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The analysis of structure, conduct, and market performance of the Indonesian sago: A case study in South Sulawesi, Indonesia

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Abstract

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The agricultural product market in developing countries involves complex marketing channel systems. In many areas, most farmers cannot directly access the consumer market. They have to sell the commodity to the wholesalers. This situation sometimes creates unfair market conditions and drives the market into inefficiency. Sago, as one of the strategic foods for Indonesians, also faces a similar problem in the market systems, particularly in eastern Indonesia. This study analyzes the sago market structure, conduct, and performance in South Sulawesi, Indonesia. The research was conducted in Luwu and North Luwu Districts, South Sulawesi Province. Primary data were collected by leading observations, interviews, and questionnaires to farmers, processors, wholesalers, collectors, and retailers. Interviews were directed to 100 farmers, 31 refinery processors, and 42 traders. The data were analyzed by applying quantitative and qualitative approaches and using the structure, conduct, and performance of the sago marketing (SCP) approach. The results show that the market structure formed from sago marketing in South Sulawesi tends towards an oligopsony market between farmers and wholesalers, and an oligopoly market structure between traders and consumers. This condition is reflected in the existence of several large traders, who significantly control the market share and the barriers to entry and exit from the market are relatively high. Sago market behavior tends to implement a uniform pricing strategy and engage in price collusion practices. Only the sago market in channel five is efficient, and the overall farmers still receive the smallest share of the sago market margin.

Keywords: sago market; structure; conduct; performance

Introduction

South Sulawesi is the fifth greatest producer of sago in Indonesia, following Papua, Ambon, Riau, and Southeast Sulawesi (Alfred, 2020). Sago serves as the primary food source for the community, particularly in Tana Luwu. Concurrently, sago is employed as a basic material for the processing industry (Metaragakusuma et al., 2017), and as a companion food to rice in other regions (Bambang et al., 2020). Sago derivative products are highly competitive and directly contribute to the increase in the income of producers and local communities (Murod et al., 2019). According to the Central Statistics Agency (BPS, 2019), sago production in this region was 3.104 tons, with a productive area of 3.636 Ha. However, the economic value of sago in this region remains low (Murod et al., 2019). The economic value of sago is minimal due to the abundance of raw materials that are processed with low quality (Maghfiroh and Nuswardhani, 2019). In comparison to wet sago, dry sago production has the highest added value (Trisia et al., 2018).

Weak of competence in processing technology, poor quality of production labor, and insufficient access to clean water throughout the sago processing procedure impede the advancement of the sago sector in South Sulawesi (Fidyansari and Aprilia, 2018). According to the production statistics, sago marketing possesses the potential for development into a significant industrial commodity in South Sulawesi. The development of a comprehensive sago industry offers many advantages over a singular operational focus, particularly for cost efficiency (Wan, 2016). The development challenges, particularly during the marketing phase, are formidable. Optimal collaboration is essential between sago industry stakeholders and the local government.

An efficient market can be attained through government intervention by establishing good information systems and infrastructure to facilitate the marketing process from producers to end customers (Aidore et al., 2022). An effective information system enhances the accessibility of price and product information for both producers and consumers (Rahamdani, 2022). Additionally, enhancing marketing efficiency can be accomplished by augmenting the involvement of farmers in marketing endeavors through the establishment of wholesale marketplaces and agricultural product auctions, alongside the enhancement of agricultural product distribution infrastructure. It is anticipated that regulations aimed at enhancing marketing efficiency will elevate prices for farmers, while simultaneously lowering prices for consumers through product processing (Oksalia et al., 2023). The attained price stability will promote heightened consumption and production of agricultural commodities. Enhancing marketing efficiency will improve food availability and accessibility, which correlates with food absorption capacity and may enhance the community's economy.

As stated by Santoso (2017), marketing is an important component in the agriculture sector. Conditions in different areas indicate that the accessible market is a local area with limited capacity, featuring processed products sold within the vicinity. The research findings of Al Azmi et al. (2020) indicate that the highest profits from sago marketing in the Tebing Tinggi Barat District are derived from wholesalers or refineries, as they achieve greater quantity of sales. This indicates that good management of the sago supply chain might enhance the competitiveness of the agro-industry in promoting economic growth (Timisela et al., 2014).

