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Socio-economic status of tomato growers in Madurai district of Tamil Nadu

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Abstract

Tomato is one of the most important vegetable crops grown in Tamil Nadu and forms a major source of livelihood for small and marginal farmers in Madurai district. Since the way a farmer manages his crop, takes decisions and adopts new practices is closely linked to his socio-economic background, the present study was undertaken to assess the socio-economic status of tomato growers in Madurai district of Tamil Nadu. A total of 90 respondents were selected from six villages spread across two blocks, namely Thirupparankundram and Chellampatti, following a purposive and simple random sampling procedure. Data were collected through personal interviews with the help of a pre-tested structured schedule and were analysed using frequency, percentage, mean and standard deviation. The findings revealed that a majority of the tomato growers (70.00%) belonged to the middle age group, had studied up to secondary level (23.33%) and combined farming with livestock rearing (72.22%). Most of them were small farmers holding up to two hectares of land (51.11%) and had a medium level of farming and tomato cultivation experience. Overall, 66.67 per cent of the respondents fell under the medium socio-economic status category, with a mean score of 87.61. These findings can guide extension functionaries and policy makers in Madurai district while planning farmer-oriented interventions for tomato growers.

Keywords: Tomato growers, socio-economic status, Madurai district, landholding, extension contact, Tamil Nadu

1. Introduction

Vegetables have always held an important place in the Indian diet because of the vitamins, minerals and other protective nutrients they provide. Even though India grows more than a hundred different kinds of vegetables and ranks among the leading producers in the world, the average Indian still eats far less than the recommended quantity and this gap is made worse by post-harvest losses of nearly 30 to 40 per cent (Rashmi, 2018) ^[12]. Among the vegetables grown widely across the country, tomato occupies a special place because it gives good returns within a short crop duration and adapts well to a wide range of soil and climate conditions (Pandey *et al.*, 2020) ^[11].

Tomato is botanically a fruit but is treated as a vegetable in almost every kitchen. It is often called the “King of Vegetables” and also the “Poor Man’s Orange”, owing to its affordability and rich nutritional value (Rashmi, 2018) ^[12]. Besides being consumed fresh, a considerable share of the tomato produced goes into ketchup, sauces, purees and other

processed items, which keeps the food processing sector dependent on a steady raw material supply. India is presently the second largest producer of tomato in the world after China, contributing about 11 to 12 per cent of global production from roughly 0.79 million hectares (Government of India, 2024) ^[7]. Even so, less than one per cent of the tomato grown in the country is processed, leaving considerable scope to reduce post-harvest losses and improve value addition.

Within Tamil Nadu, tomato is cultivated across several districts, and Madurai is counted among the important ones. During 2023-24, Tamil Nadu produced about 1,169.23 thousand tonnes of tomato from 38,850 hectares, contributing nearly 5.4 per cent of the country's total production, with Madurai figuring among the leading tomato-growing districts of the state along with Krishnagiri, Namakkal, Dharmapuri, Dindigul, Theni and Tiruppur (Department of Horticulture and Plantation Crops, Tamil Nadu, 2024) ^[5]. Agriculture continues to be the backbone of the rural economy in Madurai

district, and tomato cultivation contributes meaningfully to household income here.

A farmer's ability to manage his crop, adopt improved practices or take sound decisions about marketing is closely tied to his socio-economic background, that is, his age, education, occupation, landholding, income and the extent of contact he maintains with extension personnel and other sources of information. Unless this background is properly understood, it becomes difficult for extension agencies to design programmes that genuinely work for farmers on the ground. Similar socio-economic assessments among vegetable and tomato growers have been reported earlier by Sangavi *et al.* (2020) ^[13] in Madurai district itself, and by Gayathri and Sahana (2022) ^[6], Khan *et al.* (2020) ^[8] and Sherpa *et al.* (2023) ^[14] in other parts of the country, all of which point to the value of studying the farmer's profile before planning any extension intervention. Keeping this in view, the present study was carried out with the objective of assessing the socio-economic status of tomato growers in Madurai district of Tamil Nadu.

2. Materials and Methods

The study was conducted in Madurai district of Tamil Nadu, which was purposively selected because of its considerable area under tomato cultivation and a sizeable population of tomato growers. Out of the thirteen blocks in the district, Thirupparankundram and Chellampatti blocks were purposively selected as they have a larger area under tomato and comparatively higher productivity than other blocks. Three villages were then selected from each block, taking the total to six villages, namely Vadapalanji, Thenpalanji and Karadipatti from Thirupparankundram block, and Kannanur, Pannian and Karumathur from Chellampatti block.

A list of tomato growers was prepared for each of the six villages with the help of local horticultural officials, village representatives and progressive farmers. From this list, 15 growers were selected at random from each village, giving a total sample size of 90 respondents for the study.

