



Research Article

Analysis of Market Structure, Behavior, and Performance in Developing a Cocoa Bean Supply Chain Model in Southeast Sulawesi

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Abstract | Farmers are often in a weak bargaining position within the cocoa marketing system, resulting in low cocoa commodity prices at the farm level. This study examines the structure, behavior, and performance of the cocoa supply chain market in Southeast Sulawesi, a major cocoa-producing region in Indonesia. Despite its significant economic potential, the local cocoa industry faces persistent challenges, including low product quality, price volatility, and distribution inefficiencies. Adopting the Structure-Conduct-Performance (SCP) framework, this study analyzes the interactions between farmers, local collectors, processors, and exporters. The findings indicate an oligopsony structure at the village collector level and a monopsony pattern among inter-island traders, with a market concentration ratio of 138.45%. Barriers to entry are high, as evidenced by a Minimum Efficient Scale (MES) of 81.38%, driven by economies of scale and product differentiation strategies employed by dominant players. Market behavior is characterized by cash payments, advance purchase practices (ijon), and pricing based on quality. Market performance, as assessed thru marketing margins and farmers' share of the final price, indicates weak bargaining power due to inefficient distribution channels and limited access to market information. This study recommends increasing supply chain transparency, strengthening farmer institutions, and implementing targeted policy interventions to promote a fairer and more competitive cocoa value chain.

Received | August 13, 2025; **Accepted** | January 26, 2026; **Published** | March 26, 2026

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Citation | Al Zarliani, W.O. and A. Ahmad. 2026. Analysis of market structure, behavior, and performance in developing a cocoa bean supply chain model in Southeast Sulawesi. *Pakistan Journal of Agricultural Research*, 39(1): 146-158.

DOI | <https://dx.doi.org/10.17582/journal.pjar/2026/39.1.146.158>

Keywords | Cocoa bean, Supply chain, Market structure, Behavior, Performance (SCP), Southeast Sulawesi



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Introduction

The plantation sub-sector plays a crucial role in agricultural development (Harmaidi *et al.*, 2024; Haryono *et al.*, 2024; Khairiyakh *et al.*, 2016; Pauzia *et al.*, 2023; Ruslan and Prasetyo, 2021), particularly as a source of foreign exchange, employment absorption,

and contribution to Gross Domestic Product (GDP). In 2004, the agricultural sector (Ahmad *et al.*, 2017) generated foreign exchange amounting to 4,895 million USD, with the plantation sub-sector contributing 7,784 million USD (160.19%) (OECD, 2001). Employment data from 2024 also shows that out of 37.80 million workers in the

agricultural sector, 13.48 million (35.66%) were employed in the plantation sub-sector ([Pusat Data dan Sistem Informasi Pertanian, 2024](#)). The GDP of the agricultural sector at current prices in 2004 was 15.38%, and the plantation sub-sector contributed 2.49% to the national GDP, or 16.19% of the total agricultural sector ([Statistics Indonesia, 2008](#)). One of Indonesia's leading plantation commodities is cocoa (*Theobroma cacao* L.) ([Hapsari and Yuniasih, 2020](#); [Hermawan, 2019](#); [Nisa' et al., 2023](#); [Statistics Indonesia, 2008](#)), which holds strategic advantages for driving the national economy ([De Borger et al., 2022](#); [Rinchen et al., 2024](#)), both through its export contributions and its role in increasing farmers' incomes. Southeast Sulawesi is one of the major cocoa-producing regions with significant potential to boost national cocoa production. However, despite its potential, the cocoa industry in this region still faces several challenges, including poor product quality, fluctuating prices, and an inefficient supply chain ([Beg et al., 2017](#); [De Borger et al., 2022](#); [Ding et al., 2024](#); [Kumar et al., 2025](#); [Perez et al., 2021](#); [Rinchen et al., 2024](#); [Sa'adah et al., 2024](#); [Vivek and Steffany, 2010](#)). The cocoa supply chain involves multiple stakeholders, including farmers, collectors, processors, and exporters. The complexity of interactions among these actors often affects the efficiency of cocoa distribution, price stability, and farmers' welfare ([Baharuddin et al., 2025](#)). Therefore, it is essential to develop a comprehensive understanding of the market structure, conduct of its participants, and overall market performance. One effective approach for evaluating and identifying improvement opportunities in the cocoa market is the Structure-Conduct-Performance (SCP) framework ([Beg et al., 2017](#); [De Borger et al., 2022](#); [Vivek and Steffany, 2010](#)).

