

Marketing Channels of Tomatoes (*Solanum Lycopersicum L.*) in Argoayuningtani Farmers' Group, Senden Village, Selo District, Boyolali District

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Abstract

This study aims to (1) determine the tomato marketing channels (2) determine the level of tomato marketing margins in each marketing channel (3) determine the efficiency of tomato marketing in each marketing channel. The method used is the quantitative descriptive method. The research implementation method is the survey method. The method of selecting the research location is done intentionally (purposive). The method of determining farmer samples using the total sampling technique and determining marketing institution samples using the snowball sampling technique. The data analysis method is carried out using marketing margin analysis and marketing efficiency analysis. The results of the study showed that there were two tomato marketing channels in the Argoayuningtani Farmer Group, namely the first tomato marketing channel starting from farmers to collectors then to wholesalers then to retailers then to consumers and the second marketing channel starting from farmers to retailers then to consumers. Marketing channel I obtained a marketing margin of Rp 11,000 / kg with an efficiency level of 16.84%. Marketing channel II obtained a marketing margin of Rp 6,000 / kg and a marketing efficiency level of 7.81%.

Keywords: channels, efficiency, margin, marketing, tomatoes

Introduction

Indonesia holds a unique comparative advantage, not shared by many other countries, in its abundant natural resources. One of the key sectors leveraging these resources is agriculture, which plays a vital role in the nation's economy, owing to the country's vast arable land and fertile soil (Karuntu et al., 2022). Despite this potential, agricultural productivity and performance remain inconsistent. For instance, the harvested area, production, and productivity of tomatoes in Boyolali Regency exhibited fluctuations between 2018 and 2020 (Central Bureau of Statistics Boyolali Regency, 2022). This highlights the need for initiatives, particularly from the government, to enhance agricultural production, especially rice in Indonesia. This is due to maintenance crops and uncertain weather in the local area resulting in production unstable. However, improvements in production must be accompanied by an efficient and effective marketing system to incentivize farmers as producers.

In the agricultural sector, marketing activities are an activity economics whose role is to connect the interests of farmers with consumers, both for primary production (fresh products), semi-finished (ingredients industrial raw materials) or finished processed products. Through these activities farmers receive rewards according to the volume and price in effect at the time transaction occurs. The marketing results are expected to provide proportional profits for farmers according to costs, risks and sacrifices that have been made (Saeffudin in Karuntu et al., 2022).

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Tomatoes (*Solanum Lycopersicum L.*) are a vital agricultural commodity due to their high nutritional value and market potential (Hermanto et al., 2023). As a significant source of vitamins A and C, as well as essential minerals, the demand for fresh and processed tomatoes is increasing, aligning with the growing consumer emphasis on balanced diets. Given their economic value and rising demand, tomatoes offer substantial potential for cultivation and market expansion. According to Nasrun et al. in Yusuf (2022) the need for tomatoes will continue to increase as the population increases people, increasing people's income, and getting higher public awareness of healthy living.

Marketing is a social process in which there are individuals and groups to get what they need and want by creating, offering and freely exchanging products that are of value to other parties (Kotler in Karuntu et al., 2022). Marketing channels, which involve the movement of goods from producers to final consumers, are crucial in ensuring that agricultural products reach the market effectively. These channels consist of intermediaries that facilitate the sale of goods from producers to end consumers (Karuntu et al., 2022). Yet, as Nasrun et al. (2022) observe, despite high agricultural productivity, the inefficiency of Indonesia's agricultural marketing system limits its profitability. ongoing marketing system in Indonesia it has not been able to run effectively and efficiently. The magnitude of the difference relatively large prices or marketing margins are still the main challenge in marketing agricultural products. Large price disparities and significant marketing margins remain persistent challenges, underscoring the need for more effective marketing strategies in the agricultural sector.

