moderate level of risk orientation. The results of this investigation were in line with those of Shashidhar (2018) [13].

Economic motivation

Table 3 indicated that, nearly half (49.17%) of sugarcane growers had medium economic motivation followed by 31.66 percent, 19.17 percent had high and low economic motivation respectively. One possible reason for the high economic motivation among sugarcane growers is the substantial investment required in sugarcane cultivation, prompting a strong desire for increased profits. Sugarcane growers with high economic motivation tend to be more willing to take calculated risks and invest significant capital in their sugarcane cultivation, while addressing poor economic motivation could involve improving education, financial incentives from cooperatives and banks, and guidance from experienced fellow sugarcane growers. Which goes in hand with the results.

Scientific orientation It is apparent from Table 3 that, 40.83 percent of the sugarcane growers had medium scientific orientation followed by low (34.16%) and high (25.00%) scientific orientation, respectively. Possible reasons for respondents moderate scientific orientation include their higher education level, risk tolerance, farming experience, mass media participation, participation in extension programmes and extension contact. However, majority of the respondents did so with interest and good knowledge. Above things might have influenced their significant interest towards the scientific side of farming. The results of the current study are in conformity with those from Shanabhoga (2016) [12].

Table 3: Psychological characteristics of sugarcane growers, (n=120)

Sl. No.	Characteristics	Category	Total n=120	
			No.	%
1	Achievement motivation Mean= 10.15 SD= 1.94	Low (< 9.18)	37	30.83
		Medium (9.18-11.12)	55	45.84
		High (>11.12)	28	23.33
2	Risk orientation Mean= 3.90 SD= 0.85	Low (<3.48)	40	33.34
		Medium (3.48-4.33)	48	40.00
		High (>4.33)	32	26.66
3	Economic motivation Mean= 20.69 SD = 1.88	Low (<19.75)	32	26.66
		Medium (19.75-21.63)	60	50.00
		High (>21.63)	28	23.34
4	Scientific orientation Mean= 11.33 SD = 1.98	Low (<10.34)	41	34.16
		Medium (10.34-12.32)	49	40.83
		High (>12.32)	30	25.00

Conclusion

Understanding the distinct characteristics of sugarcane growers is crucial for informing agricultural policies and strategies. Tailoring interventions and support systems that consider the diverse backgrounds and motivations of these growers is essential. Knowledge about sugarcane cultivation and adoption of technological advancements are pivotal for enhancing crop production and ensuring the acceptability of innovative practices among farmers.

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