



UNDERSTANDING MARKET BEHAVIOR ON CORN COMMODITY: PHENOMENON AT YEAR END

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ABSTRACT

The cause of market failure is the lack of synchronization between supply and demand, or vice versa. Initially, corn was considered as a substitute and a complementary commodity for food, but now it has turned into a basic need for people in Indonesia, especially when they celebrate the new year. The main aim of this study is to examine the interaction between the demand side and the supply side. The study was carried out by inviting 9,850 respondents in Samarinda City to be surveyed regarding interest, tradition, taste, price, opportunity, profit, production cost, and distribution. Empirical testing was used to interpret the data, including correlation, reliability, and validity. Constructive validity was found in the market behavior function, where the indicators of consumer demand ($p < 0.01$) and produce supply ($p < 0.01$) have a significant effect. Also highlighted were production cost and distribution, both of which have a positive channel and are closely related to the other six indicators. The consistent performance of production cost and distribution supported further evidence providing stability of measurement results. Additionally, tradition and opportunity also produced high coefficients in the reliability test. We can further examine empirical results by including other dimensions, such as social, psychological and individual factors. In addition, diagnostic transformations need to be highlighted where market trends can change along with the growth of other commodities.

Contribution/Originality: The orientation of this study emphasizes and focuses on the increase in the demand and supply sides of corn commodity. Although livestock commodities (e.g., chicken) and plantation commodities (e.g., coffee and tobacco) have also increased by the end of the year, the most popular commodity in Indonesia is food crops such as corn. Another feature that this study offers is its focus on Samarinda City, where the market depends not only on consumer demand but also on attractive offers from producers.

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1. INTRODUCTION

This study looks at market anomalies in the demand for corn commodities during the year-end celebrations in Samarinda City. Generally, the end of the year is when people spend a lot of time with family and friends. New Year

celebrations are often in the spotlight for economists and policy makers (such as Resnik & Elliott (2016); Aya (1979)). Severe increases in commodities, services and goods must be suppressed so that prices do not soar causing 'hyperinflation' (Farandy, 2020). Sometimes farmers also benefit from inflation from the demand aspect (Paul, Jahan, Nandi, & Rahman, 2021). It's just a matter of how producers present their goods or services at relevant prices in the market (Darma, Wijaya, & Darma, 2020).

Besides Christmas, New Year has been enthusiastically celebrated since the 18th century until now (Schmidt, 1991). It is not surprising that the demand for products, services and goods has exploded (Yijo et al., 2021). Even though this benefits the welfare of farmers, it can cause harm for consumers (Darma, Maria, Lestari, & Darma, 2020). Indonesia has different cultural characteristics from other countries in the celebration of the new year (Rianti, Novenia, Christopher, Lestari, and Parassih (2018)). The most striking difference is the consumption of food and drinks, which are less favored by most people, where Indonesian people often process corn to be used as a main dish (Wijaya, 2019). They serve these preparations grilled, fried, or boiled, and the use of corn at the turn of the year has become a special tradition.

According to Rosas-Castor, Guzmán-Mar, Hernández-Ramírez, Garza-González, & Hinojosa-Reyes (2014), corn, which in Latin is 'Zea mays L' (or maize) is a food crop. Corn contains a lot of carbohydrates, so it is one of the staple food sources in Indonesia after rice (Nuss & Tanumihardjo, 2010). Because corn is a favorite commodity in Indonesia, it exists in various community groups (Arifin, 2013). Another important aspect is that corn is easy to grow (Sandhu et al., 2020). In a global context, the average temperature to produce maize ranges from 18°C–33°C with a minimum rainfall of 800 mm per year and a maximum of 2,300 mm per year (Ferrero, Mauricio, & Gonzalez-Andujar, 2014; Wang et al., 2020). With relatively cheap capital, corn production is not a big constraint. As is known, Samarinda City is the center of the East Kalimantan Province in Indonesia, which has a high level of consumptive tendencies (Wijaya, Darma, & Darma, 2020). The high level of per capita income is the main reason for the population's prosperity. They channel most of their spending on non-food needs, such as ceremonies and parties, insurance and tax collections, health and education costs (BPS of Samarinda City, 2021b; Wijaya, Zainurossalamia, & Darma, 2020). However, the factor of special celebrations, such as the end of the year, increases the need for food and horticultural crops. Customs, traditions, and culture cannot be separated because all three have become part of history (Indriastuti, Kasuma, Zainurossalamia, Darma, & Sawangchai, 2020). The complexity of the paper is demonstrated based on five plots, including the introduction, theoretical lens, methods, results and discussion, and conclusions.

