

Socio-Economic Status of Cotton Growers in Western zone of Punjab, India

ABSTRACT

Cotton is one of the major cash crops of western zone of Punjab. Multistage purposive cum random sampling technique was used for the selection of the study area. The present study on socio-economic status of cotton growers of Bathinda and Mansa districts of Punjab was carried on limited number of farmers in year 2023-24. The study was taken up in Maur and Mansa blocks from Bathinda and Mansa districts respectively with a sample size of 120 respondents. The farmers interviewed personally by a well-structured interview schedule. The data was coded, tabulated and analysed using suitable statistical tools. The profile of the cotton growers' reveals that majority of them were middle aged, educated up to high school and senior secondary, had 4 to 10 ha of land holdings, more area under cotton, more participation of women than men, more farming experience and had own implements of farming. The study may prove beneficial to the policy makers and stakeholders in decision making and agricultural development.

Keywords: cotton growers, western zone, Socio-economic status.

INTRODUCTION

Cotton (*Gossypium spp.*) is an important principal commercial fiber crop. It is one of the most leading and important cash crops in the Indian economy. It is the number one crop in natural fibre utilised by textile industries and plays a very vital role in international trade (Gohil GR, 2016). India produces 6.20 million metric tons (MT) of cotton, which accounts for 26 per cent of the total global production. The significance of cotton cultivation and the textile industry in India cannot be overstated, as they play a crucial role in the country's economic and social structure. With nearly 60 million people dependent on cotton-related activities, such as cultivation, marketing, processing, and exports, the sector is vital for livelihoods across various regions. India holds a unique position globally by cultivating not only the four main species of cotton but also their hybrids—both intra- and inter-specific—on a commercial scale, a feat that few other countries can match. The textile industry, which relies heavily on cotton as its primary raw material, contributes about 4 percent to India's GDP. This makes it the largest foreign exchange earner for the country, underscoring its pivotal role in the broader economic framework. The cotton sector, along with its textile processing and export components, creates significant value not only in terms of financial output but also in terms of employment, innovation, and regional development. India's position in the global cotton landscape is quite significant, both in terms of acreage and the diversity of cotton species cultivated. India holds the top position globally, with 124.69 lakh hectares (approximately 12.47 million hectares) under cotton cultivation. This constitutes about 39% of the world's total cotton area, which is 318.8 lakh hectares (or 31.88 million hectares). India's cotton sector is vital to both the domestic economy and global supply chains. Agriculture in Punjab remains the backbone of its economy, with approximately 75% of the state's population directly engaged in the sector. Cotton farming has emerged as a promising diversification option. In recent years, the Punjab

state has been exploring the cultivation of cotton as a means of diversifying its agricultural output. In 2023-24, 169,000 hectares were dedicated to cotton cultivation, primarily in the districts of Bathinda, Fazilka, Mansa, and Sri Muktsar Sahib. These districts dominate cotton production, with nearly 97-98% of the state's output coming from this region. Cotton has become one of India's leading fibre and cash crops and a significant contributor to India's agricultural and industrial economy. This provides with the cotton textile industry the raw material (cotton fibre). About 40-50 million people are employed in cotton manufacturing and trading and its processing. This vast workforce includes farmers who grow cotton, workers in the spinning and weaving mills, and those involved in the trade and export of cotton and cotton-based products. The cotton industry also contributes significantly to India's export economy, with cotton products such as garments and textiles being in high demand globally.

MATERIAL AND METHODS

Objectives of the Study

The several studies have been made so far mainly focusing on the socio-economic status of farmers, but a very few on evaluating the cotton growers. Considering the role of cotton crop in socio-economic development of the growers the present paper is an attempt to study the socio-economic status of cotton growers in Bathinda and Mansa districts of western zone of Punjab.

Period of study: The study was conducted for the Agricultural year 2023-24.

Research Methodology

The study was undertaken in the western zone of Punjab. Multistage purposive cum random sampling technique was followed for the selection of districts, Blocks and villages. At the first stage, Bathinda and Mansa districts were randomly selected from the five major cotton producing districts of western zone of Punjab based on the area and production. At the second stage of sampling, two blocks namely Maur and Mansa were randomly selected from the selected districts. In the third stage, four villages were randomly selected from each block that is Kamalu Swaich, Sandoha selected from Maur block whereas Gulabgarh and Dhinger were selected from Mansa block. At fourth stage, 60 cotton growers were selected from each selected district. A random sampling procedure was followed for the selection of the respondents and finally, a total sample of 120 cotton growers (60 respondents from each selected district) covering four villages, two blocks and two districts of Punjab state was selected for the study and then respondents were classified into three different size farm groups based on the area under cultivation.

