



## **A STUDY ON SATISFACTION OF FARMERS TOWARDS MARKETING OF TURMERIC IN ERODE DISTRICT**

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### **Abstract:**

Turmeric is also known as ancient and sacred spice of India. It is otherwise called as golden spice of life. Indian turmeric is considered to be the best in the world. It occupies a distinctive position in Indian spice market and also in international market. Among the major turmeric producing states, Andhra Pradesh occupies 38% of the total area grown and 58.5% of total production in India. In Tamil Nadu, the turmeric growing districts are Erode, Karur, Coimbatore, Namakkal, Salem and Trichy. The present study aims to assess the level of satisfaction of farmers in marketing of turmeric and the various factors involved in determining their satisfaction. For the purpose of the study 755 samples were drawn by using stratified random sampling technique. The data were analysed by using one way ANOVA, descriptive analysis, Regression, Factor analysis and Kruskal Wallly test. The study results finds that the turmeric farmers are satisfied with marketing, supports from market intermediaries and availability of rhizomes.

**Key Words:** Turmeric, Satisfaction, Erode

### **Introduction:**

Turmeric is considered as "Golden Spice of India". It finds a prominent place in the Indian culture as medicine, customs, food varieties etc. It has got result oriented medicinal value and used as anti-oxidant. Turmeric is cultivated in varieties according to the prevailing environment in the different states. India is the largest producer, consumer and exporter of turmeric and contributes nearly 75% of world's production network of turmeric. The turmeric is cultivated predominantly in the states of Andhra Pradesh, Maharashtra, Tamil Nadu Assam, Karnataka and Orissa. In Tamil Nadu, the cultivation of turmeric is practiced in many districts such as Erode, Coimbatore, Dharmapuri, Salem, Karur, etc.

Erode district in Tamil Nadu plays a phenomenal role in the world in terms of cultivation and exporting of turmeric. Erode turmeric has been selected under, "One District One Product" (ODOP) approach for the Central Government sponsored scheme. Recently Tamil Nadu Government in its budget 2020 has proposed to establish research center at Modakurichi. This is a step forward in promoting the turmeric market and thereby bringing the innovativeness in turmeric cultivation. Due to health consciousness and sustaining the agriculture and preserving environment, the organic products are given due importance in the present day trade and commerce. Therefore, the organic turmeric farming is also one of the opportunities to the turmeric farmers to achieve the millennium goal of sustainable development and agriculture

Cultivation and marketing of turmeric ensure a reasonable return for the farmers. At the same time, profitability alone does not give satisfaction for the farmers. There are several other issues that are to be addressed in marketing of turmeric. The farmers are highly depends on outside environment and intermediaries for marketing their final output. The issues which are satisfy the farmers in marketing of turmeric includes the existence of better market structure, suitability of soil, proper credit facility, ensuring level of income, proper training facility, income level, availability of skilled labour, seed availability, loan facility, satisfactory price, technical support, training facility, marketing of turmeric, role of middle men, storage facility all these are found essential for enhancing the satisfaction level of turmeric farmers. In addition, the proper infrastructure facility through better transportation, storage, free flow of market information are essential. So that there can be better improvement of market trade and performance, thereby, it improves the status of cultivators. An efficient market shall improve the margin of the farmers by reducing the cost as well as price fluctuation.

### **Objectives:**

- To assess the level of satisfaction of farmers in marketing of turmeric.
- To know the factors determining the satisfaction of turmeric farmers

### **Hypothesis:**

- Demographic variables of the farmers have no relation towards their satisfaction on marketing of turmeric.

### **Scope of the Study:**

It has also measured the level of satisfaction of the turmeric growers. Though the turmeric has grown all over Tamil Nadu but it is confined its scope only with reference to Erode District. This study is useful to know the various challenges, opportunities and prospects which are available for the turmeric growers at the study area.

### **Limitations of the Study:**

- The study was mainly depend on primary data which were collected from individual turmeric farmers at Erode district. The data given by them may be biased in nature.
- As the population has been largest one, it is not possible to collect the data from the entire population. Hence the results of the study cannot be generalized.

