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A Study Of Production Problems Faced By Coconut Farmers In Theni District Confront

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Abstract

This research paper attempts the socio –economic and analysis the problems that farmers in the Theni district confront in coconut production. This research paper main objective is to analysis the socio - economic and production the coconut farmers in the Theni district confront. This study is based on both primary and secondary data. The primary data was collected from the Coconut Farmers taken for the study. By following face to face interview then required data was collected. A well-structured interview – schedule was used for the purpose. The secondary data was collected through books, journals, newspapers and websites sources. By following convenient sampling technique, a sample of 560 coconut farmers was taken for the study. The selection of samples by the researchers from the population was based on her personal judgment. To find out the socio – demographic and business profile of socio –economic and production problems the coconut farmers in the Theni district confront, percentage analysis is used to socio –economic and relationship between the demographics of farmers and their acceptance of the problems experienced in coconut marketing was studied using analysis of variance and the student t test. The data relating to the study was collected during a 6-month period, from January to June 2021. Finally provided offer suggestions based on the findings of the study.

Keywords: Coconut Farmer, Institutional Support, Problems

Introduction

Agriculture has dominated the economic development of both developed and developing countries. India is an agricultural country, with agriculture employing a third of the people directly or indirectly. Since the time immemorial, agriculture has been the backbone of the Indian economy. The production of oilseeds occupies a significant position. Coconut is one of the most important and abundant sources of vegetable oil, which is used for both edible and non-edible purposes. A vast number of small and marginal farmers in peninsular India rely on the coconut for their livelihood. Coconut farming is extremely important in India's rural economy. In terms of coconut output, India is the world's leading country. India is the world's third-largest producer of coconuts, with 1.78 million hectares under cultivation. The coconut palm and its products are a major source of income for a big portion of the tropical rural population, and they also contribute significantly to the total export profits of various Asian and Pacific countries. It can be found in the Malay Archipelago, Southeast Asia, India, Sri Lanka,

the Pacific Territories, and the West Indies, among other humid tropics. Due to its adaptability, coconut is the most widely cultivated and used nut in the planet. One of the most useful plants is the coconut palm. It is grown in more than 80 countries throughout the world. The Philippines and Indonesia are the world's number one and second largest coconut producers, respectively. The coconut palm has been the foundation of an essential life system for millennia, not only for island and coastal people in the humid tropics, but also for inland parts of India, the Philippines, Indonesia, and Thailand. India is currently ranked third in the world for coconut output, having produced 16.9 billion nuts from a planted area of approximately 1.89 million hectares. India is also the most productive coconut-producing country in the world in terms of productivity.

Statement of the Problem

One of the most important components of the Indian economy has always been coconut farming. Despite the fact that India ranks first in terms of coconut production and productivity, coconut producers in India were experiencing a number of problems,[1] which resulted in a decrease in quality nuts produced, reflecting the competitive nature of the market on a worldwide scale. Lack of awareness of new innovations in crop improvement, lack of quality plant material for farmers, lack of suitable management procedures, and insect concerns must all be addressed carefully in order to make coconut cultivation attractive. Natural calamities, price fluctuations, insect infestations, and rainfall all have a significant impact on a farmer's income. They couldn't always receive the money they needed to plant or develop a crop. Farmers will not be reimbursed for the money they lost due to crop failures or low crop yields. Farmers who grow coconuts must wait more than 5 years to get a return on their investment. Farmers might invest significant sums in crops and manage their family until the coconut is harvested. Crop failures exacerbate farmers' problems. They are having trouble raising finances for intercropping and covering family expenses.

Changes in the demographic characteristics of coconut farmers, such as a shift towards absent landowners, the prevalence of senile and unproductive palms, the prevalence of marginal smallholdings, overcrowded stands of coconut palms and other trees on farms, low adoption of crop management practices resulting in low productivity, crop loss due to the incidence of various pests and diseases, especially the huge losses due to root diseases, inadequate irrigation facilities, lack of availability of quality plant material, lack of skilled labour and high wage rate, low level of product diversification, etc. all negatively affect coconut cultivation. The lack of skilled labour and pest attacks has severely harmed the possibilities for cultivation. One of the key factors that have played havoc on the confidence of coconut growers is the rising cost of labour. Many farmers have abandoned coconut farming in favour of rubber plants, trades, and other lucrative ventures, enticed by the high prices available. Coconut farmers also face fragmentation of plantations for residential and commercial purposes.

[1] Vanamadevi (2017). A study on cultivation and marketing problems of coconut growers in Theni panchayat, Udumalpet. Paper Presented at the International Conference on Research avenues in Social Science, Coimbatore.