Since the study aimed to examine the existing situation of farmers without manipulating any variable, an ex-post facto research design was adopted. Data were gathered through personal interviews with the help of a structured interview schedule, which was pre-tested and finalised after a pilot study and consultation with subject matter experts.

Eleven socio-economic characteristics of the respondents were considered for the study, namely age, education, occupation, farming experience, experience in tomato cultivation, landholding, extension contact, social participation, farm equipment possession, mass media exposure, market orientation and annual income. Standard scales developed by earlier researchers, such as Supe (2007) for education, Nirban (2004, 2007) for mass media exposure and extension contact, Pandya (2010) for social participation and annual income, and Samanta (1977) for market orientation, were used with suitable modification, along with the landholding classification given by the Government of India (2011).

The data collected were analysed using frequency, percentage, arithmetic mean and standard deviation. Based on the mean and standard deviation of the total score obtained by each respondent, the growers were classified into low, medium and high categories of overall socio-economic

status.

3. Results and Discussion

The socio-economic profile of the tomato growers was studied because it has a direct bearing on their farming decisions, adoption behaviour and marketing pattern. The profile covers personal, social and economic characteristics such as age, education, occupation, landholding and income. The findings relating to each of these characteristics are presented and discussed below.

3.1 Age

Table 1: Distribution of tomato growers according to age (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Young age group (18-30 years)	8	8.89
2.	Middle age group (31-60 years)	63	70.00
3.	Old age group (61 years and above)	19	21.11
Total		90	100.00

Table 1 shows that a majority of the respondents (70.00%) belonged to the middle age group of 31 to 60 years, followed by 21.11 per cent in the old age group and 8.89 per cent in the young age group. This indicates that most of the tomato growers in the study area are in their most active and productive years, with enough physical strength and accumulated experience to handle the demands of tomato cultivation. A similar age distribution was reported by Sangavi *et al.* (2020) ^[13] among tomato growers of Madurai district and by Maurya *et al.* (2017) ^[10] among vegetable growers of western Uttar Pradesh.

3.2 Education

Table 2: Distribution of respondents according to educational status (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Illiterate	19	21.11
2.	Primary	20	22.22
3.	Secondary education	21	23.33
4.	Higher secondary education	13	14.44
5.	Graduate and above	17	18.89
Total		90	100.00

Table 2 shows that a majority of the respondents was fairly spread across categories, with 23.33 per cent having completed secondary education, followed closely by 22.22 per cent with primary level education. About 21.11 per cent of the growers were illiterate, while 18.89 per cent had studied up to graduation and above. This mixed educational background suggests that while a sizeable section of growers can read and understand written material on improved practices, a considerable proportion still depends on oral communication and personal contact with extension staff for new information. Similar findings were reported by Khan *et al.* (2020) ^[8] and Gayathri and Sahana (2022) ^[6] among vegetable growers.

3.3 Occupational status

Table 3: Distribution of respondents according to occupational status (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Only farming	11	12.22
2.	Farming + Livestock rearing	65	72.22
3.	Farming + Agricultural labour	1	1.11
4.	Farming + Skilled occupation	1	1.11
5.	Farming + Business	4	4.44
6.	Farming + Government service	3	3.33
7.	Farming + Private service	5	5.56
Total		90	100.00

Table 3 shows that the large majority of the respondents (72.22%) combined tomato farming with livestock rearing, while only 12.22 per cent depended on farming alone. A small proportion combined farming with private service (5.56%), business (4.44%), government service (3.33%), or agricultural labour and skilled work (1.11% each). Keeping

livestock alongside tomato cultivation is a common practice in the study area, as it provides a steady side income and helps cushion the effect of price fluctuations that are common in tomato marketing. A comparable pattern of subsidiary occupation was observed by Anokye-Alexander *et al.* (2025)^[2] among tomato farmers in Ghana.

3.4 Farming experience and experience in tomato cultivation

Table 4: Distribution of respondents according to farming experience (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Low (up to 20 years)	24	26.67
2.	Medium (21-40 years)	48	53.33
3.	High (above 40 years)	18	20.00
Total		90	100.00

Table 5: Distribution of respondents according to experience in tomato cultivation (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Low (up to 20 years)	28	31.11
2.	Medium (21-40 years)	45	50.00
3.	High (above 40 years)	17	18.89
Total		90	100.00

Table 4,5 shows that more than half of the respondents (53.33%) had a medium level of overall farming experience of 21 to 40 years, and a similar trend was seen for experience specifically in tomato cultivation, where 50.00 per cent fell in the medium category. Long years of practice in farming

and in tomato cultivation in particular allow growers to build up practical knowledge about pest and disease management, timing of operations and handling of price fluctuations, which is reflected in their steady involvement with the crop over the years.

