Analysis, behavior, and market performance of sweet corn (*Zea mays L. sacharata*) certified structure in Leban Hamlet, Tawangargo Village, Karangploso Sub-District, Malang District

Analisis struktur, perilaku, dan kinerja pasar jagung manis (Zea mays L. saccharata) bersertifikat di Dusun Leban, Desa Tawangargo, Kecamatan Karangploso, Kabupaten Malang

Novita Kartika Kusuma Wardani[1*], Budi Setiawan[1], Abdul Wahib Muhaimin[1], Fitria Dina Riana[1], Dina Novia Priminingtyas[1]
[1]Program Studi Agribisnis, Universitas Brawijaya, Malang, Indonesia
Email korespondensi: novitakartikakw@gmail.com

ABSTRACT

Introduction: *Tawangargo Village, Karangploso District, Malang Regency is the largest sweet corn producing region in Karangploso District with a business base on developing vegetables that lead to special environmentally friendly products in Leban Hamlet. Quality assurance for fresh food with excellent certification requirements. The resulting product is safe for consumption or safe for pesticides. Sweet corn marketing system helps marketing institutions related to farmers in accessing consumers, making the price of sweet corn at the farm level with the price of corn accessed by different consumers. This research tries to analyze the market structure, study the market and improve the sweet corn market in Leban Hamlet, Tawangargo Village.* **Method:** *The basic method of research is analytical descriptive. Determining the location of research carried out intentionally or intentionally. Farmer sampling method using census method, with a total sample of 9 respondents. The sampling method used by traders uses the snowball sampling method with the number of broker 1 respondent and 1 respondent village collector. Data were analyzed by SCP (Structure, conduct, and performance) methods.* **Results:** *The results showed the structure of the sweet corn market in Leban Hamlet, Tawangargo Village has a tendency in imperfectly competitive markets namely the oligopsonistic market. This structure is completed inefficient markets. Market behavior discusses the marketing activities of sweet corn in Leban Hamlet. While the market performance (market performance) is 50%.* **Conclusion:** *This shows that the marketing of sweet corn in Leban Hamlet is included in the efficient category.*

ABSTRAK

Pendahuluan: Desa Tawangargo, Kecamatan Karangploso, Kabupaten Malang merupakan daerah penghasil jagung manis terbesar di Kecamatan Karangploso dengan basis usaha pada pengembangan sayuran yang mengarah ke produk ramah lingkungan khususnya di Dusun Leban. Jaminan mutu untuk pangan segar dengan pentingnya sertifikasi prima. Produk yang dihasilkan aman dikonsumsi atau aman pestisida. Sistem pemasaran jagung manis melibatkan lembaga pemasaran dikarenakan adanya keterbatasan petani dalam mengakses konsumen, membuat harga jagung manis di tingkat petani dengan harga jagung yang dibayarkan oleh konsumen berbeda. Penelitian ini bertujuan untuk menganalisis struktur pasar, perilaku pasar serta kinerja pasar jagung manis di Dusun Leban, Desa Tawangargo. **Metode:** Metode dasar penelitian adalah deskriptif analitis. Penentuan lokasi penelitian dilakukan secara *purposive* atau sengaja. Metode pengambilan sampel petani menggunakan metode sensus, dengan jumlah sampel petani sebanyak 9 responden. Metode pengambilan sampel pedagang menggunakan metode *snowball sampling* dengan jumlah tengkulak 1 responden dan pedagang pengumpul 1 responden. Data dianalisis dengan metode SCP (*Structure, Conduct and Performance*). **Hasil:** Hasil penelitian menunjukkan bahwa struktur pasar jagung manis di Dusun Leban, Desa Tawangargo mempunyai kecenderungan pada pasar persaingan tidak sempurna yaitu pasar oligopsoni. Struktur ini mengakibatkan pasar tidak efisien. Perilaku pasar (*market conduct*) ditunjukkan oleh kegiatan pemasaran jagung manis di Dusun Leban meliputi 3 tipe saluran pemasaran sudah efisien. Sedangkan kinerja pasar (*market performance*) keseluruhan saluran pemasaran mempunyai *farmer'share* > 50%. **Kesimpulan:** dari pembahasan tersebut menunjukkan bahwa pemasaran jagung manis di Dusun Leban termasuk dalam kategori efisien.

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INTRODUCTION

Malang Regency is a fertile area and rich in natural resources, for example in the food sector. There are various types of plants such as vegetables and fruits that can be planted and thrive in Malang Regency (Department of Communication and Information, 2020). According Badan Pusat Statistik (2021) production and consumption of sweet corn food crops in Malang Regency in 2016-2020 are as follows :

Table 1. Production and consumption of sweet corn food crops in Malang regency

Years	Production (ton)	Consumption (kg/kap./month)
2016	247,150	4.10
2017	295,340	4.78
2018	268,295	4.50
2019	341,847	5.34
2020	327,816	5.21

Source : Badan pusat statistik (2021)

According to the Department of Communication and Information (2020) Tawangargo Village, Karangploso District, Malang Regency is an area that is very suitable for agricultural development, especially one of the tourist villages which is dominated by farming to produce Jokowi plants (sweet corn, cabbage and mustard). Sweet corn (*Zea mays saccharata Sturt*) is increasingly popular and widely consumed because it has a sweeter taste than ordinary corn. Product certification is a process that creates value for consumers (Kuwornu et al., 2013). One of the product certifications given by the government is the Prima Certificate which is a guarantee of quality for fresh food. Prima-3 certificate itself means that the resulting product is safe for consumption or safe for pesticides. According to the East Java Agricultural Technology Study Center (2014) the results of the analysis by the PT. Angler BioChem Lab – Surabaya that the vegetable products of Tani Mulya Farmers Group, Tawangargo are safe from residues of harmful chemicals so that they are safe for consumption for sweet corn no 132396. In addition, it has been proven by the Prima 3 certificate from the Integrated Licensing Service Unit for sweet corn with P2T no. /10/11.03/01/IX/2013. Prime assessment 3 was obtained by applying GAP (Good Agriculture Practices) and land and plant management in accordance with SOP (Standard Operational Procedures) through the implementation of administrative records.

Sweet corn price fluctuations are also felt by sweet corn farmers in Leban Hamlet, Tawangargo Village, so they prefer to directly sell their harvest to broker around the village area. According to Rasoki et al. (2016) sweet corn price fluctuations at the consumer level cause the resulting marketing margin to be relatively very high. If the higher the margin obtained, the more inefficient marketing. There are two conditions for marketing to be said to be efficient, namely marketers are able to distribute agricultural products to consumers at affordable prices or costs and fair distribution of the overall price offered by final consumers to all parties involved from producers to final consumers. The importance of this research is that farmers can choose efficient marketing channels so that the price sharing from these various institutions can be balanced or have a range that is not too far away to increase the income of sweet corn farmers.