The SCP (Structure-Conduct-Performance) approach is a method for analyzing the development of industrial organizations. Modern industry has a temporary influence on the supply chain and possesses the capacity to change market structure in the long term (Azis et al., 2024). The market's conditions are affected by the dynamics of demand and supply, which determine the market structure. Brege et al. (2020) assert that a favorable link exists between market conditions and improved added value, profitability, and industrial growth. The market structure indicates market conduct, which in turn indicates market performance. Government policies in imperfectly competitive marketplaces can affect market structure, conduct, and performance. The performance of the market can impact its structure and conduct. Setiawan highlighted the positive effect of structural and behavioral determinants on market performance variables (Setiawan, 2023).

Good sago marketing potential can present opportunities for communities in villages, particularly sago producers, to increase their welfare and incomes. Efforts to improve market understanding and make it simpler to access and increase margins and sales profits depend much on the knowledge of market structure, conduct, and performance by farmers. This study aims to apply a structure, conduct and performance (SCP) analysis approach to determine the market structure, market conduct and sago market performance in South Sulawesi.

Material and Method

This research was conducted in Luwu and North Luwu Regencies, South Sulawesi Province, in June 2024. The total sago production in these two districts reached 96.36%. The selection of these two places as research locations was based on their representation of South Sulawesi Province. This research uses primary data of a cross-sectional nature. Primary data was obtained through observations, interviews, and the distribution of questionnaires to farmers, processors, distributors, collectors, and retailers. Interviews were performed with 100 farmers, 31 refinery processors, and 42 sellers, including 7 wholesalers, 9 collectors, and 26 retailers.

The study employed both quantitative and qualitative methodologies using structure, conduct, and performance (SCP) analysis of sago marketing. Market structure includes concentration ratio, barriers to market entry and exit (Herfindahl Index), monopoly index, product differentiation, and market share. Market behavior covers the determining prices, product categories, marketing functions, promotions, cooperation, and technology. Additionally, market performance include profitability, marketing margin, farmer's share, quality and service, and marketing efficiency.

Data analysis

Market structure analysis

Concentration ratio

The concentration ratio quantifies the distribution of variables within a population, including income or ownership.

It can signify the level of inequality or concentration of a variable within a specific demographic segment. The concentration ratio is defined as follows:

$$CRn = \Sigma(si)$$

where:
CRn = Concentration Ratio for the n largest companies
si = Market share of company i (expressed as a percentage)
Σ = Addition symbol
n = Number of largest companies considered
CR Interpretation:
CR4 < 40%: Competitive market (competitive)
40% ≤ CR4 < 60%: Loose oligopsony market
CR4 ≥ 60%: Tight oligopopsony market
CR4 close to 100%: Monopoly market

Herfindahl index

The Herfindahl-Hirschman Index (HHI) is a measurement utilized in economics to assess market competition by evaluating the market share of a specific company. The HHI is determined by summing the squares of the market shares, usually presented as percentages, of all market participants. Utilizing the following formulation:

$$HHI = \Sigma(si^2) * 10\,000$$

where:
HHI = Herfindahl-Hirschman Index
si = Market share of company i (expressed in decimal)
Σ = Addition symbol

HHI Interpretation:
HHI < 1500: Market is not concentrated
1500 ≤ HHI ≤ 2500: The market is quite concentrated
HHI > 2500: Market is highly concentrated

Indeks Monopoli

The Monopoly Index, a metric of market concentration, quantifies the extent to which one particular company or industry determines the whole market. The Monopoly Index, or Lerner Index, is calculated using the formula:

$$L = (P - MC) / P$$ (Gumela, 2023).

Di mana:
L = Indeks Lerner (Indeks Monopoli)
P = Price
MC = Marginal Cost

Explanation:
This index measures the difference between price and marginal cost as a proportion of price.
The value ranges between 0 and 1.
The closer to 1, the greater the firm's monopoly power.
The closer to 0, the more competitive the market.