2. THEORETICAL LENS

Moss (1974) illustrates that supply and demand are the most vital parts of market economics. 'Law of demand' and 'law of supply' are basic theories that explain the interaction between sellers and buyers for a resource (Inoua & Smith, 2020). The two laws represent the relationship between the price of a service or product, the number of people who buy it, and its availability (Parro, 2019). Both demand and supply are inversely related, which affects the price of the goods or services sold. These conditions are interpreted as a 'demand curve' and a 'supply curve' (Safiullin, Oduntsova, & Safiullin, 2015).

Demand is a term for the amount of goods and services that are desired at a certain time and price level according to the market (Mazurek, García, & Rico, 2019). The 'law of demand' applies when the price of a product or service falls and the quantity demanded increases. On the other hand, when the price of goods demanded increases, demand will decrease (Wirtz, So, Mody, Liu, & Chun, 2019). The crucial factor influencing demand is consumer tastes (Harahap, Amanah, Harahap, & Jubaidah, 2019). Increased consumer tastes trigger an increase in demand (Purcell & Lusk, 2003), for example, with certain fruits whose stock is scarce and will therefore be more expensive (Hovhannisyanyan, Kondaridze, Bastian, & Shanoyan, 2020). Another factor is the price of substitute goods (Milgrom & Strulovici, 2006). For example, when the price of coffee is high, people will start shopping for tea because it costs less. Several factors that influence demand include the proportion of needs, prices, income levels, and population (Sorrell, 2015). Figure 1 illustrates a simple demand curve that demonstrates the general relationship between the number of consumer purchases of goods and services in a given period.

In contrast to demand, the 'law of supply' occurs when the price of goods rises, encouraging an increase in supply. If the price increases, production will also increase, but when the price decreases, producers are reluctant to reduce supply (Ai-Hua, 2012). The crucial factor that determines supply is the cost of production. The lower the cost of production, the cheaper the goods that can be produced and therefore supply can increase (as per the example given by Aday & Aday (2020)). Future speculation is the second factor, where predictions of future price increases allowing people to withhold goods or services. The last element is technology. Advances in technology will result in more efficient production processes.

Figure 2 shows the 'supply curve'. If the slope is curving upward, it causes the price of goods and services to increase or become more difficult to obtain because each additional unit is scarce. Then, the cost of production becomes much more expensive and the price is much higher than usual. Unexpectedly, when prices soar, there is more incentive to increase production (MacDonald, 2000). The 'classical economic theory' represents a short-run approach (Davidson, 1999).

Interestingly, supply and demand are opposites. Both will reach a point of market equilibrium when they meet each other, which is referred to as the 'law of demand' and the 'law of supply' (Jehle & Reny, 2011). In fact, these two laws explain the harmony between the quantity and the price offered. They then connected this to a 'demand curve' and a 'supply curve'. At a certain point in time, the supply of goods brought to the market is fixed. In other words, the 'supply curve' is a vertical line, while the 'demand curve' is always downward sloping because of the diminishing law of marginal utility. When it reaches this point of equilibrium, the price of a commodity and its demand will be stable,

or not change at all (Humphrey, 1992). Sellers also can no longer raise the prices borne by consumers (Alam & Uddin, 2009). However, in the long term, they can increase or decrease the stock to change the market price to the expected level (Haugen, Talmor, & Torous, 1991).

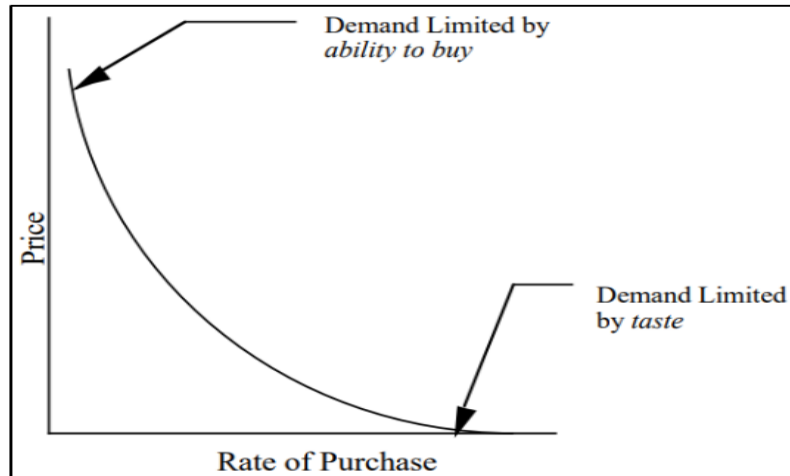


Figure 1. The point of consumer desire.
Source: Whelan & Msefer (1996).

