Analysis of Rice Marketing and its Impact on Welfare and Education of Rice Paddy Farmer Family's in Kutai Kartanegara Regency

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Abstract: The competitiveness of the local rice market affects the efficiency of the supply chain, thus highlighting the need for a robust supply chain system. Farmers, as the main marketing entity, are crucial in meeting domestic demand. This study aims to analyze the marketing margin, marketing channel, farmer share of rice. The sampling method was conducted in 10 sub-districts, namely Kota Bangun, Muara Kaman, Sebulu, Tenggarong Seberang, Muara Kaman, Marangkayu, Anggana, Samboja, Loa Janan, Loa Kulu, and Tengarong. The research method was carried out qualitatively by conducting an in-depth review so that 100 respondents were collected which were then analyzed using qualitative analysis and marketing analysis. The results show that rice marketing margins vary depending on the marketing channel used. The marketing margin of rice in Kutai Kartanegara Regency varies between IDR 5,300 to IDR 8,000 per kg, depending on the marketing channel and location. Farmer Share: Farmers receive about 53.84% of consumers' final price, while marketing agencies take the rest. Marketing Efficiency: The marketing channels used by paddy rice farmers in Kutai Kartanegara Regency are considered efficient because the marketing efficiency value is below 50%.

Keywords: Farmers; Impact; Marketing analysis; Rice.

Introduction

The development of the agricultural sector, especially in the food crop subsector, continues to be carried out to achieve food self-sufficiency in the region, increase household income, create employment opportunities, and meet local needs (Mukhlis et al., 2022). Rice is one of the superior commodities whose availability continues to be pursued by the government so that the resulting production continues to increase and stabilize (Nahrisah et al., 2020; Febrianti et al., 2024)

The efficiency of the marketing chain is also influenced by the competitiveness of local rice products in the market, so a sound marketing system is needed. Marketing activities require trust and require help from various stakeholders (Metcalf et al., 2019). To achieve the goal, it is necessary to know the marketing and the process that affects it so that it becomes the basis for achieving the goal; namely, farmers can make profits with a short marketing chain (Bello et al., 2004; Hao et al., 2018; Souza et al., 2017; Winter et al., 2021). Agricultural commodities must be maintained so that they are not easily damaged. For example, in developing countries, potatoes and significant commodities are perishable. Therefore, proper and efficient post-harvest technology and marketing are essential for the production-consumption system. According to (Hao et al., 2018), which analyzed the cooperative's primary marketing channels, cooperatives sell products to wholesale markets and facilitate farmers' access to

markets by bridging farmers and government-driven agribusiness (Weber, 2002).

Farmers, as one of the marketing institutions, have an important role in meeting domestic needs. A journal that explains that local products are of high quality and create added value in terms of culture and experience (Kynda R. Curtis et al., 2018) In its journal that the high consumer demand for local and organic products, many are willing to pay more for fresh, high-quality products. This opens up profit opportunities for farmers who can exploit market trends. Additionally, direct selling allows farmers to offer smaller quantities or present unique products that do not compete in the wholesale market (Al-Haboobi et al., 2024; Hao et al., 2018).

Farmers are always in a bargaining position in marketing products, where the long marketing chain involves many market players, namely marketing institutions. Rice farmers, as one of the main actors in marketing, play an important role in meeting domestic food needs (Winter et al., 2021). However, they often face various product marketing obstacles (Xiang & Xu, 2020). One of the main problems is the often weak bargaining position of farmers. A long marketing chain causes many market players or marketing agencies to be involved. As a result, marketing agencies make more profits, while farmers, as early marketing institutions, only get a small profit.

The production costs incurred by farmers are often not proportional to the profits obtained. Marketing institutions such as collectors, intermediaries, and retailers distribute agricultural products to the end consumer. Ironically, wholesalers and retailers not directly involved in activities on agricultural land often earn greater profits. The longer the marketing chain is involved, the more farmers, as the primary producers, will be disadvantaged. Especially with the costs incurred, as it is known that marketing costs are calculated by adding up all expenses arising from marketing activities carried out by each institution in the rice distribution chain. The amount of the cost varies between distribution channels, depending on the type of rice or rice commodity, the location of the marketing, the type of institution involved, and the marketing activities carried out (Mgale & Yunxian, 2020).