3.5 Landholding

Table 6: Distribution of respondents according to landholding (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Marginal farmer (less than 1 ha)	33	36.67
2.	Small farmer (up to 2 ha)	46	51.11
3.	Medium farmer (2-4 ha)	10	11.11
4.	Large farmer (above 4 ha)	1	1.11
Total		90	100.00

Table 6 shows that over half of the respondents (51.11%) were small farmers holding up to two hectares of land, and another 36.67 per cent were marginal farmers with less than one hectare. Only 11.11 per cent were medium farmers and just 1.11 per cent held more than four hectares. This dominance of small and marginal holdings mirrors the

general land fragmentation pattern seen across Tamil Nadu, where average farm sizes continue to shrink with each generation, a trend also noted by Verma *et al.* (2019)^[16] among vegetable growers in western Uttar Pradesh.

3.6 Extension contact

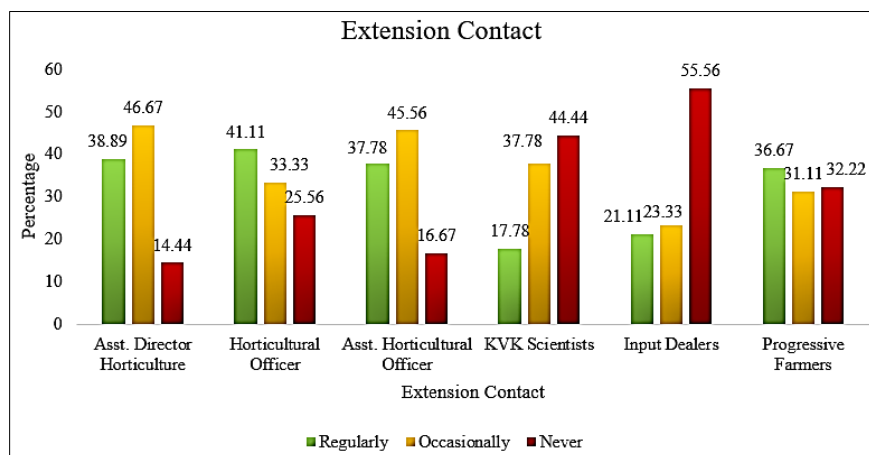


Fig 1: Distribution of respondents according to their extension contact

Figure 1 shows that among the sources of extension contact, the Horticultural Officer was the source most regularly contacted (41.11%), followed by the Assistant Director of Horticulture (38.89%) and Assistant Horticultural Officer (37.78%). On the other hand, a majority of respondents had never contacted input dealers (55.56%) or KVK scientists

(44.44%) for technical guidance. This shows that the growers rely mainly on line department officials for regular technical support, while contact with research institutions and input dealers remains limited, an area that extension planners could look into for strengthening farmer outreach.

3.7 Social participation

Table 7: Distribution of respondents according to social participation (n=90)

S. No.	Particulars	Frequency	Percentage
1.	No social participation	22	24.44
2.	Poor social participation (member in one organisation)	64	71.11
3.	Moderate social participation (member in more than one organisation)	3	3.33
4.	Good social participation (office bearer/leader)	1	1.11
Total		90	100.00

Table 7 shows that majority of the respondents (71.11%) fell under the poor social participation category, being a member of only one organisation, generally a cooperative society or farmers' association, while another 24.44 per cent had no social participation at all. Very few growers held any

leadership position. This low level of participation in social and farmer organisations may limit their exposure to collective bargaining, group marketing and shared learning opportunities that active organisational membership usually provides.

3.8 Farm equipment possession

Table 8: Distribution of respondents according to farm equipment possession (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Hand tools	90	100.00
2.	Harvesting crates	88	97.78
3.	Sprayer	87	96.67
4.	Irrigation pump set	78	86.67
5.	Power tiller	16	17.78
6.	Tractor	15	16.67
7.	Rotavator	15	16.67
8.	Ridger/Ridge planter	11	12.22
9.	Power weeder	10	11.11
10.	Drip irrigation	2	2.22
11.	Mulching equipment	1	1.11

Table 8 shows that the basic tools such as hand tools (100.00%), harvesting crates (97.78%) and sprayers (96.67%) were possessed by nearly all the respondents, and most also had an irrigation pump set (86.67%). However, ownership of higher-end equipment such as drip irrigation (2.22%) and mulching equipment (1.11%) was extremely

limited. This clearly points to a low level of mechanisation and modern input use among tomato growers in the study area, which is understandable given that a majority of them are small and marginal farmers with limited investment capacity.