Previous research related to SCP (Stucture-Conduct-Performance) that has been carried out by several researchers, among others, looks at the market structure in Wonogiri Regency, competition, imperfect competition, namely the oligopsony market so that marketing is included in the inefficient category (Dewi et al., 2018) to see how marketing institutions, marketing channels, marketing margins, farmers (Puspitasari & Sarosa, 2002; Sujarwa et al., 2011; Sari et al., 2013; Widiastuti & Harisudin, 2013; Rahmanta, 2016), ratio profit to cost (K/B ratio) (Fahriyah et al., 2011; Sujarwa et al., 2011), price efficiency (Sujarwa et al., 2011; Eka et al., 2017) , operational efficiency (Sujarwa et al., 2011; Cahyono et al., 2013). The sampling method in marketing efficiency studies is to use purposive sampling, proportional (Widiastuti & Harisudin, 2013) simple random sampling (Sujarwa et al., 2011; Sari et al., 2013), and the census method for farmer respondents. The next response is that marketing agencies are usually determined using the snowball sampling method (Sujarwa et al., 2011; Widiastuti & Harisudin, 2013). This research has differences from previous research that has been done. The object of this research is sweet corn with prima 3 certificate and the research location is in Leban Hamlet, Tawangargo Village.

The distribution of marketing margins is also not evenly distributed (Sarni, 2020). The bargaining position of farmers and always as the price taker is weak in the process of detecting the price of Mas Kirana bananas. This condition is in accordance with the research of Solomon et al. (2017) that it is difficult for farmers to find out market information about prices and the process of knowing prices and the low level of farmers related to the quality collected by various actors. To monitor and see the competition of several companies in the market, how companies behave as a result of the existing market structure and applied to market performance using SCP analysis, this approach will analyze the causes and effects of an inefficient marketing system (Anindita & Baladina, 2016). According to Sayaka (2008) partnerships or partnerships between farmers and other agricultural businesses are expected to

improve marketing efficiency, help farmers get a decent selling price and guarantee that their production can be absorbed by the market.

Based on the description that underlies the researcher, the objectives of the study 1) analyze market structure in marketing sweet corn 2) analyze market behavior in marketing sweet corn 3) analyze market performance in marketing sweet corn in Leban Hamlet, Tawangargo Village, Karangploso District, Malang Regency. This research was specifically carried out on the commodity of sweet corn with prima 3 certificate which was carried out by marketing agency actors in Leban Hamlet, Tawangargo Village. The results of this study are expected to be an alternative in selecting an efficient Market structure, conduct, and performance (SCP) at the research location.

METHODS

The research was conducted in Leban Hamlet, Tawangargo Village, Karangploso District, Malang Regency. The research location was determined purposively based on the Office of Communication and Information (2020) and The Research and Development Agency of East Java Province (2018), Leban Hamlet, Tawangargo Village which produce horticultural crops, especially sweet corn and mustard. , certified prima 3. This research was conducted in December 2020 – January 2021.

There are two respondents who will be selected in this study, namely farmers and marketing institutions. Sampling for certified farmers is carried out by census. Based on the results of a preliminary survey in the research area, information was obtained that there were 9 farmers who had obtained professional certification in sweet corn cultivation. Determination of respondents from sweet corn marketing institutions. The method of determining the sample used is snowball sampling, namely the sample of marketing institutions consists of 1 (one) collector and 1 (one) obtained from tracing, namely following marketing channels based on information from sample farmers.

Data was collected using two types of data, namely primary data and secondary data. Primary data collection was carried out by observing the objects in the study, namely sweet corn farmers who have professional certifications and sweet corn marketing institutions at the research location. As well as interview techniques to farmers and marketing agencies using a questionnaire. While secondary data was obtained using archival documents from various sources such as the Research and Development Agency of East Java Province, online media, the Central Bureau of Statistics and scientific literature relevant to the research topic to support the research findings.

The data analysis method used in this study used descriptive statistical analysis and quantitative analysis. Descriptive statistical analysis to provide an overview of market behavior, namely institutional and functional approaches. While quantitative analysis is used to analyze market structure and market performance. The following is an explanation of each indicator in analyzing marketing efficiency at the research site.

Market structure analysis

Market structure analysis is done by looking at the number of sellers and buyers in the market, exit barriers. Here are the calculations in the market structure analysis:

a. *Concentration ratio for biggest four (CR4)*

Concentration Ratio for Biggest Four (CR4) is used to measure the market share of the existing output at the marketing agency and calculate the percentage value of the market controlled by the marketing agency. The value of CR4 is expressed by the formula :

$$CRn = \frac{quantity\ purchased}{traded\ amount} x100\%$$

Description :
CR = *Concentration Ratio*
CR4 = $CR_1 + CR_2 + CR_3 + CR_4$
CR_1 = Concentration Ratio (1st largest market share)
CR_2 = Concentration Ratio (2nd largest market share)
CR_3 = Concentration Ratio (3rd largest market share)
CR_4 = Concentration Ratio (4th largest market share)
   According to Anindita and Nur (2016), the criteria for determining the market structure are:
a)   CR4 < 0,4, is a competitive market and leads to a perfect competition model..
b)   0,4 ≤ CR 0,4 ≤ 0,8, is a competitive market and leads to oligopsony competition..
c)   CR4 > 0,8, is a very concentrated market and tends towards monopsony..

b. *Index Herfindhal Hirschman (IHH)*

Herfindhal Hirschman Index (IHH) analysis is the sum of the squares of the market shares of all marketing agencies in a market. The value of the IHH indicates the size of the market concentration formed which is expressed by the formula:

$$IHH = (100 \times CR_1)^2 + (100 \times CR_2)^2 + \ldots + (CR_n)^2$$

Description :
n   = Number of traders in a sweet corn product market area
CR_n = Purchase share of sweet corn commodity from the ith trader (i=1,2,3,....,n)
Criteria :
IHH = 1.800 – 10.000, leading to monopoly/ monopsony market
IHH = 1.000 – 1.800, leading to an oligopoly/oligopsony market
IHH = 0 – 1.000, leading to a perfectly competitive market

c. Barrier to Entry

Barriers to entry are conditions where there are barriers to entry or exit from the industry. Barriers to entry were analyzed descriptively by the presence of factors that could hinder new entrants from entering the market, such as tax regulation policies, user costs and others.

d. Market knowledge

Market knowledge by knowing the type of information held, sources and flow of market information both prices, supporting facilities and government policies related to sweet corn marketing. Market knowledge includes knowledge of farmers, traders and other market participants involved in marketing sweet corn.

Market behavior analysis

Market behavior is a form of response from farmers and traders to the market structure that is formed and the goals desired by each marketing agency actor.

a. Institutional approach

Includes several activities that allow you to see the activities of each market player and the role of each marketing agency in marketing sweet corn including its distribution flow. And marketing activities provide opportunities for business coordination between marketing agencies.

b. Functional approach

Activities in the sweet corn marketing process include exchange functions in the form of buying and selling, physical functions in the form of harvesting, packaging, transportation, storage and financing facility functions, standardization and grading, risk.