The marketing channels carried out by farmers vary; Some are directly from producers to consumers, and some go through retailers before reaching consumers. Farmers mainly choose certain channels so that the products reach consumers quickly(Bello et al., 2004; Brown et al., 1995; Lukas et al., 1996; Mishra et al., 2024). However, the difference in costs incurred by each marketing agency affects the final price that consumers have to pay. The greater the price difference, the greater the marketing margin(Mishra et al., 2024; Pearce & Michael, 1997; Xiang & Xu, 2020).

Therefore, farmers as producers need to understand the targeted market segmentation so that their products can reach a broader market. The right marketing strategy (Pearce & Michael, 1997) must be implemented to minimize production costs. Ultimately, marketing efficiency is an important reference when looking at the price difference from the producer to the final consumer level. For this reason, a marketing analysis model is needed (Kyomugisha et al., 2018; Metcalf et al., 2019; Moghavvemi et al., 2017; Taylor & Strutton, 2010).

The most millennial farmers in East Kalimantan are Kutai Kartanegara. Based on agricultural census data tahun 2023, there are 45,567 millennial farmers aged 19-39 years in East Kalimantan; as many as 12,536 people, or 27.51%, come from Kutai Kartanegara. Then Paser (22.35 per cent) and Berau Regency (15.40 per cent). From the data, it is explained that the potential of the Kutai Kartanegara area for agricultural activities is very promising. From the data, it is explained that the potential of the Kutai Kartanegara area for agricultural activities is very promising. For more details, see table 1 below.

Marketing of agricultural products is very different from marketing in general. Agricultural products have characteristics, namely perishable (easily damaged), bulky (large), seasonal, weather uncertain, easy to get sick, and not easy to distribute, the price of agricultural products(Mishra et al., 2024). In addition, agricultural products are distinguished by their value of time, place, form and ownership(Hughes et al., 1999; Kyomugisha et al., 2018; Winter et al., 2021). The value of time is seasonal, and it can be stored in a particular place so that it is durable and can be consumed at any time. Use time: if the item has value when used at the right time, it means the availability of a product or service that a consumer desires. The use of the place occurs because of the marketing process, moving from producers to wholesalers, supermarkets, stalls, restaurants, and consumers. In the form that the rice, after being processed, will change its shape into rice, and until it reaches the consumer, it will be cooked first into rice and then consumed. Ownership occurs when ownership changes from producers to consumers due to the marketing process.

The local rice marketing system in tropical humid regions like Kutai Kartanegara faces a range of complex challenges. These include fragmented distribution chains, the dominant role of intermediaries, and an unequal distribution of economic value between farmers and market actors. While previous studies have often focused on production or general distribution patterns, there is still a lack of in-depth research exploring how marketing structures directly influence the welfare and educational outcomes of farming families in this specific

region. Yet, a well-functioning marketing system plays a critical role in enhancing the competitiveness and longterm sustainability of smallholder farmers.

This study aims to examine the structure of rice marketing channels, the size and variation of marketing margins, and the proportion of final consumer prices that actually reach the farmers commonly referred to as the farmer's sharein Kutai Kartanegara Regency. The research covers ten sub-districts, each representing distinct agribusiness characteristics, allowing for a nuanced understanding of distribution models and their impact on farmer income.

The urgency of this study lies in the pressing need to develop a more efficient and equitable supply chain system. Significant disparities in marketing margins have direct implications for farmer welfare and access to education within rural households. By identifying inefficiencies and highlighting how value is distributed along the supply chain, this research is expected to provide meaningful insights for shaping fairer, more farmer-centered rice marketing policies supporting both economic viability and social well-being in tropical agricultural regions.

Method

Time and Place of Research

This research was conducted from January to June 2024 in Kutai Kartanegara Regency, East Kalimantan Province, Indonesia. The study covered ten sub-districts selected for their active rice production and diverse marketing patterns: Kota Bangun, Muara Kaman, Sebulu, Tenggarong Seberang, Marangkayu, Anggana, Samboja, Loa Janan, Loa Kulu, and Tenggarong. These locations represent different market access levels and agricultural practices.

Tools and Materials

The main tools used in the study included semi-structured interview guides, questionnaires, field notes, and documentation tools such as cameras. Secondary data were also collected from government sources (e.g., the Agriculture Office), local farmer groups, and market price records to support the primary findings.

Research Methods

A descriptive qualitative research design was employed. According to Wiratna (2006), descriptive research aims to systematically observe and explain phenomena without manipulating any variables. The qualitative approach allowed for a deeper understanding of rice marketing practices, the roles of intermediaries, and the distribution structure's influence on farmers' income.

