



Marketing Efficiency of Cocoon in Salem District of Tamil Nadu, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The aim of this study is to assess the marketing efficiency of cocoon within the study area and to examine marketing challenges, subsequently proposing effective strategies to address these constraints.

Study Design: Exploratory research design.

Methodology: The research was carried out in the Salem district of Tamil Nadu. During the month of July 2022, primary data was collected from a random sample of respondents. The study examines

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cocoon production costs, returns, efficiency and marketing challenges. Data was collected from four blocks which includes Omalur, Mecheri, Attur, and Edappadi, thus comprising the total sample of 140 respondents which includes 112 farmers and 28 dealers. Personal interviews were conducted to gather primary data, Acharya's technique is employed to calculate marketing efficiency and Garrett's Ranking Method was used to assess marketing constraints.

Results: This study identifies that Acharya's marketing channel shows a nil net marketing margin, yet boasts 95.61 percent efficiency. Farmers receive a net price of ₹ 395.86, obtained by deducting marketing costs from the ultimate consumer price. Constraints faced by Salem's cocoon growers include high transportation cost, price fluctuations in cocoon market, and trader scarcity.

Conclusion: This study insists to maintain the minimum standard price for cocoon to mitigate price fluctuations, enhancing transportation infrastructure for bulk transport, and ensuring prompt and consistent payments. The successful implementation of these strategies holds the potential to facilitate the cocoon industry's progress and resilience in the face of constraints.

Keywords: Sericulture; mulberry; cocoon; marketing efficiency; and constraints.

1. INTRODUCTION

Sericulture is an ancient method of raising silkworms for silk production. It is derived from the Greek term 'sericos,' referring to silk, and the English word 'culture,' which pertains to the act of raising or nurturing [1]. The process includes growing mulberry plants to yield leaves, raising silkworms to transform those leaves into cocoons, unwinding the cocoons to extract silk yarn, and then weaving the yarn into fabrics [2]. It is essential for producing and distributing silk, which is utilized extensively across numerous industries globally. It has a long history in China and other Asian nations. Major silk-producing countries include Iran, Thailand, China, India, Brazil, Japan, and Brazil. India holds a prominent global position and stands as the second-largest silk producer worldwide, followed by China [3].

In India, total raw silk production in 2022-2023 was 27,744 metric tonnes in the year 2022-23 [4]. Sericulture, a labour-intensive, low-investment agricultural enterprise, offers high returns, rapid growth, and employment opportunities, particularly for women, benefiting marginal and small landowners [5]. Farmers (54.6%) earn the majority of their income from the sericulture business, which is followed by traders (17.8%), weavers (12.3%), twistors (8.75%), and reelers (6.6%) [6].

Cocoon marketing is a pivotal phase in the sericulture value chain, where the delicate cocoons produced by silkworms are traded, sold, and further processed into silk yarn and fabrics [7]. Sericulture, which is crucial to the textile, fashion, and medicinal industries, depends on careful attention to temperature and humidity [8]. Sericulture is a rural-oriented agricultural industry

with a worldwide presence. Notably, the Sericulture Sector is characterized by its rural essence and serves as an environmentally and economically sustainable activity, specifically benefiting the impoverished, small-scale farmers, agricultural labourers, and women [9].

This industry includes raising mulberry plants, growing silkworms, and processing silk material. It has considerable economic and social significance, creating jobs and promoting sustainable development. Women are frequently taking an active role in the manufacture of silk, supporting gender equality. Tamil Nadu, has a lot of potential for mulberry crop development. Tamil Nadu is fortunate to have an agroclimate that is conducive to cultivating several types of mulberries all year long [10]. Around 30,000 farmers in Tamil Nadu are engaged in sericulture operations, growing mulberries on 41,624 acres of land over 31 districts and employing more than 1.5 lakh people [11]. The sericulture industry supports rural residents' livelihoods and offers business opportunities [12]. Therefore the current study aimed to find out the marketing efficiency and the constraints faced by sericulture farmers during the marketing of cocoons.

1.1 Theoretical Framework

The marketing efficiency involves facilitating the movement of products from producers to consumers with minimal expenses, all of the while ensuring that consumers' desired services are fulfilled. In this present investigation, the Acharya's method was employed to assess the marketing effectiveness of different cocoon market distribution channels.

The following formula was used to calculate the efficiency of market channels.

$$ME = FP \div (MC + MM)$$

Where:

ME represents the marketing efficiency,
FP represents the net price received by farmers,
MC represents the total marketing cost.
MM represents the total marketing margin.

The mulberry growers and cocoon rearers were questioned to know the problem faced by them during marketing of cocoon by simple ranking technique. They quantified the rankings using the Garrett Ranking Technique.

