



# A STUDY ON FARMERS PERCEPTION AND USAGE TOWARDS MODERN AGRICULTURAL EQUIPMENT WITH REFERENCE TO PALLADAM TALUK

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## ABSTRACT

This study focus the farmers and the modern equipments used in agriculture which increases agriculture cultivity. Modern equipment adoption is a revolutionary change in agriculture techniques that benefits farmers in a number of ways. Analyzing farmers' perceptions and uses of modern agricultural equipment with reference to Palladam Taluk is the study's goal. It is recommended that farmers work to improve their technological competency by practicing and learning new things on a regular basis. The conclusion is that although there is a favorable opinion of current equipment, there are still issues that need to be resolved, including access to assistance and subsidies, technical complexity, and financial constraints. The report also emphasizes the necessity of ongoing education, training, and government initiatives to support farmers' successful adoption and use of contemporary agricultural technology.

## KEYWORDS

Modern agricultural equipment, Agricultural, Technology, Farmers.

## INTRODUCTION

Agriculture, as the backbone of many economies, has been undergoing a profound transformation propelled by technological advancements. The advent of modern agricultural equipment signifies a pivotal shift from traditional farming methods, offering farmers the promise of increased productivity, resource optimization, and environmental sustainability. In this dynamic context, understanding farmers' perceptions and patterns of usage towards modern agricultural equipment becomes imperative for fostering effective and sustainable agricultural practices. agriculture could undergo a revolution if cutting-edge tools and technology are incorporated into the industry. We need to investigate how farmers view and use these new technologies as we find ourselves at the nexus of cutting-edge

technology and conventional wisdom. The purpose of this study is to examine the complex relationships between farmers', knowledge, and use of contemporary agricultural equipment.

The way that modern agricultural equipment is seen by farmers greatly influence show modern farming methods develop. In general, attitudes have gradually changed as farmers become more aware of the advantages that contemporary machinery offers to their businesses. The recognition of improved efficiency is a crucial component of this view. Farmers value the time and labor savings that modern technology provides, since it enables them to cover greater ground, maximize resource use, and simplify labor-intensive operations that were formerly labor-intensive.

## **SCOPE OF THE STUDY**

The scope of this study is confined to Palladam Taluk. This study aims to provide a comprehensive understanding of the local agricultural landscape. The scope involves assessing farmers' technological literacy to measure their awareness with modern farming technologies. Additionally, the research explores farmers' perceptions of the ease of using advanced equipment and investigates their views on the economic benefits linked to adopting such technologies. Furthermore, the study delves into farmers' perspectives on how the incorporation of modern agricultural equipment influences overall productivity. By addressing these objectives, the research endeavors to offer valuable insights that can inform strategies for the effective integration of modern farming practices in Palladam Taluk, contributing to the sustainable development of the local agriculture sector

## **STATEMENT OF THE PROBLEM**

The incorporation of modern agricultural equipment is a crucial factor in determining the productivity and efficiency of farming techniques in the current agricultural environment. Farmers that struggle with antiquated equipment frequently experience lower output, higher labour costs, and higher operating expenses. This shortfall puts farming's financial sustainability in jeopardy and makes it more difficult to meet the world's growing need for food supplies. With agriculture at the center of food security, environmental sustainability, and economic expansion, it is becoming more and more important to switch from outdated to contemporary equipment.

## **OBJECTIVES**

- To study the socio-economic profile of the respondents.
- To evaluate technological literacy in the usage of modern agricultural equipment among respondents
- To assess the impact of government support on modern agricultural equipment.
- To identify the challenges encountered in the usage of modern agricultural equipment.
- To offer valid suggestions based on the study.

## **METHODOLOGY AND TOOLS**

This section contains the methods and techniques through which the research and analysis is carried out.

## **SOURCE OF DATA**

Data is collected through both primary data and secondary data sources. Primary data is collected in the form of questionnaire survey and interview survey method from the respondent. Secondary data is collected from various references of articles and websites.

## **SAMPLING DESIGN**

In this research, I have used convenient sampling method to select the sample population.

## SAMPLE SIZE

The total number of samples taken for the study is 250 respondents.

## TOOLS

The data gathered through questionnaire for the study were consolidated in relevant and classified under relevant headings. Those data were analyzed within the help of statistical techniques such as:

1. Percentage Analysis
2. Chi-square Test
3. ANOVA
4. Ranking Analysis

## LIMITATION OF THE STUDY

- This sample size is confined to 250 due to time and cost contains.
- The area of the study is limited to Palladam Taluk only.
- The perception of the farmers may change over time. This study is not suitable for all farmers.
- The researcher found it difficult to collect the questionnaire, since some of the respondents did not give proper response.