Cocoa production showed fluctuating trends between 2020 and 2023. In 2020, cocoa production reached 114,003 tons. This figure slightly declined to 107,152.74 tons in 2021, further to 104,649.13 tons in 2022, and again to 103,205.91 tons in 2023. These statistics reveal a gradual fluctuation in cocoa production, likely due to several factors such as climate variability ([Atalaya-Marin et al., 2025](#); [Moura et al., 2025](#)), plant quality ([Poojari et al., 2025](#); [Tosto et al., 2024](#)), and obstacles in production and distribution processes ([Baek et al., 2025](#); [Krause et al., 2025](#); [Valussi and Minto, 2016](#); [Vanderschueren et al., 2021](#)). This situation calls for careful consideration to improve the stability and productivity of cocoa

production in the coming years. Many cocoa farmers in Sulawesi aim to increase their profits; however, this goal is often constrained by government-determined prices and quality standards imposed by marketing agencies. Furthermore, market information especially regarding prices is still limited. Some of the largest groups of farmers often produce lower-quality cocoa compared to other marketing institutions. It is hoped that traders will provide transparent market price information to help improve farmers' incomes ([Kamal and Bangladesh, 2023](#); [Ma et al., 2024](#)).

As shown above, the cocoa bean market presents various challenges and can be problematic for farmers, who are often in a weak bargaining position ([Kongor et al., 2024](#); [Salazar et al., 2023](#); [Widhiyoga and Wijayati, 2022](#)). The marketing channels tend to be inefficient due to the involvement of various intermediaries with different requirements. According to [Asir and Asir \(2023\)](#); [Heliawaty et al. \(2024\)](#); cocoa bean marketing in Central Sulawesi is carried out by small collectors, wholesalers, and exporters a traditional marketing pattern still widely used today. [Kissi and Herzig \(2024\)](#); [Lenou et al. \(2020\)](#) adds that low cocoa prices at the farm level are due to numerous factors, including dispersed marketing centers, lack of coordination and cooperation among producers, increasingly intense market competition, the distance to export buyers, and unclear distribution mechanisms from producers to processing industries. These issues are compounded by quality and production challenges.

Global price fluctuations also affect farm-gate cocoa prices, but high export prices are not fully enjoyed by farmers ([De Figueirêdo Junior et al., 2014](#)). One approach to solving this marketing system problem is to analyze it through the Structure-Conduct-Performance (SCP) framework, which is an analytical framework in industrial organization that explains the causal relationship between three components: market structure, market participant behavior, and market/industry performance. In essence, the characteristics of market structure influence how actors behave, and that behavior in turn determines performance such as efficiency, prices, and welfare ([Lelissa and Kuhl, 2018](#); [Shaik et al., 2012](#)). According to this theory, the price of cocoa beans is influenced by market structure, marketing conduct, and market performance. Market structure determines the pricing mechanism, influenced by the number of actors and their power in the market. If a processor or exporter holds significant

market power, they can easily influence cocoa prices. This is also tied to the number of collectors or exporters fewer intermediaries mean farmers have limited options and face rigid pricing. Moreover, cocoa pricing is affected by the organizational conduct of marketing agencies and cooperatives (Asir and Asir, 2023; GIZ, 2018; Kissi and Herzig, 2024; Lenou *et al.*, 2020).

