Original Research Article

A study on Price spread and Marketing efficiency of Honey value chains in Thrissur district of Kerala

ABSTRACT

Honey is produced and consumed in large quantities all over the world. India ranks eighth among honey producing countries, with a production of 0.62 lakh tonnes of honey, which contributed 3.83 percent to the world production of honey (2020). The objective of the study was to identify the value chain actors in the study area and to analyse the price spread and marketing efficiency of honey in different value chain. Thrissur district was purposively selected for the study. The study was conducted during the months of May and June 2022 and in total, 100 beekeepers, all the four processors, 30 wholesalers, 30 retailers and 30 consumers were randomly selected for the study. The tools used for the study were price spread and marketing efficiency by Shepherds method. Four value chains were identified in the study area, in which the value chain I has the highest price spread and the value chain III has the least price spread which include only beekeepers and consumers. Marketing efficiency of honey value chain was computed using Shepherd's method and the channel III was found to have the maximum efficiency with the score of 19.27, which include only beekeepers and consumers, whereas, channel I had the least marketing efficiency with score of 4.71 which mainly includes beekeepers, processors, wholesalers, retailers and consumers. The study concluded that Channel III was efficient, from which beekeepers got the highest price of Rs. 30000 from the consumers directly.

Keywords: beekeeping, honey, value chain, value chain actors, marketing efficiency, price spread, marketing margin, marketing cost.

1. INTRODUCTION

Honey is described as a viscous syrupy fluid made by honeybees from plant nectar and there is no natural alternative to honey. Since ancient times, honey has been utilized in various ways to treat wide range of diseases. India has a reputation as the "land of honey"[1]. With the prevalence of acute and chronic illnesses rising in recent years, using honey in diet is also becoming more popular. Apiculture, also known as beekeeping, is the practice of raising honey bee colonies in artificial hives with the goal of generating honey and other related goods like bee wax and bee glue [2].

The global production of honey reached 1.62 million tonnes in the year 2020. The production of honey in India during 2020-21 was 0.62 lakh tonnes, which was the highest production compared to the previous year's [3]. Kerala ranks thirteenth in honey production in India, with a production of 2000 metric tonnes in the year 2020-21 [4]. *Apis cerana indica* is the species of honeybee generally used by the beekeepers in Kerala. In Kerala, the area under cultivation is limited due to urbanization.

Under such situations, beekeeping is an ideal solution which acts as a way to generate income, since honeybees are migratory in nature and requires no additional land. The study includes beekeepers and other intermediaries in the Thrissur district of Kerala. The study was carried out to obtain results that will aid in mapping value chain, price spread in each value chain and marketing efficiency, in order to find out the suitable channel for each intermediary. This study was conducted to identify the value chain actors in the study area and further analyse the price spread and marketing efficiency of honey in different value chain.

2. REVIEW OF LITERATURE

Ababulgu *et al.* [5] suggested that advanced beekeeping practices and honey commercialization would enhance producers' income through the supply of honey. All associated bodies need to concentrate on boosting farmers capacity via training on enhancing honey manufacture and supply, increasing the availability of upgraded beehives and its accessories, access to extension facilities, enhancing road facility, assembling honey producers to enlarge the volume, access to marketing and price setting, and setting up honey market centre.

Kapoor [6] analysed the performance of value chain of honey in India with regard to governance and administration, manufacturing and processing, integrated marketing communication and product value for the sake of improving the possibility for future expansion and development in the apiculture activity. The study used the principles of value chain analysis as a device to find out the limitations to the growth, development and competitiveness of the honey industry of India and to suggest mitigation strategies.

Tarekegn *et al.* [7] identified input suppliers, cooperatives, distributors, retailers, local collectors, producers and end users as the main actors in the honey value chain. From the recognized honey marketing channels, producer-collectors-wholesalers-retailer-consumer accounted for the majority of honey sales.

Sharma *et al*. [8] researched the financial and marketing aspects of bee farming at the farmer-processor level. The honey processors were divided into a single direct-selling channel for marketing. However, in the case of raw honey, two marketing channels were recognized with a drastic difference in the producers' share in consumer's price. The most significant factors which influenced value addition decisions include reduction of distress sale, branding and new look of products after the processing.

de Figueirêdo Junior [9] studied the relative significance of various tactics to improve the performance of value chain streams of honey in Brazil. He concluded that the chances of success of implementation task increases by aligning the strategies of the value chain stream in the direction of a performance goal. Moreover, not all of the strategic options for value chain streams were covered by the most often used upgrading typologies.

3. METHODOLOGY

Thrissur district is blessed with a variety of flora, fauna and abundant natural resources including the highest area under rubber plantation in North Kerala. It had second largest registered beekeepers in the state. So, the district was purposively selected for the study. Around 100 beekeepers (88 males and 12 females with age range of 25-70) who registered under Federation of Indigenous Apiculturists (FIA) were chosen randomly. There were only four processors in Thrissur, all of whom were chosen along with 30 wholesalers, 30 retailers and 30 consumers for the study. Primary data was collected from them individually using well structed survey and questionnaire.