Market performance analysis

Market performance is a combination of market structure and market behavior which shows that there is an interaction that affects each other. The measurement of market performance is as follows:

1.1 Price efficiency analysis

a.   Transportasion costs

$$H_i - H_{(i-1)} = BT$$

Where :
H_i : The selling price of sweet corn at the 1st marketing agency (Rp/kg)
$H_{(i-1)}$: Price of sweet corn at previous marketing agency i (Rp/kg)
BT : Sweet corn transportation cost (Rp/kg)
Price efficiency criteria according to transportation function for marketing agencies, namely:
$H_i - H_{(i-1)}$ > BT, then efficiency is achieved
$H_i - H_{(i-1)}$ < BT, then efficiency is not achieved

b.   Processing costs

$$HJ_1 - HJ_{(i-1)} = BP_i$$

Where :
HJi   : The selling price of sweet corn for the ith marketing agency (Rp/kg)
$HJ_{(i-1)}$: Selling price of sweet corn to marketing agency (i-1)
BP_i : The cost of implementing the marketing functions of the 1st agency which consists of the costs of packing, loading and unloading, sorting and grading, and packaging.
i   : 1, 2, 3, … n, s a sweet corn marketing agency involved.
Price efficiency criteria for marketing agencies, namely:
$HJ_i - HJ_{(i-1)}$ > BP_i, then efficiency is achieved
$HJ_i - HJ_{(i-1)}$ < BP_i, then efficiency is not achieved

1.2 Operational efficiency analysis

a.   Marketing margin analysis

Marketing margin analysis is done by calculating the price difference at the farmer level (Pf). This analysis aims to calculate the level of marketing efficiency of sweet corn starting from the farmer to the last institution in each marketing channel. According to Sudiyono (2002) marketing margin is calculated by the following formula:

$$MP = BP + K \text{ or } MP = Pr - Pf$$

Where :
  Mp   : Marketing Margin (Rp/kg)
  Bp   : Marketing Cost (Rp/kg)
  K   : Marketing Profit (Rp/kg)
  Pr   : Price at the last Institutional Level in each marketing channel (Rp/kg)
  Pf   : Price at Farmer Level (Rp/kg)
  M total = M1 + M2 + M3 + ... + Mn

b.   Farmer's share analysis

The calculation of farmer's share analysis is carried out to see the percentage of profits received by farmers. This farmer's share analysis has an inverse relationship with marketing margins. If the marketing margin is higher, the farmer's share will be lower and otherwise. The formula for the farmer's share is as follows:

$$FS = \frac{Pf}{Pr} x 100\%$$

Where :
Fs   : *Farmer's Share* (%)
Pf   : Sweet corn price at farmer level (Rp/kg)
Pr   : Sweet corn price at the last agency level for each marketing channel (Rp/kg)

c.   Profit and cost ratio

The profit to cost ratio is the ratio between the percentage of marketing profits and marketing costs. This analysis shows how much profit is obtained from the marketing costs incurred. The higher the ratio value, the greater the profit to be obtained and vice versa. The following is a systematic form of the profit ratio (Fahriyah et al., 2011) :

$$Profit\ ratio = \frac{\pi i}{ci}$$

Where :
πi : Sweet corn marketing agency profit (%)
ci : Sweet corn marketing agency marketing costs (Rp)
I   : 1,2,3,4 ....n, is a sweet corn marketing agent involved.

The value of the K/B ratio has criteria to determine whether or not the marketing of sweet corn is efficient. If the value of K/B ratio < 1, then it is not efficient because it is not yet profitable. If the value of K/B ratio = 1, then BEP or break even. If the value of the K/B ratio is > 1, then it is efficient because it has been profitable.

          Rasio > 1, then profit or efficient
          Rasio = 1, then BEP or not yet efficient
          Rasio < 1, then loss or inefficient

d.   Load factor efficiency

Load factor efficiency is a level of optimal use of facilities. The size of the facility used is transportation. If the carrying capacity is 100% (full capacity) or more than 100% (over capacity), it can be said to be efficient, while if the carrying capacity is less than 100% (under capacity), it can be said to be inefficient. According to Anindita (2004) the criteria for measuring operational efficiency can be formulated as follows:

          Cp = 100%, then efficient
          Cp > 100%, it can be said to be efficient from the cost factor, but the amount of damage is not calculated
          Cp < 100%, then not efficient
          Description :
          Cp = vehicle capacity in transporting sweet corn

Indicators of the efficiency level of sweet corn marketing using several indicators. The following are indicators of sweet corn marketing efficiency in Leban Hamlet, Tawangargo Village.

Table 2. Indicators of the efficiency level of sweet corn marketing

No	Marketing efficiency level indicator	Description
1	Market Structure Analysis	Efficient/Inefficient
2	Market Behavior Analysis	Efficient/Inefficient
3	Market Performance Analysis	Efficient/Inefficient

Source : Primary data processed, 2021

RESULTS AND DISCUSSION

Market structure

The market structure can also show the competition between sellers and buyers through the process of forming prices and the number of products offered in the market. Market structure analysis can show whether the market leads to a perfectly competitive market or an imperfect competition market.

Table 3. Indicators of sweet corn market structure from Dusun Leban

No	Marketing Agency	Market Nature			
		Total of sellers	Total of buyers	Differentiation product	Barriers to entry and exit
1.	Farmers	9	-	No differentiation	Exist
2.	Broker	-	2	No differentiation	Exist
3.	Village collector	-	4	No differentiation	Exist

Source : Primary data processed, 2021

Based on Table 3, it can be seen that 9 sweet corn farmers sell their products to broker (2 people) and traders (4 people). The comparison between sellers and buyers of sweet corn from Dusun Leban is not balanced, because the number of sellers (sweet corn farmers) is more than the number of buyers. The number of sellers and buyers shows that the market structure is not perfectly competitive.

Farmers and marketing institutions for sweet corn are still faced with obstacles or obstacles in entering the market. These barriers are caused by several things, among others, is the amount of cost or capital owned to enter the market. The obstacles faced by some sweet corn farmers in general are limited information on sweet corn prices and lack of capital in sweet corn farming so that farmers have to buy farming inputs such as fertilizers and pesticides on debt. Barriers to market entry and exit faced by sweet corn marketing institutions in this study broker and traders are business capital that is partly owned by loan capital in this study also often make sales with a paid system after selling, so large capital is needed to enter the market.

Concentration ratio (CR4)

According to Anindita and Nur (2016), Concentration Ratio for Biggest Four or CR4 is an analytical tool to determine the degree of concentration of the four largest market shares of a market area.

Tabel 4. Calculation of concentration ratio (CR4) analysis

No	Description	CR4 value	Market structure
1	Village collector	0.59	Oligopsony

Source : Primary data processed, 2021

Based on Table 4, the CR4 value based on the calculations that have been made is between 0.4 – 0.6 or 40% – 60%. The market concentration value of sweet corn in Leban Hamlet for wholesaler institutions shows a value of 0.59 or 59%, which means that the sweet corn market structure includes an oligopsony market which is one type of imperfect competition market.

Oligopsony competition is shown in the market structure at the level of traders, especially middle traders, because collectors are more dominant in price formation. The decline in prices at these collectors tends to cause sweet corn collectors to also lower prices so they don't lose their subscriptions (Sukirno, 2005). The level of market knowledge is also limited to information obtained around market participants, so that market participants' knowledge of price information only revolves around the surrounding conditions. This is in accordance with research Pinoa & Salakory (2018) in the marketing of the scad (*Decapterus russelli*), the dealers act as a price maker in which the price is determined by taking the market condition and situation into the consideration.