Product differentiation

Product differentiation analysis involves evaluating the degree to which a product or service diverges from those provided by competitors. Product differentiation is a marketing approach used to distinguish a company's products or services from those of its competitors (Makkarennu et al., 2018). It is frequently subjective and challenging to quantify because to the number of variables involved, including quality, features, brand, and customer experience. A commonly employed method is the Product Differentiation Index (PDI):

$$PDI = (1 - \Sigma(si^2 / Si^2)) / (1 - (1/n))$$

where:
PDI = Product Differentiation Index
si = Market share of company i in a certain market segment
Si = Market share of company i in the overall market
n = Number of companies in the industry
Interpretation:
PDI close to 0: Indicates low product differentiation
PDI close to 1: Indicates high product differentiation
(FN Simamora, 2018).

Market share

Market share analysis involves quantifying the proportion of total sales within a market that is attained by a specific company or product. It offers an understanding of the company's position relative to its competitors in the market. Market share is often calculated by comparing a company's sales statistics to the total sales of the entire industry or market. The basic formula is: = (Company Sales / Total Market Sales) x 100% (Kumalasari, 2022).

Market conduct analysis

Market conduct analysis is a systematic investigation of the decisions made by individuals and groups in their purchases of goods or services. This comprises an understanding of how these decisions are shaped by individual preferences, motivation, cultural context, social environment, and psychological aspects. This analysis is essential for organizations to formulate efficient marketing strategies, ascertain the market positioning of their products, and more effectively satisfy consumer requirements and preferences (Kailuhu et al., 2023).

Principal Elements of Market conduct Analysis 1) Acknowledgment of Consumer Requirements, 2) Deci-

sion-Making Process, 3) External and Internal Influencing Factors, 4) Attitudes and Perceptions, and 5) Brand Loyalty and Repeat Purchase Behavior.

Market performance analysis

Marketing margin (MM)

The margin at each marketing agent level can be calculated by determining the difference between the selling price and the purchasing price using the following formula:

MMi = Ps – Pb (Juliaviani et al., 2021)

where:

MMi = Marketing margin at each level of marketing institution

Ps = Selling price at each marketing agency level

Pb = Purchase price at each level of marketing institution

Marketing cost (MC)

Marketing costs include costs spent from the production of goods till their delivery to consumers. Marketing costs are determined by the formula:

$MC = MC_1 + MC_2 + \ldots + MC_n$ (Suharta and Rahayu, 2024)

where:

MC = Marketing costs

MC1, MC2, MCn = Marketing costs for each marketing institution

Marketing profit (MP)

Marketing profit is the difference between the price set by producers and the price paid by consumers, subtracting marketing costs. Marketing profits can be determined using the formula:

MP = MM – Bp

where:

MP = Marketing profit (IDR)

MM = Marketing margin (IDR)

MC = Marketing cost (IDR)

Marketing efficiency

Marketing efficiency analysis is calculated using the farmer's share formula. Systematically the farmer's share can be determined using the following formula:

FS = Pf/Pr x 100% (Ardillah and dan Hasan, 2020; Natalia et al., 2022)

where:

FS = Farmer share (%)

Pf = Price farmer (IDR)

Pr = Price retailers (IDR)

With the decision rule according to Downey and Erickson (1992) that:

FS ≥ 40% = efficient

FS < 40% = not efficient

Results and Discussion

Market structure

The analysis of the sago market structure in South Sulawesi employs five indicators: the quantity of buyers and sellers, product differentiation, barriers to market entry and exit, and market concentration. Based on these five indicators, a conclusion is drawn regarding the sago market structure in South Sulawesi. The research findings indicate that the market structure is characterized as an oligopsony, with a concentration ratio of 0.718 for wholesalers (CR4), 0.603 for collector traders (CR4), and 0.499 for retailers (CR8) as presented in Table 1. This means that the large traders in South Sulawesi possess significant influence over the market, resulting in a weakened bargaining position for farmers in establishing the selling price of sago. This aligns with Al Azmi et al. (2020), indicating that a CR value of less than 1 signifies the formation of an oligopsony market in the sago sector. Katunga et al. (2021) assert that traders that participate in more competitive market structures earn relatively little marketing margins than those that participate in less competitive ones. For better returns, commodity producers have to transact in competitive market structures.