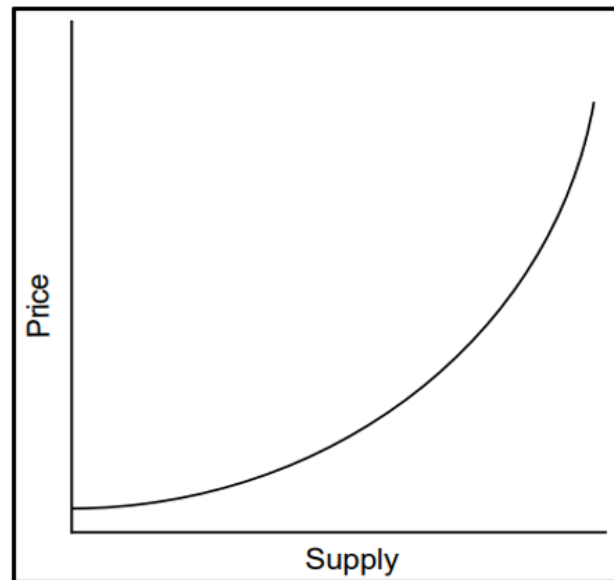


Figure 2. The point of desire.
Source: Whelan & Msefer (1996).

As an extra illustration, the interaction between supply and demand in controlling the market is largely determined by sellers and buyers (Cannon & Perreault, 1999). Both react in opposite ways to changes in the price of a commodity. When the ability, price and supply of sellers increase and the attention of buyers decreases, the market is clearly working (see Figure 3).

Moving on to 'microeconomic theory', an obvious example of the application of the 'law of demand' and the 'law of supply' is the level of consumption (Lee & Keen, 2004). Within the household, they are interrelated consumptions influenced by income ability, savings, or individual willingness. The needs of each household are very diverse. Household consumption capacity also depends on educational background, age group, occupation, and social status. Those who are classified as 'rich' certainly have a source of living eligibility, while those who are 'poor' will rethink having contemporary goods or substitutes. In essence, they classify needs into three categories, namely primary needs, secondary needs, and tertiary needs. If the economy is in a stable trend, it will affect welfare, and if not, we will see a decline in welfare. Social problems, such as poverty and unemployment, are the 'old face' of transformation and development. Socioeconomic status will determine an individual's success in achieving a decent standard of living.

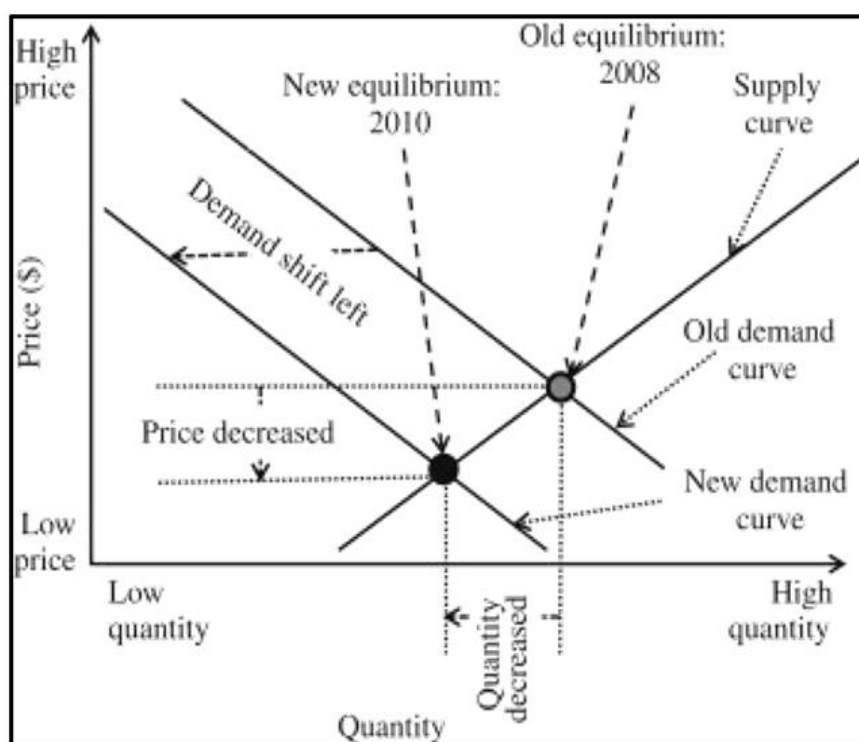


Figure 3. The points of balance of supply and demand.