### **Research Methodology:**

- Research Design: Descriptive and analytical research
- Sources of Data: Primary and secondary data were used
- Area of the Study: Turmeric is cultivated in Tamil Nadu in several districts such as Erode, Namakkal, Salem and Dharmapuri etc. Among all these district Erode district has been positioned prominently. It accounts for about 24.14% of the total area and 33.3 7% of total turmeric production as stated in Statistical handbook of Tamil Nadu 2016. The Erode turmeric market attracts farmers even from other districts of Tamil Nadu and other sates of India due to the reason of potentiality to have higher price. Due to this reason the Erode district has been considered as study area.
- Population of the Study: The population of the study includes the entire Erode district covering 14 blocks - total population consists 8970 farmers.
- Construction of Interview Schedule: The criteria for the study have been identified based on the preliminary interview with experts in the area of turmeric growing, Spice Board, market intermediaries as well as based on the pilot study with the turmeric farmers.
- Sampling Procedure: Respondents were selected from 14 blocks at Erode district - Proportionately 10% of the farmers from total population in each block were sample units - 897 samples were selected - out of these 755 samples were considered as valid - Kodumudi has the highest sample size of 267. Sample Design: Stratified random sampling was applied. Cochran formula was used to determine the sample size
- Tools Used: One way ANOVA, descriptive analysis, Regression, Factor analysis and Kruskal Wally test.

### **Reviews:**

- Muruganathi, et al., (2013) in their report entitled, "Price discovery of Indian turmeric in futures market", they examined the relationship between turmeric futures price traded in National Commodity and Derivatives Exchange (NCDEX), Mumbai and spot price prevailed in Erode market over a period of eight years (2004 -2012). The result showed the presence of unidirectional causality from futures price to spot price. This study also proved the occurrence of price transmission from futures market to spot prices of turmeric. The result of the study showed commodity futures market with respect to turmeric are efficient, since they play a fair role in price discovery.
- Jayanthi and Vaideke (2015)<sup>22</sup> conducted a study on, "Farmers' Perception towards Organic Farming in Turmeric Cultivation at Erode District". The objective of the study is to know about the factors influencing the farmers to adopt organic farming and to explore the problems faced by the farmers who cultivate turmeric under organic method. The data were collected from 100 farmers by using simple random technique. The researchers used average score analysis and average rank analysis. They found that majority of the farmers are highly motivated with soil protection in the organic cultivation of turmeric and they feel that there is a lack of organic inputs in the market. They suggested that the agriculture department has to be provided with infrastructure facility for extending their service so as to arrange for training programmes to popularise their inputs and also give technical guidance to organic farmers.
- Mishra and Bhushan (2018)<sup>43</sup> conducted a study on, "Spices Industry in India Challenges and Opportunities". The study aimed at to know about the spices industry, the challenges faced and its opportunities. For the purpose of the study secondary data were collected. They explained that India's exports around 180 types of spices to about 150 nations around the world. India is the world's biggest maker and exporter of spices. They conclude that India has a splendid past, enchanting present and an astonishing future with respect to production and export of spices. They found that the climatic conditions are most suitable for cultivating all types of spices in India.

**Analysis and Interpretation:**

**Level of Satisfaction of Farmers towards Marketing of Turmeric:**

Demographic Variables	Particulars	N	Mean Rank	H Value	Asymp. Sig.
Gender	Male	721	366.27	47.58	0.000**
	Female	34	626.74		
	Total	755			
Marital status	Married	701	381.68	2.873	0.09
	Unmarried	54	330.18		
	Total	755			
Nature of family	Nuclear Family	529	336.58	65.498	0.000**
	Joint Family	226	474.96		
	Total	755			

Source: Computed data (at 5% significant level)

The above table shows the calculated 'H value' for demographic variables. It depicts that H value at 5% significant level is significant for gender (47.58) and nature of family (65.498) on level of grower's satisfaction towards marketing of turmeric leading to the rejection of null hypothesis. Hence, there is a significant relationship between gender, nature of family and level of grower's satisfaction towards marketing of turmeric.

On the contrary the calculated H value at 5% significant level is not significant for marital status (2.873) on level of grower's satisfaction towards marketing of turmeric leading to the acceptance of null hypothesis. Therefore, there is no significant relationship between marital status and level of grower's satisfaction towards marketing of turmeric.

**Impact of Socio Economic and Agriculture Profile on Level of Satisfaction towards Marketing of Turmeric - An Analysis through Regression:**

The socio economic and agriculture profile of the respondents was considered as the independent variables ( $X_1, X_2, X_3, \dots, X_n$ ) and level of satisfaction towards marketing of turmeric was considered as the dependent variable (Y). Under socio economic and agriculture profile of the respondents, the family expenditure per month, nature of family, farming experience, marital status, agricultural income per year and family income per month were taken into consideration.

