

# ANALYSIS OF RICE MARKETING EFFICIENCY IN EAST OGAN KOMERING ULU TIMUR

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**Abstract** Rice is the main food commodity that affects the Indonesian people's welfare. Thus, it is more complex to replace rice with other food commodities. This large rice production requires post-production handling through a good marketing process because it can increase farmers income. This research aims to analyze the efficiency of rice marketing in East Ogan Komering Ulu Timur Regency through marketing channels, market structure, market conduct, and market performance. This research was by taking 90 respondents of rice farmers using a simple random sampling method. Furthermore, to determine the respondents' marketing agency, it used the snowball sampling method by following the path of the farmers. Based on the results of the research, there were four rice marketing channels formed, the first was farmers - Gapoktan factories - wholesalers - retailers - consumers, the second was farmers - Gapoktan factories - consumers, the third is farmers - millers - retailers - consumers, and the fourth was a farmer - miller - consumer. Hence, marketing channel 2 was the most efficient, because it has a low marketing margin value, and has a farmer's share value, and a high-cost benefit ratio.

**Keywords:** *marketing channel, market structure, market conduct, market performance, rice*

<http://dx.doi.org/10.21776/ub.agrise.2022.022.4.3>

Received 16 April 2022

Accepted 22 October 2022

Available online 31 October 2022

## INTRODUCTION

Based on the Law of the Republic of Indonesia Number 18 of 2012, food is anything from biological sources, whether processed or not, consumed as food or drink. These biological sources can come from agricultural, plantation, forestry, fishery, livestock, water and air products. One of the food crop commodities in Indonesia is rice, the production of which is still a staple food.

Rice is an important food crop as the staple food of the Indonesian people. Rice production in Indonesia in 2020 will reach 55,160,548 tons. This amount was obtained from rice centers spread in several provinces in Indonesia such as East Java, West Java, Central Java, South Sulawesi, and South Sumatra (Kementerian Pertanian RI, 2021).

South Sumatra Province in 2020, one of the rice centers, has a production reaching 2,696,877 tons of national rice production (Kementerian Pertanian RI, 2021). The land area supports this high rice production spread across districts and cities in South Sumatra Province.

East Ogan Komering Ulu Regency is one of the most significant contributors to rice production in South Sumatra Province compared to 16 other cities and regencies. Lowland rice production in East Ogan Komering Ulu Regency in 2020 reached 629,001.31 tons with a productivity of 6.25 tons/ha, this amount was obtained from the harvested area of 99,959.45 ha (BPS, 2021).

Rice is a strategic product so it must be planted simultaneously. It is results in increased rice production when the harvest season arrives, while

demand tends to remain, thus causing prices to decrease. The dominant problem farmers face is the low price received by farmers, which is caused by farmers selling their rice production in the form of harvested dry grain. If farmers can sell their production in the form of dry milled unhulled rice, farmers can get added value from the treatment they do. However, in reality, these activities are carried out by mills, so that the mills gain added value. Therefore, research is needed on the rice marketing system in Ogan Komering Ulu Timur Regency.

This large rice production requires post-production handling through a good marketing process because good marketing can increase farmers' income. The marketing system will be efficient if it is supported by marketing institutions that depend on each other in distributing products or services from producers to consumers. The marketing system can certainly determine market efficiency. This marketing system will determine the price received by farmers and the price consumers will pay (Asmarantaka, 2014).

To choose a marketing channel is a crucial decision in product marketing activities. One of the decisions is the selling price, which is often an essential consideration for farmers in choosing the marketing channel they will take, because high selling prices can improve the welfare of farmers. However, in reality, many rice farmers still sell their harvests to institutions that offer lower prices than other marketing institutions. The marketing channels used from producers to consumers will determine the costs incurred by marketing agencies. In other words, the existence of a process of production activities into rice in the marketing system will cost money. Whether the costs incurred in production activities can respond to a more efficient marketing system. (Asmarantaka, 2014; Mardianto et al., 2016; Nurhayati et al., 2020).