## REVIEW OF LITERATURE

**Thao Phuong Pham (2023)<sup>1</sup>“Thao Phuong Pham (2023), Inquiries into Farmers’ Perception of Biodiversity in Vietnam”** This study is Mainly focus on A Systematic Analysis, Forum for Social Economics, we examine whether small farmers have an appropriate perception of biodiversity conservation and what are the main barriers preventing them from practicing biodiversity conservation. Based on four focus group interviews with a total of 39 farmers in two key vegetable production sites in Vietnam and four expert interviews, which the qualitative analysis has been used as a primary data. Simple percentage analysis, one way, independent t-test statistical tools have been applied to reach the findings of the study. Finally, biodiversity conservation should be effective if farmers are supported by joint actions from both the government and businesses.

**Sandra Ricart (2022)<sup>2</sup>“Sandra Ricart (2022), On farmers' perceptions of climate change and its nexus with climate data and adaptive capacity”.** This study is Mainly focus on Farmers' perception of climate change is crucial in adaptation intention and process. However, farmers' perceptions may not be timely, accurate and systematically consistent with the direction and significance of observational records. We analyse a portfolio of 147 papers collected from the Scopus library catalogue since 2000. We identify which approaches are used to compare perceived and observed data, mean square and regression used, We suggest putting major efforts into reinforcing these research lines as part of a novel domain-dependent trend to reduce the discrepancy. Most importantly, perceived risk and its effects on farmers' adaptive capacity.

**Newton Morara Nyairo (2022)<sup>3</sup>“Newton Morara Nyairo (2022), Farmers’ attitudes and perceptions of adoption of agricultural innovations in Kenya”** This research applied a mixed methods approach to assess the influence of attitudes and perceptions in adoption of agricultural innovations by smallholder farmers in Kenya. Questions 26 through 44 of the questionnaires solicited information regarding usage and perceptions towards technologies commonly used by households as well as their usage and perceptions of the efficacy of agricultural extension delivery in the area. The design of the study presumed that combining the survey questionnaire, T-TEST and focus group discussions would broaden and deepen understanding of farmer perspectives of technology adoption. The quantitative results concluded that agricultural technology was generally positively valued by smallholders.

**Kanesh Suresh (2022)<sup>4</sup>“Kanesh Suresh (2022), Farmers’ Perception on Precision Farming Technologies”** This paper reports an investigation into the perception and attitudinal characteristics of farmers who intend to adopt these technologies in the Batticaloa district in Sri Lanka. The primary data were composed of randomly selected 202 farmers using a well-designed questionnaire survey. Questionnaire has been used as a primary data. Simple percentage analysis, chi-square analysis and correlation statistical tools have been applied to reach the findings of the study. The findings suggest that respondents have positive perception of adopting precision agricultural techniques. Perceived usefulness positively impacts attitude, and attitudes affect behavioural intention.

**Agussabti Agussabti (2022)<sup>5</sup>“AgussabtiAgussabti (2022), Farmers’ perspectives on the adoption of smart farming technology to support food farming in Aceh Province, Indonesia”**, This research examined the adoption readiness in using SFT for three food commodities in Aceh Province, Indonesia, namely rice, maize, and potatoes. The sample comprises 70 farmers per commodity and 48 extension workers, obtained through the quota sampling method, culminating in 258 respondents. There are four types of SFT with examples of its tools circulating in the Indonesian market as referred to in the earlier mentioned questions. This means it is essential to focus on the economic and capacity building of farmers by providing them with appropriate SFT devices to overcome the high investment cost and provide the technical skill for its application to overcome this situation.

## **RESEARCH GAP**

The previous studies have concentrated to analyse Farmers’ perceptions towards organic farming. They have not concentrated to evaluate technological literacy in the usage of modern agricultural equipment. They have taken efforts to evaluate Farmers’ risk perception in production. They have not taken efforts to assess the impact of government support on modern agricultural equipment. They have contributed their studies in Farmer’s Perception on Farm mechanization. They have not contributed in identify the challenges encountered in the usage of modern agricultural equipment.

## **ANALYSIS OF THE DATA**

In research, data analysis is the act of examining, purifying, converting, and analyzing data in order to find relevant information, make inferences, and aid in decision-making. In many disciplines, including the social sciences, natural sciences, engineering, and business, it is an essential stage in the research process.

