AN ECONOMIC STUDY ON FARM SIZE AND PRODUCTIVITY RELATIONSHIP IN PADDY CULTIVATION IN TIRUCHENDUR TALUK

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ABSTRACT

India has the largest potential for paddy output in the world and also the second largest exporter of rice in the world. Paddy is cultivated at least twice a year in most part of India, the two seasons being known as rabi and kharif respectively.

Land is important factor for agricultural production has different types of soil possessing inherent quality variations which hinder the enhancement of agricultural output beyond certain level even by the judicial application of other inputs. The major objectives of the study is to analyse the relationship between farm size and productivity in study area and to analyse the technical changes improve the productivity in the study area. The major findings of the study is agriculture is changing from subsistence level to market oriented one. However the ratio of net profit to total output is low. It decreases as farm size creases. As farm size increase output also increases but not proportionately, the ratio is relatively higher in tenant holding.

Keywords: Agriculture, Labour, Productivity, Wages

INTRODUCTION

Agriculture has always been the backbone of the Indian Economy more than two – thirds of the work-force work in agriculture and a large many depends upon it being engaged in marketing agricultural products or organized agro-based industries. Having realized the immense need for strengthening agricultural sector. Government allocated more funds during the plan period.

Continious growth of agriculture is important not only to attain self-reliance at national level but also for household food security and to bring about equity in in distribution of income and wealth resulting in rapid reduction in poverty levels. Indian agriculture has, since independence, made

rapid strides. The annual food production from 51 million tonnes in early fifties to 206 million tonnes at the turn of the century, it has contributed significantly in achieving self-sufficiency in food and try to reduce food shortages.

The relationship between farmsize and productivity has been intensely debated in India. Large number of studies during in India. Large number of studies during 1960, provided convincing evidence that crop productivity per unit declined with an increase in farm size which provided strong support for land reform. Subsequently many analysis started exploring reasons for inverse relationship between farm size and productivity.

India has the largest potential for paddy output in the world and also the second largest exporter of rice in the world. Paddy is cultivated at least twice a year in most part of India, the two seasons being known as rabi and kharif respectively. The former cultivation depends on irrigation while latter depends on monsoon. Paddy cultivation plays a major role in social and cultural life of rural India.

Statement of the problem:

This study analyse the farm size and productivity relationship in paddy cultivation in TiruchendurTaluk in Thoothukudi District. Agriculture encounters many problems which are specific to this area relate to the quantity and quality of agricultural inputs.

Land is important factor for agricultural production has different types of soil possessing inherent quality variations which hinder the enhancement of agricultural output beyond certain level even by the judicial application of other inputs.

Agricultural farmers prefer to go to other non-farm employment and demand higher wages which affect the productivity in paddy cultivation.

Lack of infrastature facilities are also play vital role affecting farm size and productivity.

The farmers lack technical education.

Therefore an analysis on farm size productivity will throw much light on this subject matter and may improve the productivity in paddy cultivation.

Objectives:

The main objective of the study is to analyse the relationship between farm size and productivity. This specific objective of the study are.

1. To analyse the relationship between farm size and productivity in study area.
2. To analyse the technical changes improve the productivity in the study area.

Hypothesis

Following hypothesis were tested in this study,

1. There is no positive relationship between farm size and productivity in the study area.
2. There is no changes in the productivity level due to using modern technology.

This study is a cross section analysis covering a period of one year from October 2017 to March 2018. This period was chosen keeping in mind the season in which paddy is cultivated in TiruchendurTaluk in Thoothukudi District.

The primary data and secondary data have been made use of this research work. The primary data were collected by using a questionarie schedule to collect the information from the respondents. The secondary were collected from agricultural office in TiruchendurTaluk inTuticorin District.

Sampling

TiruchendurTaluk consists of revenue villages and the totalfarmers in the villages were 5159. Among these, a sample of 245 farming households were selected through proportionate representative sampling number of households selected on the basis of random sampling were as follows.

Table I – 2: Selection of Sample

SI.No.	Sample Villages	No.ofCultivadors	No.of Sample farmers
1.	Kandasamypuram	2725	150
2.	Nathakulam	547	40
3.	Moolakari	67	1
4.	Nallur	79	1
5.	Veeramanikam	99	2
6.	Ammanpuram	75	1
7.	Kanam	275	15
8.	Alwarthirunagari	120	1

9.	Thenthiruperai	276	9
10.	Kurungatur	420	12
11.	Puraiyur	260	8
12.	Rajapathi	216	5
	Total		245

Source : Survey

Methodology

To estimate the relationship between farm size and productivity relationship, we have followed the following methodology.