Because these tasks are not seen as respectable employment by most people, despite the high pay, there is an increasing lack of trained personnel for climbing and dehusking. Farmers are frequently compelled to convert to other crops and vegetables, which need less capital and provide good yields in a short period of time. Coconut growers experience financial problems as a result of crop failure or low production owing to disease and weather conditions. However, due to a number of obstacles, including a high frequency of pests and diseases, poor agronomic methods, poor quality planting material, and a limited genetic base, nut yield is relatively low. Another major stumbling block to production is a lack of plant material. Inadequate and appropriate technologies in agronomy, pest and disease control, and post-harvest handling and processing have also been developed for smallholder farmers' adoption. Other considerations include the age of coconut palms and the cultivation of low-yielding coconut palm cultivars. The necessity for an agricultural technique that enhances the revenue of coconut fans becomes important in a situation where the coconut business is threatened by repeated uncertainty. As the majority of coconut farmers are illiterate, unorganized, and dispersed, marketing coconut is more difficult. They lack the information and abilities necessary to market their goods. Due to the financial crisis and a lack of lending facilities from a financial institution or cooperative against coconut palms, coconut farmers have small, marginal farms with limited operating capacity, forcing them to sell.

Farmers do not produce copra / oil for sale for a variety of reasons, the most important of which is a less marketable surplus due to the small and marginal size of their farms. Furthermore, due to a lack of storage facilities, they were obliged to sell their goods as soon as it was harvested at low prices to local vendors in the village. Grading, standards, market knowledge, credit availability, storage, and transportation are all insufficient. Furthermore, there is a long chain of middlemen between growers and end customers in the coconut industry, and they take the lion's share of the consumer price. Producers' goals and expectations are dependent on market conditions. Coconut growers, on the other hand, face challenges such as forced sales, various market fees, unethical practices in unregulated markets, and needless middlemen. When the merchant buys the coconuts, he takes a long time to pay the farmers.

The rate per tonne for purchasing coconuts from farmers is not set by the government. As a result, farmers were unable to make a profit from their crops. However, functionaries, with the exception of institutional agencies, have failed to meet the goals of an effective marketing system targeted at attaining remunerative rates through the sale of coconuts and coconut products in the existing marketing system. Due to numerous limitations that directly or indirectly influence farmers, marketing agents predominate in the marketing channels for coconut and its products. Farmers, particularly those who plant coconut groves in monoculture, borrow loans from middlemen / traders to fund their typical production and consumption expenses. Due to fluctuating coconut prices, they are forced to sell these coconuts on the farm as soon as they are harvested. Farmers are unable to engage in activities that might increase the value of their produce. This has a significant impact on the marketing of coconuts and coconut products. In this perspective, the purpose of this research is to address the following questions: What are the several factors that encourage farmers to cultivate coconuts? What level of satisfaction do farmers have with coconut farming? What are the problems that coconut farmers confront in terms of production? What level of satisfaction do farmers have with the

marketing of coconuts? What are the problems that farmers encounter when it comes to marketing coconut? What steps would be taken to ensure that coconuts are grown and sold efficiently? In this regard, the researcher conducted an investigation on coconut production and marketing in the Theni district.

Review of Literature

Chellasamy, et al. (2019)[2] investigated coconut selling in the Hassan district. This research was conducted among 77 farmers in Hassan district. Farmers were divided into three categories: marginal, small, and large. As samples, the study included 32 marginal farmers, 29 small farmers, and 16 large farms. Taxonomy of marketing channels for coconut farmers' products is also available. Channel I, producer-village trader-retailer and consumers, channel II, producer-wholesalers-retailers and consumers, channel III, producer-wholesalers-retailers and consumers, and channel IV, producer-village-merchant-wholesaler-the retailer and customers. The marketing of coconut through channel-IV is effective, according to this study.

Palanivelu and Muthukrishnan (2019)[3] conducted research to identify factors influencing coconut farmers' satisfaction with coconut production and marketing, assess coconut producers' marketing methods, and make recommendations based on the study's findings for coconut farmers' future prospects. A schedule is used to interview the farmers in the sample. 26 farmers were left out due to non-response to some questions and non-cooperation from the farmers in the sample. As a result, there are 240 farmers in the sample. Coconut producers in Coimbatore are clearly abandoning coconut production in favour of other agricultural goods. According to the findings, farmers' satisfaction with coconut cultivation can be improved by giving sufficient training on the various agricultural operations included in coconut farming. This part of training will boost their production, which in turn will increase their satisfaction.

