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Socio-Economic Status of Plant Nursery Owners: A Study at Khamargachhi in Hooghly District of West Bengal

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Abstract

A plant nursery is a place where seedlings are propagated and grown to a desired size under favourable condition until they are ready for sale. Mostly breeding of seedlings is done for the purpose of gardening, forestry, or conservation biology, rather than for agriculture. Sustainability and growth of plant nursery industry mostly depend on socio-economic condition of the plant nursery owners. We hardly think about how nursery owners are, where they live, whether their children have been getting proper education or not, are the nursery owners in a position to fulfil their basic needs or are their family members getting family safety and support from them adequately. So to know these unknowns we have tried to cast focus on the analysis of socio-economic factors of small-scale to large-scale private plant nursery owners at Khamargachhi covering Banerwarpur, Gopalpur, Hatikanda and Paranpur areas in Hooghly district of West Bengal. In this paper we have analyzed the socio-economic factors of private plant nursery owners to investigate whether there is any association between different socio-economic indicators and levels of income of nursery owners in the study area. Under socio-economic factors income, education, employment, family safety and supports, wealth and dwelling place of the nurserymen in the said area have been measured. A Total of 60 nursery farms were selected for collecting primary data using a pre-structured questionnaire. The association is verified by Goodman-Kruskal Gamma coefficient using SPSS software. Findings of the study reveal that level of income of the nursery owners depend on their level of education, length of business and land size.

Key Words: Plant Nursery, Floriculture, Kruskal Gamma Coefficient, Seedlings, Nurserymen, Sustainability, Socio-economic indicator.

Introduction

The scope of agriculture is very wide and plant nursery is a small part of agricultural activity where plants take birth as seedlings or saplings get nurtured and finally grown. The buyers of seedlings, saplings and ready plants etc go to their nearby nursery and pick up their desired one by paying the price of the products to the nursery owners. Almost all types of plants can start life and grow easily with utmost care of the nurserymen within the nursery area. Nursery business is such type of organised and recurring activity of the nursery owners which produce multiple types of plants and distributes in exchange of price. So nursery business is an economic activity in which nurserymen remain engaged in nursery related works for the purpose of earning their living. The output of the nurseries is sold to the other garden owner, wholesaler, retailers, and street vendors and even to the householders. That is why a farmer, a gardener, a businessman, a house owner, or an entrepreneur can be a client of this business.

In the last two or three decades, our world has registered many a change in the climatic condition that is now posing a threat on the survival of mankind. To cope up with this adverse climatic condition, most of the nations of the world have awakened and are now taking steps and action to mitigate and curb it. One of the important steps is to encourage the farmers to open and establish plant nurseries. Many of the past researchers have suggested, only planting of shrubs and trees and thereby making the world greener can bring the global pollution and global warming under control at ease and most effectively. A small percentage of total population of India has taken nursery business as their source of livelihood. Findings and conclusions of the previous researchers (Ghosh and Gupta, Molla et al, Lunawat and Jain, Eko, et al.) reveal that the nursery business is a profitable business and can generate huge employment opportunities not only for the people having required capital but also for the unemployed people. So it can reduce states' as well as nation's unemployment rate. But as the nursery work is a mixture of agriculture activity and normal business activity the sustainability of it depends on various social and economic factors of the nursery owners e.g. their income, education, employment, family safety, and social supports etc. because these factors can significantly affect how well and how long the nursery owners and their family can make their nursery business a profitable source of income..