The regression coefficients (b1, b2) become less reliable as the degree of correlation between the independent variables ( $x_1, x_2$ ) increases. It uses linear function that can be expressed as

$$Y = \text{Level of Satisfaction towards marketing of turmeric}$$

A = Constant

$X_1$  to  $X_n$  = Independent variables

$B_1$  to  $B_n$  = Regression coefficients of  $X_1$  to  $X_n$

$e!$  = Error term

Hence the regression model for level of satisfaction of marketing of turmeric expressed as

$$\text{Level of Satisfaction (Y)} = a + bX_1 (\text{Family Expenditure per month}) + X_2 (\text{Nature of Family}) + X_3 (\text{Farming Experience}) + X_4 (\text{Marital status}) + X_5 (\text{Agricultural income per annum}) + X_6 (\text{Family Income per month})$$

Ho: There is no significant impact of socio economic and agriculture profile of the respondents on level of satisfaction towards marketing of turmeric.

Coefficients <sup>a</sup>						
Demographic Profile and Level of Satisfaction		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)		19.215	1.291		14.88	0
1	Family expenditure per month(in '000s)	0.214	0.032	0.356	6.63	0
2	Nature of family	-2.482	0.298	-0.21	-8.319	0
3	Farming Experience	0.046	0.01	0.125	4.613	0
4	Marital status	-1.887	0.542	-0.09	-3.483	0
5	Agricultural income per year(in lakhs)	0.449	0.113	0.17	3.961	0
6	Family Income per month(in '000s)	-0.081	0.024	-0.212	-3.359	0

a. Dependent Variable: Level of Satisfaction

R Square change 0.756

Source: Computed data

The above table depicts that R square value between socio economic and agriculture profile and the level of satisfaction on marketing of turmeric. It implies that there is a high relationship between socio economic and agriculture profile and level of satisfaction towards marketing of turmeric (0.756). Hence, it is concluded that there is a significant relationship between the socio economic and agriculture profile and level of satisfaction of marketing of turmeric. Based on the individual comparison level of satisfaction has been positively impacted by family expenditure per month (0.214), farming experience (0.046) and agricultural income per annum (0.449). On the other hand the level of satisfaction have been negatively influenced by nature of family (-2.482), marital status (-1.887) and family income per month (-0.081)

**Factors Influencing the Level of Satisfaction of Turmeric Marketing - A Study through Factor Analysis:**

**Total variance explained for Satisfaction of Farmers towards Marketing of Turmeric:**

S.No	Variables	Total	Percent of Variance	Cumulative
1	Factor I	2.281	22.812	22.812
2	Factor II	2.014	20.138	42.950
3	Factor III	1.814	18.137	61.087

**Extraction Method: Principal Component Analysis:**

It is observed from the table that 22.812 percent of variance is explained by the first factor, 20.138 percent of variance is explained by the second factor, whereas 18.137 percent of variance is explained by the third factor. As a result, the entire three factors have been put together and explain the cumulative variance to the extent of 61.087 percent.

**Rotated Component Matrix for Satisfaction of Farmers towards Marketing of Turmeric:**

Factor	Satisfaction	Components		
		Factor 1	Factor 2	Factor 3
Finance	My income is sufficient to meet the turmeric cultivation	0.877		
	The price received for the sale of turmeric is satisfactory.	0.661		
	The loan schemes offered by the bank and financial institutions are sufficient.	0.585		
	Rhizomes (seed) are available at a reasonable cost in time.	0.741		
Service	The spices board research wing provides necessary technical support to the turmeric growers.		0.755	
	Adequate training facilities for turmeric growers are provided by the spices board/Department of Agriculture.		0.524	
	Adequate skilled labourers are available even at harvesting time of turmeric.		0.802	
Market Amenities	Marketing of turmeric is not a problem.			0.781
	The role of middle man is appreciable.			0.574
	Adequate storage and transportation facilities are available			0.601