Source: Hoekstra, Savenije, & Chapagain (2001).

As an actual illustration, the 2008 financial crisis in the US created new interests that caused consumption behavior, income distribution, and household debt to increase. This explains the dynamics of the crisis (Albayrak, 2020). The paradigm has continued to flow since the 1980s, and economists assume that household consumption has decreased. Debt-based consumption and a decline in actual income followed this compensatory decline. With the help of deregulation of the financial system, the pattern that leads to increased debt and reduced savings can be reduced. However, aggregate demand and the level of consumption in the private sector remain high, so that it maintains macroeconomic stability (e.g., relatively low unemployment).

Alp & Seven (2019) and Nelson (1988) highlight the stagnant wages of lower-middle income households. In today's era, the exploding financial crisis has become the focus of reducing credit bubbles. In the 'consumption theory' and the 'Keynesian theory', there are significant correlations between consumer behavior, household debt, and inequality (Perugini, Hölscher, & Collie, 2016).

In principle, 'agricultural economic theory' focuses on cause and effect relationships between spatial patterns and economic decisions derived from agricultural land use. The assumption refers to farmers pursuing utility maximization in production systems (Diogo, Koomen, & Kuhlman, 2015). Then, the framework considers land use decisions and alternatives in production (Kellerman, 1989).

Semerci et al. (2012) define the production function as a physical relationship between several inputs and outputs. Anderson et al. (1996) entered the production function into only a few input variables, while other inputs are constant (*ceteris paribus*) as follows:

$$Q = f(C + L + T + Rm + \dots n) \quad (1)$$

Equation 1 presents connectivity in the Cobb–Douglas function type described, where Q = quantity (output), f = function, C = capital, L = labor, T = technology, Rm = raw materials, and n = other supporting variables.

Through the above formulation, farmers from various countries transactional outputs on factors that support agricultural productivity implement transactionally it. The level of demand and supply significantly influenced market orientation for agricultural commodities. The relationship between consumers and producers is dominated by financial factors (Okerenta, 2005). In fact, Dwi & Nyoman (2020) argue that the government, as a regulator, seeks to encourage and promote more local agricultural products to be absorbed by the market. They expect this enthusiasm to provide social, environmental and economic benefits for the local population (Gutman, 1959). In the theory of planned behavior (Sok, Borges, Schmidt, & Ajzen, 2020), the buying behavior of agricultural commodities can be tested. The environment, local economic concerns, ethnocentrism of food safety, health, quality, and consumer perceptions influence consumer intentions (Petrea, 2001).

3. METHODS

A social experiment approach was taken in this study (such as Maat (2011); Syarifudin & Ishak (2020); Maman, Inawati, Aminudin, & Wastra (2017)) and a three-step-based interview technique was employed. The first step is data collection. Data were collected through the first (primary) party. Then, the second step comprised the selection of the

number of samples based on the population summarized in the formula below. Third, a questionnaire was prepared with four answer options: high priority (4), priority (3), moderate (2), and not priority (1). The sample size is planned using the following simple mathematical calculations (e.g., (Abdullah, Gindi, Darham, & Radam, 2015; Susanto, Siswandari, & Rujito, 2019)):