Helen Grace P. Datang, Julie Mier E. Lomanog and Felipe E. Balaria (2019)[4] investigated coconut production techniques and obstacles in Dingalan, Aurora. A descriptive study was conducted. In Barangay, Matawe, the main coconut-producing district in Dingalan, a total of 50 respondents were chosen. Only those who have been cultivating coconuts for 25 years were chosen as respondents from a total of 398 farmers in Barangay. In Dingalan, a coconut plantation could be managed in terms of size and quantity of trees, but the production was low and needed to be improved. Coconut producers' cultivation practices are too conventional and need to be modified. In Dingalan, the coconut agriculture sector was unprofitable and did not help farmers improve their situation. Technical, natural, and social factors are causing challenges in coconut farming, which can be rectified with strong political measures. According to the findings, schools should create a functioning extension programme to assist Dingalan

[2] Chellasamy, et al. (2019). A study on marketing of coconut in Hassan district of Karnataka. *Journal of the Gujarat Research Society*, 21 (10), 1436-1447.

[3] Palanivelu, N., & Muthukrishnan, G. (2019). Problems of coconut marketing in Tamilnadu. *Journal of the Gujarat Research Society*, 21 (10), 1252-1263.

[4] Helen Grace P. Datang., Julie Mier E. Lomanog., & Felipe E. Balaria (2019). Coconut farming industry in Dingalan, Aurora: Practices and challenges. *International Journal of Advanced Engineering*, *Management and Science*, 5 (1), 11-17.

coconut farmers in improving their farming capacities. Farmers should undergo training in order to become more familiar with a more effective farming system. Farmers should learn how to form a cooperative to look into their marketing tactics as well as the added value of their product and any by-products.

Mike Manaros and Ismail Bulent Gurbuz (2020)[5] examined the challenges that coconut producers confront in terms of labour. The study identified the factors that influenced the cost of labour for coconut farmers. The research was carried out in the Philippines' Lanao del Norte area. The schedule was used to interview 400 coconut farmers in total. According to the study, the province's coconut growers' biggest challenge is the high cost of labour. Coconut producers placed labour shortage second among labour difficulties, indicating that it is a serious issue. The number of workers, land area, and number of coconut trees all has a significant impact on labour costs.

Coconut cultivation in the Theni district was studied by Yesurajan and Sankaranarayanan (2020).[6] The investigation is analytic in nature. Simple random sampling was used to acquire primary data from 30 coconut growers in the Periyakulam taluk of Theni district. The primary data was collected using a well-structured interview schedule. Secondary data was also gathered from a variety of sources, including the Directorate of Economic and Statistics, Horticulture Division, Food and Agricultural Organization, Census of India, and websites. According to the study, 73.30 per cent of respondents have coconut trees that produce for 6 months to a year. Tall trees and hybrid trees were both planted by the farmers; however the hybrid tree was predominantly cultivated in the study region. In the market, 74% of respondents received a fair price, 16.70% received a good price, and the remaining 9.30% received an unreasonable price. The coconut was sold with the husk by the majority of the farmers, without the husk by 6.60 per cent of the respondents, and 12% of the dry coconut sold in the market. The majority of farmers had marketing issues as a result of price fluctuations and the presence of market middlemen. Hence, the government should devise a unique plan to boost coconut production and marketing. Fertilizers, seeds, machines, and storage facilities are all provided for free. The government should set the market price for coconuts, avoiding the abuse of middlemen and the loss of money for farmers. The government is planned to give coconut growers with equipment such as pumps and crop insurance, as well as a low-interest loan.

Mathuthra and Arumugaswamy (2020)[7] conducted a study to explore the financial situation of coconut farmers in the Coimbatore district, determine cultivation methods, and investigate the issues that they confront. The sample is made up of 100 people who were chosen at random using convenience sampling. An interview with coconut farmers was used to gather primary data. Books and magazines are used to obtain secondary data. In the case of coconut, cash payment and an reasonable price were the most important factors that influenced the marketing of coconut through direct sales. Coconut

[5] Mike Manaros & Ismail Bulent Gurbuz (2020). Assessment of labour issues faced by the coconut producer in Lanao delNorte Province. *Erwerbs-Obstbau*, 62, 195–200.

[6] Yesurajan, M., & Sankaranarayanan, R. (2020). An analysis of coconut production in Tamil Nadu, India. *International Journal of All Research Education and Scientific Methods*, 8 (8), 145-149.

[7] Mathuthra, O., & Arumugaswamy, P. (2020). The study of problems faced by coconut growers in Coimbatore district during Covid-19 pandemic. *International Journal of Management*, 11 (12), 2137-2146.

growers found that a scarcity of high-quality saplings was the major issue they were concerned about. Finance, exorbitant costs, and a manpower shortage were the major issues. As a result, various measures such as internet marketing, packaging, discounts, and touchless technology can be used to alleviate the problems. In order to normalize the price of coconut, the Department of Agriculture will launch several programmes to educate coconut growers about coconut farming and cultivation.