Marketing efficiency can be done with the SCP (structure, conduct, performance) approach. In this marketing, the decision-making system by marketing agencies is measured by the number of sellers and buyers, product differentiation, barriers to market entry, and market concentration. The market structure formed will affect market behavior, namely sales and purchases by marketing agencies, price determination and formation, and cooperation between marketing agencies. The interaction between the structure and behavior of the market will determine market performance (Novita Sari et al., 2012).

Price fluctuations will affect the decisions and abilities of the rice marketing institutions involved in responding to price changes. The determination and price formation that occurs is related to market behavior which is determined by how the structure of the rice market is formed in Ogan Komering Ulu Timur Regency. The price changes in each of the formed marketing institutions will ultimately determine the performance of the rice market.

Based on this description, this research aims to analyze the structure, conduct, and performance of the rice market in East Ogan Komering Ulu Timur Regency. Therefore, this research is expected to benefit farmers, marketing institutions, and policy makers to determine the efficiency of the rice marketing channels in East Ogan Komering Ulu Regency.

## RESEARCH METHODS

### Location and Determination of Respondents

This research was conducted in November 2021 in East Ogan Komering Ulu Regency, South Sumatra Province. Choosing a research location is purposive because East Ogan Komering Ulu Regency is one of the districts with the largest land area and has the most significant productivity in Sumatra Province. South. The villages selected were Triyoso Village, Sidodadi Village, and Sumber Suko Village, located in Belitang District.

The data collected in this research are primary and secondary. Primary data was collected through direct interviews with respondents using a list of questions that had been prepared. In contrast, secondary data was obtained from various sources of relevant studies such as literature, previous research, and institutions related to this research.

Sampling was 90 farmer respondents using simple random sampling method. After that, to determine the respondent's marketing agency, the snowball sampling method was used by following the path of the farmers.

### Data Analysis

#### 1. Market Structure

Market structure analysis is carried out by looking at four market characteristics, namely: 1) the number of sellers and buyers (existing marketing institutions), 2) the condition of the products being traded, 3) Barriers to market entry (Sari et al., 2019). In addition, market structure analysis is also conducted by analyzing market share and concentration ratio (Dewi et al., 2018).

Market share is carried out to determine the development of sales to each buyer (trader) by

calculating the concentration ratio of the four largest corn traders. The analysis used in the market structure is market share and concentration (Kohls & Uhl, 2002). Market share can be calculated using sales.

$$C4 \sum_{i=1}^4 S_i$$

Then calculate the market concentration (Baye & Prince, 2016) can be calculated using C4 (four firm concentration ratio).

$$Market\ Share(MS_i) = \frac{S_i}{S_{total}} \times 100\%$$

S is the most significant trader's rice production (tons/year). S<sub>total</sub> is the rice production in East Ogan Komerang Ulu Regency (tons/ha). The existence of a level of trust and comfort in the market is a factor that influences the selection of a market (Bailey & Hunnicutt, 2002).

**2. Market Conduct**

Market behavior uses qualitative analysis by looking at the three market characteristics proposed by Dahl & Hammond (1977) namely: 1) pricing system and price formation among traders; 2) sales and buying practices; 3) cooperation network system between marketing agencies. This market conduct analysis is analyzed using descriptive analysis

**3. Market Performance**

**Marketing Channel Analysis**

Marketing channels in this research were analyzed using descriptive analysis. The marketing channel is a system of delivering products produced by producers to consumers. A marketing channel comes from the activities of marketing institutions consisting of producers, collectors, retailers, and wholesalers.

**Marketing Margin Analysis**

Marketing margin is obtained from the difference between the selling price at the producer or farmer level and the selling price at the consumer level. Marketing margin can be calculated using the following formula:

$$MP = Pr - Pf$$

Description:

Pf = price at farm level (Rp/Kg)

Pr = price at consumer level (Rp/Kg)

**Farmer's Share Analysis**

Farmer's share analysis aims to determine the portion of the price received by farmers

(producers). If the farmer's share is higher, the market performance will be better from the producer's side. The profit sharing calculation determines the share of the price received by farmers from the consumer price level in percentage units (%). Farmer's share can be calculated using the following formula:

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

Description:

Pf = price at farm level (Rp/Kg)

Pr = price at consumer level (Rp/Kg)

