

Marketing channels and their efficiency in distribution of citrus in central Tamil Nadu

Abstract

Citrus cultivation holds significant importance in the agricultural landscape of Mannachanallur Taluk in Tiruchirappalli District, primarily due to its favourable soil conditions that support better crop establishment, growth, and yield. Lemon, being a predominant citrus crop in this region, is widely transported to various cities across Tamil Nadu immediately after harvest, highlighting its economic value. However, there is limited understanding of the distribution channels involved and the share of producers in the consumers' rupee. The present study focuses on analysing the associated distribution mechanisms peculiar to citrus. The study has identified three different marketing channels. Among these, Channel I ensures the highest producers' share in the consumers' price. However, the producers' share tends to decrease as the number of intermediaries increases, typically ranging between sixty to seventy percent. To address this issue, the establishment of a Farmer Producer Company (FPC) dedicated to citrus cultivation is recommended, aiming to reduce intermediaries and enhance farmers' income.

Keywords: citrus, marketing channels, marketing efficiency, price spread

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Introduction

A genus of Citrus (Linn) of Rutaceae an evergreen aromatic shrub and small trees occupies an important place in the medicine and also in the fruit economy of India. Scientifically it is also known as *Aurantium maximum* Burm. Ex Rumph, *Citrus aurantium* L. *Var grandis* L., *Citrus Decumana* L, *Citrus grandis* Osbeck & *Citrus pamplemos* among these *Citrus limon* (L.) Burm. holds a prominent position among the citrus fruits both in India and the world. It exhibits a variety of distinct forms that may exhibit slight variations from one another. With its wide adaptability, lemon stands as one of the most promising fruit crops worldwide. Citrus fruits have a great demand due to their high nutritive value. They are abundant in essential nutrients such as vitamin C (Ascorbic acid), natural sugars, as well as vitamins A and vitamins B. These plants provide medicines, crafts, cosmetics and also used as a source of income for rural areas. Therefore, the focus of the current study was on the analysis of the marketing practices, including the marketing channels, marketing costs, marketing margins, price spreads analysis, producers' share in the consumer's rupee, farmers' net prices, and the effectiveness of the channels' in marketing the procedure.

Design of study

The study focuses on assessing the distribution mechanism across Tamil Nadu by identifying channels involved and the margins gained by the stakeholders in Tiruchirappalli District in Tamil Nadu. The district is primarily an agricultural region with paddy as the predominant crop. However, in the dry tracts like Mannachanallur Block, farmer prefer cultivating dryland crops like cotton and citrus. The study aims to understand the economic aspect and explore the marketing channels utilized by citrus farmers in this region.

Sampling design

In the study environment, Trichy District was selected as it encompasses large numbers of farmers and traders whom are interestingly cultivating and marketing citrus predominantly and hence it was selected purposively in the first stage. In the Second stage Mannachanallur Taluk was chosen as it had higher area under citrus cultivation and of large number of traders in distributing citrus fruit. In this block, 30 sample

farms were chosen purposively from top five villages with the highest citrus cultivation area were selected. Six households from each village were randomly chosen using a three stage random sampling technique as it is focusing only on citrus cultivating and Traders of citrus in the sample farms. In respect of traders, 2 traders in each village and two wholesalers from city of Tiruchirappalli comprising 12 sample traders were selected purposively to assess the distribution mechanism associated with citrus fruit trading.

Data collection

For the study primary data and secondary data were used. Primary data was generated through well structured interview schedule designed for farm level and traders survey and the same was pretested in the field appropriately and modified accordingly. The method of data collection was done by personal interview, Data on general characteristics of farmers like age, education, farming experience, size of the land holdings, crops grown in the area, awareness and adoption of inputs, knowledge applications of inputs and farmers preferences on raising and marketing of citrus and are suitably analysed using percentage analysis. Secondary data was taken from the Department of Agriculture and Farmers Welfare and previous studies on citrus cultivation and marketing channels.

Study period

The reference year for the study was the agricultural year 2024 and the collection of data from the sample households were taken up during the months of April to June 2024.

Tools of analysis

Conventional percentage analysis, Garrett's Score, Marketing cost, Net margin and Price spread and Marketing Efficiency of citrus were carried out to assess the performance of channels involved in distribution of citrus.

