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# Relationship between the Profile of sweet orange growers with their extent of technological gap

## Hiwarale AS, Manvar VS, Kadam RP, Hadolikar SB and Gohade GR

**Abstract**
The present study was conducted on "Technological gap in adoption of recommended cultivation practices of Sweet orange growers" to find out the relationship between profile of sweet orange growers with extent of technological gap in adoption of recommended cultivation practices. The present study was purposively conducted in Jalna district of Marathwada region in 2021-22. The study was conducted in purposively selected Jalna, Ghansawangi and Ambad taluka. The sample constituted 120 sweet orange growers from 12 villages. Ex-post facto research design was used for present study. Data from the respondents were collected by personally interviewing with the help of structured and pretested interview schedule. Collected data were classified, tabulated and analyzed by using statistical methods or tools like frequency, percentage, mean, standard deviation and correlation of coefficient. Among the 120 selected sweet orange grower's majority i.e., more than half (67.50%) of sweet orange growers have medium farming experience, 37.50 per cent of the sweet orange growers were educated up to Secondary school level. It was reported that, less than half of the sweet orange growers 41.67 per cent possessed semi medium category of land holding. The findings also indicated that 80.83 per cent possessed small size of orchard up to 2 ha. Maximum percentage of sweet orange growers i.e., 79.17 per cent belonging to medium annual income Category, 55.83 per cent of the sweet orange growers belonged to medium extension contact category. It is revealed that 61.67 per cent of the sweet orange growers had medium level of sources of information. Majority i.e., 65.83 per cent of the sweet orange growers were having medium level of risk orientation. More than half of the sweet orange growers 63.33 per cent belong to medium social participation category. More than half i.e., 60.83 per cent of the sweet orange xiv growers had medium level market orientation. The results of correlation of coefficient (r) showed that the independent variable namely farming experience of sweet orange growers was positively and significant relationship with technological gap in adoption of recommended cultivation practices of sweet orange. Variables like education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation, social participation and market orientation has negatively and significant relationship with technological gap in adoption of recommended sweet cultivation practices of sweet orange.

**Keywords:** Technological gap, adoption, recommended cultivation practices, sweet orange

## Introduction

Citrus is one of the important fruit crops cultivated across the globe. Citrus fruit appeared on globe 7 million years ago. There seems to be evidence that citrus fruits were cultivated as early as 2200 BC in China. Sweet orange (*Citrus sinensis*) belongs to the plant family Rutaceae, sub family Aurantiodeae, which comprises 33 well known genera and 203 species. 78 species of family Rutaceae have their roots in Indian natives. Among the fruits, sweet orange serves as most refreshing, delicious and health promoting juicy fruit and hence it deserves a prominent place in daily diet. Sweet orange is also referred to as tight skin oranges and constitute major share of citrus production in India. Sweet orange (*Citrus sinensis* Osbeek) is considered as second important citrus species after mandarin orange in India and it shares 25% of production among all the citrus cultivars. Mandarins (*Citrus reticulata* Blanco) are the largest commercial citrus group in India with 43 per cent share, followed by sweet orange (*Citrus sinensis* Osbeck) 25 per cent, acid lime (*Citrus aurantifolia* Swingle), lemons (*Citrus limon*) 25 per cent share and others sharing 7 per cent. The major sweet orange producing states of India are Andhra Pradesh, Maharashtra, Karnataka, Punjab and Rajasthan. (Source: QRT report, ICAR-CCRI, Nagpur). Andhra Pradesh, and Maharashtra have the largest share. Maharashtra has area of 54,878 thousand hectare (or around 55,000 ha) with production 4068.38 thousand metric tons. In Marathwada region the total sweet orange area is 40,267 thousand hectares, out of which Aurangabad having highest area under sweet orange crop i.e. 21,475 thousand ha and

Jalna ranks second in area of sweet orange crop i.e. 14,342 thousand ha (Source: HAPIS). As per latest data the area of sweet orange in Jalna is 20,150 ha and production are 48,755 metric tons in 2021-22 (Source: DSAO, Jalna). Therefore, the present study is carried out to know the technological gap in adoption of recommended sweet orange cultivation practices with the following objectives.

**Specific objectives of the study**
1. To study the profile of sweet orange grower.
2. To find out the relationship between profile of sweet orange growers with extent of technological gap in adoption of recommended cultivation practices.