The main objective of this research is to investigate: How are the structure, behavior, and performance of the cocoa bean market in Southeast Sulawesi? Based on the issues mentioned above, it is crucial to conduct an analysis of market structure, behavior, and performance to provide a clearer picture of the cocoa market and identify improvement strategies. This research will provide recommendations to the government, particularly in Southeast Sulawesi province, in formulating policies related to the cocoa marketing structure by providing an empirical basis whose results will lead to more efficient, transparent, and equitable cocoa market development, and enhance the competitiveness of cocoa commodities thru interventions at both the upstream (production) and downstream (marketing and export) ends. For academics, this research can contribute scientifically to the study of market structure, behavior, and performance (Structure-Conduct-Performance analysis) in the context of tropical plantation commodities, particularly cocoa in eastern Indonesia, and serve as a reference for further research on strengthening the local cocoa value chain and improving farmer welfare.

Materials and Methods

This study was conducted in Southeast Sulawesi Province, covering several clusters located in Buton Regency, South Buton Regency, Central Buton Regency, Baubau City, and Muna Regency. The research was carried out from October to December 2023. The research area was determined purposively using a cluster sampling technique. These areas were selected based on their potential as major cocoa bean-producing regions that are highly suitable for further development.

Cocoa farmer samples were selected using cluster random sampling. This method was chosen considering the population is spread across several districts, and the sample size is based on simple

random sampling (SRS) for each actor layer (farmers, village collectors, district/city traders). A total of 8 samples were selected from each actor layer in each district, resulting in 136 traders at the provincial level for each cluster. Cluster sampling is done in two stages: the first stage involves selecting sample areas, and the second stage involves selecting individuals from those areas thru random sampling (Baker, 2018; Maxwell and Frankenberger, 1992).

The analytical techniques used in this study include descriptive, qualitative, and quantitative analysis. The study analyzes the market structure, behavior, and performance. Qualitative analysis is conducted to identify and examine the number of buyers and sellers, product differentiation, and the level of market knowledge. Descriptive quantitative analysis is used to analyze market concentration, market share, and barriers to market entry and exit. It is also employed to measure marketing efficiency, technical efficiency, and economic efficiency.

Market structure analysis

The market structure was analyzed using both descriptive and quantitative methods. The descriptive analysis of market structure involves explaining the number of market participants and the barriers to market entry and exit. The quantitative analysis of market structure includes calculating market share, concentration ratio, and the Herfindahl Index.

Market share analysis

The calculation of the market share of raw cocoa beans in Southeast Sulawesi was conducted by assessing the market share of traders offering cashew nuts from Muna Regency, South Buton Regency, Central Buton Regency, and Baubau City. Market share can be calculated using either sales revenue or production capacity (Cooper and Nakanishi, 1988).

$$MSi = \frac{Si}{Stot} \times 100\%$$

Where; MSi (Market Share)= Market share of trader i (%), Si= Sales of cashew nuts by trader i (tons/year), Stot= Total sales of cashew nuts by all traders (tons/year).

Market concentration

The concentration ratio (Cr) is the comparison between the quantity of cashew nuts purchased by a

specific trader and the total quantity of cocoa sold by all traders, multiplied by 100 percent (Alzarliani *et al.*, 2019).

$$Cr = \frac{\text{The quantity purchased by a specific merchant}}{\text{Total amount sold by all merchants}} \times 100\%$$

Barriers to market entry

Barriers to entry are analyzed using the Minimum Efficiency Scale (MES). MES is calculated by comparing the sales of the largest collecting trader to the total production of the cocoa commodity (Karakaya and Stahl, 1991).

$$MES = \frac{PjPt}{Prk} \times 100\%$$

Where; PjPt= Sales of the largest trader, Prk = Total production of cocoa commodity, A MES value greater than 10% indicates a high barrier to market entry in the marketing business (Karakaya and Stahl, 1991).

Market behavior analysis

Market behavior refers to the behavioral patterns of marketing institutions within a specific market structure. It includes activities such as buying and selling, price formation, payment systems, and collaboration among marketing institutions (Bakator and Ivin, 2020). Market behavior is analyzed descriptively by examining pricing practices carried out by traders, the payment system, and the cooperation between marketing institutions. Market behavior reflects the market structure and influences buying and selling activities. Price-setting activities are analyzed to identify which institution has a more dominant role in price determination. The analysis of cooperation among marketing institutions helps determine the dominance of specific institutions in the market.

Market performance analysis

The indicators used in analyzing market performance are marketing margin and farmer's share.

