



Determinants of Socio-Economic Well-being among Mango Farming Households: A Micro-level Study in Selected CD Blocks of Murshidabad District, West Bengal

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Abstract

Mango cultivation plays an important role in rural livelihoods in the Murshidabad district of West Bengal. However, the socio-economic well-being of mango farming households varies depending on several structural and institutional factors. The purpose of this study is to investigate the micro-level determinants of socio-economic well-being (SEW) among households that grow mangoes. A structured questionnaire survey was used to gather primary data from 107 mango growers. A composite SEW index was constructed to classify households into different well-being categories.

The variables influencing SEW were identified using descriptive statistics and multiple regression analysis. The findings show that the socioeconomic well-being of mango farmers is highly influenced by landholding size, household head education, farming experience, credit availability, and adoption of better farming practices. The results indicate that increasing farmers' access to credit, encouraging contemporary farming methods, and expanding opportunities for education and training can greatly raise the standard of living for households engaged in mango farming.

Keywords: Socio-economic well-being, Mango farming, Landholding size, Credit access, Agricultural practices

1. Introduction

India's rural economy heavily relies on horticulture, especially in states like West Bengal where a sizable section of the populace makes their living from farming. Mango, known as the "King of fruits" is most important tropical and sub-tropical fruits of the world (Saha & Bhowmik, 2020). Mango is one of the most significant fruits grown in the Murshidabad district among other horticultural crops. The district is well-known for its superior mango varieties such as Langra, Himsagar, Amrapali, Fazli, Gopalbhog etc, which boost the incomes of local farmers. The socioeconomic situations of mango producing households differ significantly, despite the significance of mango cultivation. A number of factors, such as landholding size, education level, farming experience, access to institutional credit, and adoption of improved farming technologies, can have a significant impact on farmers' overall well-being and productivity. Designing policies to enhance farmers' livelihoods and advance sustainable agricultural development requires an understanding of these determinants. Prior research has shown that development farmers' socioeconomic conditions are largely dependent on their ability to obtain credit, adaptation better farming methods, and develop their human capital. However, only a small number of micro-level studies have specifically looked at the factors that influence socioeconomic well-being among households that grow mangoes in the Murshidabad district. Therefore, this study aims to analyze the socio-economic characteristics of mango farmers and identify the major factors influencing their socio-economic well-being.

2. Objectives of the study

- i. To evaluate the socio-economic characteristics of mango farming households in the study area.
- ii. To find out the key determinants influencing the socio-economic well-being of mango farmers.

3. Methodology

3.1 Study Area

The study was conducted in Murshidabad-Jiaganj and Nabagram block (Figure 1) of Murshidabad district, West Bengal. The Murshidabad-Jiaganj is semi urban type and on the other hand Nabagram is rural in nature. Murshidabad-Jiaganj falls within the Bagri region and Nabagram is a part of Rarh region. This two CD block is well known for its different varieties of Mango production. Therefore this region is most suitable for analyzing SEW of Mango producers.



Figure 1: location map of the study area. (Source: prepared by the author)

3.2 Data Collection and Sampling

Primary data was collected from mango-growing households from the two CD block name Murshidabad-Jiaganj and Nabagram using a structured questionnaire survey. 107 farmers from the mango-growing villages of those CD blocks were selected using a simple random sampling technique. The questionnaire asked about landholding size, household head's level of education, farming experience, credit availability, adoption of improved farming practices, and socioeconomic conditions.

3.3 Variable Synopsis

To investigate the factors influencing socioeconomic well-being among mango farmers, a number of explanatory variables were taken into consideration based on previous research and field observations. The size of the landholding, the level of education attained by the household head, farming experience, the availability of credit, and the adoption of improved farming practices are some of these factors.

Table 1: an explanation of the study's variables

Variable	Measurement/Unit
Landholding size	Acre
Education level of household head	0 = Illiterate, 1 = Primary, 2 = Secondary, 3 = Higher secondary & above
Farming experience	Years
Access to credit	1 = Yes, 0 = No
Adoption of improved farming practices	1 = Yes, 0 = No
Socio-Economic Well-being (SEW)	Index (0–1)

3.4 Socio-Economic Well-being (SEW) Index

The socio-economic well-being index was developed by combining certain socio-economic indicators. The index values between 0 and 1 were normalized using standard normalization techniques. Based on the calculated SEW scores, households were classified as low, medium, or high well-being.

3.5 Analytical Method

Descriptive statistics were used to summarize the characteristics of the respondents. The factors affecting socioeconomic well-being were also identified using multiple regression analysis.

