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MARKETING ANALYSIS OF SWEET CORN IN BANJARBARU UTARA DISTRICT, BANJARBARU CITY

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ABSTRACT

North Banjarbaru District is the largest corn producing area in Banjarbaru City for harvested area. Thus, the availability of maize is one of the main factors for sufficient demand for corn. The purpose of this study was to determine the market structure, market behavior and market performance on the marketing of sweet corn (*Zea Mays Saccharata*) in the District of North Banjarbaru, Banjarbaru City. The sampling method used is *purposive sampling* for two sub-districts, namely Loktabat Utara Village and Sei Ulin Village. The data analysis uses a *Structure Conduct Performance approach*. Based on the results of the study, it is shown that the marketing institutions that have the largest share are wholesalers. This makes wholesaler's act as *price makers*. The results of the analysis show that the market structure faced by Sweet Corn Marketing in North Banjarbaru District is an imperfect competition market structure that leads to an oligopoly market structure. The largest market share is owned by wholesalers so that wholesalers have more control over the market and act as price makers, while farmers, collectors and retailers in marketing act as *price takers*. The market equilibrium in the long run (β_2) is not perfect, meaning that there is no market cohesion in the long run and the market is in imperfect competitive conditions. IMC value $0.233 < 1$ which means the degree of market integration is getting higher and the condition of the reference market, namely the market at the consumer level, is the main factor influencing formation of prices at the producer level (local market). Market performance is seen from: a) relatively efficient marketing channels with not too high total costs and low margins and high *farmer share* found in marketing channel I. b) The elasticity of price transmission, the results of the simple regression analysis obtained a significance value of $0.00 < 0.05$, which means that prices at the retailer or consumer level have a significant effect on prices at the farmer level.

KEY WORDS

Market structure, market behavior, market performance.

South Kalimantan is a large food crop producing area because of its good agricultural potential. There are a lot of crops that are planted besides rice, namely corn. This condition shows that corn is an important raw material other than as raw material for animal feed but also for consumption in South Kalimantan.

North Banjarbaru District is the largest corn producing area in Banjarbaru City, which is 12 hectares for harvested area. Therefore, the District of North Banjarbaru became the main focus as a research location with corn commodity. Conditions in the District of North Banjarbaru meet the growing requirements for maize cultivation. In this sub-district, there are two corn commodities that are cultivated, namely sweet corn and hybrid corn (maize for animal feed). However, farmers prefer to plant sweet corn because they think that the sale of sweet corn is more profitable than fodder corn.

North Loktabat and Sei Ulin sub-districts are 2 areas in Banjarbaru City which are being promoted for the development of corn production so that the distribution of corn for the South Kalimantan region can be evenly distributed. Thus, the availability of maize is one of the main factors for sufficient demand for corn. However, efforts to develop maize with an adequate level of productivity are largely determined by many factors, both agronomic and socio-economic technical factors. Economic factors are closely related to the price level. The



price level is influenced by the bargaining power of farmers as producers and on the other hand the levels of consumer demand in addition to other supporting facilities/infrastructure factors. How much price can be achieved by farmers is also very dependent on the prevailing marketing system. So this research is aimed at knowing the existing marketing channels and their marketing efficiency. Therefore, research on "Marketing Analysis of Sweet Corn in North Banjarbaru District, Banjarbaru City" needs to be done.

Research aims to find out:

- Market structure in marketing sweet corn (*Zea Mays Saccharata*) in North Banjarbaru District.
- Market behavior on the marketing of sweet corn (*Zea Mays Saccharata*) in North Banjarbaru District.
- Market performance in marketing sweet corn (*Zea Mays Saccharata*) in North Banjarbaru District.

METHODS OF RESEARCH

In this research, the data collected includes primary data and secondary data. Primary data were obtained from observations at the research site and direct interviews with farmers. While secondary data were obtained from institutions or agencies related to research such as the Banjarbaru City Agricultural Extension Center and the Banjarbaru City BPS.

The sampling method used was *purposive sampling* on two sub-districts in North Banjarbaru sub-district, namely Loktabat Utara and Sei Ulin villages with a total of 73 farmers. people and the respondents in this study were 40 farmers. As for the selection of examples of marketing institutions involved in *snowball sampling*, which is the determination of the sample by tracing the marketing institutions in stages based on information from sweet corn farmers (producing farmers).

Market structure analysis is obtained by looking at the number of marketing actors involved in marketing sweet corn, product differentiation, market information and barriers to entry and exit. Besides being analyzed using descriptive market structure, it is also analyzed quantitatively. Identification is carried out in describing the market structure using *Market Share* and market concentration (*CR4*), Wati et al, 2015).

Market Share:

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

Where: Msi - Market share of the i-th marketing agency (%); Si - Sales of the i-th marketing agency (Rp); Stot - Total sales of all marketing agencies (Rp).

Market Concentration:

$$H = (S1)^2 + (S2)^2 + \dots + (Sn)^2$$

Where: H - Herfindahl index (H values range from 0-1); Si - Market share of the ith sweet corn purchase (%); N - Number of buyers in the market.