Marketing margin

Marketing margin refers to the difference between the price received by cocoa farmers (Pf) and the price set by exporters (Pe). The price data used in this study include cocoa bean prices at the farmer level and at the exporter level to analyze the marketing margin.

The formula for calculating the marketing margin is as follows:

$$MT = Pe - Pf$$

Explanation: MT= Total Margin, Pe = Price of cocoa beans at the exporter level (Rp/kg), Pf = Price of cocoa beans at the farmer level (Rp/kg).

Farmer's share

Farmer's Share is the ratio of the price received by farmers to the price received by traders. When the marketing channel changes, the share of the price received by farmers also changes. Therefore, the farmer's share is influenced by factors such as product volume, transportation costs, product quality, and the quantity producer (Cooper, 1988). Mathematically, the farmer's share can be expressed as:

$$Fs = \frac{Pf}{Pe} \times 100\%$$

Where; Fs = Farmer's share of the cocoa bean price (Rp/kg), Pe = Price of cocoa beans at the exporter level (Rp/kg), Pf = Price of cocoa beans at the farmer level (Rp/kg)

Results and Discussion

Market share analysis

As shown in Table 1, the analysis of the cocoa bean market reveals that the market structure varies across different levels of traders. At the village collector level, the market structure displays characteristics of a loose oligopsony, with a market share of 56.33 percent. This indicates that while a few large buyers dominate the cocoa bean purchases from farmers, there are still significant differences among these buyers, suggesting a somewhat competitive environment. At the inter-island trader/processor level, the market structure reflects a tight oligopoly, with a market share of 82.22 percent. The dominance of a few major collectors in the distribution chain suggests increased market sentiment and a more stable competitive environment. At the large trader level, the market structure also falls under a tight oligopoly, with a very high market share of 94.1 percent. This high level of market concentration indicates that only a few large traders control most of the cocoa bean transactions in the region, leading to stronger market power and reduced competition.

Table 1: *Market share analysis.*

Trader level	Market structure	Market share (%)
Village collectors	Loose Oligopsony	56.33
Inter-island traders/processors	Tight Oligopoly	82.22
Large traders	Tight Oligopoly	94.10

Cocoa bean market concentration

Market concentration analysis for cocoa (as a comparative reference) was conducted using the proposed concept, by comparing the amount of cocoa purchased by a specific village collector with the total amount sold by all village collectors in Southeast Sulawesi. The results of the market sentiment analysis for cocoa beans in Southeast Sulawesi show that the market structure at various trading levels exhibits different characteristics. Based on the analysis of cocoa bean market sentiment, the market structure at the collector/processor level in villages is characterized as oligopsony, which is a market structure where the number of buyers is relatively small (a few large buyers) while there are many sellers, giving buyers strong bargaining power in determining prices and transaction terms on the demand side, with a sentiment score of 88.25%. Conversely, the inter-island trader level reflects a monopsony structure, which is a market structure where there is only one buyer (or one dominant buyer) facing many sellers, giving the buyer the power to influence prices and the quantity purchased. This single buyer acts as a price maker on the demand side, not merely a price taker, with a concentration ratio of 95% as the minimum threshold for monopsony classification.

This monopsonistic market condition at the inter-island trader level can be explained by the limited number of traders only ten inter-island traders, with one major trader in Lombe Village purchasing a significant volume of cocoa beans, approximately 450 tons in a single transaction. This volume is substantially higher compared to other islands, suggesting that this trader exerts a disproportionate influence on the cocoa bean market, potentially to the detriment of fair pricing. At the peak trader level, the cocoa bean market structure also displays a high degree of oligopsony, with a score of 96.37%. The corresponding scores are 90.92% at the village collector/processor level and 89.19% at the inter-island trader level, indicating a moderate oligopsonistic market concentration.