Research Stages

The research process involved several key steps:
1. Preliminary mapping to identify dominant rice marketing channels in the selected areas.
2. Respondent selection using purposive sampling, involving 100 rice farmers as primary informants.
3. Data collection through in-depth interviews, direct observations, and documentation.
4. Data triangulation by comparing field findings with secondary data sources.
5. Data interpretation and analysis to evaluate marketing margins and distribution efficiency.

This research used descriptive method. According to (Wirartha, 2006; Mukhlis et al., 2024), descriptive research involves the examination and depiction of different conditions, scenarios, or variables. It systematically evaluates and presents data in a way that enhances clarity and aids in drawing conclusions. The findings of the research prioritize furnishing an impartial depiction of the real circumstances regarding the subject being investigated. Nonetheless, alongside highlighting the facts, a robust inteIDRretation is essential to obtain broader advantages.

The research was carried out by taking the population of rice farmers in Kutai Kartanegara Regency. This research will last for 3 months, starting from May 2024 to July 2024. The selection of the research area was done by puIDRosive method (Sugiyono, 2017). The location of research was carried out in Kutai Kartanegara Regency by taking locations in 10 sub-districts, namely in Marang Kayu, Anggana, Samboja, Muara Jawa, Tenggarong Seberang, Loa Kulu, Kota Bangun, and Muara Kaman. The research was conducted in 10 sub-districts, namely Kota Bangun, Muara Kaman, Sebulu, Tenggarong Seberang, Muara Kaman, Marang Kayu, Anggana, Samboja, Loa Janan, Loa Kulu and Tenggarong. Qualitative research design (Dhir et al., 2025; Hassoun et al., 2025) has flexible properties (flexible).

This means there is no definitive rule regarding the number of samples that should be taken in qualitative research. The number of samples depends mainly on what is considered valuable and can be done according to the time and resources available. Characteristics of Sample Determination in Qualitative Research Qualitative research does not emphasize 4 (Roppelt et al., 2025), which focuses more on the depth and richness of data obtained from respondents. Then, validating our qualitative findings and confirming our hypothesis using a survey-based quantitative approach, his research focuses on empowering information technology (Roppelt et al., 2025).

Marketing Analytics

Data Analysis
Marketing Margin

It is the difference between the price received by farmers and the price paid by consumers. Factors that affect the margin size are changes in marketing costs, profits, prices, the properties of the products traded, and the type of product (raw or finished). Marketing margin analysis is carried out using the marketing margin formula as follows:

$$M = Pr - Pf \qquad (1)$$

The information is as follows :
M = The magnitude of the marketing margin value
Pr = Retail price
Pf= Prices from producers (farmers)

To find out the margin on each model of marketing agency, the formula is used:

$$Mt = M1 + M2 + \ldots + Mn \qquad (2)$$

Information:
Mt = Marketing agency margin
M1 = first marketing channel marketing margin
M2 = second marketing channel marketing margin
Mn = Nth marketing channel marketing margin

Marketing Advantages

To find out the amount of marketing profits from each marketing agency, the formula is used:

$$\Pi = M - TC \qquad (3)$$

Information:
Π = Advantages of marketing agencies (IDR/kg)
M = Marketing agency margin (K)
TC = Marketing costs incurred by Total marketing agencies (K)

To find out the marketing benefits of each marketing agency, the formula is used :

$$\Pi t = \Pi 1 + \Pi 2 + \ldots + \Pi n \qquad (4)$$

Keterangan:
Πt = Advantages of marketing agencies
$\Pi 1$ = Advantages of marketing channels I
$\Pi 2$ = Advantages of marketing channels 2
Πn = Advantages of marketing channels n

The selling price is determined by the marketing agencies, which is based on the marketing costs they have incurred plus the percentage of profits they apply based on agreements with other traders(Cheng & Huang, 2013; Kyomugisha et al., 2018; Morgan & Rego, 2009). For goods found in the perfect competition market, most agricultural products are priced by rice production, world wheat prices, the number of Indonesian rice imports, and the population. To calculate the efficiency of marketing channels, use Formula 4.

$$EP = \frac{BP}{NP} \times 100\% \qquad (4)$$

Information:
Ep: Marketing Efficiency (%)
BP: Total Marketing Costs (IDR/Kg)
NP: Total Product Value (IDR/Kg)

Decision-Making Criteria: (a) If the Ep value is 0 – 50%, the marketing channel is efficient; (b)If the EP is greater than 50%, the marketing channel is less efficient

Data Collection Methods

The types of data used in the study are primary and secondary. Primary data is data obtained directly from respondents. This study's primary data was obtained through interviews with agencies in Kutai Kartanegara Regency and with respondents of farmers, farmer groups, agricultural extension workers, wholesalers, retailers, wholesalers, exporters and importers. Secondary data is complementary data obtained by recording and quoting directly related to the research topic, namely from articles/journals, previous theses and literature studies of agencies or institutions related to research.