1. Least square method had been used to analyse the relationship between farm size and productivity.
2. Multiple regression analysis have been used for identifying the determinants of farm efficiency.
3. Cobb – Douglas production function had been used to analyse the relationship between farm size and return to scale.

Scope of the study

The present study is confined to arrive at the relationship between farm size and productivity in paddy cultivation in TiruchendurTaluk in Thoothukudi District. Therefore an attempt is made to examine the relationship between farm size and productivity only. Moreover the present study throws light on the problems based by paddy cultivators, as it has an impact on farm size and productivity relationship to a market extent.

Limitations of the study

The study based on the primary data collect from the farmers for the period of October 2017 to March 2018 In the sample villages. Farmers do not maintain proper records for agricultural activities. It will affect the accuracy of the results to some extent.

Farm size and Productivity relationship in Paddy Cultivation in TiruchendurTaluk

Ordinary least square methods were used to analyse relationship between farm size and productivity in the study area.

A (I) Farm size Producitivity relationship

In this method for the analysis of farm size and productivity. Farming households were classified into four categories namely.

(1) Own farm
(2) Own holding
(3) Tenant farm
(4) Tenant holding

To analyse the performance of different types of farm in the study area, their productivity and profitability, etc., ordinary least square method were used. The function used was,

Log Q = log a + b log A

Where,

Q = money value of gross yield

A = farm size

β = efficiency parameter A

The size and direction of B determine the degree of relationship between farm size and productivity. The estimated value are,

Table -2: Relationship between Farm Size and Productivity

Reg. No.	Type of Farm	Number	Constant Log a	B – Co-efficient	S.E	R^2 (R^2)	F-Value
1.	All farms	265	0.065	9.151	0.003	0.937 (0.921)	59.856
2.	Own Farm	120	0.068	9.197	0.005	0.898 (0.873)	35.55
3.	Own Holdings	25	0.040	9.959	0.0028	0.809 (0.746)	12.770
4.	Tenant Farm	78	0.084	8.816	0.009	0.605 (0.473)	4.597

| 5. | Tenant Holdings | 27 | 0.051 | 9.255 | 0.004 | 0.848 (0.811) | 22.465 |

Source: Survey.

High degree ofpositive relationship between farm size and productivity exist. The relations hip between these two are equal to one another. As such the first hypothesis that positive relationship between farm size and productivity in the production of paddy in the study area has been proved.

This means that as the land input increases productivity of paddy also increase. It means that the own and tenant holding were more productive than the other farms.

So, it importance to analysis the relationship is existence of positive relationship and its relatively high in productivity of own holding.

B (1) Farm size and farm business Income

In many developing countries world experienced important to increase the food productions. The farmer use available resources in optimum manner, so it maximize their income and at least cost on correct basis while some farmers use maximum physical yield per unit of input used.

The relationship between farm size and business income is identified by applying a simple regression which is of the form.

$$\text{Log FBI} = \text{Log } a + B \text{ Log } A$$

Where

FBI = Farm Business Income

A = Farm Size; and

B = Efficiency parameter of A

Table - 2: Farm size and business Income

Reg. No.	Types of farm	Number	Constant log a	B – Co-efficient	S.E	R^2 (R^2)	F – value
1.	All Farm	265	0.172	7.288	0.051	0.350 (0.181)	2.155
2.	Own Farm	120	0.448	3.464	0.449	0.302 (0.128)	1.738
3.	Own holding	25	0.529	2.795	0.048	0.721 (0.628)	0.7766
4.	Tenant Farm	78	0.163	7.472	0.010	0.832 (0.776)	14.889
5.	Tenant holding	27	0.236	6.577	0.012	0.946 (0.933)	70.956

Source : Survey

The analysis shows that farm size positively influence the farm business income in all types of farms.

The farmers used more level of capital equipment in offering price and the labour also used is costly and they used fertilizer and manures in the proper time it will help to increase the productivity and also increase the business income.

CONCLUSION

Following conclusion emerged out of the study,

- ❖ Agriculture is changing from subsistence level to market oriented one. However the ratio of net profit to total output is low. It decreases as farm size creases. As farm size increase output also increases but not proportionately, the ratio is relatively higher in tenant holding.
- ❖ Ratio of net profit to total cost and paid out cost also indicate the prevalence of capitalist relations size farmers hire labour and capital equipment's.

❖ The productivity of farm also positively influence the profit of the farm. The capitalist main aim to get more profit. In the study area capitalist relation in agriculture also confirms this fact.

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