Barriers to market entry

Barriers to market entry are measured using the Minimum Efficiency Scale (MES) (Kaselimi *et al.*, 2011), which is calculated based on the volume of cocoa bean sales by the largest company in Southeast Sulawesi Province in relation to the total cocoa bean sales in the province during the years 2014 to 2016. A MES value greater than 10% indicates the presence of significant entry barriers for new firms. The analysis revealed a MES value of 81.38%, which indicates very high barriers to entry in the cocoa bean marketing system. The analysis also showed that new market participants attempting to enter the cocoa industry face substantial obstacles at various levels of the market structure, including village collectors/processors, inter-island traders/processors, and large-scale traders. Specifically, the MES value was found to be 19.08% at the village collector level, 31.11% at the inter-island trader level, and 36.69% at the large trader level.

Overall, barriers to entry for new players were very high: 26.14% for village collectors/processors, 23.95% for inter-island traders, 63.10% for large traders, and the highest at the retail trader level with 81.38%. Among these, the highest entry barrier was found at the retail trader level. This significant barrier is attributed to the product differentiation practiced by farmers and collectors, each of whom offers cocoa beans with unique characteristics and individual branding. Such differentiation makes it difficult for new collectors to compete with long-established players who already have loyal customers and strong market trust. This finding is consistent with Tojiri (2023) study, which stated that product differentiation can pose a serious barrier for other producers to enter the market. Effective competition can only occur if consumers can compare different products directly. In addition to product differentiation, another factor contributing to entry barriers for newcomers at the collector or farmer level is the advantage of large economies of scale held by existing retail traders. This aligns with Islami *et al.* (2019), argument that the main determinants of market entry barriers for new players are large-scale economies, product differentiation, and absolute cost advantages of established firms over new entrants.

Market behavior analysis

Market behavior refers to the activities undertaken by farmers involved in cocoa bean marketing as they navigate the existing market structure in pursuit of maximum profit. The behaviors shown by farmers

and collectors include buying and selling activities, payment systems, price determination processes, cooperation with marketing institutions, and the implementation of marketing functions.

Purchasing and selling practices of marketing institutions

Some farmers in Southeast Sulawesi, particularly those in Central Buton and South Buton, engage in cocoa bean collection. The marketing functions they perform are similar to those of farmers in Moko Village. In Moko Village, only a small number of farmers act as processors, while most sell their cocoa beans to collecting traders/processors. The harvested cocoa beans are typically stored by the farmers until market prices rise, at which point the beans are shelled and sold to local collecting traders. However, standardization and grading are not carried out by the processing farmers. Farmer activities include drying, delivering, storing, and ripening cocoa pods. Performance evaluations of these cocoa-related activities across several villages were based on feedback from survey participants. None of the respondents from Southeast Sulawesi reported being involved in the ripening process of cocoa pods.

Only about 51.78 individuals participated in these activities. It is estimated that 73% of respondents did not participate in the Field School program that facilitated these activities in Central Buton, South Buton, and Buton districts. This indicates that around five farmer respondents had not completed the survey. The average cost of living in Southeast Sulawesi, particularly in Central Buton, South Buton, and Buton districts, was reported to be around Rp 328,325. Tools used for cocoa farming maintenance include machetes, hoes, sprayers, saws, sacks, tarps, drying racks (para-para), and pruning shears. The variation in depreciation value of tools across farms is influenced by the quantity and quality of equipment used, while variations in land tax are affected by differences in land location, land area, and farm usage.

Activities of village-level collecting traders/ processors
Village-level collector merchants play a crucial role in the cocoa bean supply chain, particularly in connecting farmers with larger markets such as wholesalers, exporters, or processing factories. These traders use various transaction methods to buy cocoa beans directly from local farmers. Common methods include cash purchases, where the buyer pays the seller in full at the time of the transaction, and the

“*ijon*” system, which involves advance payment before harvest as a form of initial compensation to the farmer. This system results in lower-than-market prices at harvest, suppressing income and reducing incentives for quality improvement, dependence, and a cycle of repeated debt, weakening the bargaining power and access to formal financing for cocoa farmers. The benefits for traders include guarantyd supply access from indebted farmers, reduced risk of raw material shortages, and the potential for higher margins from the difference between pre-harvest prices and harvest market prices, including control over quality/weight assessment. Some retailers also price based on quality, with factors such as fermentation level, moisture content, and bean size influencing the final price. With an extensive network across several regions, village-level collector traders can manage a large number of suppliers. This explanation aligns with [Ahearne et al. \(2022\)](#) and [Prado and Martinelli \(2018\)](#), who state that the relationship between buyers and sellers is competitive, and transactions occur after an agreement is reached.

