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## A study on satisfaction level and constraints faced by farmers in availing the services of custom hiring centres in Coimbatore district of Tamil Nadu

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### Abstract

Custom hiring services (CHS) have empowered small and marginal farmers to carry out their agricultural operations promptly by granting them subsidized access to expensive farm machinery on a rental basis. The research was conducted in the Coimbatore district of Tamil Nadu. Six blocks were chosen, and a total of 90 farmers were selected, specifically in regions where Custom Hiring Service Centres were operating efficiently. The data analysis was conducted using percentage analysis, likert scale and Garrett ranking techniques. The findings indicate that farmers expressed high level of satisfaction due to the availability of farm machinery at Custom Hiring Centres. The primary constraint identified is the non-availability of skilled labor to do farm operations. The study also involves valuable suggestions to address the identified challenges.

**Keywords:** Custom hiring service centres, farm machinery, satisfaction level, constraints

### Introduction

In recent years, India's agriculture and related sectors have witnessed positive growth due to government efforts to enhance productivity, stabilize farmers' income, encourage crop diversification, and invest in agricultural infrastructure. The scarcity of agricultural labor is a significant challenge encountered by farmers in rural India. As a result, the adoption of farm mechanization becomes crucial for farmers to carry out agricultural operations promptly. Agricultural mechanization has played a significant role in this development, driven by initiatives like the Green Revolution. However, the extent of mechanization varies based on socioeconomic conditions, crop types, and geographical factors. To promote agricultural mechanization, the government implemented the "Sub-Mission on Agricultural Mechanization," offering financial assistance for machinery purchase.

In Tamil Nadu, custom hiring centres have significantly expanded cultivated land, benefiting around 500 to 600 farmers each. The Uzhavan app, developed by the Tamil Nadu government, facilitates access to subsidy schemes for agricultural inputs and provides information on crop insurance options (Nandhini and Rohini, 2022) [2]. Moreover, it connects farmers with low-cost tractor and farm equipment services offered by custom hiring centers. Coimbatore district has received subsidies for various agricultural equipment, encouraging entrepreneurs to participate in the Sub-Mission on Agricultural Mechanization scheme.

Custom hiring of farm machinery was introduced in the Indian agriculture during 19th century (Srinivasarao *et al.* 2013) [1]. Custom hiring services (CHS) have emerged as a vital solution to labor shortages and improved efficiency. The Custom Hiring Centres (CHCs) offer agricultural machinery and equipment to farmers on a rental basis, catering to those who are unable to afford high-end agricultural machinery and equipment for purchase. CHCs have been established at the village level, benefiting small and marginal farmers. Each custom hiring centre has benefited an estimated number of 500 to 600 farmers (Murugesan, 2019) [3]. This study focuses on examining the level of satisfaction of farmers in utilizing custom hiring services the issues encountered by farmers when adopting the machinery and services provided by these centers. By understanding these challenges and issues, policymakers and stakeholders can work towards further enhancing the effectiveness and impact of custom hiring services in supporting the agricultural sector and improving farmers' livelihoods.

**Objective of the study**

The study aims to assess the level of satisfaction of farmers towards usage of custom hiring services and to examine the constraints faced by farmers in availing the services provided by CHCs.

**Research Methodology**

**Selection of study area**

The study is focused on Coimbatore district in Tamil Nadu due to its prominent position in farm mechanization. All twelve blocks within the district have established Custom Hiring Centres, along with a farm machinery and equipment testing centre. Consequently, Coimbatore district was chosen as the ideal location for studying CHCs and exploring alternative business models.

Among these twelve blocks, five were specifically selected: Pollachi North, Annur, Kinathukadavu, Thondamuthur, Madukkarai, and Anamalai, known for the efficient operation of CHCs and widespread utilization of machinery and implements by the majority of farmers.

**Sampling design**

Purposive sampling technique was used to select the farmers who avail services from CHCs. Well-structured interview schedule was prepared to collect the required data and information from the selected farmers as well as from the CHCs. Ninety farmers who availed machinery and implements through rent from CHCs of the selected blocks were selected and six Custom Hiring Centres providing services were chosen accordingly from each block. All the respondents were directly contacted for collecting data and to gather some information regarding those services.