There is a huge employment at Khamargachhi in Hooghly district under West Bengal, but according to the opinion of many nurserymen government shows no interest in this sector of agriculture. Actually nursery owners are

completely neglected by the government. In spite of that nurserymen give support to the government in two ways: firstly they make the environment conducive to health, secondly they create huge employment. During Lock down period the nurserymen of this area made a contribution of rupees one lakh to the Prime Minister Relief Fund. There are five hundred enlisted nurseries under Balagarh Nursery Association. In addition to this there are many tiny unlisted nurseries in the study area. Electricity bill which are borne by the nurserymen are exorbitant because they are to pay commercial bill in place of agriculture based electric bill. A medium sized nursery paid rupees twenty thousand as electric bill though the income from this source is completely exempt from tax. In Andhrapradesh, the government there has installed in every nursery a 5 horse power motor at free of cost. But in West Bengal there is a lack of effort and kindness from the end of the government. There is a huge soil problem here; soil is collected by paying the huge amount of money to the owners of the brickfield just like royalty. At least one lakh people are involved in this business directly or indirectly. There are one thousand nursery owners, on an average six workers are engaged in each nursery, there are some pot suppliers, some tob suppliers, some insecticides suppliers, some pesticides suppliers, suppliers of papers, some give supply of fruits baskets, van drivers carry nursery materials or product from one nursery to another, there are approximately 600 hawkers who purchase small plant from the nursery owners all amounts to dependence of one lakh people on nursery business.. There is a way to get subsidy and other facilities from the government under the condition of fulfilment of rigorous criteria framed by Central Government.

Significance of study

The present study is very significant in today's economy. The results of our study are expected to be significant in various aspects. Based on the study people as well as government of our country will be aware of the fact that the plant nursery business is flourishing day by day and has a full potential of generating employment for the unemployed persons and creating income in favor of nursery owners. So this study would be helpful to the government in regard to employment generation.

The findings of our study will contribute greatly some valuable information to the government and on the basis of which the government will be able to formulate policy for making possible more growth in this sector in the near future with the potential of alleviate unemployment and reduce global warming.

literature Review

Many scholarly works and studies have been conducted by the academicians and researchers on the different aspects of plant nursery business like preparedness, management, production, finance, marketing and socio-economic factors of plant nursery business. But here an attempt has been made to extract and analyze those literatures which focused only on socio-economic aspects of plant nursery business for the purpose of identifying major factors of socio-economic status of the nursery owners and their effects on the profitability and viability of the plant nursery business:

Lunawat and Jain (2022) conducted a study on 20 private plant nurseries in Raipur districts of Chhattisgarh and its nearby area during 2021-2022 to analyze the socio-economic condition of plant nursery owners and for which they collected primary data by applying survey method. Factors of socio-economic conditions in their study were family-size, level of education, source of income, occupation, longevity and ownership of nursery business, etc. Results of the study revealed that education level and experience of respondents relating to their nursery business are quite satisfactory and nursery businesses were found to be a profitable business. But some of the socio-economic factors, to a little extent, have been hindering the businesses of nursery owners in the area of study.

Eko, et al. (2021) conducted a study in Nigeria, the horn of Africa, during 2021 to understand the socio-economic importance and profitability potential of nursery industries. They collected primary data through structured questionnaire administered to 120 nursery entrepreneurs and used multistage sampling technique for the purpose of analysis. As socio-economic characteristics they analyzed age, marital status, educational level, years of experience, business involvement, land acquisition and source of fund. It reveals that most experienced nursery owners are quite confident about the increase in productivity level by the virtue of certain trade secret that are far beyond the knowing of new entrants in the field.

Molla et al (2020) conducted a study on 17 nursery owners and 10 informants with 8 group discussions in Gondar and Bahirdar Cities to analyze the socio-economic contributions of small tree nursery owners in urban areas. The socio-economic benefits in the study area were measured in terms of employment potential, incomes and uses of income. Findings of the study showed that private tree nursery owners carry out not only nursery activities but also decoration and greening activities. The income deriving from these sources are used for subsistence purpose.

Ghosh and Gupta (2019) in their research paper showed the impact of social factors and economic factors on floriculture at Kolaghat C. D. Block in Purba Medinipur District of West Bengal during 2019. All the people of the study area cultivate various types of flowers irrespective of their caste, class and religion. They also found that

those who belong to higher caste category and micro family with high educational qualification have larger size of orchards in their nurseries.