Argoayuningtani is a farmer group that has potential development as a horticultural commodity, one of which is tomatoes. The Argoayuningtani Farmer Group has several routine activities including organic farming, plant clinics, POC making, development of biological agents, manufacture of solid organic fertilizer, management of Argo Farm education, fresh vegetable marketing and cultivation coffee and processing. Table 1 show harvest area, production, and productivity of tomatoes in Argoayuningtani Farmers Group.

Table 1. Harvest Area, Production, and Productivity of Tomatoes in Argoayuningtani Farmers Group (2019-2022)

Year	Harvest area (ha)	Tomatoes production (tons)	Productivity (tons/ha)
2019	2.1	21.7	10.33
2020	2.6	26.1	10.03
2021	1.9	9.1	4.78
2022	2.6	20.8	8.28
Average	2.3	19.42	8.28

Source : Secondary Data Argoayuningtani, 2022

Based on the Table 1, tomato production in the group Argoayuningtani farming is still experiencing fluctuations, where productivity is the largest occurred in 2019 at 10.33 and the lowest in 2021 is 4.78. tomato prices fluctuate at the producer level. Price fluctuations frequently detrimental to farmers because farmers in general cannot adjust the selling time to get a more profitable selling price (Heriani et al., 2013). The size of the price difference received by farmers is one of the factors problems in the marketing process, so researchers want to do further research regarding tomato marketing in farmer groups Argoayuningtani, Senden Village, Selo District, Boyolali Regency. This study aims to determine the tomato marketing channels, determine the level of tomato marketing margins in each marketing channel, and determine the efficiency of tomato marketing in each marketing channel.

Method

This study employs a descriptive quantitative research method. According to Sugiyono (2018), quantitative research is based on a positivistic approach, utilizing concrete data that is expressed

numerically and analyzed statistically to address the research problem and draw conclusions (Imron, 2019). The study location was purposefully selected and conducted within the Argoayuningtani Farmer Group, located in Senden Village, Selo District, Boyolali Regency. The research was carried out from December 2023 to February 2024.

The population of the study comprised 30 tomato farmers from the Argoayuningtani Farmer Group. A census or total sampling method was employed, where all members of the population were included as the sample (Sugiyono, 2018). For selecting the marketing institutions, the Snowball Sampling method was applied, where respondents were selected through a rolling process from one to another, typically used to explain social or communication patterns within a specific community (Lenaini, 2021). Data were collected through observations, interviews, documentation, and questionnaires.

The data analysis methods included descriptive analysis, marketing cost analysis, marketing margin analysis, and marketing efficiency analysis. The marketing channel analysis systematically and accurately described the relationships and facts between events. The marketing margin analysis aimed to identify the price difference between what consumers paid and what producers received (Hanafie, 2010). The marketing margin (MP) is calculated using the formula:

$$MP = Pr - Pf$$

MP = marketing margin

Pr = price at the consumer level

Pf = price at the producer level

Marketing efficiency analysis was used to determine the efficiency level of each marketing channel, calculated by the formula:

$$EP = (\text{Marketing Costs} / \text{Value of Marketed Product}) \times 100\%$$

Decision criteria:

- If EP is between 0% and 50%, the marketing channel is considered efficient.
- If EP is more than 50%, the marketing channel is considered inefficient.

Result and Discussion

Respondent Farmer Characteristics

Age of Respondents

The ages of the respondent farmers ranged from 23 to 62 years. The highest percentage of respondents was within the 31-40 years age group, while the lowest percentage was in the 20-30 years age group.

Education Level

The educational background of the farmers varied, ranging from elementary school to diploma (D3) levels. The majority of the farmers had completed elementary and high school education.

Farming Experience

Farming experience plays a crucial role in determining the success of agricultural activities, as experienced farmers are generally more skilled at addressing challenges during the farming process. The farming experience of the Argoayuningtani farmer group members ranged from 7 to 26 years.