- 1) Small farmers: 1-2 ha

- 2) Medium farmers: 4-10 ha
- 3) Large farmers: 10 ha or more

The data regarding socio-economic parameters were collected for the year 2023-24. For the purpose of study eight variables viz. age, education, family size, size of land holdings, farm implements, occupational pattern and farm experience taken into consideration which constituted the socio-economic profile of cotton growers. Cotton growers as respondents have been interviewed personally with the help structured collective questionnaire. Simple statistical tool like percentage was used for analysis and interpretation of data.

RESULTS AND DISCUSSION

Socio-economic status is a combined measurement of economic and social position of an individual or a group in relation to others in the society. It has a profound role in determining one's accessibility to the common resources, livelihood pattern, household food and nutritional security etc. It also guides the psychological and behavioral components of a sample viz. knowledge, attitude, perception, adoption, change-proneness, level of aspiration, risk bearing ability, economic motivation etc (Roy *et al.*, 2013).

Area under cotton

The data presented in Table 1 showed that majority (55.83%) of the respondents had medium area under cotton, whereas 41.67 per cent and 2.5 per cent respondents possessed small and large area under cotton, respectively. Similar findings were reported by Waghmare (2020). Majority of the respondents had medium area under cotton followed by small area this is due to the fact that cotton gives higher return.

Table 1: Distribution of cotton growers according to their area under cotton

Farm Category	Number of Farmers	Percentage
Small Farmers (1-2 ha)	50	41.67
Medium Farmers (4-10 ha)	67	55.83
Large Farmers (10 ha or more)	03	2.50
Total	120	100

Age Composition

The age composition of a population is a good indicator of the type of population under study. In the present study age composition of the respondent shown in table 2, which the majority of the cotton

growers 52.5 percent belongs to age group between 30-40 years followed by 38.34 percent growers belongs to age between 40-50 years and remaining 6.67 percent and 2.5 percent cotton growers were belonging age between 20-30 years and 50-60 years respectively. Thus, it may be concluded that the middle age generation is interested in cultivating cotton more than the younger and older generations and it is clear from table that there is major concentration of farmers in the productive age group, which is expected to influence on the supply of labour and enhance the earning capacity of the household and very keen to grow sugarcane crop. The results of this study are in line with the observations carried out by the findings of Gamanagatti *et al.* (2013).

Table 2: Age composition of cotton growers

(Number)

Age of head of family (years)	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
20-30	01 (6.25)	04 (9.52)	00 (00.00)	00 (0.00)	03 (12.00)	00 (0.00)	08 (6.67)
30-40	08 (50.00)	22 (52.38)	02 (100.00)	14 (41.17)	16 (64.00)	01 (100.00)	63 (52.5)
40-50	07 (43.75)	15 (35.71)	00 (0.00)	18 (52.94)	06 (24.00)	00 (0.00)	46 (38.34)
50-60	00 (0.00)	01 (2.38)	00 (0.00)	02 (5.88)	00 (0.00)	00 (0.00)	03 (2.5)
Total	16 (100.00)	42 (100.00)	2 (100.00)	34 (100.00)	25 (100.00)	01 (100.00)	120 (100.00)

Source: Field survey

Figures in the parenthesis are percentage to total.

Level of Education

Education is regarded as an important asset for an individual as it provide the key to the understanding of the society and equip the individual to assert his rights and to claim due share from others. Education not only improves level of awareness and knowledge but also changes attitude and values, modernizes and since economic benefits and social prestige are derived from formal education, a place of respectability is given to education (Kendre, 2011). Table 3 explain that educational status of sample respondents showed that majority of farmers are matric about 47.5 per cent, up to the higher secondary class were about 35.83 per cent and 6.67 per cent in middle class. The Majority of small and medium farmers possessed education up to matric and high secondary.

Table 3: Level of education of the respondents

(Number)

Education qualification	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Illiterate	01 (6.25)	01 (2.38)	00 (0.00)	01 (2.94)	01 (4.00)	00 (0.00)	04 (3.34)
Primary	00 (0.00)	00 (0.00)	00 (0.00)	03 (8.82)	00 (0.00)	00 (0.00)	03 (2.5)
Middle	00 (0.00)	04 (9.52)	00 (0.00)	03 (8.82)	01 (4.00)	00 (0.00)	08 (6.67)
Matric	10 (62.5)	21 (50.00)	02 (100.00)	14 (41.17)	10 (40.00)	00 (0.00)	57 (47.5)
Senior Secondary	04 (25.00)	15 (35.71)	00 (0.00)	13 (38.23)	10 (40.00)	01 (100.00)	43 (35.83)
Graduate	01 (6.25)	01 (2.38)	00 (0.00)	00 (0.00)	03 (12.00)	00 (0.00)	05 (4.167)
Total	16 (100.00)	42 (100.00)	02 (100.00)	34 (100.00)	25 (100.00)	01 (100.00)	120 (100.00)

Figures in the parenthesis are percentage to total.