Sweet corn farmers in the research location sell their harvested sweet corn assisted by regular broker who still have family relationships or close neighbors. This is based on the level of farmers' trust in the broker. There is a relationship of trust between farmers and traders so that farmers do not pay too much attention to prices or their

bargaining position is weak. Broker also often bring sweet corn first and pay it to farmers after selling it. Village collector also sell sweet corn with a payment system after the sale, so that large capital is needed for village collector.

Index Herfindhal Hirschman (IHH)

The analysis of the Henfindahl Hirschman Index in this study is to determine the degree of concentration of sweet corn marketing institutions and to describe the balance of power of sweet corn farmers' bargaining position. The Henfindahl Hirschman Index (IHH) can be measured by adding up the square of the market share of each trader in marketing sweet corn.

Table 5. Calculation of the herfindhal hirschman index (IHH) analysis

No	Nilai IHH	Market structure
1	1,150.26	Pasar Oligopsony

Source : Primary data processed, 2021

Based on Table 5, the IHH value obtained by the Herfindhal Hirschman Index analysis is 1150.26. The value of the IHH is in the range of 1,000 to 1,800 or 1,000 < IHH < 1,800 which leads to an oligopsony market structure. The market is in little competition with a high concentration. Based on the results of interviews in the study, sweet corn farmers in Leban Hamlet stated that farmers often sell their harvests to their regular collectors because of their relatives or family relationships and because farmers borrow for capital needs. There is a relationship of trust between farmers and traders so they don't pay too much attention to prices. Collectors also often bring sweet corn first and pay to farmers after selling it.

Barrier to Entry

Aspects of barriers to entry include the presence or absence of difficulties in marketing sweet corn, which allows potential competitors outside the industry and the opportunity to enter the market. Several aspects identified as barriers to entry include business barriers, market access barriers and regulatory barriers. Based on observations and interviews found several forms of obstacles, namely business barriers in the form of business capital because it requires large capital. Meanwhile, regulatory barriers are in the form of retribution policies in the market.

Market knowledge

Sweet corn farmers lack knowledge of market mechanisms such as the price of sweet corn that develops dynamically at the trader level. This limited market knowledge is exacerbated by the low level of formal education, namely 55.6% with basic education and low means of communication. This has contributed greatly to the weak bargaining power of farmers in marketing sweet corn. Among tomato traders in Ghana especially in the Ashanti Region the results further show that the respondents are fairly educated which is of significant importance in their marketing decision-making process. This is because literate traders adopt new marketing ideas faster than illiterate ones and would find it relatively easier in their dealings with people more especially in the exchange process (Kumasi Polytechnic et al., 2014)

Market behaviour analysis

Sweet corn marketing agency

Sweet corn marketing activities in Leban Hamlet involve several marketing agencies that play a role in distributing sweet corn, namely farmers, broker, traders and collectors. The following is an explanation of marketing institutions and their roles in sweet corn marketing activities:
   a. Farmers, is a marketing agency that acts as a producer of sweet corn. The number of farmers who became respondents in this study were 9 farmers. Farmers sell sweet corn with a non-slashing system by selling fresh sweet corn with kelobot.
   b. Village collector are marketing institutions that make direct purchases from farmers or broker and collect sweet corn.
   c. Broker are marketing institutions that buy sweet corn directly from farmers.

Sweet corn marketing channel

Based on the results of the study using the census method to find farmer respondents and the snowball sampling method to find respondents from marketing institutions, three (3) marketing channels for sweet corn were found in Leban Hamlet, Tawangargo Village, Karangploso District, Malang Regency, namely as follows:
   a. Marketing Channel 1   : Farmer – Village collector – Karangploso Market
   b. Marketing Channel 2   : Farmer – Broker – Karangploso Market
   c. Marketing Channel 3   : Farmer – Broker – Village collector – Karangploso Market

Below is a distribution chart in the research area.

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                              ┌──────────────┐
                              │   Farmers    │
                              └──────────────┘
  Channel 2 : 11.11%          │              │          Channel 1 : 66.67%
          ┌───────────────────┘              └───────────────────┐
          │         Channel 3 : 22.22%                           │
          ▼                                                      ▼
   ┌──────────────┐                                     ┌──────────────────┐
   │   Broker     │────────────────────────────────────▶│ Village collector│
   └──────────────┘                                     └──────────────────┘
          │          ┌──────────────────────────┐          │
          └─────────▶│   Karangploso Market      │◀─────────┘
                     └──────────────────────────┘
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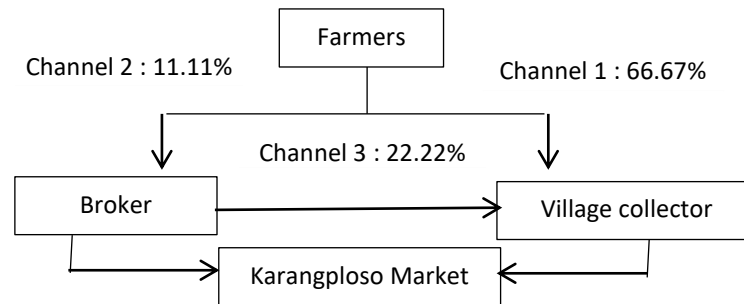
Figure 1. Sweet corn distribution chart in the research area

Based on Figure 1, it can be seen that farmers market sweet corn through two marketing institutions, namely traders and broker. The three patterns are as follows:
1. Marketing channel 1 is a marketing channel from farmers who do the packaging first sold to collectors, then collectors sell them directly to Karangploso Market.
2. Marketing channel 2 is a marketing channel from farmers to broker. The assists in harvesting and packaging, then the sells it directly to the Karangploso Market.
2. Marketing channel 3 is a marketing channel that involves farmers to broker and then to collectors. Farmers sell their harvests to broker who are packaged using plastic crackers, broker sell them to collectors, then collectors sell them to Karangploso Market.

The marketing behavior is in line with the research (Phuu, 2016) which examined cabbage that the market channel involves a number of channels and not just one channel. The findings of this study were in congruence with the theory, namely the high or low of the margin is highly affected by the length of the marketing channel and/or the amount or number of marketing agencies involved. The more marketing agencies involved in the sale of goods to customers, the longer the marketing channel is. The longer the marketing channel is, the higher the marketing margin is. Conversely, the fewer marketing agencies involved in the sale of goods to customers, the shorter the marketing channel and the lower the margins are. The results of this research are in line with the Gangkur et al. (2020) the tomato marketing system in Manggarai Regency from the two types of marketing channels the margin gap value between the first and the second channels was Rp 626. The highest margin was the longest channel i.e. the first marketing channel.

