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An Economic Analysis of Palmyrah Tappers in Tuticorin District

D. Amutha*, D. Rathi**

Abstract

The purpose of this study is to find out the socio-economic and living condition of the palmyrah tappers in Tuticorin district of Tamilnadu. The present study has covered the three villages from Tuticorin District viz Korampallam, Pudukkottai and Pannaivilai. The study utilized both primary and secondary data. Percentage, average, standard deviation, multiple linear regression, F test and Chi-square test were used. In order to find out whether there is any correlation between the family type and income of respondents, chi-square test has been applied. As the calculated value of chi-square is greater than the table value at 5 per cent level of significance, there is a relationship between income of the respondents and family types of the respondents study area. The determinants of yield per acre palm plantations are identified with the help of multiple linear regression models of Cobb-Douglas type. Per acre yield is taken as the dependent variable and six factor inputs are included as independent variables. It is observed in the case of palm orchards, R^2 value indicated that about 74 per cent of variations in yield were jointly caused by the six explanatory variables included in the model. Human labour and capital was found to be statistically significant at 5 per cent level. It indicated that one per cent increase in these variables could increase yield by 0.2813 per cent and 0.2871 per cent respectively. It was also found that the human labour had a greater influence on the determination of yield, followed by the variable capital. As per F-value, the fitted regression model was statistically significant at 5 per cent level. The study gives a clear idea of income; saving, debt and expenditure pattern of the households of palmyrah tappers in Tuticorin district and brings to light certain causes for socio-economic backwardness of the tappers community.

Keywords: Palmyrah Tappers; Soil Erosion; Natural Wealth; Pathaneer Noungu Combination; Jaggery; Eco-Friendly.

Introduction

Palms are believed to be among the oldest flowering plants in the world (Redhead 1989). For centuries, many palm species have been tapped throughout the tropical world in order to produce fresh juice (sweet toddy), fermented drinks (toddy, wine, arak), syrup ("honey"), brown sugar (jaggery) or refined sugar. One of mankind's first sources of sugar was probably *Arenga pinnata* (Redhead 1989). Hindus knew how to extract it about 4,000 years ago (Ferguson 1888**,** cited by Fox 1977). Palm sugar is processed from the sap, sap contained in some plants of the Arecaceae tribe, one of which contained the palm trees (*Arenga pinnata*) [Soeseno, 1995].

Palm sugar obtained from palm juice tapping process which then reduced the water content to be solid. Product palm sugar is in the form of sugar that is printed with a coconut shell [Soeseno, 2000]. Opportunities utilization of palm trees, especially for the manufacture of palm sugar is still very open and not breathing decreased and during this time the need for palm sugar always has increased, especially in moments before Eid or Christmas [Rumokoy, 2000].

Jaggery and treacle extracted from *Caryota urens* sap in Sri Lanka has been an important source of sugar from antiquity (Dissanayake, 1977). In Africa, the main traditional use of palm sap is for wine production. It has been reported in Egypt (date palm)

Author's Affiliation: *Associate Professor, ****Assistant Professor, Dept. of Economics, St.Mary's College (Autonomous), Tuticorin.

Reprint's Request: D. Amutha, Associate Professor of Economics, St.Mary's College (Autonomous), Tuticorin, Tamil Nadu 628001.
E-mail: amuthajoe@gmail.com

long before the birth of Christ (Barreveld, 1993) and on the Guinea coast by early navigators in the 15th century (Sodah Ayernor and Matthews, 1971).

A Tamil classical poem (Tala Vilasam) composed by Arunachalam in Tamil Nadu is entirely dedicated to the glory of this tree and enumerates 801 articles made from its various parts (Rangaswami 1977; Kovoor, 1983). This tree is called in India "Tree of Heaven", "Mankind's greatest provider in the tropics", "Tree of life", etc. (Rangaswami 1977). It is possible to obtain a sugary solution by the excision of the meristem in nearly all palms (Tuley, 1965a). Basically, starch reserves from the trunk are converted to sugar and are transported upwards toward the stem apex (Fox 1977). One of the main reasons for the decline of sugar production from palm trees is the increasing lack of fuelwood and its increasing price. Sugar production from *Arenga pinnata* requires 2-3 m^3 wood for 100 to 120 kg of sugar (Mogea et al, 1991).

