

Marketing Channels, Margin and Farmer Share, and The Marketing Mix of Stingless Bee Honey in North Sumatra, Indonesia: A Field Survey

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Abstract. The uniqueness of stingless bee honey makes it an attractive choice as both food and natural medicine for honey consumers, who were previously dominated by honey produced by honeybees (*Apis mellifera*). This study examines the marketing of stingless bee honey in North Sumatra. The objectives were to determine marketing channels and functions, farmer share, share margin, and the marketing mix. This study uses a cross-sectional survey in five districts/cities in North Sumatra. Respondents were selected using the purposive sampling method (11 stingless bee farmers with at least 50 colonies and at least 5 years of experience), snowball sampling (5 resellers) by recording buying and selling prices. The study results show that three marketing channels are used, with farmers sharing 64.6% on channel 2, yielding an average margin of IDR 106,088/kg. This study found that the longer the distribution chain, the smaller the proportion of income received by farmers (farmer share). Direct channels provide full margins to farmers, whereas the involvement of resellers significantly reduces the farmer's share of the profit. The implications of these findings underscore the importance of developing more efficient and equitable marketing strategies for farmers, including the effective use of digital platforms to expand their markets. However, this study was limited to a specific region and sample. Further studies are recommended to analyze channel efficiency and the impact of digital promotions on increasing sales and farmer welfare.

Keywords: farmer share; marketing channel; marketing mix; share margin; stingless bee

INTRODUCTION

Honey in the market generally comes from bee species of the genus *Apis*, specifically *Apis mellifera*, *Apis dorsata*, and *Apis cerana*. It has recently been known as trigona honey, produced from stingless bees. Stingless bee honey, produced by *Meliponini* species, is gaining widespread attention in Indonesia (Agussalim & Agus, 2022) as a non-conventional beekeeping product with high nutritional value and health benefits (Shamsudin et al., 2019). Some of the benefits of honey include its antimicrobial properties (Ozturk et al., 2024), antiallergic (Yong et al., 2023), antiseptic, antibacterial, and antiviral (Babbar et al., 2023). However, its marketing still faces many obstacles. The relatively limited production per colony, between 6 and 12 kg of honey per year (Papilaya et al., 2024), results in a lower supply of stingless honey than conventional honey (*Apis*). Additionally, the high selling

price and limited consumer understanding of the characteristics of stingless bee honey also hinder market expansion (Hidalgo et al., 2020). Another problem is rampant product counterfeiting (Sundari, 2024) that reduces consumer confidence. This condition indicates that the economic potential of stingless bee honey in Indonesia has not been fully utilized.

Several previous studies have attempted to address this issue. Studies in Southeast Asia emphasize the importance of product differentiation strategies, quality certification, and derivative product development to increase the competitiveness of stingless bee honey. In Indonesia, local governments and farmer groups have initiated the promotion of stingless bee honey through agribusiness programs and local product festivals. The development of digital technology also opens up new marketing opportunities through e-commerce and social media, which are



considered effective in reaching urban consumers and the younger generation (Pribadi & Roza, 2021). However, studies that specifically discuss the efficiency of marketing channels, profit sharing between actors, and the implementation of stingless bee honey marketing mix strategies are still limited.

To close the gap, this study uses an approach that combines marketing channel analysis, farmer share ratio, and marketing mix strategy. Marketing channel analysis is necessary to trace the distribution channels of stingless bee honey from farmers to end consumers, allowing for the assessment of the efficiency of each channel. The farmer share measurement provides information about the economic benefits farmers receive in the marketing chain. In contrast, the study of the marketing mix (product, price, distribution, and promotion) helps identify the marketing strategies that have been implemented. Thus, this research is expected to be able to provide a comprehensive overview of the marketing dynamics of stingless bee honey in Indonesia.

Based on this background, this study aims to provide the first quantitative estimates of farmer-share for stingless-bee honey in North Sumatra, as well as the marketing mix, through a single field study. The results of this study are expected to guide the choice of the optimal marketing channel.