**PERCENTAGE:**

S.NO	FACTOR	NO.OF RESPONDENTS	PERCENTAGE
1	GENDER(MALE)	160	64.2
2	EDUCATION LEVEL(PRIMARY SCHOOL)	95	38
3	FARM SIZE(MEDIUM5-20 ACRES)	117	46.7
4	INCOOME PER ANNUM(1,00,001-2,00,000)	110	44
5	YEARS OF FARMING EXPERIENCE(11-20 YEARS)	83	33.3
6	MAIN CROPS CULTIVATED (OILSEEDS e.g SOYBEANS, SUNFLOWER)	110	44
7	INTERESTED IN LEARNING NEW TECHNOLOGICAL SKILLS FOR FARMING(VERY INTERESTED)	102	40.8

- Majority 64.2% of the respondents are male.
- Mostly 38.0% of respondents have completed primary school.
- Mostly 46.7% of the respondents said that medium (5-20 acres) as their farm size.
- Mostly 44% of the respondents haveRs. 1,00,001-2,00,000 towards the as their income (per annum).
- Mostly 33.3% of the respondents have 11-20 years of farming experience.
- Mostly 44% of the respondents said that Oilseeds (e.g., soybeans, sunflower) main crop(s) cultivated.
- Mostly 40.8% of the respondents said that very interested in the learning new technological skills for farming.

**CHI-SQUARE ANALYSIS**

<b>FACTOR</b>	<b>CALCULATED VALUE</b>	<b>TABLE VALUE</b>	<b>RESULT</b>
SUBSIDIES INFLUENCE OF MODERN AGRICULTURAL EQUIPMENT	.080	21.026	ACCEPTED
POLICY AWARENESS LEVEL	.015	21.026	ACCEPTED
SATISFACTION WITH GOVERNMENT SUPPORT	.007	21.026	ACCEPTED
POLICY EXECUTION GOVERNMENT FOR MODERN EQUIPMENT	.168	21.026	ACCEPTED
GOVERNMENT COMMUNICATION ABOUT MODERN EQUIPMENT	.036	21.026	ACCEPTED

Through chi-square analysis, the relationship between the two variables i.e. Education qualification and the Satisfaction level for the usage of generic medicines is analysed.

There is no significant relationship between education qualification with subsidies influence adoption of modern agricultural equipment, policies awareness level, satisfaction with government support, policy execution government for modern equipment, government communication about modern equipment.

**ONE-WAY ANOVA ANALYSIS**

<b>FACTOR</b>	<b>CALCULATED VALUE</b>	<b>TABLE VALUE</b>	<b>RESULT</b>
CHALLENGES IN THE MAINTENANCE OF MODERN AGRICULTURAL EQUIPMENT	.514	230.2	ACCEPTED
AVAILABILITY OF SPARE PARTS FOR MODERN EQUIPMENT	.008	230.2	ACCEPTED
INITIAL COST TOOLS POSES CHALLENGES	.743	230.2	ACCEPTED
FACE DIFFERENCE TECHNICAL SUPPORT FOR MODERN EQUIPMENT	.965	230.2	ACCEPTED
LOGISTICAL CHALLENGES MODERN AGRICULTURAL MACHINERY	.991	230.2	ACCEPTED

Through ONE-WAY ANOVA analysis, the association of two variables i.e. Age and the satisfaction level for the usage of the generic medicines is analysed.

There is no significant association between Gender with challenges in the maintenance of modern agricultural equipment, availability of spare parts, initial cost tools poses a challenge, face difference finding reliable technical support, logistical challenges in agricultural machinery.

**RANKING ANALYSIS**

<b>FACTORS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>TOTAL</b>	<b>RANK</b>
Tractors with Advanced precision Technology	35	50	54	70	27	14	954	1
Harvesting Machinery	23	14	54	70	55	34	778	5
Sprayers	26	30	61	70	39	24	862	2
Cultivators	16	34	39	64	60	37	771	6
Seeders	23	32	43	67	50	35	806	4
Irrigation system	19	30	52	73	41	35	808	3

**INTERPRETATION**

The table shows that the tractors with advanced precision technology shows first rank, sprayers shows second rank, Irrigation system shows third rank, seeders shows fourth rank, harvesting machinery shows fifth rank, cultivators shows sixth rank.

**SUGGESTION**

- Government must conduct camps in villages and rural areas to inform the public about the modern technology and equipment in agriculture.
- Government can advertise the about the subsidies and their benefits in agriculture to the farmers. This will increase the level of agriculture.
- Farmers can be educated with the knowledge of usage and utilities of modern technological equipment in agriculture.
- Farmers need to prioritize learning new technological skills for farming to stay updated and competitive in the modern agricultural landscape.
- Farmers should aim to integrate technology into their farming activities consistently to maximize efficiency and productivity.



## CONCLUSION

In conclusion, it is evident from this study on farmers' perception and usage towards modern agricultural equipment that there exists a significant interest and willingness among farmers to embrace technological advancements in farming practices. The findings suggest that farmers recognize the potential benefits of modern equipment in enhancing efficiency, productivity, and sustainability in agriculture. Moreover, the study highlights the importance of factors such as technological proficiency, confidence in equipment usage, and awareness of government support programs in influencing farmers' adoption and utilization of modern agricultural equipment.

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