Marketing Channel Analysis

Marketing channels are the pathways through which products move from raw material sources, through producers, to final consumers. These channels encompass the various intermediaries involved in the sale of goods and services from producers to consumers (Abdullah, 2012). According to Sofanudin & Budiman (2017), the length of the marketing channel affects the distribution share received by farmers. Longer channels result in a smaller share for farmers, while shorter channels increase the farmers' share.

The research identified two marketing channels in the Argoayuningtani Farmer Group, located in Senden Village, Selo District, Boyolali Regency:

- a. Marketing Channel I : Farmers → Collectors → Wholesalers → Retailers → Consumers

Farmers as producers carry out tomato farming and sell tomato products to traders collectors at a price of IDR 8,000/Kg. then collectors sell again at a price of IDR 12,000/Kg to wholesalers in Cepogo Vegetables Market. Then wholesalers market it again to a number of Retailers in traditional markets especially Mangu Ngemplu Market with a price of IDR 14,000/Kg, and Retailers market tomatoes directly to end consumers at a price of IDR 16,000/Kg.

- b. Marketing Channel II : Farmers → Retailers → Consumers

Farmers make sales tomato to retailers located in Cepogo Market at a price of IDR 10,000/Kg.

Marketing process of tomatoes from producers to final consumers has increased added value in the form of use value, place and time. This is due to by implementing production functions before the product reaches the hands consumer. In order to facilitate the flow of tomato commodities on the market, So marketing institutions as intermediaries are really needed carry out marketing functions.

Marketing Margin Analysis

Marketing margin refers to the price difference between the various levels within the marketing system, specifically the gap between the amount paid by consumers and the amount received by producers for a given agricultural product under the same conditions (Rahmatullah et al., 2020). According to Wuryantoro & Ayu (2021), marketing margins are driven by the intermediaries in the system, who incur costs and earn profits from the distribution process. The result of marketing margin analysis of tomato commodity in Argoayuningtani shows in Table 2.

Table 2. The Result of Marketing Margin Analysis of Tomato Commodity in Argoayuningtani

	Channel I	Channel II
Marketing cost	3,200	1,250
Marketing profit	7,800	4,750
Marketing margin	11,000	6,000
Percentage of marketing margin (%)	57.9	37.5
Farmer's share (%)	42.1	62.5

Source: Data Primary Analysis, 2024

In Marketing Channel I, on marketing channel I there is a farmer's selling price of IDR 8,000/kg with a total cost of at farmers as producers with a total cost of IDR 3,260.69/kg which includes labor costs Rp. 1,395.93/kg; production input costs Rp. 1,664.00/kg; cost equipment depreciation Rp. 186.73/kg; tax fee Rp. 14.03/kg; and costs market information Rp. 0.00/kg. so that a profit of Rp 4,739.31/kg. Farmers carry out sales functions to collectors and also perform market information functions to find out the price of tomatoes what happened during the harvest. Farmers perform market information functions by coming directly to the collector. Among farmers and collectors will talk about the tomatoes the farmers will sell, if so if a price agreement occurs, the sales function will occur to farmers and purchasing function on the part of the collector. In marketing channel I there is a

marketing margin of IDR 11,000.00/kg with total marketing costs of IDR 3,200.00/kg, and total marketing profit of 7,800.00/kg. margin percentage marketing in marketing channel I is 57.9% and has famer's share value is 42.1% and the price received by the final consumer IDR 19,000/kg.

Marketing channel II looks shorter than marketing channel I. Based on the Table 2, it can be explained that farmers get profit IDR 6,635.16/kg. This selling price is when the price of tomatoes is on the market is rising. The total costs incurred by farmers are Rp 3,364.84/kg which includes labor costs, production input costs, costs depreciation, tax costs, market information costs, and transportation costs. Retailers buy tomatoes directly from farmers considered cheaper on the market at IDR 10,000/kg and selling it to final consumers in the Boyolali traditional market and also several restaurants that have collaborated with traders the retailer at a price of IDR 16,000. the costs covered retailers with a total cost of IDR 1,250.00/kg which includes transportation costs, grading costs, storage costs, fees risk, labor costs, and market information costs. In marketing channel II there is a marketing margin of IDR 6,000.00/kg with total marketing costs of IDR 1,250.00/kg, and total marketing profit of 4,750.00/kg. margin percentage marketing in marketing channel II which is 37.5% and has famer's share value is 62.5% and the price received by the final consumer IDR 16,000/kg.