Sweet corn marketing functions

The marketing function has an important role in marketing activities because it can facilitate the distribution of sweet corn from every institution involved. The marketing function consists of an exchange function, a physical function and a facility function. The marketing institutions in marketing channel 1 that perform marketing functions are:

1. Farmers

The marketing function carried out by sweet corn farmers is an exchange function and a physical function. The exchange function carried out is the sales function. The selling price for farmers is Rp. 3,000, which is determined by collectors based on the market price at that time. The physical functions performed by farmers are harvesting, packaging, transportation. The physical function of harvesting is to get sweet corn in the form of kelobot. The purpose of packaging is to facilitate the transportation process from the farmer's place to the collector. The purpose of the transportation function is to bring sweet corn products to collectors by private vehicles. The function of the facility in the form of standardization and grading functions is not carried out by farmers because the sweet corn marketed is relatively homogeneous.

2. Village collector

The marketing functions carried out by village collector are the exchange function, physical function, and facilities. The exchange function carried out is the purchase function and the sales function. Village collector buy sweet corn from farmers who sell sweet corn in the form of kelobot. Weighing is done at the house of the collector with the weight per crackle is 15 kg. The payment system is made in cash directly after the sweet corn is sold in the market on that day. The selling price of the village collector is Rp. 3,566, the purchase price is determined by the collectors because they set the price with a competitive pricing method where the price determination follows the development of prices in the market.

The physical function performed by collectors is transportation and storage. Transportation to make sweet corn kelobot products by moving the product from the warehouse owned by collectors is distributed by fast transportation to Karangploso Market using pickup transportation. The storage function is an activity to collect sweet corn that has been packaged by farmers in plastic crackers weighing 15 kg. This function is sweet corn weighed and requires many places to aim for the goods are collected in advance to be marketed on that day.

The function of the facilities carried out by the village collector is financing, standardization and grading, risk. The financing is usually carried out by collectors who transport the packaged sweet corn with an entry cost of Rp. 9,000 at Karangploso Market with parking costs, entry costs and exit costs. Standardization and grading are carried out by collectors because sweet corn tends to be non-uniform in size, so grade separation is necessary. Risk coverage consists of risks because sweet corn is a perishable and rotten product. And usually, village collector have received the previous order or orders of sweet corn at the Karangploso Market, so that losses do not occur. Risk due to changes in market conditions caused by price fluctuations which may cause unbalanced supply and demand for sweet corn. If the market price is high, consumers tend to reduce their demand and if the market price is low, consumers tend to increase their demand.

The marketing functions performed by marketing agencies in marketing channel 1 can be seen in table 5 below:

Table 6. Marketing functions in marketing channel 1

| No | Marketing functions | Marketing agency | |
		Farmers	Village collector
1	Purchase	-	√
2	Sale	√	√
3	Harvest	√	-
4	Packaging	√	-
5	Transport	√	√
6	Storage	-	√
7	Financing	-	√
8	Standardization and Grading	-	√
9	Risk	-	√

Source : Primary data processed, 2021

Description :
(√)   : Performs marketing functions.
(-)   : Does not perform the marketing function.

Meanwhile, the marketing institutions in marketing channel 2 that perform marketing functions are:

1. Farmer

The marketing function performed by sweet corn farmers who sell their crops is an exchange function. The exchange function carried out is the sales function. The selling price of the farmer is Rp. 2,900 which is determined by the based on the purchase price set by the . Farmers in marketing channel 2 perform physical functions because their harvests are assisted by broker and their workers so that those who perform physical functions are farmers and broker. The sales flow carried out by farmers who sell to broker, namely:
a. Farmers meet broker at their homes to harvest together.
b. Broker and farmers go to the farmers' land where the harvest will be done.
c. Broker carry the harvest using transportation in the form of pickups.
d. Broker and farmers negotiate prices and weigh sweet corn at the broker's premises regarding the price per plastic bag weighing 15 kg.
e. After completion, the makes payments after the sale is made in accordance with the results of negotiations with farmers on the basis of the prevailing market price.

2. Broker

The marketing functions performed by the broker are the exchange function and the physical function and the facility function. The exchange function is a buying and selling function. Broker buy sweet corn from farmers who want to be assisted in producing their crops. The payment system is made in cash if the farmer needs money immediately or with a pay later system (delayed payment) after the sweet corn sells at the Karangploso Market. The selling price of the is IDR 3,433 the purchase price is determined by the based on the market price.

The physical functions performed by broker are harvesting, packaging, transportation, storage. The physical function of harvesting is to harvest by picking sweet corn in cob. The purpose of the packaging is to protect the fresh sweet corn during the transportation process from the land to the broker's warehouse using plastic crackers. The purpose of the transportation function is sweet corn products by moving the product from broker to Karangploso Market. The facility function in the form of a financing function is useful for carrying out retribution

costs for entering and leaving the Karangploso Market as well as the cost of plastic bags in packaging sweet corn, the standardization and grading functions are carried out by separating grades, as well as the risks that occur when sweet corn undergoes physical changes and may not be sold in the market. Karangploso Market.

The marketing functions performed by marketing agencies in marketing channel 2 can be seen in table 6 below:

Table 7. Marketing functions in marketing channel 2

No	Marketing Function	Marketing agency	
		Farmers	Broker
1	Purchase	-	√
2	Sale	√	√
3	Harvest	√	√
4	Packaging	-	√
5	Transport	-	√
6	Storage	-	√
7	Financing	-	√
8	Standardization and Grading	√	√
9	Risk	-	√

Source : Primary data processed, 2021

Description :
(√)   : Performs marketing functions.
(-)   : Does not perform the marketing function.

Meanwhile, the marketing institutions in marketing channel 3 that perform marketing functions are:

1. Farmer

The marketing function performed by sweet corn farmers who sell their crops is an exchange function. The exchange function carried out is the sales function. The selling price of the farmer is IDR 2,700 determined by the based on the purchase price set by the. Farmers in marketing channel 3 perform physical functions because their harvests are assisted by broker and their workers so that those who perform physical functions are farmers and broker. Farmers usually sell sweet corn to their regular broker or broker with a high level of trust. The pays in cash after the sale is made. Sweet corn prices follow the price determination from broker by knowing price information from broker and between farmers or through the internet.

2. Broker

The marketing functions performed by the middlemen are the exchange function and the physical function and the facility function. The exchange function is a buying and selling function. Middlemen buy sweet corn from farmers who want to be helped in making their crops for him. Weighing is done on the farmer's land with the usual weight per crackle is 15 kg. The payment system is done in cash if the farmer needs money immediately or with a pay later system (payment delay) after the sweet corn is sold. The selling price of the middleman is IDR 3,433 the purchase price is determined by the middleman based on the market price. This is what causes the bargaining position of the middlemen to be stronger. The middleman sells to the collector if there is no sweet corn available to the collector with a previous order and has agreed on the price and the middleman will send the sweet corn requested by the collector.

Meanwhile, the marketing institutions in marketing channel 3 that perform marketing functions are:

1. Farmers

The marketing function performed by sweet corn farmers who sell their crops is an exchange function. The exchange function carried out is the sales function. The selling price of the farmer is IDR 2,700 determined by the based on the purchase price set by the . Farmers in marketing channel 3 perform physical functions because their harvests are assisted by broker and their workers so that those who perform physical functions are farmers and broker. Farmers usually sell sweet corn to their regular broker or broker with a high level of trust. The pays in cash after the sale is made. Sweet corn prices follow the price determination from broker by knowing price information from broker and between farmers or through the internet.