Kalimuthu and Dharani (2020)[8] conducted research to determine coconut farmers' awareness of the coconut market, as well as to learn about the marketing strategies employed by coconut farmers and to investigate the marketing issues they face. A total of 120 farmers provided primary data. The majority of respondents' crop acres (38 per cent) are smaller than 2-3 acres. The majority of respondents (29%) grow coconuts for the purpose of generating long-term income. Organic fertilizers are used by the vast majority of respondents. Around 41% of those surveyed say they rely on their own technical knowledge. The vast majority of responders sell to consumers directly. Growing coconuts, according to the majority of those surveyed, is preferable to other crops. Growing coconuts, according to the majority of those surveyed, is preferable to other crops. The majority of responders said they plan to increase their coconut production. The vast majority of individuals surveyed felt that buyers' offers are average. High cost was ranked 1 by the majority of responders as a concern in marketing coconut inputs. The lack of a stable pricing was ranked 1 by the majority of respondents as a concern in coconut marketing. According to the study, high price fluctuation causes retailers and middlemen to lose money they had expected. Intermediaries, according to the study, should be avoided. The government should come forward and develop a price guarantee scheme to stabilize the price of coconut and its products. The study recommends the formation of a coconut producers' association in order to improve the selling of coconuts. The government may build warehouses in the area to keep the coconuts and pay subsidies for any losses that occur.

Farmers, harvesters, commission agents, exporters, wholesalers, retailers, and processors all confront challenges in the coconut value chain, according to Kalidas, Mahendran, and Akila (2020).[9] Respondents were chosen using a multi-stage sampling method. Coimbatore, Tiruppur, Erode, and Namakkal were chosen from among various districts in Tamil Nadu in the first stage. Farmers were chosen from nine taluks in Coimbatore (3), Tiruppur (3), and Namakkal (3), as well as fifteen taluks in Erode district. As a result, a total of 300 coconut growers were chosen. A well-structured interview schedule was used to acquire primary data from respondents. Commission agents, harvesting contractors, exporters, processors, distributors, and retailers were chosen in addition to farmers. The main restraint was irregular and late payments by intermediaries, followed by a lack of market information on prices, high commissions or brokerage fees, an inefficient regulated market, and high transportation and storage expenses. The government should step in and create an institutional system to control prices and communicate market data. Due to the appearance of pests and illnesses, farmers experienced a decline in yield. Daily price fluctuation, a gap between production and nut requirements,

[8] Kalimuthu, M., & Dharani, S. (2020). Study on marketing problems faced by coconut producers with special reference to Sulur taluk. *EPRA International Journal of Research and Development*, 5 (11), 181-186.

[9] Kalidas, K., Mahendran, K., & Akila, K. (2020). Constraints in coconut value chain – A framework for analysis using response priority index. *Current Journal of Applied Science and Technology*, 39 (16), 76-82.

and a lack of market intelligence are all issues that most companies in the coconut value chain encounter. Improved coconut output can be achieved by developing a new variety with higher productivity, resistance to pests and diseases, and drought tolerance. To close the gap between demand and supply, the government shall establish an institutional body that will forecast price movements and availability of coconut, as well as develop creative models to improve technology and market information.

In the Batu Pahat area of Johor, Zubaidah Omara and Fazleen Abdul Fataha (2020)[10] did a study to recommend policy decisions and establish appropriate plans and programme to improve the socio-economic situations of smallholder coconut growers. Random sampling was used to choose a group of 152 farmers. Profitability was influenced by a variety of factors, including land, labour, fungicides, experience, education and extension visits, according to the findings. The cost-benefit analysis revealed that coconut growing was a viable business in the study area, with a benefit-cost ratio ranging from 5.0 to 8.4. As a result, smallholders will be able to increase their earnings and improve their living conditions. Coconut production profitability is influenced by agronomic methods, government agencies, smallholder expertise, and socio-economic factors. To ensure increased profitability among smallholder coconut producers, the study proposes that appropriate fertilizers, as well as transportation and logistics, should be improved. The availability of price information on the market can assist a smallholder in selecting marketing channels and making judgments for each market in order to maximize profitability. For smallholders to meet the needs of a more modern agricultural sector and for information and communication technologies to effectively deliver and improve their profits and capacities in collective action, additional efforts such as seminars, workshops, or integrated training approaches are required.