Marketing Efficiency

Marketing efficiency is the ultimate goal of marketing a product and refers to the ratio of total costs to the marketed product's value. Merchants and consumers often have differing views on marketing efficiency due to their contrasting interests. Merchants consider the system efficient if they achieve high profits, while consumers view it as efficient when goods are readily available and affordable (Elisa et al., 2016). One method to find out the efficiency of marketing channels is by using indicators of the share received by producer farmers or usually called famer's share. Farmer's Share is a quantitative measuring tool for assess marketing efficiency in addition to marketing margins. Farmer's value share is inversely proportional to marketing margin. This means it is getting higher farmer's share, the lower the marketing margin value, and likewise on the contrary (Annisa et al., 2018). The size of the famer's share is influenced by the size of the marketing margin. The lower the marketing margin the greater the share received by farmers, with thus marketing channels can be said to be efficient.

In this study, marketing efficiency was assessed by comparing marketing performance and costs. Table 3 shows marketing of efficiency of tomato in Argoayuningtani

Table 3. The Result of Marketing Efficiency of Tomato in Argoayuningtani

Marketing Channel	Cost (IDR/ kg)	Price (IDR/ kg)	Efficiency (%)
Channel I	3,200	19,000	16.84
Channel II	1,250	16,000	7.81

Source: Data Primary Analysis, 2024

Marketing channels in the Argoayuningtani Farmer Group, Senden Village, Selo District has been efficient with the percentage of marketing channel I is 16.84% and the percentage of channels marketing II amounted to 7.81%. Marketing channel I has a percentage marketing margin of 57.90% and the share received by producers amounting to 42.10%. Meanwhile, marketing channel II has a percentage marketing margin of 37.50% and the share received by producers amounting to 62.50%. The smaller the existing marketing margin, the more This marketing channel is also efficient. This is in accordance with the statement (Hanafie, 2010) that high and low marketing margins are used to measure marketing efficiency. The higher the margin percentage marketing, the more inefficient the marketing channel becomes. Channel I exhibited a marketing efficiency of 16.84% with a marketing cost of IDR 3,200/kg and a product value of IDR 19,000/kg. Channel II demonstrated a marketing

efficiency of 7.81%, with a marketing cost of IDR 1,250/kg and a product value of IDR 16,000/kg. Both channels were deemed efficient, with Channel II being more efficient than Channel I.

Conclusions

The study identified two tomato marketing channels within the Argoayuningtani Farmer Group in Senden Village, Selo District, Boyolali Regency. Marketing Channel I follows the path of Farmers → Collectors → Wholesalers → Retailers → Consumers, while Marketing Channel II is more direct, involving Farmers → Retailers → Consumers. In Marketing Channel I, the total marketing cost amounted to IDR 3,200/kg, with a marketing profit of IDR 7,800/kg and a total marketing margin of IDR 11,000/kg. The marketing margin percentage was 57.9%, and the farmer's share was 42.1%. In Marketing Channel II, the total marketing cost was IDR 1,250/kg, with a marketing profit of IDR 4,750/kg and a total margin of IDR 6,000/kg. The marketing margin percentage for Channel II was 37.5%, with a farmer's share of 62.5%.

Marketing efficiency analysis revealed that Marketing Channel II was the most efficient, having the lowest marketing margin (IDR 6,000/kg), a farmer's share of 62.5%, and a marketing efficiency percentage of 7.81%.

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