Once cocoa beans are acquired, collecting traders carry out sorting and small-scale storage before selling them to larger or more specialized traders. Sorting is conducted to provide high-quality cocoa products and to remove beans that are damaged or fall below market standards. Additionally, if the beans have high moisture content, drying is performed to improve the product's quality. The sorted and stored cocoa beans are then sold to major traders or exporters, with consideration given to several factors such as local and international market prices, the quality of the beans, and the volume demanded by buyers. In some cases, collecting traders form long-term supply chains with large traders or export-oriented buyers to ensure stable pricing and market conditions. Information from sub-district-level collecting traders and higher-level collectors is used to inform village-level collectors and district-level major traders. This information includes details on cocoa price trends and quality assessments.

Inter-island traders (IIT)/ processors

The price determination process during transactions between inter-island traders and retailers in Jakarta is based on market mechanisms, meaning both parties position themselves as price setters, leading to a negotiation process. Inter-island traders will only ship cocoa beans after receiving a purchase request

and reaching an agreement on the price, grade, and quantity of the cocoa beans. The roles and marketing functions of inter-island traders and processors are summarized in Table 2.

Table 2: *Inter-island trader flow.*

Marketing function	Inter-Island Traders (IIT)	Processors
Purchase from collecting traders	✓	✗
Transport to port/factory	✓	✓
Storage in warehouse	✓	✓
Sorting and quality improvement	✓	✓
Cocoa processing (fermentation/drying/production)	✗	✓
Sale to exporters	✓	✓
Access to financing	✓	✓
Providing market information to farmers	✓	✓
Risk of market price fluctuation	✓	✓

Processors play a key role in improving the quality of cocoa beans through fermentation, drying, or further processing before the product is sold on local or international markets. Due to these factors, cocoa beans command higher selling prices and meet more stringent market standards. Both inter-island traders and processors face similar challenges, such as market price fluctuations that can affect their income. Inter-island traders typically store cocoa beans in their own warehouses to accumulate larger volumes before selling. The marketing channels for cocoa beans are as follows:

Channel I: Farmers → Company

In the first marketing channel, cocoa farmers in areas such as Lasalimu, Kapontori, Sampolawa, Siompu, Kadatua, Wonco, and Kalia-Lia Subdistrict sell their dried harvest directly to companies operating in the surrounding region. The price received by farmers in this transaction is IDR 120,000 per kilogram.

Channel II: Farmers → Large Traders → Company

In the second marketing channel, large traders act as intermediaries in the cocoa trade. They purchase cocoa from farmers and sell it to companies located in South Buton, Central Buton, and Buton Regencies, as well as in other areas of Southeast Sulawesi such as Kendari and Makassar. In this system, farmers sell cocoa to large traders at a price of IDR 105,000 per kilogram.

Channel III: Farmers → Collectors → Large Traders →

Company

The third marketing channel involves collecting traders who buy cocoa directly from farmers in Lasalimu, Kapontori, Sampolawa, Siompu, Kadatua, Wonco, and Kalia-Lia. A pick-up system is applied in this process, where collectors collect packaged cocoa directly from the farmers' homes. The cocoa is then sold to large traders, who in turn market it to companies. In this channel, farmers sell cocoa to collectors at IDR 96,000 per kilogram, and large traders sell it to companies at IDR 110,000 per kilogram.

Large traders (Exporters)

Large traders (exporters) are individuals or entities engaged in purchasing cocoa beans in large quantities directly from farmers. PT ADM Cocoa is one of the major cocoa bean traders and exporters operating in Southeast Sulawesi. The large traders who served as respondents in this study were identified through field research conducted in Kalia-Lia Subdistrict of Baubau City and in Moko Village, Lakudo District. In addition to trading cocoa beans, these exporters also market other commodities such as candlenuts, copra, and cashew nuts. The main sales destination for these large traders is outside Southeast Sulawesi. However, they may also sell raw cocoa beans to inter-island traders or collecting/processing traders in Central Buton Regency if orders from Surabaya-based buyers (export destinations) decline thus, such sales are not their primary focus.