3.1 Tools for analysis

3.1.1 Price spread analysis

Price spread is the difference between the price that the producer receives and the price that the customer pays for a certain good in the market at a particular time. If the price spread is the lowest, the market is said to be efficient [10]. Information was gathered from individual beekeepers as well as other value chain actors. The expenditures for marketing the produce comprised of expenditures for transportation, loading and unloading, packing, storage, spoiling, and other needs. During the marketing of honey, the Price spread was measured by the difference between the price paid by the end consumer and the price received by the beekeeper for an equivalent quantity of honey. The profits earned by the many market players who aided in getting the products from the place of production to the end customer were tracked. The formula for price spread follows:

Price spread $P_S = P_c - P_F$ [11]

Where,

P_c = Price paid by customers

P_F = Farm-gate price

3.1.2 Beekeepers share in consumer's rupee

Beekeepers share in consumer rupees is the price received by the beekeepers which expressed as a percentage to the price paid by the consumers. The following formula was used to determine the beekeepers share of the consumer rupee.

$F_s = (F_p/C_p) \times 100$

Where,

F_s = Beekeeper's share in consumer rupee (percentage)

F_p = Beekeepers price (Rs)

C_p= Consumer's price (Rs)

3.1.3 Estimation of marketing efficiency

Shepherd and Futrell found out marketing efficiency to be the percentage ratio of total costs to total value of the marketed products. A greater ratio indicates greater marketing effectiveness, and

vice versa.[12] Shepherd's method was applied to determine marketing efficiency. The level of market efficiency was measured by market performance.

Shepherd's method

Shepherd's method of marketing efficiency was determined by dividing the consumer price by the total marketing cost and subtracting one from the result. The following formula was used to determine the value chain's efficiency. The efficiency would increase with the increase in ratio, and vice versa. This is defined in the following way:

Marketing efficiency (Shepherds approach) = (V/I)-1

Where,

V = Value of the sold items (Rs)

I = Total cost of marketing (Rs)

4. RESULTS AND DISCUSSION

4.1 Value chain of honey

A value chain comprises of several actors who were involved in the processes necessary to take a product from production stage up to end usage. These actors range from producers, processors, input suppliers, exporters and buyers [13]. The honey value chain usually starts with beekeepers as they are the producer of honey. Honey collected by beekeepers who maintain honeybees in hives in a scientific and systematic manner would be processed by processors who purchase honey at a cheaper price from beekeepers, process it in a systematic manner, pack it, and then sold it to the consumers. From the processors, wholesalers were the ones who buy the honey and then sell it to retailers after adding their marketing expenses and profit margins. Retailers purchased honey from beekeepers or wholesalers and then sold it to customers after adding their costs and profit margins. Retailers were those who were most accessible to consumers. Finally, customers purchased honey from nearby retail stores or by visiting beekeeper's house directly who were the end users of honey.

Figure 1 Value chains of honey in the Thrissur district.

Value chain 1

Value chain 2

Value chain 3

Value chain 4

Figure 1. Value chains in Thrissur district of Kerala

Value chain I represents a basic value chain which began with beekeeper and ended in consumers with all the intermediaries in between. The processor procured honey from beekeeper, further processed it and sold to the wholesaler, who then in turn sold it to the retailer and finally, the retailers sold the honey to the consumers. In value chain II, the retailer directly purchased honey from beekeepers and sold it to the customers and in value chain III, the consumers purchased honey directly from the beekeepers. The fourth chain was a special chain in which Khadi and Village Industries Commission (KVIC). KVIC had clusters of beekeepers from whom the honey unit of KVIC collected honey, processed it and then sold it through their own exclusive retail shops.

4.2 Price Spread Among Different Stakeholders

Four key value chains were identified for the study and the price spread of them was calculated and presented in the Table 1.

Table 1. Price Spread of Honey across different value chain

(Rs/quintal)

S. No	Particulars	Channel I	Channel II	Channel III	Channel IV
1.	**Beekeeper**				
	Net price	17336 (40.32)	25244 (72.13)	28520 (95.07)	18916 (49.78)
	Marketing cost	664 (1.54)	1256 (3.59)	1480 (4.93)	584 (1.54)
	Gross price received	18000 (41.86)	26500 (75.71)	30000 (100)	19500 (51.32)
2.	**Processor**				
	Price paid	18000	-	-	19500