Mamun, Rahaman and Afrooz (2018) conducted a study after collecting primary data from 105 respondents using a structured questionnaire in Dhaka metropolitan area, Savar Upazila and two Upazilas of Gazipur District of Bangladesh during 2018 to analyse the socio-economic condition of the owners of plant nursery and profitability potential of their business. As socio-economic characteristics of the plant nursery owners they analyzed age, education, experience, length of business, ownership pattern, legal institution, family size etc. The results of their survey revealed that experienced, educated and young nursery owners' earning is more profitable than others. Moreover, these businesses are economically sound in the surveyed area.

Benedict C. Posadas (2018) analyzed the determinants of the level of mechanization of nurseries and greenhouses with a view to develop a socio-economic status of horticulture workers and to find the effect of automation on their safety, skill levels, employment, earnings and retention rates through a survey covering 215 randomly selected wholesale nurseries and greenhouses in eight Southern states using a questionnaire containing 9 factors that were identified to have socioeconomic impacts on mechanization and automation. Respondent age, Respondent education, Input constraints, Labour characteristics, Operational characteristics, annual gross sale, Location and time were identified as the top 7 determinants which have great impact on mechanisation of nurseries in the southern United States.

Haque, Monayem and Rashid (2007) conducted a study at Jessore and Gazipur districts in Bangladesh during 2007 to analyse the socio-economic condition of plant nursery owners. For this purpose four government nurseries, forty private plant nurseries, and six NGO nurseries were selected at random. Family size (no./farm), education level (%), occupation, source of income, length of business, and ownership of land were considered as the factors of socio-economic condition. Their findings showed that the respondents of the observed area bear a satisfactory education level and experience. Besides the nursery businesses in the study area are profitable and can generate substantial number of employment.

Objectives of the Study:

The objectives of the study are:

1. To analyze the socio-economic indicators of the plant nursery owners.
2. To measure the association between income levels and other various socio-economic indicators of plant nursery owners.

Research Methodology:

Sampling Design:

The study is based on primary data which was collected from 60 nursery owners by convenience sampling method through structured questionnaire. Sometimes some secondary data have been incorporated in the study after collecting the same from journals, articles, websites etc. The study area is Khamargachi under Balagarh Police station in Hooghly District of West Bengal. Period of study was from first day of March 2024 to 30th April, 2024.

Statistical Design:

Hypothesis Framed:

Ho1: There is no association between Level of income and Level of education

HA1: There is an association between Level of income and Level of education

Ho2: There is no association between Level of income and Length of Business

HA2: There is an association between Level of income and Length of Business

Ho3: There is no association between Level of income and Size of Land

HA3: There is an association between Level of income and Size of Land

Ho4: There is no association between Level of income and Size of Family

HA4: There is an association between Level of income and Size of Family

Statistical Technique:

The data, collected through questionnaire, have been analyzed by using frequency table, percentage, cross tabulation, etc. to achieve the research objectives.

To measure the association between level of income and other socio economic indicators Goodman-Kruskal Gama coefficient has been used which is a measure of the relationship between two ordinal variables. Entire analysis has been done with the help of Microsoft Excel and SPSS software. Here,

$$\text{Gamma } (\gamma) = \frac{N_s - N_d}{N_s + N_d}$$

Where N=Sample size, N_s = number of Concordant pairs, N_d= Number of Discordant pairs.

Results and Discussion

a. Analysis of The Socio-Economic Aspects of Plant Nursery Owner:

a. Age of respondents:

Age pattern of the 60 respondents is presented in table no.1.

Table No.1: Age

Age of Respondent	Frequency	Percentage
20-30	2	3.33%
30-40	21	35%
40-50	21	35%
50 & above	16	26.67%
Total	60	100%

(Source: Field Survey)

From the Table No.1 it is seen that 70% of the respondents belong to the age group 30--50. So majority of the respondents are from middle age group and they have been dominating the nursery business in the study area.

b. Gender of the respondents:

Gender of the 60 respondents is presented in Table no.2.