Decision-making criteria in the *Herfindahl Index* (Wati et al. 2015):

- *Herfindahl. Index* has a value of 0-1;
- If $IH = 1$ then the market structure in sweet corn marketing tends to lead to a monopsony market;
- If $IH = 0$ then the market structure of sweet corn marketing tends to lead to a perfectly competitive market;
- If $IH = 0 < IH < 1$ then the market structure in sweet corn marketing tends to lead to an oligopsony market.

Furthermore, the market concentration of the four largest buyers (*CR4*) is calculated with the following calculation:

$$CR_4 = S_1 + S_2 + S_3 + S_4$$



Where: CR_4 = Concentration Ratio for the Biggest Four (%); S = Market share of the largest sweet corn trader.

Decision making criteria (Pujiharto, 2014):

- If the value of CR4 33% (*competitive market structure*);
- If the CR4 value is between 33%-50% (*weak oligopsonist market structure*);
- If the value of CR4>50% (*Strongly oligopsonist market structure*).

Descriptive analysis by observing components of market behavior such as price formation practices, cooperation between marketing agencies and payment systems. Besides being analyzed using descriptive market behavior, it is also analyzed quantitatively, a statistical model that is able to explain price changes in the local market as a function of:

$$P_{it} = \beta_1 P_{it-1} + \beta_2 P_{jt-1} + \beta_3 P_{jt-1} + \beta_4 X_t + e_t$$

In general, this equation shows that how the price in a market in the area of consumption (retail market) affects the formation of prices that occur in market production (level farmer) with consider influence price at time certain (t) with price on time previously (t-1). The ratio of the price coefficient in the local market in the past (Pt-1) and the price coefficient in the reference market in the past (Pjt-1) can be used to determine the market integration index (*Market Connection Index*) or IMC. Systematically, the IMC formula can be written as follows:

$$IMC = \frac{\beta_1}{\beta_3}$$

The decision-making criteria for IMC are as follows (Momoh and Agbonlahor 2007):

- IMC <1 indicates short-term market integration ;
- IMC >1 indicates low short-term market integration;
- IMC = 1 indicates high or low theoretical short-term market integration.

The accuracy of the sample regression function in estimating the actual value can be measured from the *Goodness of fit*. In general, it can be measured by performing the R2 test, F - test , t -test , and Dw (Ghozali, 2014).

According to Misbahuddin (2013), test assumption classic also need conducted in a study so that the equations formed are free from assumption deviations such as multicollinearity, heteroscedasticity, autocorrelation so that the results obtained are more valid and accurate.

Herawati (2012) states that the amount of margin for each channel of trade is influenced by sales volume and distance of marketing locations, the length of the marketing chain, marketing functions performed by marketing institutions, and the market structure faced. The amount of costs, profits, and marketing margins in the channel I pattern can be seen in the following table.

According to Sumarwan *etal* (2011), marketing margin analysis is calculated using the following formula:

$$TMP = Pr - Pf$$

Where: TMP -Total Marketing Margin (Rp/Kg); Pr - Price is at retailer or final consumer level (Rp/Kg); Pf - Price at farmer or producer level (Rp/Kg).

Siregar (2010) states that the size of the *farmer's share* does not always indicate the size of the profit received by the farmer. The longer the marketing channel, the smaller the share of the price received by farmers, even though the price paid by consumers is getting bigger. The calculation of *share* price received by farmers is formulated as follows:

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

Where: SPF - *Share* Farmer level price (Rp /Kg).



Share costs and benefits can be formulated as follows:

$$S_{ki} = (K_i)/(Pr - Pf) \times 100\%$$

$$S_{bi} = (K_i)/(Pr - Pf) \times 100\%$$

Where: S_{ki} - *Share* the profits of the i -th institution; S_{bi} - *Share* the cost of the i institution; Pr - Price at retail level; Pf - Price at farmer level.

Decision making criteria:

- $S_{ki} > S_{bi}$, then the marketing channel for corn in the District of North Banjarbaru is profitable;
- $S_{ki} < S_{bi}$, then the marketing channel for corn marketing in North Banjarbaru District is not profitable.

Marketing efficiency analysis is formulated as follows:

$$E_p = \frac{TB}{TNP}$$

Where: E_p - Marketing Efficiency; TB - Total Marketing Cost; TNP - Total value of marketed products.

Making criteria:

- If the E_p is 0–50%, then the sweet corn marketing channel is efficient;
- Sweet corn marketing channel is not efficient.