Objectives of the Study

Considering the production and marketing of coconut in Theni district, the study was carried out with the following objectives:

1. To study the cultivation practices of coconut farmers in the Theni district.

2. To study the problems that farmers in the Theni district confront in coconut marketing.

Scope of the Study

The purpose of this study is to look into the production and marketing of coconut in the Theni district. Farmers in the five taluks of Theni district, namely Theni, Periyakulam, Andipatti, Bodinayakkanur, and Uthamapalayam, are included in the study. Coconut manufacturing and marketing entails a variety of operations. As a result, only the most common practices in coconut production and marketing are examined in this study. Furthermore, the study primarily focuses on the reasons why farmers select

[10] Zubaidah Omara., & Fazleen Abdul Fataha (2020). Unravelling the factors affecting agriculture profitability enterprise: Evidence from coconut smallholder production, *Accounting*, 6 (2020) 493-500.

coconut farming, farmers' satisfaction with coconut cultivation, coconut growers' production problems, farmers' satisfaction with coconut marketing, and farmers' problems with coconut marketing.

Selection of the Study Area

The Agro-Occidental climate zone encompasses the Theni district. The current minimum temperature is 24 degrees Celsius, and the maximum temperature is 38 degrees Celsius. The district's soil types include sandy loam, clay, and alluvial soil. Fruit crops such as mango, banana, grape, guava, and aonla, tropical vegetables such as bhendi, tomato, brinjal, and onion, temperate vegetables such as cauliflower, beets, and knol-khol, spices and condiments such as pepper and cardamom, and plantation crops such as coffee and tea are the main horticultural crops grown in this district. Agriculture is the most important component of the district's economy, with 30% of the people dependent on agriculture and allied activities for a living. Coconuts are commonly grown in this region. Coconuts are cultivated in both rainfed and irrigated environments. Hence, the researcher opted to conduct the investigation in his hometown of Theni.

Sampling Design

Theni district had five taluks as of 31.08.2020. For the purposes of the research, the researcher used multistage sampling to obtain primary data. In the first stage, the district of Theni was purposefully chosen as the study area. The five taluks of Theni district were chosen in the second stage using the census method. In the third stage, simple random sampling was used to select 25% of the revenue villages from each of the taluks. At the final stage, 20 farmers were chosen at random from each of the revenue villages. Thus, the sample size is 560 farmers. The sample distribution for this study is shown in the table below.

Table 1.1: Sampling Distribution

S. No.	Taluk	Number of Revenue Villages	Samples	
			Revenue Villages	Farmers
1	Theni	12	3	60
2	Periyakulam	22	5	100
3	Andipatti	25	6	120
4	Bodinayakkanur	15	4	80
5	Uthamapalayam	39	10	200
	Total	113	28	560

Data Collection

This research is based on a survey method and is empirical in nature. Both primary and secondary data were used in this study. The study was mainly based on primary data collected from 560 farmers in Theni district who grow and market coconuts. The schedule method was employed to collect primary data due to the low level of education and farmers' lack of awareness about coconut production and

marketing. A pilot survey with 25 farmers was undertaken in January 2020 to determine the relevance of the questions. In light of the experience obtained during the pilot study, the adequate information in the schedule has been tested, and the necessary changes have been made into the new schedule. Secondary data was employed in the study to offer general information on coconut production and marketing. Books, journals, periodicals, theses, and websites were used to gather secondary data. The National Horticultural Board, the Coconut Development Board, and the Ministry of Agriculture of the Government of India provided the most important secondary sources of information. To arrive at useful findings, the data was placed into a master table and tabulated.

Data Collection Period

The study gathered primary data during a 6-month period, from January to June 2020.

Framework of Analysis

Analysis of variance, student t test, chi-square test, coefficient of variation, multiple regression analysis, factor analysis, and multiple discriminant function analysis were used to examine coconut production and marketing.

The relationship between farmer demographics and their acceptance of coconut production problems was studied using analysis of variance and the student t-test. The coefficient of variation is used for determining how consistent farmers' acceptance of coconut production problems is. The underlying variables in the set of statements relevant to the problems of coconut production are identified using factor analysis. The effect of farmer demographics on their acceptance of coconut production problems is measured using multiple regression analysis.

The relationship between the demographics of farmers and their acceptance of the problems experienced in coconut marketing was studied using analysis of variance and the student t test. The researcher employed multiple discriminant function analysis to look at how coconut marketing problems differ between the three types of producers: marginal and small farmers, medium farmers, and big farmers. The effect of farmer demographics on their acceptance of the problems experienced in coconut marketing is measured using multiple regression analysis. In addition, percentage analysis and descriptive statistics are used to arrive at meaningful results in this study.