With the income of farmers is excellent, so naturally if they can meet its needs will live food, clothing, shelter, health, education, and social, it can be understood that the success of the tapper farmers can improve the socio-economic welfare of farm families palm tapper [Bank Indonesia, 2008]. To determine the socio-economic conditions of farming families welfare palm tappers will be illustrated with a level of subsistence including food, clothing, shelter, education, health, and social [The National Population and Family Planning, 2000].

Importance of the Study

Palmyrah tree prevents soil erosion and protects natural wealth. Palm sugar derived from palm tree sap is preferred by consumers compared to other sugar products. Therefore, palm sugar industry is an alternative to improve the welfare of the community, because the processing is still done traditionally with very minimal capital. Opportunities utilization of palm trees, especially for the manufacture of palm sugar is still wide open. The demand for commodities is not breathing and during this decline are still unmet needs. Palm sugar derived from palm tree sap is preferred by consumers compared to other sugar products. By him, palm sugar home industry is an alternative to improve the welfare of farmers tapping sap, because processing can be done simply and with minimal capital.

Palmyrah juice could be used for producing a wide range of products. They include jaggery, spiced jiggery, value-added palm candy and toddy. During the summer season palmyrah pathaneer noungu combination is one of the most sought after and widely popular health drinks. Brushes used for toilet cleaning and floor cleaning are made out of palmyrah fiber. Palmyrah fibre is extracted out of the stalk of the palmyrah leaves. Palmyrah leaves are mostly used for thatching rural huts and for setting separate apartments with in the huts'. Palm leaf-based artifacts were exported in considerable quantity from Tuticorin port to European countries.

Palmyrah trees are grown mostly in Tiruchendur, Srivaikundam, Sattankulam and Vilathikulam taluks in Tuticorin district. *Jaggery* is produced from palmyrah juice; the production of jaggery is the main occupation of the people of Tiruchendur and Sattankulam taluks. In Thoothukudi, there are 3½ crores of palmyrah trees which are getting ready for harvest. Per tree, can give Rs.100 to the government as a revenue (3,50,00,000 x 100 = 350,00,00,000). The numbers of palmyrah trees in Tamil Nadu is eight crores (100 x 8,00,00,000 = 800,00,00,000). The government's annual income from toddy is 800,00,00,000 x 3 = 2400,00,00,000. The actual income from foreign liquor is 50,00,00,00,000. It is a good income to the government as well as the poor and unnoticed palmyrah tappers. At this juncture, the purpose of this study is to find out the socio-economic and living condition of the palmyrah tappers in Tuticorin district of Tamilnadu.

The Procedure Involved in Palmyrah Tapping

The palmyrah tapping is a difficult task. Tapping sugar palms is very labour intensive. It must be done daily otherwise the sap flow rapidly diminishes as tissue healing occurs and restarting the sap flow requires long and hard work. Whenever easier and better paid jobs were available, tapping was given up.

Palmyrah tappers should have the stamina and determination to apply themselves heart and soul to their formidable task. No time is earlier or too late for them. They get up early in the morning around 2 or 3 a.m. and get ready for the task. By 8 o'clock in the morning they retire home and remain home bound mostly. Their afternoon work starts at or after 2 p.m., it will go on till 7 p.m. in the evening. The work is so tiring that they invariably take a liberal dose of toddy to replenish their strength and energy. Over and above these climbing leaves its hideous marks on the legs and arms of the palmyrah tappers. No plastic surgery can ever remove these indelible scars. Thus palmyrah tapping is one of the most difficult occupations ever known to mankind.