**Profit and Cost Ratio Analysis**

The ratio of profits to marketing costs shows how each unit of cost incurred during the marketing process can benefit these marketing activities. The ratio of profits and costs can be calculated using the following formula:

$$profit\ to\ cost\ ratio = \frac{\pi}{C}$$

Description:

π = profit of marketing agency

C = marketing agency marketing costs

**RESULTS AND DISCUSSION**

**Characteristics of Respondent Farmers**

The age of the farmer is a crucial thing to consider in farming, because it will impact the quality of the performance of farmers in carrying out their farming activities. Relatively younger farmers in age, tend to be more assertive at work, agile, can easily accept newer innovations and information, and are more responsive to the surrounding environment when compared to farmers who have a relatively older age (Soekartawi, 2001).

Table 1. Respondent Farmer Age

Age	Age classification	Total	Percentage
26 – 35	Early adult	10	11.11
36 – 45	Late adult	37	41.11
46 – 55	Early elderly	31	34.44
56 – 65	Late elderly	12	13.33
Total		90	100.00

Sumber: Data primer (diolah), 2021

Table 1 shows the age classification according to the Department of Health. It can be seen that most respondent farmers are in the age group of 35-44 years with an age classification of 37 people with a percentage of 41.11 percent. They were then followed by rice farmers respondents who are in the age classification in the range of 46 - 55 years as many as 31 people with a percentage of 34.44 percent.

The area of arable land will affect the production results that farmers will obtain. The larger the land area owned by farmers, the more production results will be received. The land cultivated by the respondent farmers is their land.

Table 2. Respondent Farmer's Land Area

Land area (ha)	Total	Percentage
0.5 – 0.9	42	46.67
1.0 – 1.5	41	45.56
1.6 – 2.0	7	7.78
Total	90	100.00

Sumber: Data primer (diolah), 2021

Table 2 shows that the respondent farmers have a land area of 0.5 – 0.9 ha as many as 42 people with a percentage of 46.67 percent and 1.0 – 1.5 ha as many as 41 people with a percentage of 45.56 percent.

The education level is also significant for farmers, considering its influence on knowledge insight in farming. The higher the level of education of farmers who have been achieved, the better the mindset and practice of farmers in determining a decision and solving various problems that farmers in their farming activities will face.

Table 3. Respondent Farmer Education

Level of education	Total	Percentage
SD	49	54,44
SMP	11	12,22
SMA	30	33,33
Total	90	100.00

Sumber: Data primer (diolah), 2021

The majority of respondent farmers' formal education is limited to elementary school. There are 49 respondent farmers at the elementary school level with a percentage of 54.44 percent. Then there were 30 people at the high school level with a percentage of 33.33 percent. The rest are at the junior high school level totaling 11 people with a percentage of 12.22 percentages.

However, respondent farmers' low level of education does not necessarily indicate their shared knowledge of rice cultivation, because they generally acquire this knowledge based on experience from generation to generation.

Farming experience is also very important for rice farmers. It will undoubtedly affect the farming activities carried out so that they can run well and affect the success of farmers in running their farming. This farming experience is a farmer's extended time in running the farming he has lived.

Table 4. Respondent Farmer's Farming Experience

Farming experience	Total	Percentage
10 – 19	20	22,22
20 – 29	20	22,22
30 – 39	36	40,00
40 – 49	9	10,00
≥ 50	5	5,56
Total	90	100,00

Sumber: Data primer (diolah), 2021

Based on Table 4 the experience of the respondent farmers in rice farming, it can be seen that the respondent farmers have a pretty long experience in farming. It is because farming is a hereditary business that comes from their parents. In East Ogan Komerling Ulu Regency, most rice farmers have farming experience of 10 to 39 years. It shows that the respondent farmers in East Ogan Komerling Ulu Regency have long experience. From this long experience, it can help farmers in carrying out farming activities so that they can run well.

**Marketing Channel**

Marketing is an essential aspect in distributing rice to consumers. Marketing patterns in each rice-producing region in Indonesia are very diverse. Marketing channel is a set of interdependent marketing institutions or involved in creating products that will be consumed. This pattern of marketing channels is determined based on the tendency of marketing institutions to market their products.