Limitations of the Study

This study focuses on how farmers perceive coconut production and marketing in Theni, rather than how traders and processing firms report it. In addition, the study has the following limitations.

1. Incomplete answers and non-answers to certain questions are unavoidable in any attitude survey. However, great care is taken to ensure that the investigation is as objective and systematic as possible.

2. The investigation is constrained by time and resources, which the researcher is usually confronted

with. Only 560 farmers from five taluks in the Theni district were chosen for the study. As a result of various flaws in the sample selection, the survey results are difficult to extrapolate to the entire population.

3. As the study relies on primary data, farmers' responses may be skewed by their socio-economic background.

Demographic Profile of Coconut Farmers

Individual demographic profiles serve as unique identifiers. It contains basic information such as gender, age, education, occupation, and income, among other things. Table 2 shows the demographic profiles of the farmers in the sample.

Table 2: Demographic Profile of Coconut Farmers

Farmer Demographics		No. of Respondents	Percentage
Gender	Male	427	76.25
	Female	133	23.75
Age (years)	Upto 30	31	5.54
	31-40	100	17.86
	41-50	311	55.54
	Above 50	118	21.07
Education	Upto SSLC	53	9.46
	H.Sc	211	37.68
	Degree	240	42.86
	PG and above	56	10.00
Annual income (Rs.)	Upto 250000	63	11.25
	250001-500000	178	31.79
	500000 - 750000	255	45.54
	Above 750000	64	11.43
Farmer's category	Marginal and small farmer	231	41.25
	Medium farmer	188	33.57
	Big farmer	141	25.19
Marital status	Married	488	87.14
	Unmarried	72	12.86
Family type	Joint family	108	19.23
	Nuclear family	452	80.71
No. of family members	Upto 5	357	63.75
	6 and 7	117	20.89
	7 and above	86	15.36
Taluk	Theni	60	10.71
	Periyakulam	100	17.86

	Andipatti	120	21.43
	Bodinayakkanur	80	14.29
	Uthamapalayam	200	35.71

Source: Primary Data.

76.25 per cent of the 560 farmers in the sample are male, while 23.75 per cent are female. 5.54 per cent of the respondents are under the age of 30, 17.86 per cent are between the ages of 31 and 40, 55.54 per cent are between the ages of 41 and 50, and 21.07 per cent are over the age of 50. SSLC education is held by 9.46 per cent of respondents, H.Sc is held by 37.68 per cent, graduates are 42.86 per cent and PG and above qualifications are held by 10% of respondents. The group with the highest annual income, Rs. 500000-750000, is followed by the group with the annual income, Rs. 250001-500000, with 31.79 per cent of respondents. 11.25 per cent of respondents have an annual income of less than Rs. 250000 and 11.43 per cent have an annual income of more than Rs. 750000. A total of 41.25 per cent of the 560 farmers in the sample are marginal and small farmers, 33.57 per cent are medium farmers, and 25.19 per cent are big farmers. Of the total, 87.14 per cent of farmers are married and 12.86 per cent of farmers are unmarried. A joint family accounts for 19.23% of farmers, whereas a nuclear family accounts for 80.71 per cent. 63.75 per cent of the 560 farmers in the sample had up to five family members, 20.89 per cent have six to seven family members, and 15.36 per cent have seven or more family members. The taluks of Theni, Periyakulam, and Andipatti are home to 10.71 per cent, 17.86 per cent, and 21.43 per cent of the respondents, respectively. Bodinayakkanur taluk has 14.29 per cent of the responders, while Uthamapalayam taluk has 35.71 per cent.

Problems of Farmers in Coconut Production

The agriculture sector in India is very significant to the Indian economy. People are employed directly or indirectly as a result of the cultivation of coconuts. Coconut farmers face a variety of problems, including volatile market prices, high cultivation costs, climatic conditions, a lack of motivation, importation, mixed farming, and preservatives. The researcher aimed to investigate the association between farmer demographics and their acceptance of the problems associated with coconut cultivation in this section.

Table 3: Gender and Acceptance of Problems in Coconut Production

Gender	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Male	427	94.37	14.94	15.83
Female	133	93.11	15.11	16.23
Total	560	94.07	14.98	15.92

Source: Primary Data.