Results and discussion

The results are discussed under the following sub heads. They are

- Factors Influencing Cultivation of Citrus in the Sample farms
- Marketing channels prevalent in the distribution process of Citrus fruits
- Constraints Faced by the Traders of Citrus

Factors influencing the cultivation of citrus in the sample farms

In Tiruchirappalli District, Mannachanallur block is blessed with Citrus orchards and are spread in different villages which are under the intensive care by the farmers. For such preference in cultivation, there must be strong reasons backing the cultivation of citrus. In this respect, one should be interested in analyzing the factors which are actually motivating the farming community in practising Citrus cultivation in their farm lands becomes important and hence these details are analyzed and the results are presented in Table 1.

Table 1 Factors influencing cultivation of citrus in the sample farms

Sl. No.	Factors	Percentile position	Garrett's score	Rank
01	Adaptability to Poor Soil Conditions and Drought Tolerance	20.37	2126	I
02	Availability of High Yielding Varieties and its Less Maintenance Cost	19.09	1993	II
03	Capable of Absorbing Higher Volume of Output in Regional Markets	15.67	1635	III
04	Less Incidence of Pest Infestation	15.58	1627	IV
05	Plenty of Value Addition Possibilities in Lemon	11.24	1171	V
06	No Need of Regular Care and Maintenance	10.85	1132	VI
07	Absence of Cattle and Wild Animal Menace	07.20	756	VII

(Source: Field survey, figures in parenthesis indicates percentage to total)

Table 1 has highlighted the influencing factors from the sample farms by conducting preliminary inquiry through the structured questionnaire and are delineated as follows:

- Adaptability to Poor Soil Conditions and Drought Tolerance
- Availability of High Yielding Varieties and its Less Maintenance Cost
- Capable of Absorbing Higher Volume of Output in Regional Markets
- Less Incidence of Pest Infestation
- Plenty of Value Addition Possibilities in Lemon
- No Need of Regular Care and Maintenance
- Absence of Cattle and Wild Animal Menace

Among these factors, the adaptability to poor soil conditions and drought tolerance found to be the principal factor which motivates them to establish the Citrus Orchards which has scored the percentile position of 20.37 with 2126 score and stood first among the sample farms.

Availability of high yielding varieties like Krishna and Pragathi had influenced the farmers to practice cultivation of Citrus. Besides this, it also not commanding utmost care like the seasonal crops raised in the farms and it stood in the second rank with the score of 1993 and it is holding the percentile position of 19.

Capable of absorbing higher volume of output in the regional market seems to be the factor which is influencing the farmers. Anything produced in the farm should not face a glut in the market. But Citrus has the ready market because of multiple uses in the homes of the consumers and hence it is standing in the third rank with the score of 1635.

The Less Incidence of Pest Infestation is another important factor that motivates the farmers to go for Citrus plantations. Any crop planted in the field that is infested heavily with pests means the farmer has to undertake utmost care in protecting the crop. Fortunately, Citrus is not infested with pests and hence farmers are happy to maintain the Citrus in their farm lands. It stood in the fourth rank with the percentile position of 15.58 with the Garrets Score of 1627.

Because of the above reasons and some other factors such as value addition possibilities, no regular maintenance and it is not fed by cattle population and by the wild animals particularly it is not being damaged by Monkey. The monkey population is heavy in this zone and hence most of the pulses crops were damaged heavily by the wild animals. Such is not evidenced in the case of Citrus and hence the area under Citrus could be easily enhanced by the farming community.

A Farmer Producer Company exclusive of Citrus may be established further to promote the area, its production, productivity and the development of value-added products out of Citrus so that the return per unit area could be enhanced and the socio-economic status of the farming community will develop further.

Marketing channels prevalent in the distribution of citrus

Marketing is the process of transferring any commodity from the producers to the ultimate consumers either directly or through the intermediaries. In respect of Citrus, there were few channels of distribution which is prevalent among the sample farms. These are traced and are presented below.

- Farmer Producers --> Ultimate Consumers
- Farmer Producers --> Wholesalers --> Retailers --> Ultimate Consumers
- Farmer Producers --> Commission Agent --> Wholesaler cum Retailers --> Ultimate Consumers

When a commodity moves from one point to other, the share of the producer from the consumer price becomes varied and hence the share of the producer from the consumer price needs to be assessed. Price spread is the one which indicates how much a producer could get from the consumers rupee as his share. The Producers' share needs to be determined by calculating the price spread for each channel. This indicates the efficiency with which a producer could get the highest share from the particular channel. These are analyzed and the results are presented in Tables 2 to 4.