Data was obtained in Kutai Kartanegara Regency: Central Statistics Agency, Agriculture and Livestock Service, Food Security Service, Trade and Industry Office. The data was collected by collecting 10 farmer respondents from each sub-district. For respondents to extension workers, intermediaries, wholesalers, and retailers, data was taken based on information provided by the party who knows, namely the farmers.

Result and Discussion

For Indonesia, rice is a staple for 95 per cent of the population and contributes to energy consumption of more than 55% (BPS, 2009). This farming provides job opportunities and income for millions of rural households. Indonesia's high population growth rate from year to year also impacts increasing rice consumption, so high rice availability is required.

Rice Price Development

GKP is freshly harvested grain with a relatively high moisture content. GKP prices fluctuate from January to June 2024, starting from IDR 7,069.33 in January to IDR 5,832.63 in April. The highest price occurred in February IDR 7,411.03, while the lowest price was recorded in April.GKG is the grain that has undergone further drying, so the moisture content is lower than GKP. The price of GKG also showed fluctuations, with the highest price in February IDR 8,714.62 and the lowest price in April IDR 7,067.49. The price of Non-Quality Grain (IDR /Kg) is the grain that does not meet the quality standards of GKP or GKG. The highest price occurred in February (IDR 7,208.47), and the lowest price in April (IDR 5,294.61). Rice Quality (GKP): The highest moisture content occurred in April (20.74%) and the lowest in January (19.36%). GKG with quality Moisture content was relatively stable, with a slight decrease from January (13.05%) to June (12.88%). Quality Outer Rice has the highest moisture content compared to GKP and GKG, with a peak in April (26.63%). GKP Vacuum/Fecal Content had the highest faecal content in June (5.56%) and the lowest in February (4.96%). GKG with faecal content tends to be stable and low, with the lowest value in June (4.05%). Quality Grains have the highest impurities, especially in May (11.74%). The Government Purchase Price (HPP) is HPP Harvested Dry Rice (GKP) and Ground Dry Rice (GKG). GKP, with the government's purchase price, remained at IDR 5,100 per kg from January to May and rose to IDR 6,100 in June. GKG had a fixed purchase price of IDR 6,200 per kg from January to May, which increased to IDR 7,300 in June. The data above can be seen in the following table, a table of monthly grain prices for 2024.

Marketing Margin

The following is a recapitulation of purchase prices, selling prices and marketing margins in 10 Kutai Kartanegara sub-districts.

Table 1. Buying Price, Selling Price, and Marketing Margin in 10 Kutai Kartanegara Districts

District	Purchase Price (IDR)	Selling Price (IDR)	Marketing Margin (IDR)
Kota Bangun	6.000,00	12.800,00	6.800,00
Muara Kaman	7.500,00	12.800,00	5.300,00
Sebulu	7.500,00	12.800,00	5.300,00
Tenggarong Seberang	7.000,00	13.000,00	6.000,00
Marangkayu	6.000,00	14.000,00	8.000,00
Anggana	6.000,00	14.000,00	8.000,00
Samboja	5.000,00	11.000,00	6.000,00
Loa Janan	5.000,00	11.000,00	6.000,00
Loa Kulu	7.000,00	13.000,00	6.000,00
Tenggarong	7.000,00	13.000,00	6.000,00

Source: Primary Data Processed (2024)

From the research results, it can be explained that producers or farmers sell their products to mills. Milling sells to retailers and retailers sell to final consumers. The table data shows the total marketing cost of Rp 636/Kg and the total profit of Rp.5,364/Kg. In channel I, farmers do not incur marketing costs because the mill bears the cost of transportation and packaging that has been agreed upon. Based on the table, the mill incurs costs of Rp. 320.00/kg. Meanwhile, retailers incur costs of Rp. 316/kg. In this marketing channel, farmers sell their crops to the mill at a price of Rp. 7,000/kg. Then the mill sells rice to retailers at a price of Rp. 11,000.00 /kg. In this marketing channel, the marketing margin or the difference in selling prices from farmers/producers to consumers is Rp. 6,000/kg.