2. Broker

The marketing functions performed by the broker are the exchange function and the physical function and the facility function. The exchange function is a buying and selling function. Broker buy sweet corn from farmers who want to be helped in making their crops for him. Weighing is done on farmer's land with the usual weight per crackle is 15 kg. The payment system is done in cash if the farmer needs money immediately or with a pay later system (payment delay) after the sweet corn is sold. The selling price of the is IDR 3,433 the purchase price is

determined by the based on the market price. This is what causes the bargaining position of the broker to be stronger. The sells to the collector if there is no sweet corn available to the collector with a previous order and has agreed on the price and the will send the sweet corn requested by the collector.

The physical functions performed by broker are harvesting, packaging, transportation, storage. The physical function of harvesting is to harvest by picking fresh sweet corn in cob. The purpose of packaging is to protect the fresh sweet corn during the transportation process from broker to warehouses belonging to collectors. The storage function is the sweet corn harvest, the scales are heavy and require a lot of places so that the goods are collected first to be transported to the collectors on that day quickly. And the purpose of the transportation function is sweet corn products by moving the product from broker to collectors.

The facility function in the form of a financing function is useful for carrying out the cost of plastic bags in packaging sweet corn, the standardization and grading functions are carried out by broker because sweet corn tends to be not uniform in size so it is necessary to separate grades and the risks that occur when fresh sweet corn undergoes slight physical changes.

3. Village collector

The marketing functions performed by the village collector are the exchange function, physical function, and facilities. The exchange function carried out is the purchase function and the sales function. Collector traders buy sweet corn per crackle 15 kg from broker who sell sweet corn in the form of kelobot to him. The payment system is made in cash directly after the sweet corn is sold in the market on that day. The selling price of the village collector is Rp. 3,933 the purchase price is determined by the village collector because they set the price by negotiating competitive pricing with broker where the price determination follows price developments in the market.

The physical function performed by collectors is transportation and storage. Transportation to make sweet corn product kelobot by moving the product from the warehouse owned by collectors is distributed by fast transportation to Karangploso Market. The storage function is an activity to collect sweet corn that has been packaged in plastic crackers weighing 15 kg by broker.

The function of the facilities carried out by the village collector is financing, risk. The financing is usually carried out by collectors who transport the packaged sweet corn with an entry cost of Rp. 9,000 at Karangploso Market with parking costs, entry costs and exit costs. Risk coverage consists of risks because sweet corn is a perishable and rotten product. Village collector have received orders or orders for sweet corn previously at Karangploso Market, so that losses do not occur. Risk due to changes in market conditions caused by price fluctuations which can cause unbalanced supply and demand for sweet corn in the Karangploso Market. If the price in the market is high, consumers tend to reduce their demand and if the price in the market is low, consumers tend to increase their demand.

The marketing functions performed by marketing agencies in marketing channel 3 can be seen in table 7 below:

Table 8. Marketing functions in marketing channel 3

No	Marketing function	Marketing agency		
		Farmer	Broker	Village collector
1	Purchase	-	√	√
2	Sale	√	√	√
3	Harvest	√	√	-
4	Packaging	-	√	-
5	Transport	-	√	√
6	Storage	-	√	√
7	Financing	-	√	√
8	Standardization and Grading	-	√	-
9	Risk	-	√	√

Source : Primary data processed, 2021

Description :
(√)   : Performs marketing functions.
(-)   : Does not perform the marketing function.

The exchange function consists of a sales function and a purchase function. For the sales function, all marketing agencies in marketing channel 1, marketing channel 2, and marketing channel 3 do it. While the purchasing function is carried out by traders in marketing channel 1, broker and collectors in marketing channel 3. Physical functions in the form of harvesting, packaging and transportation are carried out by farmers in marketing channel 1. Physical functions in the form of harvesting, packaging, transportation and storage are carried out by broker on marketing channel 2 and on channel 3. While the physical functions in the form of transportation and storage are carried out by collectors in marketing channel 1 and marketing channel 3. The function of facilities in the form of financing, standardization and grading as well as risk is carried out by collectors in marketing channel 1 and broker in marketing channel 2, broker in

marketing channel 3. Facility functions in the form of financing and risk are carried out by collectors in marketing channel 3.

Research to Aliyi et al. (2021) producer's price setting strategy according to the survey result, about 54% of sample farmer said that market price was set by buyers and 38% of respondents said that price was set by the supply and demand. The remaining 8% of farmer reported that the selling price was set by negotiation. This indicates that majority of producers are price taker. And purchasing and selling strategy of trader study finding shows that the majority (50.8 %) of the respondents cited the price is determined by market (demand &supply) similarly about 28%, 12.2% and 9% of respondents reported that the price was set by negotiating with suppliers, discussing with other traders and by themselves respectively.

Market performance analysis

Price efficiency analysis

Price efficiency shows the relationship between costs and output. Price efficiency is calculated from transportation costs and processing costs.

1. Transportation Cost

In all marketing channels, the selling price at the marketing agency at the collector's level is the selling price at the marketing agency at the farmer level. The following is a table of the calculation of transportation costs:

Table 9. Calculation of marketing channel transportation costs

Description	Marketing channel 1	Marketing channel 2	Marketing channel 3	
	Price(Rp/kg)			
Selling price at village collector Level	3,566	-	3,933	-
Selling price at broker	-	3,433	-	3,433
Selling price at farmers level	3,000	2,900	3.433	2,700
Price gap	566	533	500	733
Transportation costs :				
- Driver's pocket money	10	8	10	8
- Driver salary	10.5	9.5	10.5	9.5
- Fuel cost	13.5	12.5	13.5	12.5
Total Transportation Cost	34	30	34	30

Source: Primary data processed, 2021

Marketing channel 1, the result of the calculation of transportation costs, shows that the difference between the selling price at the collector's level and the selling price at the farmer level is greater than the transportation costs incurred. This means that marketing efficiency is achieved. Marketing channel 2 calculation results show that the price difference between the selling price at the wholesaler level and the selling price at the farmer level is greater than the transportation costs incurred. This means that marketing efficiency is achieved. While the marketing channel 3 results from the first calculation show that the price difference between the selling price at the level of broker and the selling price at the level is greater than the transportation costs incurred at the selling price at the wholesaler level with farmers. This means that marketing efficiency is achieved.

According to Anindita and Nur (2016) if the difference in the selling price is smaller than the transportation costs incurred, it is still not said to be efficient, but if the result of the difference from the selling price is greater than the transportation costs incurred, it is already efficient. Some institutions that incur transportation costs also have a higher selling price difference than the total marketing costs incurred. Therefore, the analysis of price efficiency according to the transportation function of the three sweet corn marketing channels has been efficient.

2. Processing cost

The following is a table for calculating processing costs.