Based on information from interviews with respondents, it can be seen that several marketing institutions are involved in marketing rice in East Ogan Komerling Ulu Regency, such as a association of farmer groups, millers, wholesalers, and retailers. The pattern of marketing channels is determined based on the tendency of marketing institutions to market or distribute products. The following is a marketing channel for rice in East Ogan Komerling Ulu Regency, which can be seen in Figure 1.

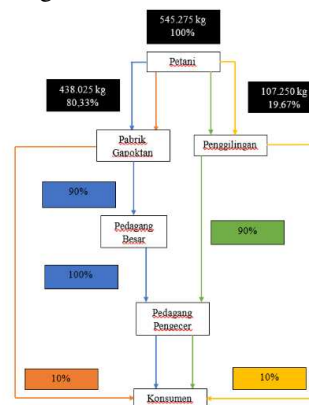


Figure 1. Rice marketing channel in East Ogan Komerling Ulu Regency

Based on Figure 1, there are four marketing channels in Ogan Komering Ulu Timur Regency which involve four marketing institutions consisting of a association of farmer groups, millers, wholesalers, and retailers.

As many as 80.33% of the farmers' produce sell their harvests to a association of farmer groups. In marketing channel 1, farmers sell their harvests in the form of harvested dry grain with a selling price of Rp. 6,666.67/kg. Afterward, the combined farmer groups process the harvested dry unhulled rice into rice and then sell it to wholesalers. Then the wholesalers will sell the rice to retailers and then sell it to consumers. In marketing channel 2, the difference with marketing channel 1 is that a association of farmer groups sells the rice directly to final consumers without any other intermediary marketing agency.

Furthermore, of the total production, 19.67% of grain production is sold to mills. Marketing channel 3, farmers sell their harvests to mills through GKP. Then the mill processes the GKP into rice which will then be sold to retailers to reach consumers. Marketing channel 4 is the same as marketing channel 3, except that the mill does not use an intermediary marketing agency to sell its rice to the final consumer.

**Market Structure**

Market structure analysis is qualitatively analyzed by looking at the number of sellers and buyers, product differentiation, and barriers to entry and exit. while quantitative analysis is carried out using market concentration analysis (CR4).

Table 5. Characteristics of rice market structure in East Ogan Komering Ulu Regency

No.	Sifat Pasar	Petani	Gapoktan	Penggilingan	Pedagang Besar	Pedagang Pengecer
1	Jumlah penjual	90	2	6	5	15
2	Jumlah pembeli	8	5	9	5	>15
3	Diferensiasi produk	Tidak Ada	Ada	Ada	Tidak Ada	Tidak Ada
4	Hambatan keluar masuk	Ada	Tidak Ada	Ada	Tidak Ada	Tidak Ada

Sumber: Data primer (diolah), 2021

Based on Table 5, farmers totaling 90 people market their products to 8 buyers consisting of 2 association of farmer groups and 6 millers. Products sold and purchased are homogeneous. There is no product differentiation at the farmer level because the products sold are homogeneous, namely harvested dry grain. Farmers' barriers in marketing their products are not so tricky because market information regarding the supply and price of harvested dry grain in East Ogan Komering Ulu Regency is also relatively easy to obtain by farmers. However, price information, especially at

the consumer level, still needs to be obtained by farmers.

There are 2 association of farmer groups, the association of farmer groups is a means for farmers to sell their harvests. There is product differentiation, namely the change in the product which was originally harvested dry unhulled rice into rice which went through several treatments such as drying and milling. Then the rice is sold to wholesalers and final consumers.

Furthermore, at the milling level, 6 millers buy harvested dry grain from farmers and then sell them in the form of rice. There is product differentiation in milling. The rice is sold to retailers and final consumers. The obstacle experienced by the mill is the need for more capital for the grinder to buy harvested dry grain from farmers.

Then at the wholesaler level, 5 wholesalers buy and sell rice. There is no product differentiation at the wholesaler level, because the products purchased and sold are homogeneous or the same.

Then at the level of retailers which consists of 15 retailers. These retailers take products from wholesalers and mills which will then be sold to final consumers.