The cocoa beans purchased by these traders come from various regions around Buton Regency and Baubau City, including Lasalimu, Kapontori, Sampolawa, Siompu, Kadatua, Wonco, and Kalia-Lia Subdistrict, as well as from outside Southeast Sulawesi such as Bima, Taliabu, Namlea, Makassar, and Southeast Maluku. Findings from this research indicate that such large traders are found only in Baubau City. For cocoa beans originating from Namlea, the purchasing transactions are conducted at Murhum Port in Baubau City, based on prior agreements between both parties regarding the price and quantity of cocoa beans to be supplied.

Pricing mechanism

The pricing mechanism refers to the process carried out by buyers and sellers in determining the price of cocoa beans. Technically, the price of cocoa beans is based on the quality level of the marketed beans. The quality of cocoa beans includes moisture content,

number of beans per gram, presence of impurities, and mold. The findings of this study align with the opinion of [Limi et al. \(2024\)](#), who explain that demand and supply conditions are the primary factors considered in setting selling prices. This is further emphasized by [Salazar et al. \(2023\)](#), who states that decisions made by companies regarding pricing are influenced by market characteristics, demand, and competition. The research findings indicate that, in general, prices

are determined by traders whether local collectors, major traders, or inter-island traders even though there is some negotiation between both parties. This explanation supports the findings of [Chkanikova and Sroufe \(2021\)](#), which state that, in principle, the prices at the farmer level are determined by traders, and farmers act merely as price takers with weak bargaining power. The cocoa bean price determination process across marketing institutions is presented in [Table 3](#).

Table 3: *Cocoa bean price determination process by marketing institutions in Buton regency and Baubau city.*

Marketing institution	Source of price information	Price process
Farmers	Collecting traders, other farmers	Determined by collecting traders
Village collecting traders	Subdistrict collecting traders	Determined by large-scale traders
Inter-island collectors	Subdistrict-level large traders	Determined by large-scale traders
Large traders (exporters)	Global market	Through negotiation

Table 4: *Cocoa bean marketing margin.*

No	Marketing channel	Marketing cost components	Selling price (Rp/kg)	Marketing cost (Rp/kg)	Marketing margin (Rp/kg)
I	Zero Channel	Farmer's selling price	120,000	-	-
		Packing cost	-	500	-
		Company purchase price	120,000	-	-
II	Channel I	Farmer's selling price	105,000	-	-
		Large trader purchase price	105,000	-	-
		Labor cost	-	1,500	-
		Transportation	-	700	-
		Total cost	-	2,200	-
		Selling Price	130,000	-	-
		Sales Profit	-	22,800	-
		Company purchase price	130,000	-	-
		Margin	-	-	25,000
III	Channel II	Farmer's selling price	96,000	-	-
		Collecting trader purchase price	96,000	-	-
		Transportation	-	500	-
		Labor cost	-	1,500	-
		Total cost	-	2,000	-
		Selling price	130,000	-	-
		Sales profit	-	32,000	-
		Margin	-	-	34,000
		Large trader purchase price	110,000	-	-
		Transportation	-	500	-
		Selling price	130,000	-	-
		Sales profit	-	19,500	-
		Margin	-	-	20,000
		Total margin	-	-	79,000

Table 5: *Farmer's share.*

Marketing channel	Marketing institution	Producer price (Rp/kg)	Marketing price (Rp/kg)	Farmer's share (%)
I	-	120,000	120,000	100
II	Large Trader	105,000	130,000	80.7
III	Collecting Trader	96,000	130,000	73.8
III	Large Trader	110,000	130,000	84.6

Furthermore, this study explains that each marketing institution has its own rules that must be followed. This is shown by the condition during price determination: when cocoa beans are sold by processing farmers, traders may set the price at IDR 105,000/kg, and even increase it to IDR 125,000 with the condition that payment will be made sometime after the Eid celebration. This explanation is reinforced by [Argyrou et al. \(2025\)](#), who notes that from an institutional perspective, market structure also consists of all formal rules and regulations that coordinate transactions in the market. Each market actor (trader) follows a set of rules. The information about the pricing mechanism from each market actor can be summarized as follows:

The cocoa beans traded originate from various areas in Buton Regency and Baubau City, including Lasalimu, Kapontori, Sampolawa, Siompu, Kadatua, Wonco, and Kalia-Lia Subdistrict.