Source: Field survey

Family Composition of Cotton Growers

Table 4 depicted the family composition in Bathinda and Mansa districts as per data obtained from villages by personal investigation. The table separates family composition into male, female, and children's categories. On an overall basis, the demographic trend followed in cotton cultivation depicted that females were sharing the major (37.99 %) followed by male (35.95%) and children (26.06). Understanding gender and age composition in the cotton cultivation sector is important for devising gender-specific and age-sensitive agricultural policies and labour drives. Such observations would help improve working conditions, productivity, and welfare programs in such regions. The results of the study regarding family composition are consistent with the findings reported by Gamanagatti *et al.* (2013).

Since women are typically assigned to work as daily wage workers on other farms, it is evident that many cotton growers are women about 39.99 per cent and males are about 35.95 per cent in all the farm categories in both districts.

Table 4: Family composition of cotton growers

(Number)

Family composition	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Male	38 (35.85)	100 (35.97)	03 (33.33)	82 (36.44)	55 (35.95)	02 (25.00)	280 (35.95)
Female	40 (37.74)	106 (38.13)	04 (44.45)	85 (37.78)	58 (37.90)	03 (37.5)	296 (37.99)
Children	28 (26.41)	72 (25.90)	02 (22.22)	58 (25.78)	40 (26.15)	03 (37.5)	203 (26.06)
total	106 (100.00)	278 (100.00)	09 (100.00)	225 (100.00)	153 (100.00)	08 (100.00)	779 (100.00)

Figures in the parenthesis are percentage to total.

Source: Field survey

Farming experience

Farming experience is an important factor in cotton production, thus determining the productivity and decision-making power of such farms. Their ability to adopt new practices depends on their experience, which enables them to perform better and manage related risks best. Table 5 examined how farming experience influences economic outcomes in the cotton sector concerning addressing effective practice that increases sustainability and profitability. Table 5 showed that the farming experience for the sampled cotton growers in two categories. The experience of different groups indicated that 75.84 per cent were having 11-20 years of farming experience and only 24.17 per cent of cotton growers were having an experience up to 10 years. The results in the table highlights the consistency and reliability to align the findings of the study closely with the results of Bedi *et al.* (2015).

Table 5: Distribution of respondents based on their Farming experience

(Number)

Farming experience (years)	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Up to 10 years	05 (31.25)	11 (26.19)	00 (0.00)	06 (17.64)	07 (28.00)	00 (0.00)	29 (24.17)
11-20 years	11 (68.75)	31 (73.81)	02 (100.00)	28 (82.35)	18 (72.00)	01 (100.00)	91 (75.84)
Total	16 (100.00)	42 (100.00)	02 (100.00)	34 (100.00)	25 (100.00)	01 (100.00)	120 (100.00)

Figures in the parenthesis are percentages of the total.

Source: Field survey

Occupational Pattern

All farmers are distributed in accordance with the subsidiary and a casual occupation since agriculture is main occupation. In every household, some of the members are involved full time in agriculture whereas others expense part time by practicing subsidiary and casual occupations as shown in the table 6. The data exhibited that majority of the majority of cotton growers were engaged in farming (85.71%) as the major source of income followed by Private employment (11.42%), while participation in horticulture (0.71%) was less than 1 percent. Dairy farming, government jobs, and business make up only 0.71 percent of each of the secondary occupations. Such findings revealed that the lead position of agriculture is the major sources of income contributing to people's livelihoods. The results of the occupational status of the study area are consistent with the findings reported by Avaldeep *et al.* (2022). It has been observed that the majority of cotton farmers (85.71%) engaged in farming in addition to jobs, which is followed by 11.42 per cent in private job and 0.71 per cent in govt. and self-employment job.