The profit to cost ratio can be formulated as follows:

$$\text{Ratio Profit/cost } (\pi/c) = \frac{\pi_i}{c_i}$$

According to Sudyono (2002), the price transmission elasticity is formulated as follows:

$$E_t = \frac{\partial Pr/Pf}{\partial Pr/Pf}$$

Decision making criteria (Rahim et al 2012):

- If $E_t = 1$, the rate of change of prices at the producer level (Pf) is balanced with the rate of change in prices at the consumer level (Pr), so that the marketing system is perfectly competitive so that the marketing system is efficient;
- If $E_t > 1$, meaning that the rate of price change at the producer level (Pf) is greater than the rate of price change at the consumer level (Pr), imperfect competition means that there is monopsony/oligopsony power in the market so that the marketing system is inefficient;
- If $E_t < 1$, the rate of price change at the producer level (Pf) is smaller than the rate of price change at the consumer level (Pr), imperfect competition. namely there is monopsony/oligopsony power in the market so that the marketing system is inefficient.

RESULTS AND DISCUSSION

The age range of respondent farmers is 20-60 years, with an average age of 4-2 years for respondent farmers. The age group of respondent farmers is mostly between 40-49 years old as many as 16 (40%), this is based on the fact that at that age the dominance is the head of the family with demands to meet the needs of his family.

Sweet Corn respondents were elementary school, which amounted to 20 farmers (50%). This is because most of the respondents are also the children of a farmer where it is customary for a child to go down to the land to help with farming.



Table 1 – Number and Percentage of Respondents by Age Group

No	Age group	Number of Respondents (persons)	Percentage (%)
1	20-29	2	5
2	30-39	15	37.5
3	40-49	16	40
4	>50	7	17.5
Total		40	100

Source: Processed primary data, 2022.

Table 2 – Number and percentage of respondents by education level

No.	Level of education	Amount (person)	Percentage (%)
1.	Elementary School/Equivalent	2 0	50
2.	Middle School/Equivalent	13	3 2,2
3.	High School/ Equivalent	7	17,5
Amount		4 0	100

Source: Processed primary data, 2022.

Respondent farmers who have family dependents in the range of 1-6 people, with an average dependent of 3 people. The highest number of dependents is 3-4 people, there are 15 respondents or 37.5% and the least is 5-6 people, there are 4 respondents or 10%.

Table 3 – Number and percentage of respondents by family dependent

No.	Number of Dependents (Soul)	Amount (person)	Percentage (%)
1.	1 – 2	15	37.5
2.	3 – 4	21	52.5
3.	5 – 6	4	10
Amount		40	100

Source: Primary Data Processing, 2022.

The majority of respondents' occupations are farmers. The highest occupation of respondents is farmers as many as 36 people (90%), besides farming there are also those who have jobs outside agriculture, namely traders and civil servants.

Table 4 – Number and percentage of respondents by occupation

No.	Work	Amount (person)	Percentage (%)
1.	Farmer	36	90
2.	Trader	3	7.5
3.	civil servant	1	5.75
Amount		4 0	100

Source: Primary Data Processing, 2022.

The area of land owned by respondent farmers varies between 0.05 – 3 ha. The land area of sweet corn is the largest with 29 people (7 2, 5%). Meanwhile, the lowest area of land owned by respondent farmers is between 2-3 ha, which is 2 people (5%).

Table 5 – Number and percentage of respondents by land area owned

No.	Land Area Owned (Ha)	Amount (person)	Percentage (%)
1.	<0.5	29	72.5
2.	0.5 - <1	6	15
3.	1 - <2	3	7.5
4.	2 – 3	2	5
Amount		4 0	100

Source: Primary Data Processing, 2022.



In Table 6, respondent farmers who have farming experience in the range of 1-15 years, with an average of 8 years of experience in farming. There are 1-5 years of sweet corn farming experience (37.5%) and 12-15 years of sweet corn farming experience (30%).

Table 6 – Number and Percentage of Respondents by Length of Sweet Corn Cultivation

No.	Length of Farming (Years)	Amount (Soul)	Percentage (%)
1.	1 – 5	15	37.5
2.	6 – 10	13	32.5
3.	11 – 15	12	30
	Amount	40	100

Source: Primary Data Processing, 2022.

In table 7, it is known that the number of samples of sweet corn sellers in the research location reached 61 actors involved in Sweet Corn Marketing in North Banjarbaru District. When viewed from the side of the seller, the number of farmers as producers dominates because the number of farmers is more than other farmer group institutions.

Table 7 – Sweet corn marketing actors in Kec. North Banjarbaru

No.	Marketing Agency	Sample	Percentage (%)
1.	Collector	7	16.39
2.	Wholesaler	4	6,59
3.	Retailer	10	11.48
4.	Farmer	40	65.57
	Amount	61	100

Source: Primary Data Processed, 2022.

Information Prices received by farmers are generally obtained from traders and also from fellow farmers. Farmers can easily obtain information on the price of sweet corn. Sweet corn prices usually tend to be the same every day or not often experience fluctuations, changes in the price of sweet corn are usually in the event of a price war with other fruit commodities in the market. Although farmers can easily access information about the price of sweet corn, the determination of the selling price of sweet corn is entirely determined by traders and farmers only as price takers.