Objectives of the Study

The basic objective of the study is to learn about

the palmyrah tappers. This study focuses on the following specific objectives.

1. To study the socio-economic condition of the palmyrah tappers in Thoothukudi district.
2. To know the reasons for tapping by the palmyrah tappers
3. To analyze the relationship between family type and monthly income of the respondents

Methodology

The present study has covered the three villages from Tuticorin District viz Korampallam, Pudukkottai and Pannaivilai. The study utilized both primary and secondary data. Primary data relating to the socioeconomic background and various other aspects relating to Palmyrah tappers were collected through pre-designed questionnaire from 90 Palmyrah tappers from the selected three villages (each village 30 respondents as sample) in Tuticorin District. The study was conducted over six months, starting from June 2015 to November 2015. This study reveals that all the respondents are male. Percentage, average, standard deviation, multiple linear regression, F test and Chi-square test were used.

Findings

Age-Wise Classification of the Respondents

The study shows that 20% of the respondent belongs to the age of 25-35 years, 13% of the respondents are 35-45 years, 27% of the respondents are 45-55 years, 22% of the respondents are 55-65 years and 18% of the respondents are 65 above age and the mean age group is 41.63 years and standard deviation was 32.41 in the study area.

Religion-Wise Classification of the Respondents

The data displays that 54% of the respondents are Hindu, 4% of the respondents are Muslim and 42% of the respondents are Christian.

Community wise Details of the Respondents

The fact indicates that 40% of the sample respondents belong to SC/ST, 30% of the sample respondents are BC, 16% of the sample respondents are MBC and 14% of the sample respondents are OC.

Educational Level of the Respondents

The statistics displays that 40% of the respondents completed Primary education, 8% of the respondents completed the Middle School education, 20% of the respondents High School education, 2% of the respondents completed of H.S.S education and 30% of the respondents are Illiterate.

Marital Status

The above table shows that a considerable number of the Palmyrah tappers are married. They constitute 91 percent of the sample, 9 percent are unmarried.

Particulars about Family type of the Respondents

The study demonstrations that 52% of the sample respondents are Nuclear family and 48% of the sample respondents are Joint families.

Family Members of the Respondents

The data shows that the family members of the sample respondents were out of 100 samples. 43 respondents having 43 families with the size ranging between 2 to 4 members (43%) and 57 respondents were having a family with the size ranging from 4 to 6 members (57%).

Particulars about the Nature of House

In the study shows that 52% of the sample respondents are having own houses and 48% of the sample respondents are having rent house.

Particulars About of the type of the House

The data shows that 25% of the sample respondents are having Thatched house, 23% of the respondents are having Tiled house and 52% of the respondents are having the Concrete house.

Reasons for Tapping by the Palmyrah Tappers

Nearly 32 per cent of the Palmyrah tappers take up this occupation because they prefer it out of interest. Nearly 48 per cent of the Palmyrah tappers take up this occupation because of traditional reasons and only one per cent of the respondents have this occupation due to high income. Out of the total, 19 per cent seem to have been compelled to take up this occupation because no other alternative occupation was available for them.

Types of Land Holdings

The data shows that 15% of the respondents

having below 2 acre Land, 25% of the respondents having 2-4 acre Land, 10% of the respondents having 4-6 acre of Land , 30% of the respondents having 6-8 acre Land and 20% of the respondents having above 8 acre Land.

Payment Details of the Respondents

The above table shows that 43% are getting their payment monthly and 57% are getting weekly payment.

Types of Crops

The statistics reveals the type of crops. 14% of the respondents are cultivating Paddy, 18% of the respondents are cultivating Black gram, 20% of the respondents are cultivating Green gram, 12% of the respondents cultivating Tomato, 16% of the respondents are cultivating Chilly and 20% of the respondents are cultivating Brinjal.