Table 6: Proportion of cotton growers according to the type of occupational pattern

(Number)

Occupation	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Primary occupation							
Crops	16 (88.89)	42 (91.30)	02 (66.67)	34 (80.95)	25 (83.34)	01 (100.00)	120 (85.71)
Horticulture	00 (0.00)	00 (0.00)	01 (33.33)	00 (0.00)	00 (0.00)	00 (0.00)	01 (0.71)
Dairy Farming	00 (0.00)	01 (2.17)	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)	01 (0.71)
Secondary occupation							
Private jobs	02 (11.11)	03 (6.53)	00 (0.00)	07 (16.67)	04 (13.33)	00 (0.00)	16 (11.42)
Govt. jobs	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)	01 (3.33)	00 (0.00)	01 (0.71)
Business	00 (0.00)	00 (0.00)	00 (0.00)	01 (2.38)	00 (0.00)	00 (0.00)	01 (0.71)
Total	18 (100.00)	46 (100.00)	03 (100.00)	42 (100.00)	30 (100.00)	01 (100.00)	140 (100.00)

Figures in the parenthesis are percentages of the total.

Source: Field survey

Cropping Pattern

The cropping pattern of the cotton grower is one of the important determinants of agricultural productivity, resource allocation, and, as such, overall economic viability. Table 7 revealed the existing cropping pattern of the sampled growers as well as the proportion of area under different crops. A proportionate share in the gross cropped area in the farm indicates the economic as well as social significance that the grower attributes to a particular crop. The seasonal choices of growers in the study area for crops are shown in Table 7. Paddy and wheat were the dominant cereal crops in the study area. Paddy is the prominent crop (82.39%) during the Kharif Season in Bathinda and Mansa whereas, Cotton is a minor (10.59%) constituent of the cropping pattern. In the Rabi season, wheat dominated with a high adoption rate (93.26%) in Bathinda and Mansa. The absence of other crops indicates this is a specialty crop mostly toward the staple crops by the growers in the region, and thereby, seasonality in crop preference holds all the more significance. The results presented in the table show the robustness of the results drawn by Sharma *et al.* 2022.

Table 7: Distribution of respondents according to cropping pattern

(in acre)

Crops	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Kharif season							
Cotton	2.25 (52.9)	1.64 (9.4)	1.5 (4.7)	1.5 (34.5)	1.68 (11.05)	02 (7.7)	1.76 (10.59)
Paddy	1.74 (40.9)	15.36 (88.3)	25.62 (78.84)	2.55 (58.62)	13.1 (86.18)	23.75 (91.34)	13.68 (82.39)
Fodder	0.25 (5.8)	0.16 (0.92)	0.125 (0.38)	0.07 (1.6)	0.2 (1.32)	00 (0.00)	0.134 (0.82)
Maize	0.016 (0.4)	0.24 (1.38)	0.25 (0.77)	0.23 (5.28)	0.22 (1.45)	0.25 (0.96)	0.201 (1.21)
Horticulture	00 (0.00)	00 (0.00)	05 (15.39)	00 (0.00)	00 (0.00)	00 (0.00)	0.83 (4.99)
Gross-Cropped Area	4.25 (100.00)	17.40 (100.00)	32.5 (100.00)	4.35 (100.00)	15.2 (100.00)	26 (100.00)	16.61 (100.00)
Rabi season							
Wheat	4.09 (96.23)	17.22 (98.97)	27.125 (83.46)	4.26 (97.9)	14.78 (97.23)	25.5 (98.00)	15.49 (93.26)

Crops	Bathinda			Mansa			Overall
	Small	Medium	Large	Small	Medium	Large	
Fodder	0.156 (3.77)	0.160 (0.92)	0.25 (0.77)	0.069 (1.6)	0.27 (1.77)	0.25 (0.96)	0.192 (1.15)
Vegetables	00 (0.00)	0.0208 (0.11)	0.125 (0.38)	0.022 (0.5)	0.15 (0.98)	0.25 (0.96)	0.094 (0.56)
Horticulture	00 (0.00)	00 (0.00)	05 (15.38)	00 (0.00)	00 (0.00)	00 (0.00)	0.83 (5.0))
Gross-cropped Area	4.25 (100.00)	17.40 (100.00)	32.5 (100.00)	4.35 (100.00)	15.2 (100.00)	26 (100.00)	16.61 (100.00)
Net Sown Area	2.1	8.7	16.25	2.17	7.6	13	8.3
Cropping Intensity	200.00	200.00	200.00	200.00	200.00	200.00	200.00

Source: Field Survey

Figures in the parenthesis indicate the percentage of the gross cropped area.