In terms of barriers to entry and exit from the market for Sweet Corn Marketing in the District of North Banjarbaru, Banjarbaru City, there are almost no barriers, even if there are small obstacles. For new producers or new farmers starting enter the market possible will experience obstacle, farmer new will difficulty in the process of selling the harvest. Based on field conditions, this can be overcome because some new farmers whose land is not so large usually tend to entrust their harvests to other farmers whose production is larger. Meanwhile, in terms of barriers to exit the market, it is easier because sweet corn farmers can divert their land for other commodities.

The market structure at the level of middlemen tends to lead to an imperfect competition market structure. When viewed from the buyer's side, the number of collectors as producers is less, namely: 4 people compared to the number of buyers as many as 17 people. The 17 buyers consisted of 7 wholesalers and 10 retailers.

Product which for sale differentiated which it means sweet corn since bought from farmer already distinguished based on *grades*. Price sell also determined based on the grade with the selling price at the level of collectors at IDR 1,800 / cob. Sources of information regarding prices obtained by collectors from other traders. Regarding obstacles go out enter market more tend in obstacle related capital. The more capital owned by traders, the more traders can buy sweet corn produced by farmers and sweet corn marketed by wholesalers and so on the contrary. In the Marketing of Sweet Corn in the District of North Banjarbaru, traders cannot freely raise or lower prices. If the collectors make price changes to increase their selling prices, the traders will lose some of their market share and the retailers will switch to other collectors.



Therefore, based on observations in the field, prices at the level of collectors tend to be the same. If you pay attention, the market conditions at the level of the middleman, seen from the buyer's side, tend to lead to an oligopsony market.

The market structure at the wholesaler level tends to lead to an imperfectly competitive market. Judging from the number of sellers and buyers, the number of wholesalers is 4 people and sells sweet corn to 10 traders.

The product sold is the same, namely fresh sweet corn but is differentiated due to the difference in sweet corn based on *grade*. Wholesaler in Sweet Corn Marketing in North Banjarbaru District this could say Act as *price setters*. This institution can have a big influence, especially in terms of determining price sweet corn, because almost all trader which there is in North Banjarbaru District refers to the prices made by traders wholesaler.

Market information tends to be easily accessible from fellow wholesalers. Regarding prices, bargaining activities usually occur between farmers and traders, but prices are still determined by traders and farmers only follow. If you pay attention, actually selling through wholesalers has disadvantages such as payments that are not cash or paid at the end after the sweet corn is sold. However based on conditions in the field there is a separate reason why farmers always sell through wholesalers. A very large production of sweet corn if it is not immediately sold to wholesalers will make farmer losers.

Obstacle go out enter market still faced by trader related with capital. This is because the level of a wholesaler is influenced by the capital owned. The more capital you have, the more will the more many also trader the can buy results harvest farmer's sweet corn. From the buyer's point of view, the market structure faced by local wholesalers tends to lead on market oligopsony. Temporary if seen from side The seller of the market structure at the local wholesaler level is imperfect competition which leads to an oligopoly market. Salvator (2013), explained in the structure market oligopoly producer knowing that every action which will have an effect on other producers. So that even though wholesalers as traders who determine prices or *price setters* in determining prices, wholesalers also still look at market conditions. This is because if one of the wholesalers changes the price of course this will have an effect on the wholesaler others (2015).

The market structure at the retailer level also leads to an imperfect competition market structure. The number of retailers is less than the number of consumers who buy sweet corn. Product traded in the market at the retailer level is the same as the product is homogeneous but differentiated by being divided into several *grades*. Trader retailer buys sweet corn through trader collector and wholesalers because they can buy in small quantities and transactions are easier. Besides that, retailers don't need to spend a lot cost.

Analysis share market (*Market share*) in study This can be seen in Table 8. Observed During 3 months starting from April 2022 (Month I), May 2022 (Month II), June 2022 (Month III). The average *Market Share value* shows that wholesalers are marketing institutions that have the largest market share that is as big as 0, 4735 (47,35%), trader collector as big as 0, 3139 (31.39%) and retailers 0, 2724 (27.24%). This percentage shows that wholesalers have the largest sales volume compared to other marketing agencies or marketing agencies under them. Thing this in accordance with condition in roomy that the price of sweet corn tends to follow and refers to the price set by wholesalers and wholesalers tend to dominate market.

In April 2022 – June 2022 the market share of wholesalers fluctuated. There is an increase *Market Share* at wholesaler level, increased from 48.70% to 51.10% in May. The increase in May is due to coincide with Eid al-Fitr. Back down to 42.25% in June. While the average market shares value of wholesalers is 47.35%, so it can be said that wholesalers control 47.35% of the market in Sweet Corn Marketing in North Banjarbaru District. Referring to on statement and results study Sinaga (2016), that all battery n tall level concentration market so the more big strength market and will have an impact on the form of an imperfect competition market. This is in accordance with the situation in the field where all traders are guided by the prices determined by wholesalers so that wholesalers act as price determinants and traders who are under them tend to follow them.