3.9 Mass media exposure

Table 9: Distribution of respondents according to mass media exposure - regular use (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Television	77	85.56
2.	Newspaper	45	50.00
3.	YouTube	22	24.44
4.	Internet	18	20.00
5.	Social media	11	12.22
6.	Radio	1	1.11

3.10 Market orientation

Table 10: Distribution of respondents according to market orientation - 'Strongly Agree' response (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Cultivates tomato mainly for market sale	89	98.89
2.	Collects market price information before selling	81	90.00
3.	Profit motive guides tomato cultivation (Agree)	78	86.67
4.	Delays/advances harvest based on market price (Agree)	68	75.56
5.	Market demand influences cultivation decision (Agree)	53	58.89
6.	Prefers selling where better price is offered (Agree)	33	36.67
7.	Uses mobile/WhatsApp/media for price information (Agree)	54	60.00

Table 10 shows that almost all the respondents (98.89%) strongly agreed that they grow tomato mainly for market sale, and 90.00 per cent strongly agreed that they collect price information before selling. A large share also agreed that profit motive (86.67%) and prevailing market prices (75.56%) influence their cultivation and harvesting decisions. Interestingly, only 36.67 per cent agreed that they actually prefer to sell wherever a better price is offered, suggesting that despite being market-oriented in outlook, many growers continue to sell at the nearest or most convenient market rather than actively searching for better prices, possibly due to the perishable nature of the crop and limited transport options.

3.11 Annual income

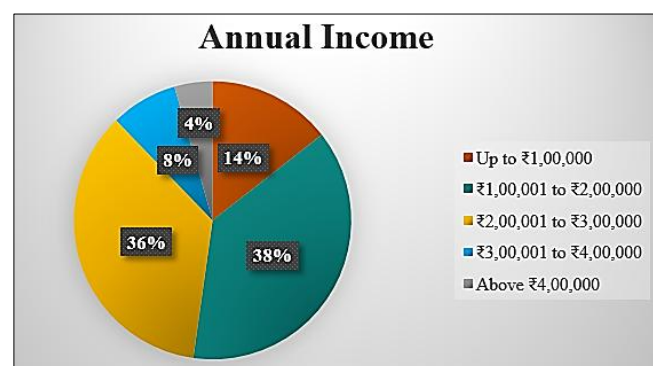


Fig 2: Distribution of respondents according to their annual income

Figure 2 shows that little over a second of the respondents (37.78%) reported an annual income between ₹1,00,001 and ₹2,00,000, closely followed by (35.56%) earning between ₹2,00,001 and ₹3,00,000. Only 4.44 per cent of the growers earned above ₹4,00,000 annually. Given that most respondents are small and marginal farmers, these income levels are broadly consistent with the landholding pattern

Table 9 shows that television was regularly used source of information (85.56%), followed by newspapers (50.00%). Among the newer digital sources, YouTube was used regularly by 24.44 per cent of the respondents, while radio was almost unused (1.11%). Television and newspapers continue to be the mainstay of information flow to tomato growers in the district, though the moderate uptake of YouTube and internet suggests that digital platforms are gradually finding a place among the younger and more educated sections of the farming community.

observed earlier and reflect the modest but steady earning capacity that tomato cultivation provides to households in the district.

3.12 Overall socio-economic status

Table 11: Distribution of respondents according to overall socio-economic status (n=90)

S. No.	Particulars	Frequency	Percentage
1.	Low (79 and below)	15	16.67
2.	Medium (80-95)	60	66.67
3.	High (95 and above)	15	16.67
Total		90	100.00

Mean = 87.61, Standard Deviation = 8.317

Taking all the socio-economic characteristics together, two-thirds of the respondents (66.67%) fell under the medium socio-economic status category, while low and high categories accounted for 16.67 per cent each. With a mean score of 87.61 and a standard deviation of 8.317, the results indicate that tomato growers in Madurai district generally occupy a moderate socio-economic position, shaped by their small landholdings, mixed educational background and dependence on farming combined with livestock rearing. This finding is in line with Sangavi *et al.* (2020) ^[13], who reported a similar medium socio-economic status among tomato growers of the same district, and with Basyal *et al.* (2019) ^[3] and Makka *et al.* (2023) ^[9], who observed comparable trends among tomato farmers elsewhere.

4. Conclusion

The present study on the socio-economic status of tomato growers in Madurai district of Tamil Nadu shows that most of the growers are middle-aged, moderately educated and combine tomato cultivation with livestock rearing as a subsidiary occupation. Small and marginal landholdings dominate the area, and while growers show a clear market-oriented outlook, their participation in farmer organisations

and use of modern equipment such as drip irrigation remain limited. Television and personal contact with horticulture officials continue to be the main channels of information for these farmers. With two-thirds of the growers falling in the medium socio-economic status category, there is a need for extension agencies to strengthen farmer group activities, promote wider adoption of water-saving and labour-saving equipment, and improve access to timely market information, particularly through mobile-based platforms. Such targeted interventions can help raise the socio-economic status of tomato growers and improve the overall efficiency of tomato cultivation and marketing in the district.

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