**Market Conduct**

**1. Purchase Activity**

Rice farmers in Ogan Komering Ulu Timur Regency generally sell harvested dry grain directly after harvesting to the association of farmer groups by delivering directly using a motorcycle taxi service. Meanwhile, if the farmer sells it to the mill, the mill will take it to the farmer. The mill will sell the rice produced to retailers and consumers

Furthermore, the the association of farmer groups sells processed rice to wholesalers and final consumers. Then wholesalers sell only to retailers, and retailers only focus on selling directly to consumers.

**2. Pricing fixing**

Pricing in this marketing system is generally a bargain and there is an agreement in each marketing agency. Farmers tend to receive prices from the prices set by the Gapokta association of farmer groups n or milling factories. When dealing with wholesalers, association of farmer groups generally considers the prices set by wholesalers, especially if the capacity of large traders is getting bigger.

Wholesalers are usually decisive in determining selling prices to retailers, so retailers can only follow the prices set by wholesalers. Retailers then sell the rice by setting a selling price to consumers.

The most dominating payment system is the cash payment system. Almost every marketing agency implements a cash payment system to provide satisfaction, it is just that payments from association of farmer groups to farmers sometimes use a delayed payment system that takes 4-7 days.

### 3. Cooperation between marketing agencies

Cooperation among farmers through farmer groups has been very good. Farmer groups who are members of the association of farmer groups have become a forum as a marketing institution that can increase farmers' bargaining.

## Market Performance

### 1. Marketing Margin

Marketing margin is the difference between the selling price from farmers as producers and the purchase price at the final consumer at each marketing agency. Marketing margin is used as an indicator of marketing efficiency, which must be carried out in an agribusiness marketing system with an equivalent calculation (Asmarantaka, 2014).

Marketing margin is the difference between the selling price from the farmer level and the purchase price from the final consumer. The marketing margin of rice in East Ogan Komerung Regency is calculated by looking at the selling price of rice farmers which is equated with the price of rice purchased by consumers which can be seen in Table 6.

Table 6. Rice marketing margin in East Ogan Komerung Ulu Regency

Marketing Channels	Price at farm level (Rp/Kg)*	Price at consumer level (Rp/Kg)	Marketing margin (%)
1	6.666,67	10.000,00	3.333,33
2	6.666,67	8.000,00	1.333,33
3	6.333,33	10.000,00	3.666,67
4	6.333,33	7.750,00	1.416,67

Sumber: Data primer (diolah), 2021

price of harvested dry grain that has been converted into rice (60%)

Based on Table 6, it can be seen that the marketing margin in marketing channel 2 is the smallest margin, which is Rp. 1,333.33/kg same as marketing channel 4 which also has a low marketing margin value of IDR 1,666.67/kg. It is because in marketing channels 2 and 4, each marketing agency, namely the Gapoktan and milling factories, sells their processed rice directly to final consumers without intermediary traders, so that the marketing costs incurred are even less and the selling price of rice is not high.

While channels 1 and 3 use many marketing institutions, which results in many marketing costs and the length of the marketing channel from farmers to consumers which results in high rice prices because they pass through several institutions.

### 2. Farmer's Share

Farmer's share is the ratio between the price at the farm level to the price at the consumer level. Farmer's share is also one of the quantitative measuring tools to assess marketing efficiency, where farmer's share is the share received by farmers, expressed as a percentage. For more details to see the farmer's share in each marketing channel can be seen in Table 7.

Table 7. Farmer's share in East Ogan Komerung Ulu Regency

Marketing Channels	Price at farm level (Rp/Kg)*	Price at consumer level (Rp/Kg)	Farmer's Share (%)
1	6.666,67	10.000,00	66,67
2	6.666,67	8.000,00	83,33
3	6.333,33	10.000,00	63,33
4	6.333,33	7.750,00	81,72

Sumber: Data primer (diolah), 2021

In Table 7 it can be seen that marketing channel 2 has a higher farmer's share value, which is 83.33%, slightly higher than marketing channel 4, which is 81.72%. It is because in marketing channels 2 and 4, it is a association of farmer groups and millers who directly sell their produce in the form of rice to final consumers. So, the difference in prices obtained by farmers and prices purchased by consumers is a little.