Table 8 – Market share of several sweet corn marketing institutions in North Banjarbaru District

Marketing Agency	MS I (%) (April.22)	MS II (%) (May.22)	MS III (%) (June.22)	Average - Flat
collector	0.3216	0.3151	0.3052	0.3139
Wholesaler	0.4870	0.5110	0.4225	0.4735
Retailer	0.1914	0.1739	0.2724	0.2126

Source: Primary Data Processed, 2022.

Based on the results of the calculation of the Herfindahl index in Table 9, it can be seen that the *Herfindahl Index value* for collectors is 0.2958, wholesalers are 0.6768 and retailers is 0.1411. *The Herfindahl Index value* for all marketing institutions is less than one, which means that the market structure leads to an oligopsony market. The results of Sinaga's research (2016), show that based on the analysis of the *Herfindahl Index* on several The level of marketing institutions is seen from the buyer's side on the marketing of sweet corn in the District of North Banjarbaru, Banjarbaru City both at the level of collectors, traders wholesaler and retailer show that structure the market oligopsony. This is because it has a *Herfindahl Index value* of less than one.

Table 9 – *Herfindahl index value* on sweet corn marketing

Marketing Agency	Herfindahl. Index
Ped. collector	0.2958
Ped. Wholesaler	0.6768
Ped. Retailer	0.1411

Source: Primary Data Processed, 2022.

Furthermore, to determine the degree of market concentration, CR4 analysis is used. The results of the CR4 analysis can be seen in Table 10, it is known that the market structure at the retailer level leads to a competitive market structure with a CR4 value of 22%. The market structure at the wholesaler level leads to a moderate concentration oligopsony market structure with a CR4 value of 37%. The market structure at the wholesaler level leads to a strong concentration oligopsony market structure with a CR4 value of 78%. Meanwhile, the market structure at the retail level leads to a competitive market structure with a CR4 value of 17%.

Table 10 – Market Concentration Value (CR4) on the Biggest Traders

Institution Marketing	CR4 Value (%)	Classification
Farmer	22	<i>Competitive market structure</i>
collector	37	<i>Weak oligopsonist market structure</i>
Wholesaler	78	<i>Strongly oligopsonist market structure</i>
Retailer	17	<i>Competitive market structure</i>

Source: Primary Data Processed, 2022.

The results of the analysis of the three kinds of analytical tools used by *Market Share*, *Herfindahl index*, CR4 and by looking at the large number of market participants, the obstacles go out enter market conditions _ product so could is known that market structure in Sweet Corn Marketing in North Banjarbaru District, it can be concluded that the condition of the market structure is imperfect competition which tends to lead to an oligopoly type of market. According to Sudiyono (20-15), an oligopoly market that produces homogeneous goods but can be differentiated by style is called a differentiated oligopoly. The results of this research on market structure are in accordance with the results of research that has been carried out previously by Sinaga in 2016 on sweet corn marketing, a study of the structure of market behavior and appearance using the *Herfindahl Index analysis*.

The marketing agency that has the power to determine price is trader wholesaler. Farmers can only bargain but bargaining is rare because there is a high sense of trust between traders and farmers. Farmers in bargaining prices also cannot ask for high prices.



because the large number of farmers allows traders to buy sweet corn belonging to other farmers if the price asked by farmers is too high. So that in this case farmers are usually more likely to accept the price that has been set by the trader. Based on this explanation, it can be seen that farmers have a weak position (*gaining position*) in marketing sweet corn. Wholesalers are usually faster to catch changes in market demand, so wholesalers are very dominant in determining prices.

Table 11 – Sweet corn market structure in North Banjarbaru District

Indikator	Petani	Pengepul	Grosir	Pengecer
Jumlah Penjual	40	7	4	10
Jumlah Pembeli	11	14	10	∞
Sifat Produk	Homogen terdiferensiasi	Homogen terdiferensiasi	Homogen terdiferensiasi	Homogen terdiferensiasi
Informasi Pasar	Ada	Ada	Ada	Ada
Hambatan	Ada	Ada	Ada	Ada
IH	-	0,2958 (<1)	0,6768 (<1)	0,1411 (<1)
CR4	22% (<33%)	37% (>33%)	78% (>33%)	17 (<33%)
Struktur Pasar	Persaingan Sempurna	Oligopoli Terdeferensiasi	Oligopoli Terdeferensiasi	Oligopoli Terdeferensiasi

The cash payment system is usually carried out by collectors to farmers at the collector's place or in the farmers' plantations. The purchase volume of sweet corn that is not too large allows collectors to always pay cash to farmer. System payment part or then is a payment system that wholesalers tend to use a lot. The large volume of sweet corn purchases makes it difficult to pay in cash. So that most trader wholesaler To do payment part or then namely a payment system by paying some money as a down payment of the total sweet corn purchased. Payment is made by the merchant when the sweet corn has been sold out or after it has been distributed. Based on the results of interviews with farmers, wholesalers usually bring sweet corn for about 3-4 days at most a week and then the shortfall is paid payment.