Table 1. Sago market structure in South Sulawesi Province

No	Marketing Institute	Number of Sellers	Number of Buyers	Product Differentiation	Market Entry and Exit Barriers	Market Concentration	Market Structure
1	Wholesaler	7	>25	√	0.262 (high)	CR4 = 0.718	Oligopsony
2	Collector Trader	9	>25	√	0.216 (high)	CR4 = 0.603	Oligopsony
3	Retailer	26	>25	√	0.084 (low)	CR8 = 0.499	Oligopsony

Source: Primary data, processed 2024

Product differentiation dan herfindahl index

The sago marketing organization comprises three actors: wholesalers, collectors, and retailers (Table 1). Product differentiation is executed by three categories of traders. The two forms are wet sago and dry sago, with wet sago being predominant. The Herfindahl index calculation indicates that barriers to entry and exit for wholesalers and collectors are classified as high. This is due to the buyer's existing connection (partnership) with the the seller. This situation limits market entry for new participants. At the retailers' level, the Herfindahl index signifies minimal barriers, since the market is more accessible, facilitating trader entry and exit. In addition, financial ownership, cooperative networks, a greater number of buyers, and information proficiency facilitate traders' entry and exit in the retail market. Strategic differentiation to mitigate market rivalry can be achieved by price setting, enhancement of service quality, and expansion of consumer options (Panasenko et al., 2021).

Concentration ratio and market structure

The research findings indicate that the sago market structure in South Sulawesi tends to an oligopsony at the wholesaler, collectors, and retailer levels, characterized by a relatively high concentration ratio (CR4 and CR8). The findings of the sago market structure analysis align with the research conducted by Bintoro et al. (2018), indicating a relatively high concentration in the sago market. The four largest corporations have about 60% of the sago market share in Indonesia. The significant market concentration suggests the possibility of oligopolistic practices in the sago industry. Malaysia outperforms Indonesia in the global market for processed sago products. Malaysia is regarded as have a higher comparative advantage compared to Indonesia (Mohamad et al., 2024).

Market share

Market share refers to the percentage of a company's products or services sold within the market within a certain period of time. Market share quantifies a company's performance relative to its competitors within the market. Market share is calculated by dividing the company's sales by the total sales of its industry over the same period. Companies possessing the highest market share within an industry are referred to be market leaders (The Stevenson Company, 2019; Hayes, 2020). Market share can be expressed as a percentage, indicating the extent of market control held by a company. Calculating market share enables a company to ascertain its market position and evaluate the degree of competition with other competitors.

The South Sulawesi Central Statistics Agency (2017 – 2021) reports that the market share of sago from South Sulawesi is one of the larges from total of national production. The increase is driven by several factors: (1) Government initiatives that support the sago industry; and (2) Enhancements in the quality of sago products acceptable in both local and international markets (BPS South Sulawesi, 2017 – 2021).

The research findings indicate that collectors attain an average market share of 38.88%. The retailer market share was 24.1%, while wholesalers achieved a market share of 37.02% (Table 2). The biggest market share was achieved by collectors, and the lowest market share was held by retailers. The large purchasing and selling influence of wholesale traders enables them to acquire products from farmers in greater volumes than retailers. Retailers typically acquire lesser volumes of product transactions. In South Sulawesi, the wholesalers have engaged with medium to large-scale sago processing industry, so the quantity of sago they obtain typically relies on the supplies from these processing industry.

Table 2. Market share of sago marketing actors in South Sulawesi Province

Marketing Actors	Amount (Kg)	Percentage (%)
Wholesaler	27.725	38.88
Collector Trader	26.400	37.02
Retailer	17.185	24.1
Total	71.310	100.00

Source: Primary data, processed 2024

Market conduct

Market conduct refers to the disposition or conduct of marketing participants engaged in purchasing and selling activities. In the sago marketing system in South Sulawesi, wholesalers, collectors, and retailers exhibit distinct behaviors. The pricing of sago in South Sulawesi, similar to other commodities, is affected by various factors including the quantity of sago available at the processing level, the quality of the produced sago, production costs, and the profit margins level by processors, collectors, wholesalers, and retailers.

At the processing level, farmers that sell sago products to collectors, wholesalers, retailers, and direct consumers primarily have their prices determined by buyers who buy from sago processors. Interviews with 18 respondents (56.25%) of sago processors revealed that the selling price of sago at the processing level is decided by the buyer. Subsequently, up to 8 respondents (25%) of sago processors indicated that the establishment of sago pricing at the processing level was determined by agreement or negotiation between sago processors and customers. Conversely, merely 6 respondents (18.75%) of sago processors indicated that they determine the pricing independently.