Table 10. Calculation of processing costs in marketing channels

Description	Marketing channel 1		Marketing channel 2		Marketing channel 3	
	Price (Rp/kg)					
Selling price at village collector level	3,566		-		3,933	-
Selling price at broker	-		3,433		-	3,433
Selling price at farmers level	3,000		2,900		3,433	2,700
Price gap	566		533		500	733
Marketing Costs :						
- Harvesting	-		120		-	120
- Packaging	-		15		-	15
- Transportation	10		14		10	14
- Financing	10		6		10	6
- Risk	100		100		100	100
Total Marketing Cost	120		255		120	255

Source: Primary data processed, 2021

Based on Table 10, the results of the calculation of processing costs show that it applies to all marketing channels, marketing efficiency is achieved. Price efficiency according to processing costs can be said to be efficient if the price difference is higher than the costs incurred (Anindita & Nur, 2016), so it can be said that the price efficiency according to the processing function in the three sweet corn marketing channels is efficient.

Based on the above two price efficiency calculations with transportation costs and processing costs, marketing can be said to be efficient because the average transportation costs and marketing costs incurred are still relatively small compared to the price difference obtained by each marketing agency. This means, farmers have been able to allocate the costs incurred to produce maximum output and broker and traders can also allocate the inputs obtained efficiently.

Operational efficiency analysis

Operational efficiency relates to the implementation of marketing activities that can increase or maximize the marketing output-input ratio. The analysis carried out in this study:

1. Marketing margin

Marketing margin is the difference in price at different levels of the marketing system. The following is a table of 10 marketing margin analysis

Table 11. Marketing margin analysis

Marketing Channel	Marketing Agency	Selling Price (Rp/kg)	Cost (Rp/kg)	Profit (Rp)	Margin (Rp)
1	Farmer	3,000	231	-	-
	Village Collector	3,566	120	446	566
2	Farmer	2,900	67	-	-
	Broker	3,433	255	278	533
3	Farmer	2,700	67	-	-
	Broker	3,433	255	478	733
	Village Collector	3,933	120	380	500

Source : Primary data processed, 2021

Based on the calculation of marketing margin analysis. The difference in margin indicates that marketing channels 1 and 2 have been efficient. Meanwhile, in marketing channel 3, the total margin is Rp. 1,233. The difference in margin between farmers and traders is quite high. This is because the farmers who are assisted in harvesting do not carry out any marketing functions. The marketing functions that should be carried out by farmers such as harvesting, packaging, transportation are paid for by broker.

According to Ramadinata et al. (2014) the marketing margin received by intermediary traders is quite large compared to the selling price in each marketing channel. Marketing margin has a negative relationship with farmer's share so that the lower the marketing margin, the higher the farmer's share and the more efficient the marketing (Ruauw E, 2015). According to Rasoki et al. (2016) the higher the value of the marketing margin, the more inefficient the marketing will be. The longer and more marketing institutions are involved in the marketing process, the greater the total margin and net profit obtained by marketing actors, on the contrary, the shorter and fewer marketing institutions involved in the marketing process the smaller the total margin and net profit earned

by the marketing agency. The increase in marketing margins can occur due to an increase in marketing services (Anindita & Nur, 2016).

2. Farmer's Share

Farmer's share share is used to determine the portion of the prevailing price at the consumer level enjoyed by farmers. The following table shows the results of the calculation of the farmer's share.

Tabel 12. Farmer's share calculation results

Marketing Channel	Marketing Agency	Selling Price (Rp/kg)	*Farmer's Share* (%)
1	Farmer	3,000	84.12
	Village Collector	3,566	-
2	Farmer	2,900	84.47
	Broker	3,433	
3	Farmer	2,700	68.64
	Broker	3,433	-
	Village Collector	3,933	-

Source : Primary data processed, 2021

Based on Table 12, the marketing channel that has the highest farmer's share is in marketing channel 2 where this marketing channel provides the largest share of the price for sweet corn farmers, which is 84.47% of the price paid by the final consumer. While the marketing channel which has the lowest farmer's share in marketing channel 3, provides the lowest price share for sweet corn farmers of 68.64% of the price paid by the final consumer.

The farmer's share that received by a farmer is different for each trading pattern. Farmer's share on each trading pattern is affected by some factors, there is a) the cost of the trading system is borne by each trading institution, b) the size of the trading system margins that formed in the trading system pattern; c) profits that determined by each trading institution from the buying price; d) the high or low prices at the consumer level orselling prices at the highest level of trading institution. The smaller trading system margins and the smaller prices at the final consumer level, the greater of farmer's share that received by farmers (Pujiharto& Wahyuni, 2020).

Table 13. Comparative analysis of farmer's share with marketing margin

Marketing Channel	*Farmer's Share* (%)	Marketing Margin (Rp)	Margin Percentage (%)	Description
1	84.12	566	15.87	FS>MP
2	84.47	533	15.52	FS>MP
3	68.64	1,233	31.35	FS>MP

Source: Primary data processed, 2021

Table 13 shows that all marketing channels are marketing channels that have a higher farmer's share value than the margin percentage. Marketing is said to be efficient if it has low margins and high farmer's share compared to other marketing for the same commodity. However, the value of the farmer's share is still higher than the percentage value of the marketing margin. So, from the comparison of farmer's share value and margin percentage, these three marketing channels are efficient.

Based on the results of the farmer's share analysis carried out, it can be seen that the value of the price share received by farmers from all channels is included in the efficient category. This is in accordance with the research of Aprilani & Fahmi (2016) which states that the share price of farmers can be said to be efficient if it has a value of more than 50% and if the value is less than 50%, then sweet corn marketing is not efficient. Commodities that are sold fresh have a higher share value of farmers than commodities that are processed in the form of processed products (Kohls & Uhl, 2002). If the percentage value of the farmer's share is greater, the marketing of sweet corn commodity will be more efficient and otherwise.

3. Profit and cost ratio

The profit and cost ratio shows the comparison between the costs incurred and the profits generated.

Table 14. Result of profit and cost ratio calculation

Marketing channel	Marketing agency	Selling price (Rp/kg)	Cost (Rp/kg)	Profit (Rp)	Profit/Cost
1	Farmer	3,000	231	-	
	Village collector	3,566	120	446	3.71
2	Farmer	2,900	67	-	
	Broker	3,433	255	278	1.09
3	Farmer	2,700	67	-	
	Broker	3,433	255	478	1.87
	Village collector	3,933	120	380	3.16

Source: Primary data processed, 2021

The K/B value of the entire marketing channel is efficient because a value of more than 1 indicates that this marketing channel is also efficient. The profit ratio achieved by each marketing agency in each sweet corn marketing channel has different values. Marketing institutions that obtain a ratio of marketing profits and costs > 1, then the marketing agency gains greater profits than the costs incurred and can be said to be efficient (Serawai, B. A. & Adly, 2017) Based on the results of the profit and cost ratio analysis of marketing, it can be seen that 50% of the existing marketing channels get a K/B ratio value > 1, which means that sweet corn marketing based on a review of the profit and cost ratio is said to be efficient.

4. Load factor efficiency

This measurement is carried out using the standard of transportation usage capacity. Analysis of operational efficiency according to load factor efficiency at sweet corn marketing institutions can be seen in Table 14.