The following formula was used to calculate the efficiency of market channels.

$$\text{Position} = 100 (R_{ij} - 0.5 / N_j)$$

Where:

R_{ij} represents rank is given for i^{th} item assigned by j^{th} individual,
 N_j represents the number of items is ranked by j^{th} individual,

2. METHODOLOGY

This study was carried out in India's silk-producing district, namely Salem district of Tamil Nadu. The data was collected on the basis of total cost and returns from cocoon production and the problems faced in cocoon marketing. Further, the data was collected from four selected blocks, namely Omalur, Mecheri, Attur, and Edappadi. Among the four blocks, Mecheri block ranked first in area under mulberry cultivation was selected. Accordingly, other blocks were selected for the detailed study. This includes 140 sample respondents comprising 112 farmers and 28 dealers. Further data was collected and tabulated for percentage analysis. The primary data was collected through personal interviews from sericulture farmers to analyze the marketing efficiency in cocoon. Garrett's ranking technique is used to analyze the constraints faced by the farmers in marketing of the cocoon. The percentage position is transformed into scores using the reference table provided by Garrett and Woodworth (1969). Subsequently, the scores of individual respondents for each factor were aggregated and then divided by the total number of respondents whose scores were compiled. These average scores for all factors were organized in a descending sequence,

enabling the identification of the most impactful factors through assigned ranks [13]. This technique involves a structured approach to rank and assess the reported by the farmers. By using this method, it is easy to understand the factors inhibiting smooth cocoon marketing and to prioritize these challenges based on their perceived significance.

3. RESULTS AND DISCUSSION

3.1 Findings Related with Marketing Efficiency and Constraints

3.1.1 Marketing efficiency of cocoon

From the Table 1, it was observed that only one channel was identified, known as Channel I: Producer-Wholesaler-cum-reeler. The marketing process began at the producer level and ended at the wholesaler-cum-reeler level, involving reeling and value addition. Farmers sold their cocoons directly to these wholesalers, which eliminated price spread problems. The study found that the marketing efficiency achieved was 95.61 per cent.

From the Table 2, the data presents information about Acharya's marketing channel, which incurs a total cost of Rs 4.14, covering transportation, loading, commission, and other marketing-related expenses. The net marketing margin is Nil, indicating a break-even situation. After deducting the total marketing cost and net marketing margin, farmers receive Rs 395.86 as their net price. The marketing efficiency of Acharya's channel is 95.61 percent, reflecting the channel's operational efficiency.

3.1.2 Constraints in the marketing of silkworm cocoon

In the research area, the silk cocoon growers encountered marketing challenges that hinder their growth and profitability. This was made to study the constraints in the study area. These challenges were ranked using Garrett's ranking techniques and the findings shown in Table 3 indicated that the majority of the respondent opined that market price fluctuation was the major constraint in marketing of cocoon as ranked 1st followed by lack of cocoon market, high transportation cost, lack of traders, and delayed payment. This results and of the study find support with the findings of [14] who observed constraints like price fluctuation of cocoon, non availability of market, non

Table 1. Price spread of marketing channel of 1Kg of cocoon

S.No	Particulars	Amount (Rs/Kg)
1	Producer's sales price	400
2	Marketing cost	4.14
3	Net price received by the producer	395.86
4	Consumer's price	395.86
5	Marketing margin	Nil
6	Price spread	Nil
7	Producer's share in consumer's rupee (percent)	98.96
8	Marketing efficiency	95.61

Table 2. Marketing efficiency of raw silk – acharya's marketing efficiency

S.No	Particulars	Marketing channel
I	Total marketing cost	4.14
II	Net marketing margin	Nil
III	Net price received by the farmers	395.86
	Acharya's marketing efficiency (III / I+II)	95.61

Table 3. Constraints in cocoon marketing

S.No	Factors	Garrett score	Rank
1	Fluctuation in market price	65.93	I
2	Lack of availability of cocoon market	50.43	II
3	High transportation cost	48.29	III
4	Lack of traders	42.93	IV
5	Delayed payment	40.43	V

availability of traders. The marketing cost of cocoons such as price volatility and inadequate market knowledge is major constraints identified farmers in Mysore district of Karnataka [15]. The main challenges experienced by sericulture producers, which were consistent with the results of the current investigations, were price volatility and inadequate marketing facilities [3]. High price swings in the market were the main issue in the cocoon market [16]. The findings were in conformity with [17].

4. CONCLUSION

The present study concluded that the Acharya's marketing channel being analyzed has a break-even net marketing margin of Nil. Despite this, the marketing efficiency of the channel is relatively high at 95.61 percent, and the farmers receive a net price of Rs 395.86 after deducting marketing costs from the final consumer price. The constraints faced by the cocoon growers in the Salem district of Tamil Nadu were obtained. The major problems faced by the farmers are high transportation cost, price fluctuation in the market and lack of traders. By implementing the suggested measures, such as fixing a minimum standard price for the cocoon to minimize the

fluctuation in price, improving transportation infrastructure as bulk transportation and ensuring timely payments, the cocoon industry can overcome these constraints and achieve sustainable growth.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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