**Materials and Methods**
The present study was undertaken in Marathwada region of Maharashtra state during the year 2021-22 in Jalna district was selected purposively from Marathwada region, three talukas namely Jalna, Ghansawangi and Ambad were selected purposively and four villages from each taluka were selected randomly for the study. From each selected village, ten sweet orange growers were selected purposively, in this way total 120 respondents were considered for the study. An Ex-post-facto research design was followed for the study. Data was collected by personally interviewing the sweet orange growers. The collected data was analyzed, classified and tabulated. Statistical tools such as frequency, percentage, mean, standard deviation, and coefficient correlation were used to interpret findings and draw conclusions.

**Results and Discussion**
**1) Profile of Sweet orange grower**
**Distribution of sweet orange growers according to their socio-economic characteristics**

**Table 1:** Distribution of sweet orange growers according to their socio economic characteristics (N=120)

| Sr. No. | Characteristics | Frequency | Percentage |
|---|---|---|---|
| 1 | **Farming Experience** | | |
| i | Low (up to 5 years) | 21 | 17.50 |
| ii | Medium (6 to 12 years) | 81 | 67.50 |
| iii | High (above 13 years) | 18 | 15.00 |
| 2 | **Education** | | |
| i | Illiterate | 10 | 08.33 |
| ii | Primary school (1-4 Std.) | 14 | 11.67 |
| iii | Secondary school (5-10 std.) | 45 | 37.50 |
| iv | Higher secondary (11 & 12 std.) | 35 | 29.17 |
| v | Graduate and more | 16 | 13.33 |
| 3 | **Land Holding** | | |
| i | Marginal (Up to 1.00 ha) | 11 | 09.17 |
| ii | Small (1.01 to 2.00 ha) | 36 | 30.00 |
| iii | Semi-medium (2.01 to 4.00 ha) | 50 | 41.67 |
| iv | Medium (4.01 to 10.00 ha) | 16 | 13.33 |
| v | Large (above 10.01 ha) | 7 | 05.83 |
| 4 | **Orchard size** | | |
| i | Small (up to 2 ha) | 97 | 80.83 |
| ii | Medium (2.01 to 4 ha) | 21 | 17.50 |
| iii | Large (above 4.01 ha) | 2 | 1.67 |
| 5 | **Annual Income** | | |
| i | Low (Up to Rs.215652) | 11 | 09.17 |
| ii | Medium (Rs. 215653 to Rs. 415847) | 95 | 79.17 |
| iii | High (Rs. 415848 & above) | 14 | 11.67 |
| 6 | **Extension Contact** | | |
| i | Low (up to 20) | 29 | 24.17 |
| ii | Medium (21 to 32) | 67 | 55.83 |
| iii | High (33 & above) | 24 | 20.00 |
| 7 | **Sources of Information** | | |
| i | Low (up to 15) | 27 | 22.50 |
| ii | Medium (16 to 27) | 74 | 61.67 |
| iii | High (28 & above) | 19 | 15.83 |
| 8 | **Risk Orientation** | | |
| i | Low (up to 17) | 20 | 16.67 |
| ii | Medium (18 to 24) | 79 | 65.83 |
| iii | High (25 & above) | 21 | 17.50 |
| 9 | **Social Participation** | | |
| i | Low (up to 9) | 27 | 22.50 |
| ii | Medium (10 to 15) | 76 | 63.33 |
| iii | High (16 & above) | 17 | 14.17 |
| 10 | **Market Orientation** | | |
| i | Low (up to 17) | 22 | 18.33 |
| ii | Medium (18 to 23) | 73 | 60.83 |
| iii | High (24 & above) | 25 | 20.83 |

**The data pertaining to Table 1 depicts socio-economic characteristics of sweet orange grower as following**

1. **Farming experience:** It was found that majority i.e., more than half (67.50%) of sweet orange growers have medium farming experience, followed by 15.00 per cent had high and remaining 17.50 per cent of the sweet orange growers having low experience in farming. The above findings were in accordance with Chavan (2016) [2].

2. **Education:** It was observed that majority 37.50 per cent of the sweet orange growers were educated up to Secondary school level category, while 29.17 per cent sweet orange growers were educated up to higher school level. Primary school level education was availed by 11.67 per cent of the sweet orange growers followed by 13.33 per cent of the sweet orange growers was educated up to Graduate college level. Whereas, 8.33 per cent of the sweet orange growers were Illiterate. Similar findings were reported by Chavan (2014) [1].

3. **Land holding:** It was reported that 41.67 per cent of the sweet orange growers possessed semi-medium category of land holding, followed by 30.00 per cent were belonged to small category, 13.33 per cent were belonged to medium category, 9.17 per cent were from marginal and 5.83 per cent of sweet orange growers belonged to large category of land holding. The findings of the present study are similar with Chavan (2016) [2].