METHODS

This research was conducted in the first semester of 2025, using a cross-sectional survey in five districts/cities in North Sumatra by conducting interviews and collecting honey prices from the farm gate and resellers. Consumer prices are estimated from the average transaction price by farmers and resellers. Prices were collected in one observation. Respondents were determined using purposive sampling and had at least 50 colonies and more than 5 years of experience in beekeeping. They were considered representative of a business scale

suitable for commercial marketing analysis. Five resellers were identified using a snowball sampling technique to obtain a comprehensive picture of the marketing chain. Primary data was collected through in-depth interviews, field observations, and secondary data from relevant literature and scientific publications. To increase the validity of the research results, data source triangulation was conducted by comparing data from various respondents (farmers, resellers, and consumers). Furthermore, the data was analyzed using qualitative descriptive methods to better understand marketing channels, functions, and mixes. Quantitative analysis was used for marketing margins, distribution margins, and farmer share, as outlined in (Dewi et al., 2021):

a. Marketing Margin

$$MM = C_p - P_p \text{1)}$$

Keterangan:

MM = Marketing Margin

C_p = Consumer Price (IDR/kg)

P_p = Producer Price (IDR/kg)

b. Marketing Margin Distribution

$$MIPs = \frac{\pi_{ij}}{P_c - P_f} \times 100\% \text{2)}$$

Where:

MIPs = Marketing institution's profit share

π_{ij} = Marketing profit

P_c = Price at the collector level

P_f = Price at the farmer level

c. Farmer share

$$FS = \frac{P_f}{P_c} \times 100\% \text{3)}$$

Where:

FS = farmer's share

P_f = Price at the farmer level

P_c = Price at the consumer level

RESULTS AND DISCUSSION

Based on the research results on the marketing of stingless bee honey in North Sumatra, the following are the characteristics of the respondents involved in this study. The following table presents detailed data on the farmer's name, location, number of colonies, dominant stingless bee species, and marketing channels used.

Table 1. Respondent characteristic

Farm/ Beekeeper	District/City	Colonies	Stingless Bee Dominant	Marketing Channel
Citra Honey	Sibolga	80	<i>H. itama</i> , <i>G. thoracica</i>	1
Siregar	Tapanuli Tengah	62	<i>H. itama</i> , <i>G. thoracica</i>	1
Nahampun	Tapanuli Tengah	476	<i>H. itama</i> , <i>G. thoracica</i> , <i>T. apicalis</i>	1, 2, 3
Nafidz Trigona	Tapanuli Tengah	79	<i>H. itama</i> , <i>G. thoracica</i>	1,2
Panggabean	Tapanuli Tengah	82	<i>H. itama</i> , <i>G. thoracica</i>	1
Hutauruk	Tapanuli Tengah	50	<i>H. itama</i> , <i>G. thoracica</i>	1
Alfareezee	Tapanuli Selatan	958	<i>T. minangkabau</i> , <i>H. itama</i>	1, 2
Benben Trigona Honey	Langkat	304	<i>T. laeviceps</i>	1, 2
Yau Madu	Padang Lawas Utara	100	<i>H. itama</i> , <i>G. thoracica</i>	1,2
Muda Alam	Padang Lawas Utara	60	<i>H. itama</i> , <i>G. thoracica</i>	1
Sama Liem	Tebing Tinggi	300	<i>T. laeviceps</i>	1, 2

Table 1 shows that the stingless beekeeping, dominated by *Heterotrigona itama* and *Geniotrigona thoracica* species, is spread across several regions in North Sumatra. These two types are extensively utilized due to their superior honey production compared to other species (Saludin, S.F., Kamarulzaman, N. H., Ismail, 2019). The diversity of cultivated bee species and the variation in the number of colonies indicate a diverse scale of effort, from small to large. In addition, various marketing channels demonstrate that farmers

are utilizing one or more ways of selling their products, reflecting a dynamic marketing strategy.

1. Marketing Channels and Functions

There are three primary marketing channels for distributing stingless bee honey. The first channel is direct marketing, where the producer communicates directly with the consumer. The second channel involves resellers as intermediaries between the producer and the consumer, while the third channel involves two levels of resellers. The marketing channel is illustrated in Figure 1.

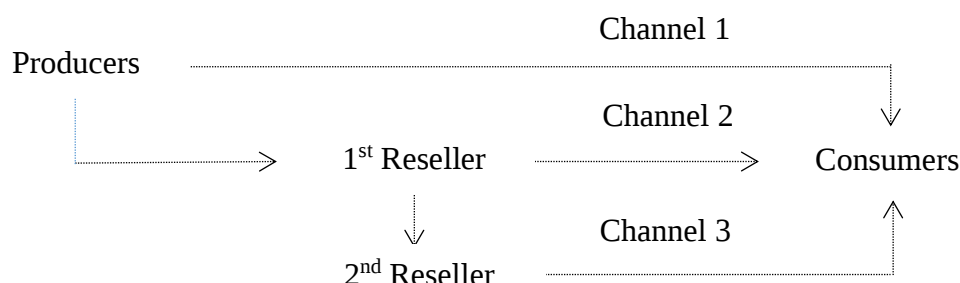


Figure 1. Stingless Bee Marketing Channel

The first channel connects producers directly with end consumers. This channel has the advantage that farmers receive the entire sales value (100% farmer share). In