Table 15. Calculation results of load factor efficiency

Marketing Channel	Marketing Agency	Transportation	Normal Capacity (kg)	Carrying Capacity (kg)	LFE (%)
1	Farmer	Motorcycle	100	100	100
	Village Collector	Pick up car	1,500	1,500	100
2	Farmer	-	-		
	Broker	Pick up car	1,500	1,200	80
3	Farmer	-	-		
	Broker	Pick up car	1,500	1,200	80
	Village Collector	Pick up car	1,500	2,000	134

Source: Primary data processed, 2021

Based on Table 15, marketing agencies that carry out the transportation function as a means of distributing sweet corn, most of them have not used it efficiently because there is (under capacity) because the transport capacity is less than 100%, namely marketing channel 2 by broker using pickup trucks with a transport capacity of only 1,200 kg of normal capacity. 1,500 kg, and marketing channel 3 by broker are both only 80%. Meanwhile, the carrying capacity reaches 100% (full capacity) in marketing channel 1 by farmers and collectors. And the carrying capacity reaches more than 100% (over capacity) on marketing channel 3 by collectors with a percentage of 134% because they use a pickup truck with a carrying capacity of 2,000 with a normal capacity of 1,500 kg.

The results of the calculation of the operational efficiency of the marketing margin approach, farmer's share, and the ratio of profit and cost, load factor efficiency are summarized into one table in table 15.

Table 16. Operational efficiency analysis

Marketing channel	Marketing agency	Margin(Rp)	Farmer's Share (%)	Profit/Cost	LFE (%)
1	Farmer	-	Efficient		Efficient
	Village Collector	Efficient	-	Efficient	Efficient
2	Farmer	-	Efficient		-
	Broker	Efficient		Efficient	Ineffficient
3	Farmer	-	Efficient		-
	Broker	Efficient	-	Efficient	Inefficient
	Village Collector	Efficient	-	Efficient	Efficient

Source: Primary data processed, 2021

Based on the four operational efficiency calculations above, marketing channel 1 is a marketing channel that has a small margin and a high farmer's share, and seen from the value of the profit and cost ratio which is more than 1, and the load factor efficiency shows that there is full capacity indicating that this marketing channel already efficient. While marketing channel 2 is a marketing channel that has the smallest margin and the highest farmer's share, and the value of the profit and cost ratio is more than 1, the load factor efficiency shows that there is under capacity indicating that this marketing channel is not efficient. Meanwhile, marketing channel 3 is a marketing channel that has a larger margin than marketing channel 1 and marketing channel 2 and the farmer's share is lower than the value of the farmer's share in marketing channel 1 and marketing channel 2, and seen from the value of the profit and cost ratio of all marketing institutions. which is more than 1, load factor efficiency indicates that there is under capacity and over capacity indicates that this marketing channel is also inefficient. The following are indicators of sweet corn marketing efficiency in Leban Hamlet, Tawangargo Village. Table 16. Indicators of the efficiency level of sweet corn marketing in Leban Hamlet, Tawangargo Village

The indicator of the efficiency level of sweet corn marketing is used to determine whether the marketing of sweet corn from Dusun Leban has been efficient or not. The following are indicators of sweet corn marketing efficiency in Dusun Leban.

Table 17. Sweet corn marketing efficiency level indicators

No	Marketing Efficiency Level Indicator	Description
1	Market Structure Analysis	Inefficient
2	Market Conduct Analysis	Efficient
3	Market Performance Analysis	Efficient

Source : Primary data processed, 2021

Based on Table 17, the results of the assessment of the level of marketing efficiency of sweet corn with the SCP approach in Dusun Leban, one of which is in the analysis of market performance in inefficient operational efficiency. Field conditions show that most farmers are price takers that have been determined by the selected marketing agency and the bargaining position of farmers is weak in determining prices. This situation is in accordance with Dewi et al. (2018) research that price changes at the consumer level are greater because buyers act as price determinants while sweet corn farmers are only price recipients so prices at the sweet corn farmer level are more volatile when compared to prices at the consumer level. This can be caused by various things, such as the condition or nature of agricultural products that are easily damaged, so it is not possible for farmers to store them for too long, so farmers must quickly sell their sweet corn harvest without considering the price of sweet corn at that time.

The weak bargaining position of farmers is due to the fact that the majority of farmers do not carry out marketing functions and farmers sell their harvests to their regular broker. This is in accordance with the research of Widiastuti and Mohd H (2013) which shows that the cause of the weak bargaining position of farmers is that farmers have not done post-harvest and there is a trust relationship between farmers and traders so they do not pay too much attention to prices. In addition, according to research Ali et al. (2018) a price agreement is formed with demand and supply until both parties agree on the price. The existence of an inefficient indicator means that marketing efficiency still needs to be improved so that it can benefit all parties, both farmers and marketing institutions. In today's modern era, farmers should start learning about developing technologies for the sake of the sustainability of their product marketing. Farmers use the internet to find out the price of sweet corn that is developing in the market so that farmers can get a suitable and more profitable price.

CONCLUTIONS

The existing market structure in Dusun Leban has a tendency that leads to an imperfect competition market, namely the oligopsony market. This condition is proven by the number of sellers (farmers) dealing with a few buyers (traders) with a high concentration. It is also proven by barriers to market entry, market information is included in the inefficient category and there is no product differentiation. There are barriers to entry and exit from the market, and

lack of knowledge about marketing for sweet corn farmers so that sweet corn marketing is included in the inefficient category. This structure causes the bargaining position of farmers in a weak condition (price taker). Price behavior at the farmer (producer) level is more controlled by collectors who deal directly with farmers.

Market conduct shows the efficient category that there are 3 types of marketing channels for sweet corn marketing activities in Leban Hamlet. Marketing Channel 1: Farmers – Village collector – Karangploso Market. Marketing Channel 2: Farmers – Broker – Karangploso Market. Marketing Channel 3: Farmers – Broker – Collector Traders – Karangploso Market. The payment system tends to use a cash system at the farm level as well as the merchant level. The marketing functions carried out are the exchange function (buying and selling), physical function (transportation, storage), and facility function (risk bearer, cost and price information)

Market performance shows that marketing channel 1 is the channel with the highest level of efficiency because it has the lowest percentage of marketing margin. Meanwhile, marketing channel 3 is the channel with the lowest level of efficiency because it has a high percentage of marketing margin. Price efficiency shows efficiency while operational efficiency is not efficient at load factor efficiency. This shows that the level of marketing efficiency of sweet corn in Dusun Leban is in the efficient category.

Suggestion

For farmers, to increase the efficiency of marketing sweet corn, farmers can choose marketing channel 1 because the margin formed is low and the share price received by farmers is high. This is because in marketing channel 1, it only passes through one intermediary institution, namely the collector. For Marketing Institutions, future collectors are expected to minimize risk costs and transportation costs incurred for marketing. This is so that the benefits obtained can be higher than the costs incurred. So that in the end marketing efficiency with an operational efficiency approach can be achieved. For the Regional Government, there is government intervention regarding price policy so that farmers can get the right price so that the welfare of sweet corn farmers in Leban Hamlet, Tawangargo Village is achieved.

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