The research results indicate that pricing at the trader level, encompassing both collectors and retailers, are entirely set by the seller, whereas for wholesalers selling to retailers and consumers, prices are set by the wholesaler. In industry sales, pricing is decided by the industry. The price and profit from selling sago are determined at each level according to the costs incurred during the marketing process. Various types of expenses include processing costs, transportation costs, handling costs (such as washing or drying), storage costs, and repackaging costs.

Furthermore, sago marketing cooperation is an essential strategy for enhancing sales, improving efficiency, and strengthening the competitiveness of sago products. Collaboration with sago producers and processors usually appears as partnerships in marketing for sago stems. Sago farmers, as landowners of mature sago trees, maintain relationships with sago processors, selling produced sago stalks at a mutually negotiated price. Cooperation between sago processors and collectors or wholesalers is created through contracts to regulate the marketing of sago. The contract states that sago processors must consistently market their sago goods to wholesalers. The cooperative relationship is reinforced by the financial assistance from traders in the form of a down payment for production expenses. Advance payments are utilized by sago processors to get raw materials for sago stems, cover production operational expenses, and pay employees. Cooperation also occurs between wholesalers and industrial manufacturing partners. Additionally, there are partnerships with farmers. Partnerships with sago farmers are formed to provide a sustainable and high-quality supply of raw materials.

The research also explains the structure of sago marketing channels in South Sulawesi. Marketing channels are typically defined as a network of companies or individuals engaged in the distribution of products or services from producers to end consumers. This concept emphasizes the significant function of each channel member in enabling product distribution and creating value for consumers. Kotler and Armstrong (2018) define a marketing channel (or distribution channel) as an association of interdependent entities that facilitate the availability of a product or service for utilization or consumption by consumers or business clients. Research indicates the existence of six sago marketing channels that encompass different actors.

Marketing function

The marketing function is usually defined as a set of activities focused on recognizing consumer needs, generating value, and creating enduring, mutually advantageous connections between a company and its customers. The marketing function includes the processes of communication, distribution, and value exchange between a company and its diverse stakeholders. The marketing role involves the creation of value for customers and fostering of strong connections with them. This strategy aims to obtain value from customers (Kotler and Armstrong, 2018).

The research results indicate that in marketing channels one to six, all sago farmers participate in sales activities and obtain market information. Farmers derive no additional value from the sale of sago, as they only sell it as unprocessed sago stems (Table 3). Actors involved in sago processing, present in channels one to six, carry out purchasing and selling activities, acquire market information, and derive added value from processing sago stems into wet or dry sago. Nonetheless, there are no sago processors engaged in the quality sorting of sago. Sago processors perform activities related to storage, packing, transportation, handling risks, and financing.

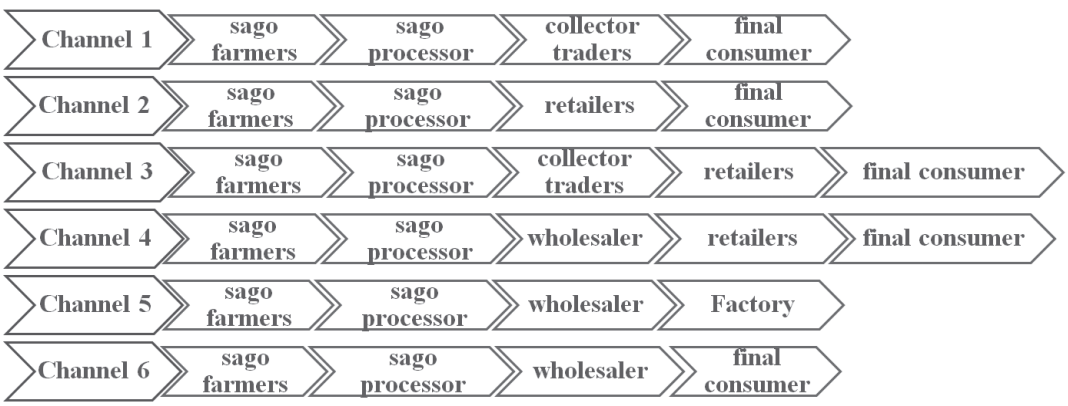

Fig. 1. Sago marketing channels in South Sulawesi, Indonesia
Source: Primary data, processed 2024