this study, it is evident that all beekeepers utilize direct marketing channels to consumers, and a significant 45% of them rely solely on this marketing channel. The

beekeepers sell their products directly to consumers for cash at a higher price (Kaygisiz, 2023). Consumers typically reside near or within a relatively short proximity to the cultivation site, facilitating direct access. These findings support the research of Negash & Mengeste (2019), indicating that most beekeeping products are sold in nearby markets.

Weaknesses identified in this channel include the relatively small transaction volume and the irregular frequency of transactions, which is attributed to the limited market reach. Consumers purchase honey when supplies are low or when it is needed. Sales volume is limited due to several factors, including reliance on local consumers, difficulty reaching a broader market, and a lack of professional management, such as unattractive packaging or branding.

The marketing functions in this first channel include the exchange function, which involves direct buying and selling transactions between the farmer and the end consumer. The physical function involves storing the product directly by the producer before the consumer purchases it. There is no large-scale or long-distance product transportation; instead, there is only simple transportation from the farm to the storage location, usually the producer's home. Furthermore, the facility function involves the producer independently assuming all risks associated with the product, including the risk of damage and product quality.

The second channel involves a single reseller 45% of respondents are involved in this channel. The product is packaged by the producer, usually without a label or brand. The reseller adds their label or brand without changing the product's contents. Resellers have a broader marketing network, capable of reaching markets far from the cultivation site, such as other areas in North Sumatra, and even beyond the province.

The marketing functions in this second channel include the exchange function, where the sale and purchase transaction

occurs twice: from producer to reseller and from reseller to consumer. The physical function involves the reseller storing the product purchased from the producer and transporting it to the end consumer. The facility function consists of the reseller being responsible for any risks arising during the product distribution, such as packaging damage, quality degradation during transportation, or market fluctuations.

Compared to the first channel, this second channel offers a much broader market potential, increased sales volume, and more professional product branding through the reseller's label. However, the farmer's share is reduced because profits must be shared with the reseller; producers lose complete control over product branding, as resellers often use their brands.

The third channel involves two intermediaries: the first reseller and the second reseller. This channel is the longest distribution chain of the three. Only 9% of respondents use this channel. The first reseller purchases the product from the manufacturer in specific packaging and then resells it to the second reseller. The second reseller then sells the product to the end consumer without further changes. The first reseller already labels the product, so the second reseller acts solely as a distributor without additional processing.

The marketing functions occurring in this third channel are exchanged. This channel involves three stages of the buying and selling process: producer to first reseller, first reseller to second reseller, and second reseller to end consumer. The following functions are physical storage and transportation. Storage and transportation occur in two stages: from the producer to the first reseller, and from the first reseller to the second reseller, until it reaches the end consumer. In the form of risk coverage, the facility function is found in resellers, particularly in the second and third channels. The agent is responsible for product damage, quality degradation during storage, and market risks, including price fluctuations.

This function provides farmers with a sense of security when selling their products, but it also increases the cost burden on resellers, subsequently impacting their margins. The facilitation function is to share marketing risks between the two resellers. The second reseller also plays a role in expanding market reach, usually to areas that are inaccessible directly to the first reseller or producer.

In this third channel, product distribution is broader, enabling far-reaching market penetration. The second reseller is closer to consumers, facilitating access and purchasing for consumers in remote areas. However, this channel has the smallest farmer-producer share because the margin is split between the producer and two other resellers. The more intermediaries there are, the greater the marketing margin distributed to these marketing institutions. This channel significantly reduces farmers' profits compared to the first and second channels. Furthermore, producers have limited control over product pricing and branding at the end-consumer level, risking excessively high consumer prices that could reduce purchasing power.

The involvement of resellers in the second and third channels does provide functional benefits, especially in absorbing market risks, product damage, and price fluctuations, providing a guarantee of sales for farmers. However, the transfer of the risks and functions of these facilities must be paid for dearly by farmers through a substantial decrease in their revenue share.

2. Marketing Mix

The marketing mix aspect reveals product characteristics and the marketing strategies implemented.