		(41.86)			(51.32)
	Marketing Cost	4344 (10.10)	-	--	5156 (13.57)
	Marketing Margin	4656 (10.83)	-	-	13344 (35.12)
	Price Received	27000 (62.79)	-	-	38000 (100)
3.	**Wholesaler**				
	Price paid	27000 (62.79)	-	-	-
	Marketing cost	1654 (3.85)	-	-	-
	Marketing margin	4846 (11.27)	-	-	-
	Price received	33500 (77.91)	-	-	-
4.	**Retailer**				
	Price paid	33500 (77.91)	26500 (75.71)		38000 (100)
	Total marketing cost	860 (2)	780 (2.22)	-	0
	Marketing margin	8640 (20.1)	7720 (22.05)	-	0
	Price received	43000 (100)	35000 (100)	-	38000 (100)
	Price paid by consumer	43000 (100)	35000 (100)	30000 (100)	38000 (100)
I	Price Spread	**25000** **(58.14)**	**8500** **(24.29)**	**-**	**18500** **(48.68)**
II	Total Marketing cost of the	**7522**	**2036**	**1480**	**5740**

	Channel	**(17.5)**	**(5.81)**	**(4.93)**	**(15.11)**
III	Total marketing margin	**18142** **(42.2)**	**7720** **(22.05)**	**-**	**13344** **(35.12)**

(Figures in parentheses indicate percentage to the total)

Value chain I

Value chain I included beekeeper, processor, wholesaler, retailer and consumer. This was the longest channel found in the study. In this channel, beekeepers received an amount of Rs.18000 per quintal as gross price which constituted about 41.86 percent of price paid by the customer. In this channel, the processor bought honey from beekeeper at a price of Rs 18000 per quintal, proceeds to process it and sold to the wholesaler at a price of Rs. 27000 (62.79 percent) per quintal who earned a margin of Rs.4656 (10.83 percent) and spent marketing cost of Rs.4344 (10.10 percent). The wholesaler purchased honey from the processor for Rs.27000 and sold that honey to retailers at a price of Rs.33500 (77.91 percent), who earned a margin of Rs.4846 (11.27 percent) and an amount of Rs.1654 (3.85 percent) was spend as marketing cost. Retailer purchased honey from wholesaler for an amount of Rs.33500 and sold to the consumer at a price of Rs.43000 (100 percent), which obtained a margin of Rs.8640 (20.1 percent) and spent marketing cost of Rs.860 (2 percent). In channel I, the price spread was Rs 25000, which was the highest price spread among the four channels. It was also found that in this channel the beekeepers got the least gross price among the all four channels.

Value chain II

Value chain II included beekeeper, retailer and consumer. In this particular channel, beekeepers received an amount of Rs.26500 per quintal as gross price which comprised about 75.71 percent of price paid by the customer. An amount of Rs.1256 was spent by the beekeeper, which constituted about 3.59 percent of consumer price as marketing cost, which included transportation, loading and unloading charges and packing charges. Retailer would purchase honey directly from beekeeper for a price of Rs.26500 (75.71 percent) and sold to the consumer for an amount of Rs.35000 (100 percent), gaining a margin of Rs.7410 (21.17 percent) and spent marketing cost of 2036 (5.81 percent). In channel II, the price spread was Rs.8500, which was third in price spread and the second-best channel which gave better gross price for the beekeepers.

Value chain III

Value chain III included only beekeeper and consumer. In this channel, beekeepers received an amount of Rs.30000 per quintal as gross price which accounted for about 100 percent of price paid by the customer. The beekeeper spent Rs.1480 which accounted for about 4.93 percent of consumer price as marketing cost and cost of transportation, loading and unloading charges, packing and

parcel. From the point of view of beekeepers, it was found to be the best channel as they received the highest gross price. In this channel, marketing margin was found to be the least among all as there were only beekeepers and consumer in this channel. Finally, it was clear that this channel was the best channel for beekeepers to sell their produce as the price spread in this channel was low as compared to the others.

Value chain IV

This was a special channel as it includes KVIC, a cooperative society having its own honey processing plant. In this channel, beekeepers obtained an amount of Rs.19500 per quintal as gross price which constituted about 51.32 percent of the price that the consumers pay. KVIC purchased honey from beekeeper at a price of Rs.19500 per quintal, processed and sold at their own specific retail units at a price of Rs.38000 per quintal. The marketing cost for beekeepers was Rs.584, which included cost of loading and unloading and for transportation. The purchased honey was processed by processing unit owned by KVIC. The marketing charge for KVIC was Rs.5156 which constituted about 13.57 percent of the money spent by consumer. The marketing margin of KVIC was about Rs.13344 which constituted about 35.12 percent of the money the consumers spent on honey which was the highest among all the channels. The processed honey was sold exclusively through KVIC retail shops. There were 29 retail shops in Thrissur through which KVIC sold their honey to the consumers. In addition to that the retail shop, they did not have any marketing charge or margin as they directly sold the honey to the consumers. Also, there was fixed salary for the labourers in these retail shops. The price spread in this channel was about Rs.18500, which was the second highest price spread among the four channels.