Monthly Income Details of the Respondents

Null Hypothesis: There is no significant difference between the incomes of the sample respondents between family types.

Table 1: Relationship between family type and monthly income of the respondents

Income (Rs.)	Percentage of Respondents		
	Own House	Rent House	Total
2000-4000	45	77.5	58
4000-6000	25	7.5	18
6000-8000	30	15.0	24
Total	100	100	100

Source: Computed from Primary Data.

From the above table reveals that 45% of the own house respondents acquire income between Rs.2000-4000, 25% of the respondents obtain income between Rs. 4000-6000 and 30% of the respondents receive income Rs. 6000-8000. In the case of rent house respondents 77.5% obtain income between Rs. 2000-4000, 25% of the respondents acquire income between Rs. 4000-6000 and 30% of the respondents get income Rs. 6000-8000 respectively.

In order to find out whether there is any correlation between the family type and income of respondents, chi-square test has been applied. The results of the Chi-square test are furnished below.

Calculated value of Chi-square = 41.09

Table value at 5 per cent level = 5.991

Degrees of freedom = 2

As the calculated value of Chi-square is greater than the table value at 5 per cent level of significance, there is a relationship between income of the respondents and family types of the respondents study area.

Monthly Savings of the Respondents

The data reveals that 26.67% of the respondents have savings in post office, 41.67% of the respondents prefer banks and 31.67% of the respondents are having their savings with chit fund respectively.

Expenditure Details of the Respondents

The fact reveals 44% of the respondents monthly expenditure is between Rs.3000-5000, 38% of the respondent's monthly expenditure between Rs. 5000-7000 and 18% of the respondent's monthly expenditure Rs.7000-9000.

Debt Details of the Respondents

The study indicates that 44% of the respondents have borrowed from bank, 16% of the respondents have borrowed from relatives and 40% of the respondents borrowed chit fund.

Table 2: Estimated regression results for cultivation of palm

Variable	Parameter Estimates
Intercept	3.814
Log X_1	0.2813* (3.821)
Log X_2	0.07232 (0.7394)
Log X_3	0.2871* (2.714)
Log X_4	0.0243 (0.03101)
Log X_5	0.1008 (1.2033)
Log X_6	0.1031 (0.7205)
R^2	0.7421
F- Value	32.54
Residual Sum of Squares	0.081
No. of Observations	90

Figures in brackets represent t- value.

* Indicates that the co-efficients are statistically significant at 5 per cent level.

The determinants of yield per acre palm plantations are identified with the help of multiple linear regression models of Cobb-Douglas type. Per acre yield is taken as the dependent variable and six factor inputs are included as independent variables.

It is observed from the table, in the case of palm orchards, R^2 value indicated that about 74 per cent of variations in yield were jointly caused by the six explanatory variables included in the model. Human labour and capital was found to be statistically significant at 5 per cent level. It indicated that one per cent increase in these variables could increase yield by 0.2813 per cent and 0.2871 per cent respectively. It was also found that the human labour had a greater influence on the determination of yield, followed by the variable capital. As per F-value, the fitted regression model was statistically significant at 5 per cent level.

Conclusion

The study gives a clear idea of income; saving, debt and expenditure pattern of the households of palmyrah tappers in Tuticorin district and brings to light certain causes for socio-economic backwardness of the tappers community. It is hoped that suggestions made in the study, will serve as a decision in solving many problems of tappers who, for centuries, have been basically poor and downtrodden. The palmyrah tappers are having poor socio-economic conditions. The challenge facing scientists, researchers, extension workers and farmers in the next millennium is to find appropriate ways of utilizing the earth's resources to feed the predicted doubling of the human population while at the same time improving the living standards of rural people. Directly, it provides employment to the toddy tappers, indirectly a significant section of people who lives in the rural segment gets livelihood through abundant source of palmyrah palm by marketing the products and products of the tree. And also it is a tree of eco-friendly and ultimately most economical one.

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