A. Products

Stingless bee products include honey, propolis, and bee bread. Most stingless honey is marketed from the *Heterotrigona itama* species, followed by *Geniotrigona thoracica*. These two bee species are the most commonly found among beekeepers. In

addition, smaller quantities of honey from *Tetrigona apicalis*, *Tetragonula laeviceps*, and *Tetragonula minangkabau* are also found.

The honey these bees produce depends on the season and the vegetation surrounding the beekeeping area. The dry season is the peak period for honey production. During this period, a single *Heterotrigona itama* colony can produce 1-2 liters per month, while *Geniotrigona thoracica* produces 2-3 liters per month, depending on the size of the beekeeping area.

Honey quality depends on the harvesting process. Currently, no established standards exist (Pimentel et al., 2022). Two harvesting methods are available. For stingless bees with large honey pots (such as *Heterotrigona itama* and *Geniotrigona thoracica*), an electric (battery-powered) vacuum is used to prevent direct contact with the honey. For bees with small honey pots (such as the *Tetragonula* species), the honey is harvested by squeezing and draining. The honey is then filtered before being packaged. The honey from the honey pots is directly poured into containers without the harvester's hands or undergoing further processing.

Before being bottled, the honey is first filtered. The clean honey is then placed in plastic bottles of various sizes, including 250 mL, 500 mL, and 1000 mL. Some are also sold in 350g, 500g, and 1000g bottles. The packaging at the farmer level includes information on the brand, size, and P-IRT number. However, some products are still sold without a brand or P-IRT permit.

In addition to honey, these bees produce bee bread and propolis (Abdurofi et al., 2021). Bee bread is derived from pollen that adheres to the legs of bees as they search for nectar, which is then further processed into bee bread. Stingless bees are also known as propolis bees due to the large amount of propolis they produce.

The diverse products produced by bees offer significant market potential. Despite this considerable market potential,

marketing stingless bee honey in Indonesia faces several challenges. Among these are the lack of product quality and authenticity standards, which can impact consumer confidence. [Gratzer et al. \(2019\)](#) reveals that challenges in honey cultivation and marketing in Indonesia include post-harvest issues and a lack of knowledge among farmers about effective marketing practices and business experience ([Buchori et al., 2022](#)). Bee farmers, with limited knowledge and capital, face obstacles in developing their honey beekeeping businesses ([Harianja et al., 2023](#)). Some of these products have not yet been commercialized, thus lacking significant economic value.

B. Prices

The prices of stingless bee products vary considerably depending on the region and species. At the farmer level, *Heterotrigona itama* honey costs from IDR 250,000 to IDR 500,000/kg (\$15.16 to \$30.32). *Tetragonula laeviceps* and *Tetragonula minangkabau* honey range from IDR 250,000 to IDR 333,000/kg (\$15.16 to \$20.22), while *Geniotrigona thoracica* and *Tetrigona apicalis* honey range from IDR 200,000 to IDR 666,667/kg (\$12.13 to \$40.43). Prices at the end-consumer level are higher than producer prices due to additional marketing costs and profits taken by each institution involved in the process.

The pricing method employs a market-based approach, where producers adjust product prices to reflect prevailing market prices for similar products. There is no premium pricing strategy or significant price differentiation; most still follow the prevailing market price.

C. Places

The distribution of stingless bee honey products is rudimentary and does not utilize dedicated locations or professional organizations. Regarding sales locations, most producers and resellers sell products from home without dedicated stores or outlets. Some resellers are more active,

shipping products to wider areas, including between cities and even across provinces.

Products are stored in basic conditions, such as in a home or a small warehouse. Adequate specialized facilities are lacking. The best recommendation is to store glass containers at around 4°C, with ideal consumption within 90 days after harvest ([Nadja Julika et al., 2022](#)). Producers and agents have not fully leveraged marketplaces or digital platforms, despite their significant potential to expand product distribution nationally and internationally.

D. Promotions

Current promotional strategies for stingless bee honey remain traditional and limited, primarily utilizing social media as the primary tool. To promote their honey, farmers and agents use social media platforms such as Facebook, WhatsApp, Instagram, and TikTok ([Rosyada et al., 2020](#)). Producers typically post content in the form of reels, stories, or live streams during the harvest and packaging process to build consumer trust. Some producers actively participate in local events, such as bazaars and agricultural product exhibitions, or through MSMEs, to increase consumer product visibility. Current promotional strategies lack strategic planning. There is a lack of a consistent and integrated digital campaign. Furthermore, paid digital advertising or influencer marketing, which have significant potential to increase consumer awareness and interest, are not yet optimal.