The cooperation that exists between marketing agencies itself is created on the basis of how long they have established buying and selling relationships as well as on the basis of mutual trust. The cooperation carried out is cooperation in terms of marketing. Cooperation in terms of marketing is more about cooperation in the distribution of harvested products as well as emphasis on farmers to sell their harvests to their regular traders. This kind of cooperation has existed for a long time, most farmers already have traders customer each. So it is difficult for new producers to enter the market because most traders already have regular farmers and vice versa. Usually farmer which already bound with cooperation this have high emotional sense to sell his sweet corn to other traders.

The price data used is weekly price data for sweet corn from April 2022 to May 2022. Data processing is analyzed by use model *Index Market Connection* (IMC) through model approach *Autoregressive Distribution lag* which suspected with Method Square Smallest (*Ordinary Least squares*).

The R^2 value obtained from the results of the regression analysis was 0.883 (88.3%). It shows that price sweet corn in level producer on time t could explained by variable free that is price sweet corn in level producer on time t-1, the price of sweet corn at the consumer level at time t-1, and the difference in the price of sweet corn at the consumer level at time t with time t-1 is 88.3% in the model and the remaining 11.7% is explained by other variables outside model.

Results from analysis regression Among the market in the production level and the market in the consumption area obtained the calculated F value of 79.389 with a significance level of 0.000 and F table at the confidence level 95% as big as 3.49. Score F count as big



as 79,389 more big compared score F table which indicates that variable free that is the price of sweet corn at the producer level at time t-1, the price of sweet corn at the consumer level at time t-1, and the difference in the price of sweet corn at the consumer level at time t and time t-1 together have a significant effect on the price of sweet corn at the producer level at the time t.

Variable which has an influence on the formation of sweet corn prices at the farmer (producer) level is price sweet corn in level consumer at time t-1 (P_{jt-1}), and the difference in the price of sweet corn at the level ($P_{jt}-P_{jt-1}$). While the independent variable that has no effect is the price of sweet corn at the producer level at time t-1 (P_{it-1}).

The sweet corn price variable at the consumer level at time t-1 (P_{jt-1}) has a regression coefficient value of 0.703. The positive sign of the coefficient explains the unidirectional relationship between the price of sweet corn at the consumer level on time t-1 with price sweet corn in producer rate at time t. This means that every time there is an increase in the price of sweet corn at the consumer level at time t-1 by one unit, the price of sweet corn in level producer on time t will go on as big as 0.703 units. The results of statistical tests obtained that the significance value of the price variable at the consumer level at time t-1 was 0.004 and less than 0.05 ($0.004 < 0.05$) indicating that the price of sweet corn at the consumer level at time t-1 has a significant effect on the price of sweet corn at the producer level.

The variable difference in the price of sweet corn at the consumer level between time t and time t-1 ($P_{jt}-P_{jt-1}$) has a regression coefficient of 0.418. The positive sign of the coefficient explains that there is a unidirectional relationship between the difference in the price of sweet corn at the consumer level at the time t with time t-1 and price sweet corn in level producer on time t. It means every there is enhancement change difference price sweet corn in in level consumer on time t with time t-1 as big as one unit so the price of sweet corn at the producer level at time t will increase by 0.418 unit. The results of statistical tests obtained that the significance value of the price variable at the consumer level at time t with time t-1 was 0.022 and less than 0.05 ($0.022 < 0.05$) indicating that the difference in sweet corn prices at the consumer level at time t with time t-1 have influence real on the price of sweet corn at the level producer.

The results of the regression analysis showed the value of Durbin Watson was 2,309. The value of Dw is then compared with the value of d at = 5% to get $dL = 1.5780$ and $du = 1.7221$. Because the value of $Dw = 2,309 > du (1.7221)$ then there is no positive autocorrelation nor negative.

The results of the analysis show the VIF value for each variable, the VIF value is < 10 and the tolerance value is > 0.10 so that the model is declared to have no symptoms of multicollinearity.

Based on the results of the regression analysis, the following equation is obtained:

$$P_{it} = 0.164 (P_{it-1}) + 0.418 (P_{jt} - P_{jt-1}) + 0.703 (P_{jt-1}).$$

Based on the results of the analysis between the market in the production area and the market in the consumption area, the level of market integration can be seen by looking at the IMC value as follows:

$$IMC = 1/\beta_3 = 0,233$$

The results of the comparison between the regression coefficient values of the sweet corn price variable at the level producer on time t-1 with score coefficient regression variable price sweet corn in level consumer on w time t-1 obtained score IMC as big as 0,233. Score IMC 0.233 approach zero which means degrees integration market the more tall and the condition of the reference market, namely the market at the consumer level, is the main factor influencing the formation of prices at the producer level, so that price changes that occur in the reference market are transformed into the local market and affect the formation of prices in the local market or market level.

Balance market in period long (β_2) no perfect seen from the value (β_2) of 0.418 less than one, then the market conditions are not perfectly competitive and do not experience



market integration in the long term.