Table 3. Functions of sago marketing in South Sulawesi Province

Marketing Institution Channels	Marketing Functions									
	Exchange			Physique				Facility		
	Sell	Buy	P1	P2	P3	Tr	Sr	Rs	Fn	In
Channel 1										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Collector Trader	√	√	x	√	√	√	√	√	√	√
Channel 2										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Retailer	√	√	x	√	√	X	√	√	√	√
Channel 3										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Collector Trader	√	√	x	√	√	√	√	√	√	√
Retailer	√	√	x	√	√	X	√	√	√	√
Channel 4										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Wholesaler	√	√	x	√	√	√	√	√	√	√
Retailer	√	√	x	√	√	X	√	√	√	√
Channel 5										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Wholesaler	√	√	x	√	√	√	√	√	√	√
Channel 6										
Sago Farmer	√	X	x	x	x	X	x	x	x	√
Sago processor	√	√	√	√	√	√	x	√	√	√
Wholesaler	√	√	x	√	√	√	√	√	√	√
Source: Primary data, processed 2024. Remarks :										
P1 = Processing P2 = Packaging P3 = Storage Tr = Transportation	Sr = Sorting Rs = Risk Fn = Financing In = Information Reception									

The Wholesalers are only located on channels four, five, and six. The marketing function performed by wholesalers include all marketing efforts, excluding processing. Meanwhile, collectors, performing similar marketing responsibilities as wholesalers, are only present in channels one and three. Collectors also are not involved in processing activities. The subsequent marketing entity is the retailer. Retailers are only found on channels two, three, and four. Sago retailers in South Sulawesi are not involved in processing and shipping; instead, they perform activities such as purchasing and selling, packaging, storage, sorting, handling risks, finance, and information gathering.

Collectors, wholesalers, and retailers are not involved in processing, but they achieve greater profits due to higher selling values and capacities. Performing the marketing function of sago processors may produce higher profits than other participants in the sago industry, especially farmers. The results of this research are in line with the findings of Bagasbas and Barroca (2020), who concluded that the activity of processing raw sago products into wet or dry sago will provide more benefit value for processing business actors than the activity of selling sago stems without further processing. Besides, Antoni and Tokuda (2019) who reported that older farmers are more likely to choose direct selling to the factory rather than to wholesalers.

Market performance

The performance of the sago market is shown through several essential indicators, including marketing margin, marketing profit, and marketing efficiency, which is measured by the amount of the farmer's share. South Sulawesi has significant potential for sago production and marketing. The sago market in South Sulawesi showed a favorable trend during the past five years. Increasing profits, market share, marketing margins, quality and service, and marketing efficiency are indicators of industrial success. The inefficiencies of Indonesia's supply chain from upstream to downstream have led to a diminished negotiating position for farmers (Trisia et al., 2021). The market performance market system was determined by examining channel actor profitability, return on capital employed, and channel efficiency (Phiri et al., 2022; Verter, 2019). Continuous government encouragement and innovation within the sago industry in South Sulawesi provide the potential for sustained growth and substantial contributions to the regional economy. Uninterrupted access to sago raw materials is essential for maintaining the integration of upstream and downstream sectors within an extensive agriculture system (Saediman et al., 2020). The sago agroindustry contributes to enhancing community economic activity, fulfilling the needs for supporting infrastructure to increase sago production and processing, promoting SMEs (Public Satisfaction Index/PSI), and sustainably enhancing the human resource capacity of farmers (Nurlette, 2021). Research findings in Riau indicate that diverse sago food products have high customer acceptance and nutritional value (Pramana et al., 2021). In order to increase the performance of agribusiness enterprises, it is recommend the use of long-term agricultural contracts between actors in the system, which will affect the growth and development of agriculture and its sustainability (Pazaj, 2023; Chitete et al., 2023). To increase their performance, the auction markets need access to counseling or monitoring from other parties, collaboration with financial institution, and a higher number of administrators (Nugroho et al, 2020).