The practice of stingless bee honey marketing when associated with modern agro-marketing studies in Indonesia, especially those focusing on e-marketplace platforms, reveals both the potential for harmonization (convergence) and fundamental differences (divergence).

A comparative study in Indonesia confirms that using e-marketplaces is key to shortening distribution channels for agricultural products in general, allowing farmers to conduct direct transactions and

overcome geographical barriers (Kusumawati et al., 2021). This converges directly with the implications of stingless bee honey research findings that suggest using digital platforms for market expansion. Digitalization also increases farmers' price transparency and market access (Rahma et al., 2024).

The divergence in product elements is shown when honey farmers are particularly vulnerable to non-standard quality and authenticity issues. At the same time, the modern market demands quality standardization and guaranteed logistics so that perishable agricultural products can be delivered intact and on time. Farmers have failed to meet the demands of product standardization, which are crucial to compete in the digital market (Kusumawati et al., 2021). Divergences in place elements are shown when farmers have not managed e-commerce strategically. Even though they use social media (promotion), they do not focus on standardizing the process, namely ensuring transaction and delivery flows, or building credibility through professional digital displays that have proven to influence the purchasing decisions of modern consumers greatly.

These limitations reflect the failure of farmers in value capture. Farmers only sell raw commodities with uncertain standards. As a result, resellers who provide branding capabilities and market access manage to absorb disproportionate margins. Farmers must transform from commodity sellers to marketers of branded and certified products to reclaim control of prices and value.

3. Marketing Margin

Margin share refers to the portion of the profit margin allocated to each agency in the marketing chain. The share received by each stingless bee marketing agency can be seen in Table 2.

Table 2 shows that the marketing margin for stingless bee honey increases with the increasing number of agencies involved. The first reseller incurs higher marketing costs

(IDR 12,500) than the second reseller (IDR 7,500). First reseller is due to a more aggressive promotional strategy or higher distribution costs. While higher marketing costs can increase product visibility, they can also reduce margins if not offset by increased sales. Furthermore, the second reseller successfully set a higher selling price (IDR 660,000) than the first reseller (IDR 471,157). The second reseller has a more effective marketing strategy in building perceived value in the eyes of consumers or targeting a more premium market segment that values quality more and is therefore willing to pay a higher price.

Viewed from the cost structure, there is a real vertical inefficiency. The increase in total marketing costs from 1.10% in the first channel to 4.08% in the third channel is relatively small. However, the total marketing margin (the difference between the manufacturer's and consumer prices) shot up to IDR 212,176 per kg, which translates to 35.36% of the consumer price.

The gap between rising logistics costs and margin spikes suggests that consumer price increases are primarily driven by a substantial increase in profit markups at each chain level. Notably, the second reseller on channel 3 managed to record the highest margin (IDR 128,843/kg, or 21.47% of the final selling price) by incurring lower marketing costs than the first reseller. This condition strongly indicates rent-seeking activity or market forces that allow intermediaries to allocate profits disproportionately.

4. Farmer Share and Margin Distribution

Farmer share refers to the proportion of the final price received by farmers. Table 2 shows that farmers receive a selling price of IDR 407,547 per kg, meaning producers receive 100% of the price end consumers pay. They receive the full proportion of the selling price before resellers become involved.

Table 2. *Farmer Share in Marketing Channel*

N o	Marketing Institution	1 st Channel (IDR/kg)	%	2 nd Channel (IDR/kg)	%	3 rd Channel (IDR/kg)	%
Stingless Bee Producers							
a.	Production Cost	28,000	6.87	28,000	5.94	28,000	4.67
b.	Marketing Cost	4,500	1.10	4,500	0.96	4,500	0.75
c.	Profit	375,047	92.03	355,324	75.42	355,324	59.22
d.	Selling Price	407,547	100	387,824	82.31	387,824	64.64
1st Reseller							
a.	Buying Price			387,824	82.31	387,824	64.64
b.	Marketing Cost			12,500	2.65	12,500	2.08
c.	Profit			70,833	15.03	70,833	11.81
d.	Selling Price			471,157	100	471,157	78.53
e.	Margin (IDR/kg)			83,333	17.69	83,333	13.89
2nd Reseller							
a.	Buying Price					471,157	78.53
b.	Marketing Cost					7,500	1.25
c.	Profit					121,343	20.22
d.	Selling Price					600,000	100
e.	Margin (IDR/kg)					128,843	21.47
Consumers							
a.	Buying Price	407,547	100	471,157	100	600,000	100
Total Margin		0	0	83,333	17.69	212,176	35.36
Total Marketing Cost		4,500	1.10	17,000	3.61	24,500	4.08
Total Profit		375,407	92.03	426,157	90.45	547,500	91.25
Farmer's Share			100		82.31		64.64