Table No.2: Gender of Respondents

Gender	Frequency	Percentage
Male	58	96.67%
Female	2	3.33%
Total	60	100%

(Source: Field Survey)

Table 2 above depicts the gender wise distribution of the respondents. 96.67 % of the nursery owners were male while 3.33% was female. This indicates that majority of the respondents in the study area are male.

c. Educational Qualification:

Education Qualification of the 60 Respondents is depicted in Table no.3

Table No.3: Educational Qualification:

Education Qualification	Frequency	Percentage
Illiterate	9	15%
Up to Class VIII	18	30%
IX-XII	18	30%
Graduation and Above	15	25%
Total	60	100%

(Source: field survey)

Table 3 shows that only 15% of the respondents are illiterate and rest 85% can read and write. 25% of the respondents have their graduation degrees. Majority of the respondents (55%) are class VIII passed owners.

d. Caste:

Castes where the respondents belong is depicted in Table no. 4

Table No.4: Caste of the Respondents:

Caste	Frequency	Percentage
SC	26	43.33%
ST	0	0
OBC-A	6	10%
OBC-B	1	1.67%
General	27	45%
Total	60	100%

(Source: field survey)

Table 4 reveals that except 11.67% of the nursery market the rest of the nursery market is occupied almost equally by the owners belonging to scheduled castes (43.33%) and the owners belonging to general castes (45%). No participation of the ST category was found there. Advancement of scheduled caste owners in this field is remarkable.

e. Annual income of respondents:

Annual Income of Respondents is shown in Table No.5

Table No.5: Annual Income

Annual Income	Frequency	Percentage
Below Rs.100000	10	16.67%
Rs.100001- Rs.250000	24	40%
Rs.250001- Rs.500000	18	30%
Above Rs. 500000	8	13.33%
Total	60	100%

(Sources: field survey)

Table 5 expresses that 16.67% of the respondents have their annual income below Rs.1, 00,000. Majority of the respondents (70%) have their annual income more than Rs. 1, 00,000 but less than Rs. 5, 00,000. Only a few percentages of the respondents (13.33%) have their annual income more than Rs. 5, 00,000.

f. Length of businesses of respondents:

Length of Businesses of Respondents is shown in Table No.6

Table No.6: Length of Business

Annual Income	Frequency	Percentage
Less than 5 years	9	15%
5-10 years	15	25%
11-20 years	22	36.67%
More than 20 years	14	23.33%
Total	60	100%

(Sources: field survey)

Table 6 above depicts only 23.33% of respondents have been running their nursery business for more than 20 years. 15% of the respondents have not yet completed 5 years of their business. Majority of the respondents (60%) have been performing their businesses for 11 years and more. Businesses that are older than 5 years are 85%.

g. Area of land

Land area on which the 60 respondents perform their nursery works is shown in Table No.7

Table No.7: Area of Land

Area of Land	Frequency	Percentage
Less than 2 Bighas	25	41.67%
2-5 Bighas	23	38.33%
6-10 Bighas	10	16.67%
Above 10 Bighas	2	3.33%
Total	60	100%

(Sources: field survey)

Table 7 above depicts only a few percentage (3.33%) of the nurserymen have their land size above 10 bighas and 41.67% of the nurserymen have their land size below 2 bighas. But majority of the nurserymen (55%) have their land size from 2-10 bighas.

h. Family size

The family size of the nursery owners is measured in Table no.8

Table No.8: Family Size

Family Size	Frequency	Percentage
Small	14	23.33%
Medium	28	46.67%
Large	18	30%
Total	60	100%

(Sources: field survey)

Table 8 above depicts that nursery owners from the medium family size have the highest participation (46.67) in nursery business. Again, the participation of the large family size (30%) is more than the participation of the small family (23.33%).

i. Wealth acquisition

Wealth acquired by nursery owners is measured in Table no.9

Table No.9: Wealth Acquisition

Wealth (No. of Home appliances including house) Acquisition	Frequency	Percentage
1-2	0	0
3-4	0	0
5-6	3	5%
7-8	19	31.67%
9-10	38	63.33%
Total	60	100%

(Sources: field survey)

Table 9 above depicts that majority of the respondents (63.33 %) have almost all the assets and 5% of the respondents have only 5-6 assets out of 10 assets we considered.