Comparison of Acceptance of Problems by Male and Female Farmers in Coconut Production

Calculated t Value	DF	Table Value at 5% Level	Result
0.842	558	1.964	Not significant

At the 5% significance level, the calculated t-value for 558 degrees of freedom is (0.842) smaller than the table value (1.964). As a result, there is no substantial difference in male and female farmers' acceptance of coconut production problems. As a result, the null hypothesis (H_{03}) is accepted. This indicates that the gender of the farmers has no significant influence on the problems associated with coconut production. Male farmers have the highest acceptance score (94.37), followed by female farmers. This indicates that male coconut producers are more accepting of the problems of coconut production. The variation in acceptance is high (16.23 per cent) among female farmers and it is low (15.83 percent) among male farmers. As a result, male coconut farmers are consistent in their acceptance of production problems.

Table 4 : Age and Acceptance of Problems in Coconut Production

Age (Years)	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Upto 30	31	91.48	17.47	19.10
31-40	100	93.93	17.35	18.47
41-50	311	94.53	14.33	15.16
Above 50	118	93.64	13.88	14.82
Total	560	94.07	14.98	15.92

Source: Primary Data.

Relationship between Age and Acceptance of Problems in Coconut Production

Source of Variation	Sum of Square	DF	Mean Square	Calculated F Value	Table Value at 5% Level	Result
Between groups	296.659	3	98.886	0.439	2.621	Not significant
Within groups	125124.763	556	225.045			

Total	125421.421	559				

At the 5% significance level, the calculated F value (0.439) is less than the table value (2.621) for 3 and 556 degrees of freedom. As a result, there is no significant relationship between the age of farmers and their acceptance with coconut production problems. As a result, the null hypothesis (H_{03}) is accepted. This means that the age of the farmers has no significant influence on the problems that arise during coconut production. Farmers between the ages of 41 and 50 have the highest average acceptance score (94.53), followed by farmers between the ages of 31 and 40. Farmers under the age of 30 have a low acceptance score (91.48). Farmers between the ages of 41 and 50 are more accepting of the problems of coconut production, according to the study. The variation in acceptance is high (19.10 per cent) among farmers under 30 and it is low (14.82 per cent) among farmers over 50. As a result, the acceptance of farmers over 50 who have problems with coconut production is consistent.

Table 5: Education and Acceptance of the Problems of Coconut Production

Education	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Upto SSLC	53	94.92	14.86	15.66
H.Sc	211	94.33	14.29	15.15
Degree	240	93.40	15.18	16.25
PG and above	56	95.14	16.94	17.81
Total	560	94.07	14.98	15.92

Source: Primary Data.

Relationship between Education and Acceptance of the Problems of Coconut Production

Source of Variation	Sum of Square	DF	Mean Square	Calculated F Value	Table Value at 5% Level	Result
Between groups	226.693	3	75.564	0.336	2.621	Not significant
Within groups	125194.728	556	225.170			
Total	125421.421	559				

The calculated F value for 3 and 556 degrees of freedom is (0.336) less than the value in the table at the 5% significance level (2.621). As a result, there is no discernible relationship between farmer education and acceptance of the problems associated with coconut production. As a result, H_{03} (null hypothesis) is accepted. This means that farmer education has no significant influence on the problems associated with coconut cultivation. Farmers with a PG degree or higher had the highest average acceptance score (95.14), followed by those with up to SSLC education. The average acceptance score of graduated farmers is low (93.40). As a result, farmers with a PG degree or higher are more accepting of the problems associated with coconut production. The variation in acceptance is high (17.81 per cent) among farmers with PG qualification and above and it is low (15.15 per cent) among farmers with H.Sc. Thus, there is consistency in the acceptance of farmers who have studied H.Sc with coconut production problems.

Table 6: Annual Income and Acceptance of Problems in Coconut Production

Annual Income (Rs.)	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Upto 250000	63	95.40	14.48	15.18
250001-500000	178	92.64	15.03	16.22
500000 - 750000	255	94.88	15.18	16.00
Above 750000	64	93.50	14.51	15.52
Total	560	94.07	14.98	15.92

Source: Primary Data.

Relationship between Annual Income and Acceptance of Coconut Production Problems

Source of Variation	Sum of Square	DF	Mean Square	Calculated F Value	Table Value at 5% Level	Result
Between groups	662.122	3	220.707	0.984	2.621	Not significant
Within groups	124759.300	556	224.387			
Total	125421.421	559				

The calculated F-value for 3 and 556 degrees of freedom is (0.984) less than the value in the table at the 5% significance level (2.621). As a result, there is no significant relationship between

farmers' annual income and their acceptance to endure problems with coconut production. As a result, H_{03} (null hypothesis) is accepted. As a result, farmers' annual income has no significant influence on the problems associated with coconut production. Farmers earning between Rs. 500000 and 750000 per year had the highest average acceptance score (95.40), followed by farmers earning between Rs. 500000 and 750000 per year. Farmers earning between 250000 and 500000 rupees per year have a low acceptance score (92.64). As a result, farmers earning between Rs. 250001 and Rs. 500000 per annum are more accepting of the problems of coconut production. The variation in acceptance is high (16.22%) among farmers with annual income of Rs. 250001-500000 and it is low (15.18%) among farmers with annual income up to Rs. 250000. As a result, farmers earning up to Rs. 250000 per year are consistent in their acceptance of the problems associated with coconut production.