4. Results and Discussion

4.1 Socio-economic Characteristics of Respondents

Analyzing farmers' well-being and decision-making behavior requires an understanding of their socioeconomic traits. The distribution of respondents based on specific socioeconomic factors is shown in Table 2.

Table 2: socio-economic characteristics of mango farming households (n=107) (data source: field survey)

Variable	Category	Number of Farmers	Percentage (%)
Landholding Size (acre)	< 1 acre	29	27.1
	1 – 3 acres	48	44.9
	> 3 acres	30	28
Education Level of Household Head	Illiterate	21	19.6
	Primary	32	29.9
	Secondary	34	31.8
	Higher Secondary & Above	20	18.7
Farming Experience (years)	< 10 years	24	22.4
	10 – 20 years	46	43
	> 20 years	37	34.6
Access to Credit	Yes	44	41.1
	No	63	58.9
Adoption of Improved Farming Practices	Yes	58	54.2
	No	49	45.8

Table 2 gives a simple picture of the background of the 107 mango farmers in the study area. It shows that most farmers have small or medium sized land, so farming is mostly done on a smaller scale. In terms of education, many farmers have studied up to primary or secondary level, though some have little or no schooling. A good number of farmers have been farming for many years, which helps them handle their work better. However, access to credit is still a problem for many farmers. On the positive side, more than half of the farmers are using improved farming practices.

4.2 Descriptive Statistics

An overview of the distribution of the variables used in the analysis is given by descriptive statistics.

Table 3: descriptive statistics of variables (n=107) [source: author's calculation]

Variable	Minimum	Maximum	Mean	Std. Deviation
Landholding size (acre)	0.5	6.8	2.38	1.47
Education level	0	3	1.49	1.02
Farming experience (years)	4	35	18.62	8.21
Access to credit	0	1	0.41	0.49
Adoption of improved farming practices	0	1	0.54	0.5

It shows the descriptive statistics of the variables for 107 mango farming households. The average landholding size is about 2.38 acres, which means most farmers are small or medium landholders. The mean education score of 1.49 indicates that farmers generally have primary to secondary level education. The average farming experience is 18.62 years, showing that most of the farmers are quite experienced about farming. About 41 percent of farmers have access to credit, while 54 percent have adopted improved farming practices. The differences in values suggest some variation among the farmers. Overall, the table gives a clear summary of the main socio economic characteristics of the respondents.

4.3 Socio-Economic Well-being Status

Households were divided into various well-being groups using the socioeconomic well-being index.

Table 4: distribution of households based on sew index [source: author's calculation]

SEW Category	Score Range	Number of Farmers	Percentage (%)
Low well-being	0 – 0.33	28	26.2
Medium well-being	0.34 – 0.66	55	51.4
High well-being	0.67 – 1.00	24	22.4

It is clear that most farmers fall into the medium well being group, which means they have a moderate standard of living. A significant number of farmers are in the low well being category, indicating weaker economic conditions. Only a smaller portion of farmers belong to the high well being group, showing better income and living standards. This pattern suggests that the benefits of mango cultivation are not equally shared among all farmers. Overall, the table highlights the need to improve the conditions of those who are still in the lower well being group.

4.4 Determinants of Socio-Economic Well-being

To examine the determinants of socio-economic well-being, a multiple regression analysis was conducted.

Table 5: regression results [source: author's calculation]

Variable	Coefficient	Std. Error	t-value
Landholding size	0.126	0.041	3.07
Education level	0.089	0.035	2.54
Farming experience	0.072	0.029	2.48
Access to credit	0.118	0.046	2.56
Adoption of improved practices	0.143	0.052	2.75

The results of the regression analysis used to identify the factors affecting socio economic well being among mango farming households. The results indicate that landholding size, education level, farming experience, access to credit, and adoption of improved farming practices all have a positive influence on well being. Among these, adoption of improved practices and landholding size has a stronger impact compared to others. The coefficients suggest that an increase in these factors improves the socio economic condition of farmers. All variables are statistically significant, which means they are important in explaining well being.

5. Conclusion

Using primary data from 107 respondents, the study looked at the factors that influence socioeconomic well-being in mango farming households in the Murshidabad district. The findings indicate that landholding size, education level, farming experience, credit availability, and adoption of better farming practices are all significant determinants of farmers' well-being. Policies that support agricultural extension services, expand farmers' access to credit, and promote the adoption of improved farming technologies could significantly improve the socioeconomic conditions of mango growers. Supporting rural education and training programs would also lead to improved livelihoods and higher agricultural productivity.

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