B. Measurement of The Association Between Level of Income and Other Socio-Economic Aspects:

a. Measurement of association between Level of Income and Level of Education (Hypothesis -1)

Cross tabulation:

		Education Level of the Respondents				
Annual Income of the Respondents		Illiterate	Upto class VIII	Class IX to XII	Graduation	Total
Up to Rs.1,00,000		6	3	1	0	10
Rs.1,00,000 –Rs.2,50,000		2	11	8	3	24
Rs. 2,50,001-Rs.5,00,000		2	4	6	6	18
Above Rs.5,00,000		0	0	2	6	08
Total		10	18	17	15	60
Association between Level of Income and Level of Education						
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level	Significance
Level of Income	Level of Education	0.686	0.098	5.694		.000

The gamma value between level of income and level of education is 0.686, and approx T (b) value is 5.694 and it is significant at 1% level. SoHo1 is rejected. It can be concluded that there is an association between level of education and level of income.

b. Measurement of association between Level of Income and Length of Business (Hypothesis-2):

Cross tabulation:

		Length of the business				
Annual Income of the Respondents		Less than 5 Yrs	5-10 Yrs	11-20 Yrs	More than 20 Yrs	Total
Up to Rs.1,00,000		5	3	1	1	10
Rs.1,00,000 –Rs.2,50,000		3	12	5	4	24

Rs. 2,50,001-Rs.5,00,000	1	3	8	6	18
Above Rs.5,00,000	0	0	4	4	8
Total	9	18	18	15	60
Association between Level of Income and Level of Education					
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level Significance
Level of Income	Length of Business	0.617	0.109	4.962	.000

The gamma value between level of income and length of business is 0.617, and approx T (b) value is 4.962, hence it is significant at 1% level. So, Ho2 is rejected. It can be concluded that there is association between length of business and level of income.

c. Measurement of association between Level of Income and Size of Land
(Hypothesis-3):

Cross tabulation

Annual Income of the Respondents	Size of Land				Total
	Less than 2 Bighas	2-5 Bighas	6 to 10 Bighas	More than 10 Bighas	
Up to Rs.1,00,000	9	0	0	1	10
Rs.1,00,000 –Rs.2,50,000	14	10	0	0	24
Rs. 2,50,001-Rs.5,00,000	2	13	3	0	18
Above Rs.5,00,000	0	0	7	1	8
Total	25	23	10	2	60
Association between Level of Income and Size of Land					
Dependent variables	Independent variable(Socio economic Factors)	Gamma Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. level Significance
Level of Income	Size of Land	0.854	0.104	7.133	.000

The gamma value between level of income and size of land is 0.854 and approx T (b) value is 7.133 and it is significant at 1% level. So, Ho3 is rejected. It can be concluded that there is association between level of income and size of land.

a. Measurement of association between Level of income and Size of Family
(Hypothesis-4):

Cross tabulation

Annual Income of the Respondents	Size of Family			Total
	Small	Medium	Large	
Up to Rs.1,00,000	4	6	0	10
Rs.1,00,000 – Rs. 2,50,000	5	9	10	24
Rs. 2,50,001-Rs.5,00,000	5	9	4	18
Above Rs.5,00,000	0	4	4	8
Total	14	28	18	60
Association between Level of income and Size of Family				
Dependent variables	Independent variable(Gamma Value	Asymp. Std. Error(a)	Approx. T(b)

	Socio economic Factors)			
Level of Income	Size of Family	0.268	0.142	1.817

The gamma value between Level of income and Size of family is 0.268, and approx T(b) value is 1.817 so it is insignificant at 1% level. Hence, Ho4 is accepted. It can be concluded that there is no association between size of family and level of income.