Table 2 outlined the details of marketing cost and the net margin incurred by the producer to show case the produce in the market after incurring certain marketing cost like transportation, loading and unloading charges which are accounted for 3.20 per cent and the net margin gained for the transaction made by the farmer is arrived at 16.80 per cent. Here the producers' share is arrived at 80 per cent from the consumers' unit price for the exchanged produce. When

the intermediaries are absent in the channel, the margin gained by the producers are increased. In this respect, the producer has to resort selling the produce through the channel where number of intermediaries are almost reduced will elevate the share of the producer from the consumers' rupee. How this share will be reduced in another channel in which the number of intermediaries is more than one is analyzed and the details are presented in Table 3.

Table 2 Price spread in marketing channel - I

Sl. No	Particulars	Unit Price (Rs. /kg)	Percentage to the Consumers' Price
I Farmer Producers			
01	Price Received by the Farmer Producer	100.00	80.00
02	Loading and unloading	02.00	
03	Transportation Cost	02.00	
04	Total Marketing Cost	04.00	03.20
05	Net Margin	21.00	16.80
06	Ultimate Consumer's Price	125.00	100.00
Price Spread		25.00	

Farmer producers -->Ultimate consumers

(Source: Field survey, figures in parenthesis indicates percentage to total)

Table 3 Price spread in marketing channel - II

Sl. No	Particulars	Unit price (Rs. /kg)	Percentage share in the consumers' price
I Farmer Producer			
01	Price Received by farmer	95.00	73.07
II Wholesalers			
02	Purchase Price from Producer	95.00	73.07
03	Loading and unloading	02.00	
04	Transportation Cost	02.00	
05	Grading Charges	04.00	
06	Packing charge	02.00	
07	Total Marketing Cost	10.00	
08	Net Margin	15.00	
09	Sale Price by Wholesalers	130.00	
III Retailers			
10	Price Received by Retailers	130.00	86.66
11	Transportation Cost	02.00	
12	Total Marketing Cost to the Retailers	02.00	
13	Net Margin to the Retailers	18.00	
IV Consumers			
14	Ultimate Consumer's Price	150.00	100.00
Price Spread		55.00	

Farmer producer -->Wholesalers-->Retailers-->Ultimate consumers

(Source: Field survey, figures in parenthesis indicates percentage to total)

Table 3 revealed the details of marketing cost and net margin involved in the channel where more than one intermediary took the

responsibility of transferring the produce to the consumers. Here, the Producer is able to receive a sum of Rs. 95 per unit which is accounted for 73 per cent. When one compares the same with previous channel, a reduction of 7 per cent share is visible explains the intermediary involvement and they are taking the share of the producers.

The next level is Wholesalers who takes the title of goods at the rate of Rs. 95 per unit and he incurs the marketing cost to the tune of Rs.10 per unit and fix the net margin for his services as Rs. 15 per unit and then the commodity is transferred to the Retailers on demand from the wholesalers. Then the retailers are taking the title of the goods at the rate of Rs. 130 per unit and he incurs certain marketing cost which is arrived at Rs 2 per unit and the net margin fixed at Rs. 18 and then the title of the goods transferred to the ultimate consumers at the rate of Rs. 150 per unit. Here the price spread between the Producer and the ultimate consumer is arrived at Rs. 55 per unit of the produce. This is well explained that when intermediaries are more than one, then the share that goes to the producer from the consumer rupee will be declining.

The Third important marketing channel involved in the trading services of Citrus is presented in Table 4.