The results of this study can explain that in the near or short term, if there is a price change in the reference market (consumption area market), the price change is still conveyed by wholesalers as marketing institutions that receive early information and know about Request and condition market. Temporary if occur change prices in the longer term or in the long term, the behavior of several marketing institutions that dominate the market in this case wholesalers to cooperate with each other, do not share this information and prefer to determine the same price in order to gain mutual benefits.

The scheme of the potato trading system in North Banjarbaru District as the research location as a whole is described as follows:

- Marketing Channel I: Farmers → Collecting Traders → Wholesale Traders → Retailers → Consumers;
- Marketing Channel II: Farmers → Wholesale Traders → Retailers → Consumers.

The average price of sweet corn at the farm level is Rp3. 3 00 / piece sold to collectors. Then the collectors sell again to wholesalers with price IDR 4,500/piece and price in level retailer IDR 6,500/piece, so that a marketing margin of Rp. 3,200/piece is obtained. The profit *share value* is 96.77% and the cost share is 3.23%, it can be concluded that the first marketing channel is profitable because the profit share value is greater than the cost share. The price received by farmers is Rp. 3.300 / fruit (50.77%) of the price received by retailers. This percentage shows that farmers receive prices that are still quite high from the prices received by retailers and farmers are not disadvantaged. Ski value in the distribution analysis of the collector's margin is 36.12%, wholesaler 28.27% and retailer 29.06%. The percentage distribution of this margin is very different; it shows the level of distribution of profits for marketing institutions has not been equally.

Table 12 – Analysis of marketing margins, profits and costs on marketing channels I

No	Lembaga Pemasaran	Harga (Rp/Kg)	Share (%)		DM (%)		μ/c
			Ski	Sbi	Ski	Sbi	
1	Petani						
	a. Harga Jual	3.300	50,77				
2	Ped.Pengepul						
	a. Harga Beli	3.300					
	b. Biaya TK Panen	43,33		0,67		1,35	
	c. Biaya Transportasi	0,83		0,01		0,03	
	c. Harga Jual	4.500					
	d. Keuntungan	1.156	17,78		36,12		23,51
3	Pedagang grosir						
	a. Harga Beli	4.500					
	b. Biaya Transportasi	58,33		0,9		1,82	
	c. Bongkar Muat	33,33		0,51		1,04	
	d. Restribusi sewa	3,84		0,06		0,12	
	e. Harga Jual	5.500					
	f. Keuntungan	905	13,92		28,27		9,47
	Pedagang Pengecer						
3	Pengecer						
	a. Harga Beli	5.500					
	b. Biaya Transportasi	40		0,62		1,25	
	c. Biaya Restribusi	30		0,46		0,94	
	d. Harga Jual	6.500					
	e. Keuntungan	930	14,30		29,06		13,28
	Margin Pemasaran (MP)	3.200	96,77	3,23	93,45	6,55	
	Total			100		100	

Source: Primary Data Processed, 2022.

The average price of sweet corn at the farmer level is Rp3. 3 00 / piece sold to wholesalers. Then the wholesaler sells again to the retailer with price IDR 4,300/pc, so that



marketing margin of IDR 2,200/piece is obtained. The profit *share value* is 96.30% and the cost *share* is 3.64%, it can be concluded that the second marketing channel is profitable because the profit *share value* is greater than the cost share. Ski value on distribution analysis margin wholesaler 39.39% and 51.35% retailer. The percentage distribution of this margin is very different; it shows the level of distribution of profits for marketing institutions has not been equally.

Table 13 – Analysis of marketing margins, profits, and costs on marketing channels II

No	Lembaga Pemasaran	Harga (Rp/Kg)	Share (%)		DM (%)		μ/c
			Ski	Sbi	Ski	Sbi	
1	Petani						
	a. Harga Jual	3.300	60,00				
	Pedagang grosir						
	a. Harga Beli	3.300					
	b. Biaya						
	Transportasi	43,33		0,79		1,97	
2	c. Bongkar Muat	53,33		0,97		2,42	
	d. Restribusi sewa	39,99		0,6		1,52	
	e. Harga Jual	4.300					
	f. Keuntungan	867	15,76		39,39		6,5
	Pedagang Pengecer						
	a. Harga Beli	4.300					
	b. Biaya						
	Transportasi	40		0,73		1,82	
3	c. Biaya Restribusi	30		0,55		1,37	
	d. Harga Jual	5.500					
	e. Keuntungan	1.130	20,54		51,35		16,14
	Margin Pemasaran (MP)	2.200	96,30	3,64	90,74	9,10	
	Total			100		100	

Source: Primary Data Processed, 2022.

Farmer Share with marketing margin has a negative relationship. The higher the value of the marketing margin, the lower the farmer share. The comparison of *farmer share values* between marketing channel patterns I and II pattern channel marketing which have score percentage *farmer share* biggest is the pattern of marketing channel II which is 76.92%. The value of *farmer share* on channel marketing this because margin marketing which taken by marketing agencies are not too large with large-scale purchases. Meanwhile the percentage value of *farmer share* in the marketing channel pattern I is 53.8 5%.