Vii. Findings and Conclusions:

- In the above analysis it is seen that majority (70%) of the nursery owners belong to age-group 30-50 years.
- 83.33% of the nurserymen have their annual income more than Rs. 1, 00,000.
- The participation of owners belonging to scheduled caste in this field is remarkable (43.33%).
- Except only 15% of the respondents all other are literate and out of total literate nursery owners 25% of the nursery owners have graduation degree. So, educated persons also started taking entry in this field.
- Majority (50.98%) of the nursery owners have been using the leasehold land rather than acquired land.
- 36.67% of the respondents have been performing their nursery activities for a period ranging from 11-20 years.
- 41.67% of the nurserymen have been using land shorter than 2 bighas.
- Majority of the respondents (63.33%) have almost all the assets like own house, gas, television, refrigerator and washing machine.
- In our study we found that level of income significantly depends on level of education. So, the nursery owners should be more focused on the education of their next generation which in turn would sustain their nursery business for a long period of time as well as would ensure strong source of livelihood of their successors.
- We also found that there is an association between the level of income and length of business. That means the level of income also depends on the length of the business.
- In the study we find that the larger the length of the business (period of business) the more is the amount of profit. So, it can be concluded that at the initial stage of nursery business it is better not to expect huge profit from this business but afterwards it would start giving more profit to the nurserymen with the increase in the length of the business.
- We also found the association between the level of income and size of land. The logic behind this association is economies of large scale operation. If the nurserymen consolidate their land holdings avoiding fragmentation of land, they can earn more profit.

We also found some opinions of the respondents that Government's attention in the nursery sector of the study area does not match with the current employment in the study area. Stakeholders of the nursery sectors in the study area are totally neglected by the government. Though the nursery sector gives support to the society in two respects a) It saves the environment and b) It gives efforts to generate employment and also sustain that employment level. There are more than 1000 nurseries in the field, out of which more than 600 are enlisted to the Balagarh Nursery Association in the area of Khamargachhi. And others are not as they are the small nurseries. More than 1,00,000 persons are directly or indirectly dependent on nursery business in the study area. Average number of workers is 6, Besides, some are supplying pots, some are tubs, some are insecticides and pesticides some are supplying fertilizer and there are some hawkers (more than 500 hawkers are there) who purchase small plants from the nurseries and sell them to the different places surrounding the nursery industry. In one season this nursery needs 100 ton of newspaper, some families give supply of this paper. Some people supplying fruit case. Some people have van for goods carriage In this way total number of persons directly or indirectly dependent on nursery business is approximately more than 1,00,000. So a large number of persons are engaged in the field our Government hardly pays any attention to this sector in the study area. Stakeholders of this sector in the study area are totally deprived. Out of 1000 nurseries, around 750 nursery owners do not have their own land and that is why they do not get any grant or financial assistance from the West Bengal Government. Though there is hardly any scheme of West Bengal Government under which facilities are available but as most of the nurseries fail to fulfill the criterion as laid down in the Governments' regulations they becomes deprived of getting that facilities like Government constructs shed in the individual nurseries and supply vermi- compost to the nursery owners. As more than 75% owners have land size below 5 khathas they are not eligible to get the government assistance. In the way the present condition of the nursery owners have not yet been improved satisfactorily in the study area. So our government should come forward to solve all pertinent problems and accelerate the pace of economic development of the nursery sector in the study area by simplifying the criteria it framed up for providing benefits to the nurserymen. The government should, keeping in view the importance of the nursery industry in the study area, frame up some new policy by which the grievances of the nursery owners can be redressed and thereby they

can be more motivated to invest their full efforts, potentiality and other resources in the field and can generate more employment for the unemployed persons and remove poverty as far as possible. Moreover the contribution of the MSME sector, our GDP and overall the national income and per capita income of our country will be increased. As per field survey nursery owners and others who are dependent on nurseries ensure their willingness and efforts to improve the nursery sectors in the study area, now it is the kindness of the government which can make the nursery industry as a glorious way of livelihood of the people of our society.

Limitations of the Study:

- a) The Study is confined within Khamargachi of Hooghly District and the sample size is small.
- b) The study is based on convenience sampling rather than random sampling so there may be a chance of errors due to the biases of respondent.
- c) The result may be different if large number of respondents were considered.

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