Operational Landholding

Table 8 revealed the distribution of total land and land under cotton cultivation across different farms small, medium, and large in the Bathinda and Mansa districts of Punjab. In Bathinda, small farms accounted for 4.25 acres (7.85% of total land), with 2.25 hectares (41.74%) under cotton, while medium farms covered 17.40 hectares (32.13%), with 1.64 hectares (30.43%) under cotton. The large farms under Bathinda district had 32.5 hectares (60.02%), of which 1.5 hectares (27.83%) are under cotton whereas in Mansa, small farms occupied 4.35 hectares (9.55%), with 1.5 hectares (28.96%) under cotton, medium farms hold 15.2 hectares (33.37%) with 1.68 hectares (32.43%) under cotton, and large farms cover 26 hectares (57.08%), of which 2 hectares (38.61%) are under cotton. This data highlights the variation in cotton cultivation across different farms of both districts. The results in table show a strong agreement with the findings of Bedi *et al.* (2015), highlighting the reliability of the methodologies used.

Table 8: Distribution of respondents according to their operational landholding

(in Acres)

Particulars	Bathinda		Mansa	
	Total land	Under cotton	Total land	Under cotton
Small	4.25 (7.85)	2.25 (41.74)	4.35 (9.55)	1.5 (28.96)
Medium	17.40 (32.13)	1.64 (30.43)	15.2 (33.37)	1.68 (32.43)
Large	32.5	1.5	26	02

	(60.02)	(27.83)	(57.08)	(38.61)
Total	54.15 (100.00)	5.39 (100.00)	45.55 (100.00)	5.18 (100.00)

Source: Field survey

Figures in the parenthesis are percentages of the total.

Availability of Farm implements

It is evident from table 9 regarding ownership of various farm assets/machinery amongst growers of different farms is represented on average basis and it is evident from table that the farm assets value of growers in Bathinda was recorded maximum ₹7,96,664 whereas ₹6,15,949 value of assets was recorded in Mansa district. The results in table closely correspond to the study of Sharma (2018) validating the consistency of the methodologies applied and highlights their broader relevance.

Table 9: Availability of Farm implements

(Rs/farm/annum)

Implements/Machinery	No. of growers having implements/machines	Initial value (Average) (₹)	Present value (₹)
Bathinda			
Tractor	55	5,59,313.5	94,841.5
Electric motor	55	1,13,194.5	15,244.41
Power sprayer	48	35,581.74	6,984.45
Disc harrow	48	17,093.69	4,373.72
Storeroom	51	40,642.86	6,567.94
Seed drill	52	30,837.5	30,244.97
Total	309	7,96,664	1,58,257
Mansa			
Tractor	52	3,91,514.5	63,534.5
Electric motor	52	72,826.5	7,822.5
Power sprayer	52	36,142.29	7,651.605
Disc harrow	52	2,8411.5	4,834.46
Storeroom	46	40,654.29	16,708.23
Seed drill	51	46,400	18,061.46
Total	305	6,15,949	1,18,612.5

Source: Field survey

CONCLUSIONS

Based on the above discussion, it can be concluded that farmers across all categories, particularly those under the age of between 30-40 years, exhibit a strong inclination towards cultivating cotton on their fields. The majority of these farmers have an educational background up to Matriculation or Senior Secondary levels. Regarding landholding sizes, most farmers belong to the marginal and small

categories, while large farmers own a relatively larger area of land. The presence of agricultural implements is notably higher among large and medium farmers, while small farmers are more dependent on manual labour. Notably, a large proportion of cotton growers are women, who oversee relatively extensive areas dedicated to cotton cultivation. Their considerable experience in cotton farming is a major factor that enhances their expertise and effectiveness in the field. In terms of subsidiary and casual occupations, marginal and small farmers primarily engage in agricultural labour, whereas large farmers are involved in business activities. These findings suggest that the current agricultural structure of the area is heavily reliant on cotton cultivation. The insights from this study are valuable for the agricultural extension system, as they can guide the redesign of strategies for transferring cotton-related technologies. Such strategies should focus on improving production practices, increasing productivity, addressing marketing challenges, and enhancing the socio-economic status of cotton growers. Additionally, it is crucial to encourage marginal and small farmers to diversify their farming practices by introducing high-value, low-volume crops like medicinal and aromatic plants, as well as promoting alternative livelihoods such as dairy farming, fisheries, poultry farming, and bee-keeping. These initiatives would help improve the income and sustainability of farmers in the study area, especially considering their poor purchasing power. The data reveals the socioeconomic status of the cotton growers of central zone of Punjab which will further help policy makers and other stakeholders in decision making and agricultural and rural development.

FUTURE SCOPE

The result found in this study will help the policy makers in taking appropriate decisions for farmers and increasing their socio-economic status.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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