Table 14 – *Farmer share* in sweet corn marketing channels in North Banjarbaru District

Pola Pemasaran	Harga di tingkat Petani (Rp/Kg)	Harga di tingkat Konsumen (Rp/Kg)	Farmer Share (%)
Pola Pemasaran I	3500	6500	53,85
Pola Pemasaran II	5000	6500	76,92

Source: Primary Data Processed, 2022.

Marketing channel I meets the criteria of an efficient marketing channel as seen from the marketing margin which is smaller than *Farmer's Share* 49.23% 53.85%. Based on field conditions, this marketing channel is usually used by farmers whose land is not so large because marketing is easy, prices are high and payments are fast. So this marketing channel is very suitable for use by farmers who have not so large land and want fast payments because collector traders always make payments with cash.



Based on the results of a simple regression analysis, an R^2 value of 0.879 is obtained which indicates that 87.9% of price changes at the farm level are determined by price changes at the retailer level, while the rest is influenced by other factors outside the model. The t-count value is 27.995 > t-table of 2.74, meaning that partially the price at level trader retailer or consumer takes effect by real to prices at the farm level. F-count value of 378.984 > F-table of 4,68. The calculated F value is greater than F table indicating that the model used is appropriate. Based on the results of the regression analysis, the coefficient value is 0.621 so that the E_t value is obtained as follows:

$$E_t = x Pr / Pf = 0.866$$

Table 15 – The results of the regression analysis of price transmission elasticity

Description	Coefficient	F-count	t table
Constant	703.224	378.984	2.74
Coefficient (β)	0.621		
R^2	0.879		
t count	27.995		
Sig-t	0.007		

Source: Secondary Data Processed, 2022.

Results score elasticity transmission price 0, 866 that is $e_t < 1$, speed change the price at the producer level (P_f) is smaller than the rate of change in prices at the retail level (P_r). This shows that the market faced by marketers is imperfect competition, that is, there is monopoly/oligopoly power in the market and indicates that the marketing system is not yet efficient. The value of $E_t < 1$ also means that if there is a 1% change in price at the consumer level will cause change price as big as 0.866% on level producer farmers or it can also be interpreted that changes in prices at the producer level of 0.866% are influenced by changes in prices at the consumer level. In addition to showing the magnitude of price changes at the producer and consumer levels. elasticity value transmission price also could state level competition something market or market structure formed. The value of the elasticity of price transmission is 0.866 (less than one) thus indicating the market structure in imperfect competition.

CONCLUSION

Based on the results of research and discussions that have been carried out previously, it can be concluded the following things:

- The results of the analysis show that the market structure faced by Sweet Corn Marketing in North Banjarbaru District is an imperfect competition market structure that leads to an oligopoly market structure. The largest market share is owned by wholesalers so that wholesalers have more control over the market and act as price makers, while farmers, collectors and retailers in marketing act as price takers;
- Prices at the farm level are formed from the results of bargaining and the payment system is made in cash and partly (down payment) depends on the marketing agency. Cooperation between marketing agencies in terms of distribution of goods. The market equilibrium in the long run (β_2) is not perfect, meaning that there is no market cohesion in the long run and the market is in imperfect competitive conditions. This makes market behavior dominated by farmers in the form of collusion by making and setting prices based on cooperation with other wholesalers in order to obtain high profits. IMC value 0.233 < 1 which means the degree of market integration is getting higher and the condition of the reference market, namely the market at the consumer level, is the main factor influencing the formation of prices at the producer level (local market);
- Market performance is seen from: a) relatively efficient marketing channels with not too high total costs and low margins and high *farmer share* found in marketing



channel I. b) The elasticity of price transmission, the results of the simple regression analysis obtained a significance value of $0.00 < 0.05$, which means that prices at the retailer or consumer level have a significant effect on prices at the farmer level. The result of the value of E_t 0.866, namely $E_t < 1$ means that the rate of price change at the producer level (P_f) is smaller than the rate of change in prices at the retail level (P_r), where a 1% price change at the consumer level will cause a price change of 0.866% at the producer level. So this also indicates that the price transmission formed between the farmer's market and the consumer market is strong and indicates that the marketing system is not efficient.

SUGGESTIONS

Based on the results of research and discussions that have been carried out previously, the researchers provide the following suggestions:

- Farmers are advised to be more active in farmer groups so that it is easy to get information and easily market their corn production;
- There is a transparent price determination process and an equitable distribution of information delivery to all sweet corn marketing institutions;
- Sweet corn production, agro-industry should be developed in the District of North Banjarbaru. In addition to increasing added value. The presence of variations in products can also reduce the level of competition in the market;
- It is hoped that the government will provide assistance in the form of capital and knowledge about corn cultivation to farmers. And further increase the role of outreach to the socialization of the latest technology in the field of corn cultivation.

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