Marketing margin is reviewed from two things, namely price and marketing costs incurred. The marketing margin is the difference between the price paid by consumers and the price received by farmers (Al-Haboobi et al., 2024). The table shows that this marketing channel consists of two intermediaries: mills and retailers. When producers or farmers sell their products to mills (Mgale & Yunxian, 2020; Souza et al., 2017), it is mentioned that Channel III is the dominant distribution channel across all farm sizes, making it valuable for farmers and stakeholders to make informed marketing decisions. This is the same as research (Fedorova et al., 2020; Mgale & Yunxian, 2020; Winter et al., 2021).
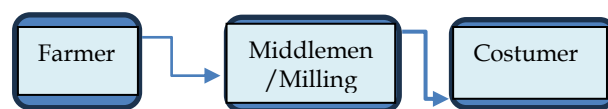
Marketing Channel

Based on the research results, marketing channels in 10 sub-districts namely Kota Bangun, Muara Kaman, Sebulu, Tenggarong Seberang, Marangkayu, Anggana, Samboja, Loa Janan, Loa Kulu, and Tenggarong there are 2 patterns of marketing channels, as follows:

1) Zero-level Marketing Channels, marketing activities take place from producers in this case farmers and directly to consumers

Figure 1. Zero Level Marketing Channel

2) One-level Marketing Channel, marketing activities from farmers through middlemen/grinders and further distributed to consumers.

Figure 2. One Level Marketing Channel

Further discussions on the factors influencing channel choice and its impact on production and profit are essential for understanding market dynamics. Price. The mill sells to the retailer merchant, and the retailer sells to the end consumer. The table shows the total marketing cost of IDR. 636/Kg and a total profit of IDR. 5,364/kg. In channel I, farmers do not incur marketing costs because the mill bears the cost of transportation and packaging that has been mutually agreed upon. In line with the idea, based on the table, the mill costs IDR. 320.00/kg. Meanwhile, retailers incur a fee of IDR. 316/kg. Farmers sell agricultural products to mills for IDR in this marketing channel. 7,000.00/kg (Andaleeb, 1996; Geyskens et al., 1998; Purkus et al., 2015). That satisfaction in tracing marketing channels for farmers is based on the principles of family and friendship, so they feel comfortable in the marketing channel. Then, the mill sells rice to retailers for IDR 11,000.00 /kg. In this marketing channel, the marketing margin or the difference in selling price from farmers/producers to consumers is IDR 6,000 /kg.

This is in line with research (Andaleeb, 1996; Brown et al., 1995; Mishra et al., 2024; Watson et al., 2015), which states that farmers who market their products through long value chains tend to use fewer organic seeds compared to those who market through short value chains. This underscores the importance of better integration in the long organic value chain involving processors, traders, retailers, and seed providers. Regardless of the marketing channel used, farmers view the development of organic breeding as a crucial step to increase the use of organic seeds. This suggests that overcoming the shortage of organic seeds is more likely to be successful if accompanied by adequate breeding efforts.

Farmer Share

Farmer Share compares the price consumers pay to the price of rice farmers receive. Based on this data in the table, the farmer's share value is 53.84 percent. This happens because rice producers/farmers sell to mills retailers, and retailers sell to consumers. Marketing agencies are involved so that producers or farmers receive a percentage of the consumers' price. The share received by the mill is 28.99 percent. This happens because there is marketing activity at the mill level. Moreover, the share received by retail traders is 84.61 percent. This happens because of the activity at the retailer level. It's important to manage marketing activity and the mill level (Geyskens et al., 1998; Golany et al., 1990; Stern & Reve, 1980), Where the farmer's share is the percentage of the price received by farmers in return for farming carried out in producing a commodity If the share received by farmers is close to 100%, then the marketing channel is categorized as

efficient. The share received by farmers is 53.84%, which is said to be efficient (Al-Haboobi et al., 2024).

Conclusion

Based on the analysis results, it can be concluded that Marketing Margin: The marketing margin of rice in Kutai Kartanegara Regency varies between IDR 5,300 to IDR 8,000 per kg, depending on the marketing channel and location. Farmer Share: Farmers receive about 53.84% of consumers' final price, while marketing agencies take the rest. Marketing Efficiency: The marketing channels used by paddy rice farmers in Kutai Kartanegara Regency are considered efficient because the marketing efficiency value is below 50%.

Author Contributions
K.N., N.W.: Conceptualization, developing ideas, analyzing data, writing, reviewing, responding to reviewers' comments; G.A.P., K.A.S.: analyzing data, overseeing data collection, reviewing scripts, and writing; M.K.: analyzing data, reviewing scripts, and writing

Conflicts of Interest
The authors declare no conflict of interest.

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