Figure 2 The price spread among different honey value chains.

The figure 2 showed that value chain I had the highest price spread among the four chains, followed by value chain IV and then value chain II. There was no price spread in chain III, since the beekeeper directly sold honey to the consumers. Out of all the four chains, consumer paid the highest price of about Rs. 43000 per quintal of honey in value chain I. This was followed by value chain IV which honey was sold at RS. 38000 to the consumers, third was value chain II in which customers paid Rs.35000 and value chain III was the one in which customer had to pay the least, that was, Rs.30000. Hence, with regard to the consumers, value chain III was the best. In the case of price received by the farmer, value chain III was the first with a corresponding amount of Rs.30000. Farmers received around Rs.26500, Rs.19500 and Rs.18000 from value chain II, value chain IV and value chain I, respectively. Therefore, beekeepers received maximum price from chain III. In the case of total marketing cost, value chain I had the highest and value chain II had the lowest cost, meanwhile, in case of total marketing margin, value chain I offered the highest margin and value chain III offered the lowest margin.

4.3 Beekeepers share in consumers' price

Beekeepers share in consumers price is used to identify how much share of money the beekeepers get from the money spent by the consumer. Through this method, it was found out that which channel is giving more share to the beekeepers. The results from the Table 1 were used to calculate beekeepers share in consumer price. This table depicts showing the beekeepers share in consumer price.

Table 2 Beekeepers share in consumers' price

(Rs/quintal)

S. No	Marketing channels	Price Received by the beekeeper (Rs/quintal)	Price paid by the Consumer (Rs/quintal)	producers Share (Percent)
1	Channel I	18000	43000	41.86
2	Channel II	26500	35000	75.71
3	Channel III	30000	30000	100
4	Channel IV	19500	38000	51.31

It could be inferred from the table that beekeepers share in consumers price was the highest in channel III, which accounted for about 100 percent, since the beekeepers directly sold the honey to the consumers. Moreover, there were no intermediaries present in the channel, so there was no price spread. Channel II had second highest percentage among the four channels in which producers share was 75.71 percent. This was because there was only one intermediary between beekeeper and

consumer in this channel who was retailer. The third was for channel IV, which was KVIC special channel. In this channel, there was price spread only between beekeepers and KVIC, who sold the honey through their retailers directly to the consumers. Channel I had the least share of beekeepers in consumer price which was about 41.86 percent due to more number (3) of intermediaries present in this value chain.

4.4 Marketing efficiency of honey: using Shepherd's approach

For finding marketing efficiency by Shepherds' method, the consumer price was divided by the entire marketing cost and from that value one was subtracted. The formula for the marketing efficiency as follows:

Marketing efficiency = (A2/A3) - 1

The marketing efficiency of the value chain using Shepherds' method is presented in Table 3.

Table 3. Marketing Efficiency of Honey: Shepherds formula

(Rs/quintal)

Particulars	Channel I	Channel II	Channel III	Channel IV
Price received by the beekeeper (A1)	18000	26500	30000	19500
Price paid by consumer (A2)	43000	35000	30000	38000
Total Marketing Cost (A3)	7522	2036	1480	5740
Total Marketing Margin (A4)	18142	7720	-	13344
Shepherd's approach, ME= (A2/A3)-1	4.72	16.20	19.27	5.62

It could be concluded from the table that among the four channels, channel III had the highest marketing efficiency with the score of 19.27 which included beekeeper and consumer it indicated that the customers were able to purchase honey at a lower cost per unit of production. After channel III, channel II had the highest score of 16.20 and consisted of beekeeper, retailer and consumer. Channel IV had score of 5.62 which consisted of beekeeper, KVIC, KVIC retail unit and consumer, whereas channel I was the longest channel with the lowest score of 4.72, which involved beekeeper, processor, wholesaler, retailer and consumer.

5. CONCLUSION

The study concluded that the value chain actors in the study area included beekeepers, processors, wholesalers, retailers and consumers. Four different honey value chains were present in Thrissur district. From the results of price spread analysis, value chain I which consisted of beekeeper, processor, wholesaler, retailer and consumer had the highest price spread of Rs.25000

and in contrast to value chain III had the least price spread as it consisted of only beekeeper and consumer. So, value chain III was preferred value chain for the beekeepers. From the beekeeper's share in consumer price, value chain III accounted for about 100 percent followed by the value chain II which was around 75 percent which had beekeeper, retailer and consumer as intermediaries. Further marketing efficiency of honey value chain was computed using Shepherd's method and channel III had the highest efficiency with a score of 19.27 and channel I had the least marketing efficiency corresponding to score of 4.72, which was the longest value chain with maximum number of intermediaries. From the finds it is evident that, among the four honey value chains, chain II and III were the best choices for beekeepers.

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