Table 4 Price spread in marketing channel - III

Sl. No	Particulars	Unit price (Rs. / kg)	Percentage to the consumers' price
I Farmer Producer			
01	Price Received by the Farmer Producer	90.00	60.00
II Commission Agent			
02	Purchase Price	90.00	60.00
03	Loading and unloading	01.00	
04	Transportation Cost	01.00	
05	Total Marketing Cost	02.00	
06	Net Margin	12.00	
07	Sale Price by Commission agent	110.00	
III Wholesalers			
08	Purchase Price from Commission agent	110.00	73.33
09	Loading and unloading	02.00	
10	Transportation Cost	02.00	
11	Grading Charges	04.00	
12	Packing Charges	02.00	
13	Total Marketing Cost	10.00	
14	Net Margin	10.00	
15	Sale Price by Wholesalers	130.00	
IV Retailers			
16	Price Received by Retailers	130.00	86.66
17	Transportation Cost	02.00	
18	Total Marketing Cost to the Retailers	02.00	
19	Net Margin to the Retailers	18.00	
V Consumers			
20	Ultimate Consumer's Price	150.00	100.00
Price Spread		60.00	

Farmer producer --> Commission agent --> Wholesaler --> Retailers -->Ultimate consumers

(Source: Field survey, figures in parenthesis indicates percentage to total)

It moves from the producer to the consumer through the commission agent and then it moves to the Wholesalers and the retailers. Here one intermediary is introduced additionally when compared to the Channel – II. Here, the details of producers' share are examined and the results are presented in Table 4.

Table 4 revealed that the producer in this channel could get only around 60 per cent of the consumers' price for the produce transacted through this channel. It indicated that the consumer price is found to be increased for every addition of intermediary in the channel. Though the consumer price is found to be increased, the percentage share to the producer gets decreased indicated that the producers should always practice the channel in which the number of intermediaries is less and capable of fetching highest return per unit of the produce. The total marketing cost and the marketing margin involved in each channel and the price received by the producer are presented in Table 5.

Table 5 Marketing efficiency

Marketing channel	Net price received by the farmer	Marketing cost + marketing margin	Marketing efficiency
I	100.00	26.00	3.84
II	95.00	45.00	2.11
III	90.00	54.00	1.66

Table 6 Constraints faced by the traders of citrus in the sample farms

Sl. No.	Particulars	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total
01	Supply of Citrus Fruits is Poor	05 (16.67)	07 (23.33)	09 (30.00)	04 (13.33)	05 (16.67)	30 (100.00)
02	Absence of Grading Facility in the production zone	06 (20.00)	14 (46.66)	02 (06.67)	06 (20.00)	02 (06.67)	30 (100.00)

(Source: Field survey, figures in parenthesis indicates percentage to total)

When Demand is more in the market, the availability of Citrus fruits are not available in the required quantity. In the zone of production itself the grading facility may be established through appropriate machinery so that delayed time for grading could be avoided.

Conclusions and policy implications

The produce sent to the wholesalers were put into open auction in which the city representatives will participate and bid the produce and are distributed to efficient cities which are accounted for one third to the total. In the process of distribution of citrus, only three marketing channels are observed. Among the three distribution channels, the second channel found to be more efficient because it also needs the requirement of all other intermediates and at the same time, it keeps the produce also with considerable return per unit of output. Supply of citrus fruits is poor and absence of grading facility in the production zone is the twin problems to the traders. Though the region is able to produce higher quantity of Citrus, its grading facility is not at all available in the environment and hence a grading facility may be established in the production zone. A farmer producer company exclusively for Citrus may be established in the zone of production to guide the farmers both technologically and in the process of value addition and distribution to the end users. On doing so, the area production and productivity in Citrus could be thought off in a big way.

Table 5 indicated that the marketing efficiency is on the higher side shows that it is an efficient channel. But the channel in which the number of intermediaries is more and their services are satisfied through the channel and at the same time it is capable of meeting the producer needs also of much important and in this respect the channel – II found to be efficient because it also meets the requirement of all other intermediaries and at the same time, it keeps the producer also with considerable return per unit of the output.

Apart from production and marketing of Citrus produce, the producers and the traders are also facing certain constraints in transferring process till it reaches the ultimate consumers. They became an impediment in most of the hours and hence one should concentrate on the problems and how to alleviate from that are the need of the hour and hence these are analyzed and the results are presented in Table 6.

Constraints faced by the traders of citrus

Traders are also facing certain constraints. These are examined from the traders while visiting the market and their response is presented in the table 6.

Table 6 outlined and stressed that they are facing only two constraints. Supply of Citrus Fruits is Poor and absence of Grading Facility in the production zone is the twin problems to the traders. This was almost reported by all the traders contacted.

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Conflicts of interest

There is no conflict of interest.

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