Cocoa bean marketing margin

The profit margin of cocoa beans is the difference between the price set by the producers and the price at the end of the distribution chain. As the distribution process progresses, the profit margin set by the distributors increases. However, the total amount of money spent during the distribution process also increases accordingly.

Based on the [Table 4](#), the marketing margin for each cocoa marketing channel shows that the first channel cannot be determined in this study and does not reflect any reduction in cocoa production costs. The total costs shown in the table represent the accumulation of marketing expenses, including transportation and labor costs. The marketing margin in Channel II, where large traders purchase directly from farmers, is around Rp25,000/kg with marketing costs of Rp505/kg. In Channel III, collecting traders have a margin of Rp34,000/kg with marketing costs of Rp450/kg, while large traders who buy from collecting traders have a margin of Rp20,000/kg with marketing costs of Rp475/kg.

Farmer's share

Farmer's Share is the ratio of the price received by farmers to the price received by traders. Overall, the farmer's share is influenced by the quantity of products, transportation costs, and product quality [Blegoh et al. \(2024\)](#); [Busch and Spiller \(2016\)](#), based on the analysis results, this can be seen in the table.

Based on the [Table 5](#), the farmer's share percentage for Channel II involving large traders is 80.7%, the farmer's share percentage for Channel III with large traders is 73.8%, and the farmer's share percentage for Channel III with companies is 84.6%. This indicates that the farmer's share in each marketing channel whether Channel II or Channel III is considered efficient, as the criterion for efficiency states that if the farmer's share exceeds 60%, all marketing companies fall into the efficient category.

Conclusion

The research conducted revealed that there are three types of cocoa marketing channels. The first involves farmers selling to local traders, who then sell to aggregators. The second involves farmers selling directly to local traders, and the third involves farmers selling to external traders who then sell to companies. Additionally, there are channels where farmers sell directly to companies. Based on the farmers' share, the third marketing channel in Kolaka Regency proved to be efficient. Additionally, this third channel is considered the most efficient marketing channel due to its shorter marketing chain. The market structure for cocoa beans tends toward strict oligopoly, while market concentration indicates a fairly concentrated oligopsony structure. However, in some cases, the structure exhibits highly concentrated oligopsony, where new entrants face significant barriers to entering the cocoa bean market. The observed payment systems include cash payments, partial payments, advance payments, and credit.

Acknowledgments

We would like to thank all cocoa farmers and cocoa commodity stakeholders in Babau City, Southeast Sulawesi, who were willing to be interviewed to provide information to complement our research results.

Novelty Statement

The main novelty of this study lies in the use of the Structure–Conduct–Performance (SCP) framework to map market structure, actor behavior, and cocoa marketing performance in an integrated manner within a single supply chain (farmers, village collectors, inter-island traders/processors, to wholesalers/exporters) in the context of Southeast Sulawesi. De-

tailed empirical evidence at each level of trade regarding market forms (e.g., loose oligopsony among village collectors and tight oligopoly among inter-island traders/wholesalers) accompanied by high market share figures of up to 94.1% indicates the most decisive points of dominance in the supply chain.

Author'S Contribution

WOA: conceptualization, analysis, writing, and editing; and AA: literature review, analysis, and editing. Their collective contributions enhance the validity and reliability of the research results, reflecting a shared commitment to academic excellence.

Generative AI and AI-assisted technology statement

The author states that this research did not use Generative AI technology or AI-assisted technology in writing the manuscript, analyzing data, or interpreting results. The author reviewed and revised all of the results and is fully responsible for the content of the article.

Conflict of interest

The authors have declared no conflict of interest.

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