Marketing margin

Marketing margin is an essential concept in economics that measures the difference between the production costs of a product or service and its market selling price. This margin indicates the profits obtained by market actors from promotional activities related to the product. Marketing margin is scientifically defined as the difference between the total price received by producers and the price paid by consumers for a product. In agricultural marketing, marketing margin refers to the costs paid by marketing institutions in performing responsibilities such as storage, transportation, and sales. Data from the South Sulawesi Trade Service (2018 – 2022) shows sago marketing margins fluctuate between 20% and 25%.

The highest marketing margin occurs between wholesalers and end consumers, amount to IDR 1.576, while the minimum margin is observed between wholesalers and retailers, totaling IDR 573.23 (Table 4). The high marketing margin in the marketing channel from wholesalers to end customers indicates that a short distribution chain to the final consumer market may produce significant profits for marketers. This aligns with the findings of Ahmad et al. (2023), which determined that marketing channels facilitating direct connections between wholesalers and consumers produce more margins, as wholesalers are not required to distribute marketing margins with competitors South Sulawesi Trade Office (2018-2022). They are considered to possess the financial resources and transportation fasilities to access further markets at higher selling prices.

Profit

Profit is an essential aspect of business growth. Profit analysis is employed by professionals and the scientific community to assess financial performance and the efficacy of a company's business plan. Profit analysis assists managers in formulating investment strategies and assessing operational efficiency. According to data from Bank Indonesia (2018 – 2022), the average profit of sago processing companies has

Table 4. Average level of marketing margin at several levels of sago commodity traders in South Sulawesi Province

No	Description	Purchase price (IDR/kg)	Selling price (IDR/kg)	Marketing Margin (IDR/Kg)
1	Collector Traders – Consumers	2,282,01	3,516,67	1,234,66
2	Retailers – Final Consumers (S2)	2,136,46	3,041,21	904,75
3	Retailers – Final Consumers (S3)	2,845,45	3,545,04	699,59
4	Retailers – Final Consumers (S4)	3,976,25	4,618,18	641,93
5	Collector – Retailer	2,069,92	2,845,45	775,53
6	Wholesalers – Retailers	3,403,02	3,976,25	573,23
7	Wholesaler – Factory	2,123,66	2,966,67	843,00
8	Wholesaler – Final Consumer	2,076,39	3,652,81	1,576,00

Source: Primary data, processed 2024

risen by 5% annually. Factors contributing to profit enhancement include (1) an increase of sago selling prices caused by raised export demand; (2) increased production efficiency resulting from reduced operational costs; and (3) diversification of sago-based products that are demanded in the market (Bank Indonesia, 2022).

Table 5. Average profit of sago marketers in South Sulawesi Province

Marketing Actors	Average profit per month (IDR)
Farmer	320,567
Sago Processor	9,338,566,46
Collector Trader	3,080,174
Wholesaler	15,448,281
Retailer	1,114,784

Source: Primary data, processed 2024

The average income of sago marketers' actors in South Sulawesi Province is contingent upon the nature and scope of their business operations. Large merchants achieved the highest profits, with an average monthly profit value of IDR 15,448,281.00. The sago processing division (refinery) achieved the second highest profit, with a monthly profit of IDR 9,338,566.46. The following group of marketing actors that produces the highest profit is the collectors, who earn IDR 3,080,174.00 per month. Retailers of sago in South Sulawesi Province receive IDR 1,114,784.00. In contrast, farmers achieved the lowest profit, with a monthly profit of only IDR 320,567.00 (Table 5). The purchasing and selling capacity of production results and the marketing costs incurred significantly influence the profit produced by each marketing level. The marketing cost component is primarily influenced by transportation expenses and the distribution of product supplies within marketing channels (Bijmolt et al., 2021). Increasing the productivity and profitability of farming activities can be done by improivng the quality of services (Yanfika et al., 2024).

Marketing efficiency

The research results indicate that channel five shows the highest marketing channel efficiency at a value of 0.418, while channel four has the lowest efficiency at 0.222 (Figure 2). Channel five's increased marketing efficiency is facilitated by product delivery with less barriers. In addition, the marketing actors are companies with considerable capabilities (sago processors and wholesalers), ending distributing to factories in Makassar and outside the province. The involvement of these marketing actors provides farmers with the potential of obtaining better pricing compared to those that operate wide distribution networks involving many marketing entities. This aligns with the research conducted by Crysiani et al. (2024), which indicates that the greatest marketing efficiency occurs inside the shortest channel of the agricultural product marketing chain.