4. **Orchard size:** Majority of the sweet orange growers 80.83 per cent possessed small size of orchard upto 2 ha. whereas, 17.50 per cent sweet orange growers were having medium size of orchard i.e., 2.01 to 4 ha followed by only 1.67 per cent of the sweet orange growers were possessed large size of orchard i.e. above 4.01 ha under cultivation of Sweet orange crop. Similar result was found by Vithalkar (2021).

5. **Annual income:** It was observed that, maximum percentage of sweet orange growers 79.16 per of sweet orange growers are in medium annual income category (Rs.215653 to Rs.415847). While 9.17 per cent of the sweet orange growers were from low annual income category (upto Rs.215652), whereas, 11.67 per cent had high annual income category (Rs.415848 and above). This finding is similar to the finding of Pawar (2015) [4].

6. **Extension contact:** It was depicted that, majority of the sweet orange growers 55.83 per cent belonged to medium extension contact category while 20.00 per cent and 24.17 per cent of the sweet orange growers belonged to high and low extension contact category, respectively. The findings favours the findings of Chavan (2014) [1].

7. **Sources of information:** It is revealed that, 61.67 per cent of the sweet orange growers had medium level of sources of information while 22.50 per cent and 15.83 per cent of them uses low and high level of sources of information, respectively. The findings of the study are similar to the findings of Chavan (2014) [1].

8. **Risk orientation:** It was noticed that, majority of sweet orange growers 65.83 per cent having medium level of risk orientation while 16.67 per cent who were under low category of risk orientation whereas, 17.50 per cent sweet orange growers were under high category. The findings are similar to the findings of Kadam (2016) [3].

9. **Social participation:** More than half 63.33 per cent of the sweet orange growers had belonging to medium social participation category while 22.50 per cent of the sweet orange growers had low social participation and 14.17 per cent of them had high social participation. This finding is similar to findings of Pawar (2015) [4].

10. **Market orientation:** It was found that, majority of the sweet orange growers 60.83 per cent had medium level of market orientation followed by 18.33 per cent in low market orientation category followed by 20.83 per cent had high market orientation of the Sweet orange growers. This result is supported by findings of Chavan (2014) [1].

**2) Coefficient of correlation between the profiles of sweet orange grower with their extent of technological gap in sweet orange cultivation**

**Table 2:** Relationship between Profile of Sweet orange growers with extent of technological gap of recommended Sweet orange cultivation practices (N=120)

| Sr. No. | Independent Variable | Correlation |
|---------|---------------------|-------------|
| 1 | Farming experience | 0.199* |
| 2 | Education | -0.286** |
| 3 | Land Holding | -0.205* |
| 4 | Orchard Size | -0.232* |
| 5 | Annual income | -0.221* |
| 6 | Extension Contact | -0.262** |
| 7 | Sources of Information | -0.415** |
| 8 | Risk Orientation | -0.319** |
| 9 | Social Participation | -0.391** |
| 10 | Market Orientation | -0.384** |

\*\*Significant at 0.01 per cent level
\*Significant at 0.05 per cent level

It is observed from Table 2 that, the results of correlation coefficient (r) showed that the independent variable namely farming experience of sweet orange growers was positively and significant relationship with extent of technological gap of Sweet Orange cultivation practices. This finding is supported by Chavan (2014) [1]. While education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation, social participation and market orientation had negative and significant relationship with extent of technological gap of sweet orange cultivation practices, respectively. These findings supported by Chavan (2014) [1] and Rane (2019) [5].

**Conclusion**
Result indicated that majority i.e., more than half (67.50%) of sweet orange growers have medium farming experience, 37.50 per cent of the sweet orange growers were educated up to Secondary school level. It was reported that, less than half of the sweet orange growers 41.67 per cent possessed semi medium category of land holding. The findings also indicated that 80.83 per cent possessed small size of orchard up to 2 ha. Maximum percentage of sweet orange growers i.e., 79.17 per cent belonging to medium annual income Category, 55.83 per cent of the sweet orange growers belonged to medium extension contact category. It is revealed that 61.67 per cent of the sweet orange growers had medium level of sources of information. Majority i.e., 65.83 per cent of the sweet orange growers were having medium level of risk orientation. More than half of the sweet orange growers 63.33 per cent belong to medium social participation category. More than half i.e., 60.83 per cent of the sweet orange growers had medium level market orientation. Data further concluded that, the results of correlation coefficient (r) showed that the independent

variable namely farming experience of Sweet orange growers was positively and significant relationship with extent of technological gap of Sweet Orange cultivation practices. While education, land holding, orchard size, annual income, extension contact, sources of information, risk orientation, social participation and market orientation had negative and significant relationship with extent of technological gap of Sweet Orange cultivation practices, respectively.

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