**Tools for analysis**

Percentage analysis (Kumar *et al.*, 2022) <sup>[4]</sup>, likert scale technique (Tagore and Divya, 2022) <sup>[4]</sup>, Rank Based Quotient (RBQ) and Garrett ranking (Ao and Jamir 2020) <sup>[6]</sup> are the

tools used for the study. Percentage analysis is used to determine the demographic characteristics. Likert scale is used to analyze the level of satisfaction towards CHS. Garrett ranking technique was used to examine the constraints faced by farmers in availing custom hiring services.

$$\text{Percentage analysis} = \frac{\text{Number of respondents}}{\text{Total sample size}} \times 100$$

In Rank Based Quotient Method, the respondents were asked to rate the given statements and the rank given by the respondents were converted into RBQ scores by using the formula,

$$\text{RBQ} = \frac{\sum Fi(n+1-i)}{Nn} \times 100$$

Whereas, RBQ = Rank Based Quotient

$F_i$  = Frequency of attributes for the  $i^{\text{th}}$  rank of the factor

N = Number of respondents

n = Maximum number of ranks given by the respondents for the given statements

i = Rank of the attributes

Garrett ranking technique was used to evaluate the problems faced by the custom hiring service providers and users. In this method, the farmers are asked to rank the problems according to the magnitude of the problem. The orders of merit given by respondents are converted into ranks by using the following formula.

$$\text{Percent position} = 100 \times \frac{(R_{ij} - 0.5)}{N_j}$$

Where,

$R_{ij}$  = Rank given for  $i^{\text{th}}$  factor by  $j^{\text{th}}$  respondent

$N_j$  = Number of variables ranked by  $j^{\text{th}}$  respondent

**Analysis and findings**

**Table 1:** Demographic characteristics of respondents

Particulars	No. of respondents (n = 90)	Percentage (100%)
<b>Age</b>		
Up to 35 years	18	20
35-55 years	45	50
Above 55 years	27	30
<b>Gender</b>		
Male	82	91
Female	8	9
<b>Educational status</b>		
No formal education	7	8
Able to read and write	2	2
1 <sup>st</sup> to 5 <sup>th</sup> standard	21	23
6 <sup>th</sup> to 8 <sup>th</sup> standard	12	13
9 <sup>th</sup> to 10 <sup>th</sup> standard	28	31
11 <sup>th</sup> to 12 <sup>th</sup> standard	16	18
Degree or Diploma holder	4	5
<b>Farm size</b>		
Marginal	11	12
Small	20	22
Semi-Medium	24	27
Medium	26	29
High	9	10

Farming experience		
Low	19	21
Medium	54	60
High	17	19
Annual income		
Low (Up to Rs. 300000)	52	58
Medium (Rs. 300000 to Rs. 1000000)	29	32
High (Rs. 1000000 and above)	9	10

The analysis of the demographic characteristics of farmers who use custom hiring services, based on a total of 90 respondents is shown in table 1. It reveals that the majority of users fall in the age group of 35-55 years, accounting for 50% of the respondents, followed by those above 55 years at 30%, and those up to 35 years at 20%. Custom hiring services are predominantly utilized by male farmers, constituting 91% of the respondents, while female farmers represent only 9%. Moreover, 82% of the farmers have completed at least 9th to 12th standard education. In terms of farm size, 29% own medium-sized farms, 27% have semi-medium farms, and 22% have small farms. The majority of respondents (60%) have medium farming experience, while 58% have low annual incomes (up to Rs. 300,000), and 32% fall under the category of medium annual income (Rs. 300,000 to Rs. 1,000,000). These insights suggest that custom hiring services are more

commonly used by middle-aged male farmers with some level of formal education, owning medium-sized or semi-medium farms, and having moderate farming experience and income levels.

#### Level of satisfaction of farmers towards custom hiring service centres

Level of satisfaction of farmers towards custom hiring service centres refers to the degree of contentment, fulfilment, or happiness experienced by farmers who have utilized the services offered by custom hiring service centres. It is analysed using Rank Based Quotient (RBQ) method. The statement with the highest RBQ score was considered as the respondents' highest satisfaction level on using the custom hiring services as given in table 2.

**Table 2:** Satisfaction level of farmers towards CHCs

S. No	Attributes	Satisfaction level of farmers					RBQ score	Rank
		HS	S	N	DS	HDS		
1.	The availability of farm machinery at Custom Hiring Centres	45	35	10	0	0	62.69	I
2.	Rental rates for farm machinery at Custom Hiring Centres	35	20	35	0	0	57.14	II
3.	Types of machinery available at Custom Hiring Centres adequately meets the demands of different farming practices	20	10	40	15	5	46.82	III
4.	Performance and reliability of the farm machinery rented from Custom Hiring Centres	18	22	12	15	23	42.38	IV
5.	Condition and quality of the machinery provided by Custom Hiring Centres	8	25	7	30	20	38.25	V
6.	Availability of additional services, such as maintenance and repair support	12	5	18	22	33	33.49	VI
7.	Equipment provided by Custom Hiring Centres is up-to-date and in line with modern farming needs	8	6	16	28	32	31.74	VII

From table 2, it is observed that the satisfaction level of farmers towards Custom Hiring Centres (CHCs) is analyzed based on several attributes using the Rank Based Quotient (RBQ). The attributes are ranked based on farmers' satisfaction, with the availability of farm machinery at CHCs ranked first, indicating the highest level of satisfaction. Rental rates for farm machinery are ranked second, showing a more divided opinion among farmers. The adequacy of machinery types is ranked third, receiving moderate satisfaction. Performance and reliability of rented machinery are also ranked third, indicating a similar level of satisfaction. The condition and quality of equipment are ranked fifth, with potential for improvement. Availability of additional services like maintenance and repair support is ranked sixth, indicating moderate satisfaction. Lastly, the up-to-dateness and alignment of equipment with modern farming needs are ranked seventh, representing the lowest level of satisfaction.