Marketing efficiency defines the capacity to market products in the most effective and profitable ways. The application of information technology in marketing, optimizing distribution and logistics paths, executing marketing plans, and selecting appropriate marketing channels can enhance farmers' share value. The inefficiency of sago marketing is mostly caused by insufficient diversification, represented by processed sago products remaining in the forms of wet or dry sago (Surni et al., 2020). Government regulations unfavorable to sago processing businesses have contributed to the decreased prominence of the sago commodity in Kolaka (Purbaningsih et al., 2019). Hardiyanti et al. (2022) assert that a marketing channel is considered efficient if the share obtained by farmers exceeds their marketing margin. The selection of marketing channels significantly influences farmers' income; thus, farmers need to simplify the marketing

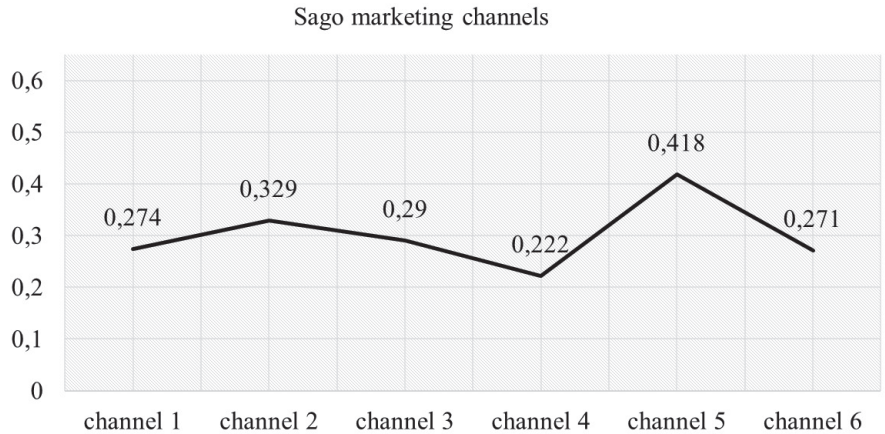

Fig. 2. Level of marketing efficiency in each channel in South Sulawesi Province
Source: Primary data, processed 2024

chain and strengthen their bargaining power by encouraging groups and government support to ensure access to improved capital and marketing opportunities (Rahayu et al., 2021). Musliu et al. (2023) stated that to enhance the efficiency should focus on developing the optimal use of inputs to reduce input waste and cost inefficiencies.

Conclusions

South Sulawesi Province, one of the largest sago producers in Indonesia, also deals with fundamental issues regarding the distribution of production results from producers to consumers. The limited technological intervention and the length of the marketing chain are the reasons for the low added value, which results in a very low profit sharing among producers. In South Sulawesi Province, the sago market at the farmer level is characterized by an oligopsony market structure, in which a small number of consumers wield significant influence over the price of sago. This is shown by the high level of barriers to entry and exit from the market. The sago market structure tends to establish a market with oligopoly, which results in optimal competition from the consumer market perspective. A relatively large number of retailers are found in the research area. The market is still dominated by a number of large retailers. Nevertheless, market entry and exit barriers remain relatively low.

Ten marketing functions were identified as being performed by sago marketers in South Sulawesi Province. Each function is carried out by distinct actors. All marketing actors, from farmers to retailers, participate in the functions of buying, selling, and sharing information. The sago refinery manager supervises the processing and packaging operations, resulting in the production of wet and dry sago products. Moreover, the functions of storage, sorting, packaging, shipping, risk bearing, and financing are mainly fulfilled by wholesalers, collectors, and retailers.

A review of market performance indicates that the most significant marketing margin exists between wholesalers and final consumers, whereas the least significant margin is found between wholesalers and retailers. Furthermore, the highest marketing profits are obtained by wholesalers, while farmers receive the lowest share of marketing profits. In the end marketing efficiency is attained through marketing channel five. Conversely, the remaining five marketing channels exhibit inefficiency.

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