**Extraction Method: Principal Component Analysis:**

**Rotation Method: Varimax with Kaiser Normalization**

The above table indicates the factor loadings of farmers satisfaction towards marketing of turmeric through factor analysis. It contains a total of 10 statements and these statements were loaded into three factors by using rotated component matrix. The three factors were named as Finance, Opportunities and Marketing. The first factor finance relating to the satisfaction of farmers towards turmeric marketing includes my income is sufficient to meet the turmeric cultivation, the price received for the sale of turmeric is satisfactory, the loan schemes offered by the bank and financial institutions are sufficient and rhizomes (seed) are available at a reasonable cost in time. Regarding the second factor service relating to the satisfaction of farmers towards turmeric marketing comprised of technical support to the turmeric growers, training facilities for farmers and availability of skilled labourers. In case of the third factor market amenities relating to the satisfaction of farmers towards turmeric marketing consists of marketing of turmeric is not a problem, the role of middle man is appreciable and adequate storage and transportation facilities are available.

**Findings:**

- There is a significant difference between socio economic and agriculture variables such as educational qualification, size of the family, earning members in a family, agricultural income per year, family

income per month, family expenditure per month, farming experience, position of land holding, total land holdings and source of irrigation on level of farmer's satisfaction towards marketing of turmeric. Therefore, the null hypothesis is rejected. Hence, it is concluded that there is a significant difference exist between level of satisfaction and the above said socio economic and agriculture variables.

- Based on the mean value indicates that the farmers who have completed their diploma, belongs to 5 members in their family, those who give as joint family, having 2 earning members in their family, earning an agricultural income between Rs.3,00,001-4,50,000 per annum, getting family income between Rs.30001-Rs.45000, family expenditure falls between Rs.15,001-Rs.30,000, possess farming experience between 41-50 years, the leased land for cultivation, the respondents holding land between 1-5 hectares and the farmers depending on canal water as a source of irrigation have higher level of satisfaction towards marketing of turmeric.
- The socio economic and agriculture profile were considered as independent variable and level of satisfaction of marketing of turmeric considered as dependent variable. The R square value shows that high relationship exist between socio economic and agriculture profile and the level of satisfaction on marketing of turmeric. This exhibits that the regression equation is giving a good fit. The comparison between these variables with the level of satisfaction indicates that there is a positive impact by family expenditure per month, farming experience and agricultural income per annum on level of satisfaction of turmeric farmers towards marketing of turmeric. On the other hand, the level of satisfaction have been negatively influenced by nature of family, marital status and family income per month. The net impact of above said variables the R<sup>2</sup> value is found significant.
- The finding on level of satisfaction of marketing of turmeric indicates that the turmeric farmers in the study area are satisfied with marketing of turmeric in respect price, market intermediaries, supports from institutions, transport facility, rhizome availability etc. The variables such as family expenditure, farming experience and agricultural income have positive impact on level of satisfaction towards marketing of turmeric.

#### **Suggestions:**

- Normally when the tender price quoted, in open market, the price quoted by new entrants are not considered by the market intermediaries. These intermediaries are considering only the tender price offered by the existing traders at the time of auction sale. Even the tender price quoted by new traders are preferred by the growers, due to collusion between the traders and market intermediaries the above negligence as become the order of the day. Therefore, it is essential that the price quoted by new entrants to be considered by the intermediaries, thereby it becomes the opportunities for the turmeric growers to have a higher price at the auction sale for their product.
- The pesticides which is used at the storage place sometimes with the high dosage produces the smell at the time sale of turmeric. This results into reduction in the quality and standard of the turmeric. Therefore, it is a responsibility of these intermediaries to use only limited quantity of pesticide to protect to the turmeric from the pest.
- More training programs could be arranged through spices board research wing, TNAU, horticulture department etc., towards cultivating turmeric. In these training facility the technical knowledge and the practical problems should be properly addressed. So that the production and productivity of turmeric increases.

#### **Conclusions:**

Turmeric is considered as "Golden Spice of India". It finds a prominent place in the Indian culture. Turmeric cultivation and marketing is a source of income and gives an employment opportunities to a large number of people. Turmeric is cultivated in varieties according to the prevailing environment in the different states. India is the largest producer, consumer and exporter of turmeric and contributes nearly 75% of world's production network of turmeric. The study results finds that the turmeric farmers are satisfied with marketing, supports from market intermediaries and availability of rhizomes. At the same time the turmeric cultivators are facing problems such as low price for their produce, storage, marketing cost, high wages, availability of labour etc.

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