Furthermore, farmers' share decreases as more institutions become involved in marketing stingless bee honey. In line with these findings (Hailemariam & Tolemaria, 2017), it was shown that the distribution of margins in honey marketing is strongly influenced by market structure and the distribution channels used. This is in accordance with the farmer share theory, which states that the proportion of the final price received by farmers can vary depending on the role of intermediaries in the supply chain. Paying attention to the farmer's share ensures that farmers receive a fair share of the selling price, which is

crucial for their sustainability and well-being.

Table 2 also shows the distribution of margins for each marketing channel. In this study, different distribution channels provided varying margins, with the direct channel from farmers to consumers providing the highest margins. In channel 1, the margin is thoroughly enjoyed by stingless bee honey producers. Consumers receive the full price paid, as no other institutions are involved in the product marketing process to the end consumer. In this channel, the margin distribution is 100%.

In channel 2, the margin is distributed among producers (82.31%) and the first reseller (17.69%). The proportion of farmers received is smaller than in the previous channel, with the first reseller receiving one-third of the total margin. In Channel 3, the margin is distributed among the three institutions: producers (64.64%), first reseller (13.89%), and second reseller (21.47%).

These findings indicate that the longer the distribution chain, the greater the proportion of marketing margin enjoyed by intermediaries and the smaller the net profit received by farmers. With a shorter marketing system, farmers retain a greater share of the value of their products, contributing to improved economic well-being. These findings align with (Winahyu et al., 2021), which states that direct channels are more efficient.

Furthermore, increasing market volume requires marketing agents as strategic partners. Therefore, marketing strategies need to be designed to ensure fairer and mutually beneficial profit distribution, such as through strategic partnership schemes between farmers and agents or farmer cooperatives, which can strengthen farmers' bargaining position in the market.

An effective marketing strategy should include consumer education about the health benefits of stingless bee honey and the uniqueness of this product compared to honey from conventional bees. Research (Nugraha et al., 2020) shows that e-commerce systems can be an effective tool for increasing the accessibility and sales of stingless bee honey, enabling farmers to reach a broader market.

CONCLUSION

This study empirically explains how the structure of marketing channels influences the distribution of profit margins and the welfare of stingless bee farmers in North Sumatra. Stingless bee honey products are predominantly produced by *Heterotrigona itama* and *Geniotrigona thoracica* bees, with

peak production during the dry season. Farm-level selling prices vary by region and bee species (around IDR 200,000–IDR 666,667 per kg), while end-consumer prices are higher due to additional marketing costs and intermediary margins. Product distribution remains relatively simple, with products originating from producers' homes and not having dedicated outlets. The use of marketplaces and online platforms to expand distribution is not yet optimal. Current promotional strategies remain traditional: producers and agents use social media (Facebook, Instagram, WhatsApp, TikTok) and local bazaars to increase visibility, with no integrated digital campaigns or intensive paid advertising. In the future, it is necessary to make attractive standard product packaging to increase retail prices and explore marketing through cooperatives and e-commerce to reach a broader market.

This study also revealed three marketing channels: a direct channel (producer-consumer), a channel with one reseller, and a channel with two resellers. Farmers receive the entire sales value (100% farmer share) in the first channel because there are no intermediaries. In contrast, in the second channel with one intermediary, the farmer's share of income decreased to around 82%, and in the third channel (two intermediaries), the farmer's share was even smaller, at around 64.64%. These findings indicate that the supply chain structure influences the distribution of profits between farmers and intermediaries. The longer the distribution chain, the greater the marketing margin enjoyed by intermediaries and the smaller the net profit received by farmers. This study only involved stingless bee farmers with a relatively large number of colonies; therefore, the findings may not be representative of the conditions of smallholder farmers or other regional contexts. Furthermore, this study did not thoroughly explore the external factors that may influence the stingless bee honey supply chain. Future research should focus on evaluating digital promotion strategies to

determine their impact on the sales volume of stingless honey.

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