Table 7: Category of Farmers and Acceptance of Problems in Coconut Production

Farmer Category	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Marginal and farmer	231	93.01	15.10	16.23
Medium farmer	188	94.84	15.20	16.03
Big farmer	141	94.77	14.48	15.28
Total	560	94.07	14.98	15.92

Source: Primary Data.

Relationship between Annual Income and Acceptance of Coconut Production Problems

Source of Variation	Sum of Square	DF	Mean Square	Calculated F Value	Table Value at 5% Level	Result
Between groups	437.835	2	218.917	0.976	3.012	Not significant
Within groups	124983.587	557	224.387			
Total	125421.421	559				

At the 5% significant level, the calculated F-value (0.976) is less than the table value (3.012) for 2 and 557 degrees of freedom. As a result, there is no discernible relationship between the farmer's category and their acceptance of coconut production problems. As a result, H_{03} (null hypothesis) is accepted. This indicates that the type of farmer does not have a significant influence on the problems associated with coconut production. Medium farmers had the greatest average acceptance score (94.84), followed by big farmers. The average level of acceptability among marginal and small farmers is low (93.01). As a result, medium farmers are more accepting of the problems associated with coconut

production. The variation in acceptance is high (16.23%) among marginal and small farmers and it is low (15.28%) among big farmers. As a result, big farmers have consistently accepted the problems with coconut production.

Table 8: Taluk by Farmers and Acceptance of the Problems of Coconut Production

Taluk	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Theni	60	83.60	6.39	07.64
Periyakulam	100	98.82	18.19	18.41
Andipatti	120	95.48	14.25	14.92
Bodinayakkanur	80	91.44	12.18	13.32
Uthamapalayam	200	95.04	14.96	15.74
Total	560	94.07	14.98	15.92

Source: Primary Data.

Relationship between Taluk by Farmers and Acceptance of the Problems of Coconut Production

Source of Variation	Sum of Square	DF	Mean Square	Calculated F Value	Table Value at 1% Level	Result
Between groups	9812.969	4	2453.242	11.777	3.353	Not significant
Within groups	115608.453	555	208.304			
Total	125421.421	559				

At the 1% significance level, the calculated F value (11.777) is greater than the table value (3.353) for 4 and 555 degrees of freedom. As a result, a significant relationship between the acceptances of coconut production problems by farmers from distinct taluks has been discovered. As a result, the null hypothesis (H_{03}) is ruled out. This indicates that taluks have a considerable influence on coconut production problems. Farmers in the Periyakulam taluk have the highest average acceptance score (98.82), followed by those in the Andipatti taluk. Farmers in the Theni taluk have a low acceptance score (83.60). As a result, the farmers in the Periyakulam taluk are more accepting of the problems of coconut production. The variation in acceptance is high (18.41%) among Periyakulam taluk farmers and it is low (7.64%) among Theni taluk farmers. As a result, Theni taluk farmers have consistently accepted the

problems of coconut production.

Table 9: Type of Coconut Palm and Acceptance of the Problems of Coconut Production

Type of Coconut Palm	No. of Respondents	Mean	Standard Deviation	Coefficient of Variation
Dwarf coconut	354	94.70	14.78	15.61
Tall coconut	206	92.98	15.29	16.44
Total	560	94.07	14.98	15.92

Source: Primary Data.

Comparison of the Acceptance of Coconut Production Problems by Dwarf and Tall Coconut Farmers

Calculated Chi-square Value	DF	Table Value at 5% Level	Result
1.317	558	1.964	Not significant

At the 5% significance level, the calculated t-value for 558 degrees of freedom is (1.317) smaller than the table value (1.964). As a result, there is no substantial difference in terms of accepting coconut production problems between farmers who grow dwarf and tall coconut palms. As a result, the null hypothesis (H_{03}) is accepted. This indicates that the type of coconut palm grown by farmers has no significant influence on coconut production problems. Farmers who planted a dwarf coconut palm variety had the highest average acceptance score (94.70), followed by farmers who planted a tall coconut palm variety. This indicates that farmers who grow the dwarf coconut palm are more accepting of the problems associated with coconut production. Farmers who cultivate dwarf coconut palms, on the other hand, are consistent in their acceptance of the problems associated with coconut production.

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