### 3. Profit and Cost Ratio

Marketing efficiency is not only seen from the size of the marketing margin and the value of the farmer's share, it can also be seen from the ratio of profits and costs. The profit and cost ratio analysis is the amount of profit received by the marketing agency against the costs incurred. Profit and cost analysis is used to determine how much profit marketing agencies obtain when marketing costs are issued.

Table 8. Profit and Cost Ratio of Rice Marketing in East Ogan Komerung Ulu Regency

Marketing Channels	Total Marketing Cost (Rp/Kg)	Total Marketing Profit (Rp/Kg)	Total Marketing Profit (Rp/Kg)
1	1.273,19	2.174,43	1,71
2	451,88	995,74	2,20
3	1.260,75	2.448,77	1,94

4	468,82	990.70	2,11
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Sumber: Data primer (diolah), 2021

Marketing of rice in East Ogan Komerung Ulu Regency shows that the lowest marketing costs are in marketing channel 2, which is Rp. 451.88/kg. It is due to the relatively few marketing agencies involved, so that the marketing costs and the resulting marketing profits are low. The total cost of the marketing agency is Rp. 451.88/kg with a total profit of Rp. 995.74/kg, so the profit ratio is 2.20 percent.

The total cost of the marketing agency in marketing channel 1 is Rp. 1,273.19/kg and the profit of the marketing agency is Rp. 2,174.43/kg, so that the profit ratio is 1.71 percent.

Then in marketing channel 3, the total marketing costs incurred are Rp. 1,260.75/kg with a total profit of Rp. 2,448.77/kg for the institution, so the profit-to-cost ratio is 1.94 percent.

In marketing channel 4, the total marketing costs incurred are Rp. 468.82/kg and the profits are Rp. 990.70/kg, so that the cost-benefit ratio is 2.11 percent.

#### 4. Marketing Efficiency

Marketing efficiency is the ultimate goal to be achieved in a marketing system. Marketing efficiency is a measure of satisfaction from producers, marketing agencies, and consumers. In this study using indicators of operational efficiency measures. The analysis used to determine operational efficiency in the marketing process of a product is the analysis of marketing margins, farmer's share and cost profit ratios. The following are the indicator values for each marketing channel which have been summarized in Table 9.

Table 9. Marketing Margin Value, Farmer's Share, and Marketing Profit and Cost Ratio

Marketing Channels	Marketing Margin (%)	Farmer's Share (%)	Total Marketing Profit (Rp/Kg)
1	3.333,33	66,67	1,71
2	1.333,33	83,33	2,20
3	3.666,67	63,33	1,94
4	1.416,67	81,72	2,11

Sumber: Data primer (diolah), 2021

Table 9 shows that the smallest marketing margin value, the most considerable farmer's share value, and the most significant profit and cost ratio are generated from marketing channel 2 through farmer institutions, association of farmer groups, and to the final consumer. In this condition indirectly, farmers benefit more because the proportion of the price they receive compared to the price at the consumer level is 83.33%. It is

because the marketing agency, namely the association of farmer groups, directly sells rice to final consumers. However, based on the volume flowing, only about 10% of the rice produced by the association of farmer groups is sold directly to the final consumer.

## CONCLUSION

The rice marketing system in East Ogan Komerung Ulu Regency involves 4 marketing channels with 4 marketing institutions to reach consumers, namely association of farmer groups, mills, wholesalers, and retailers.

The market structure formed by selling rice in East Ogan Komerung Ulu Regency leads to an oligopoly market structure.

Based on the value of the marketing margin, farmer's share, and the ratio of profits and costs obtained, marketing channel 2 is the most efficient. Because it has a low margin value of Rp. 1,333.33/kg, a high farmer's share value is 83.33%, and a high profit and cost ratio value is 2.20%.

Based on the results of the research that has been done, it is recommended that farmers sell their harvests to Gapoktan factories on channel 2 (farmers, Gapoktan factories, consumers), because in this channel the farmer's share value obtained is higher than other channels.

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