The data highlights the importance of addressing pricing concerns, expanding machinery options, and improving performance and maintenance services to enhance farmers' overall satisfaction with CHCs.

#### Constraints faced by farmers in availing the services from custom hiring centres

The percentage position of each rank thus obtained was converted into scores by referring to the table given by Henry Garrette (1969). Then, for each factor, the scores of individual respondents are added together and divided by total number of respondents for whom the scores are added. Then the constraints are ranked according to the obtained scores (Ao and Jamir, 2020) <sup>[6]</sup>. The tabular representation of various constraints faced by farmers in availing the services from CHCs is given below.

**Table 3:** Constraints faced by farmers in availing custom hiring services

S. No	Constraints	Garrett score	Rank
1.	Non availability of skilled labour to operate agricultural machineries	58.27	I
2.	Non availability of machines during peak season	56.23	II
3.	Unavailability of good conditioned machinery	55.68	III
4.	Lack of awareness about Custom Hiring Service Centres	55.10	IV

5.	Timely information on farm machinery is not available	53.46	V
6.	Difficulty in transportation of agricultural machinery and equipment	52.52	VI
7.	More distance of CHC from the village	49.36	VII
8.	Hiring charges are not affordable	48.68	VIII
9.	Payment methods are not suitable	43.20	IX
10.	Poor services provided	41.77	X

From the table 3, it is observed that the most significant constraint is the "Non availability of skilled labour to operate agricultural machineries," emphasizing the importance of addressing the shortage of trained operators. Following closely in second place is the constraint of "Non-availability of machines during peak season", indicating the importance of meeting during peak season by ensuring the availability of more number of machineries. The "Unavailability of good conditioned machinery" ranks third, indicating farmers' concern over the lack of well-maintained equipment. "Lack of awareness about Custom Hiring Service Centres" ranks fourth, underlining the need for awareness campaigns. "Timely information on farm machinery not being available," ranks fifth, highlighting the need for better communication about machinery availability. Addressing these concerns, such as providing well-maintained machinery, availability of machineries during peak season, ensuring timely information, and enhancing awareness, could significantly improve farmers' satisfaction with the services offered by custom hiring service centers.

### Suggestions

- Farmers face challenges in finding skilled operators, so organizing training programs can increase the number of skilled labor and improve the efficient use of machinery.
- Farmers expressed dissatisfaction with the unavailability of well-maintained machinery, so investing in a diverse range of equipment and ensuring regular maintenance can address this concern.
- Many farmers are unaware of the services offered, so conducting awareness campaigns can educate them about the benefits of CHCs and encourage greater utilization.
- Farmers face difficulties due to machinery scarcity during crucial periods, so maintaining an adequate supply during peak seasons can alleviate this constraint.
- The distance to CHCs poses a challenge, so setting up centers closer to villages can enhance accessibility for farmers, reducing travel time and expenses.
- Focusing on customer support and addressing farmers' concerns promptly can enhance overall satisfaction and loyalty of farmers in utilizing CHC services.

### Conclusion

The study provides valuable insights into the demographic characteristics, level of satisfaction, and constraints faced by farmers availing the services of Custom Hiring Centres (CHCs) in Coimbatore district, Tamil Nadu. The findings highlight that CHCs are predominantly utilized by middle-aged male farmers with some level of formal education, owning medium-sized or semi-medium farms, and having moderate farming experience and income levels. While the availability of farm machinery and rental rates received high satisfaction levels, challenges related to types of machinery, machinery quality, and additional support services were identified. Moreover, the unavailability of skilled labor and non-availability of machines during peak season were major constraints faced by farmers. To improve overall satisfaction and enhance effectiveness of CHCs, it is essential to focus on

providing well-maintained machinery, number of machineries available, implementing efficient communication channels. Organizing training programs to increase skilled labor availability, conducting awareness campaigns, and improving customer support services can further address farmers' concerns and foster greater utilization of CHCs. By adopting these measures, CHCs can play a crucial role in supporting agricultural productivity, uplifting farmers' livelihoods, and contributing to the sustainable growth of the agricultural sector in the region.

### Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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