$$n = \frac{N}{[1+(N \times e^2)]} \tag{2}$$

$$n = \frac{658,525}{[1+(658,525 \times 0.01^2)]} \tag{3}$$

$$n = \frac{658,525}{[1+65.85]} \tag{4}$$

$$n = \frac{658,525}{66.85} \tag{5}$$

$$n = 9,850 \tag{6}$$

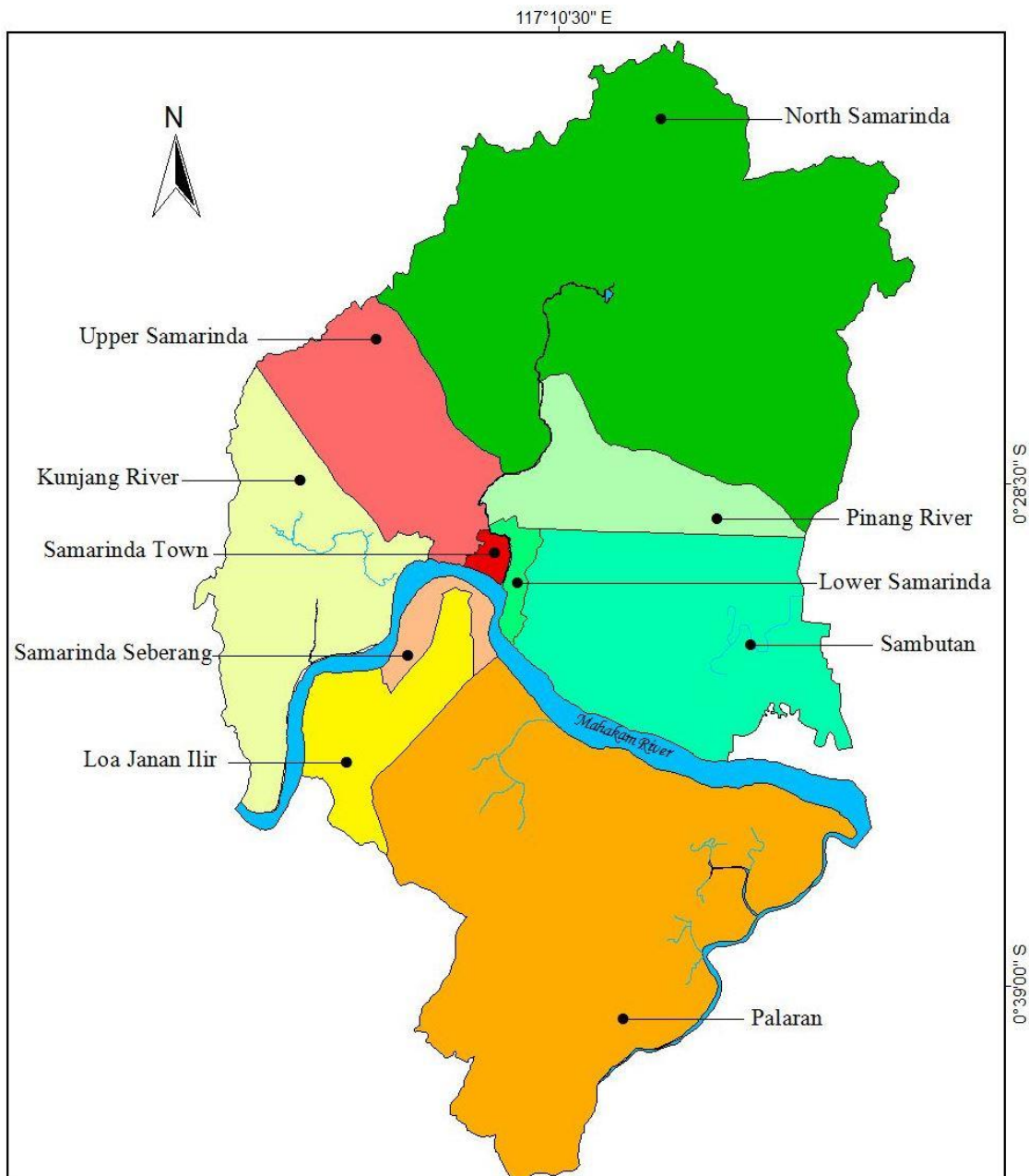


Figure 4. Road map of sample distribution.

Source: Susanto et al. (2019).

Equations 2 to 6 formulate the identity of the sample, where n = sample, N = population, and 0.01 = margin of error. The total population is the sum of the various age groups (15+ years). From BPS of Samarinda City (2021a), the population in Samarinda City is 827,994, of which 658,525 are head of the family. Figure 4 displays the sample distribution model. The distribution of the sample comprises ten sub-districts in Samarinda City (64.72), including Pinang River (64.72.08), Kunjang River (64.72.06), Sambutan (64.72.07), North Samarinda (64.72.05), Samarinda Ulu (64.72.03), Samarinda Seberang (64.72.02), Samarinda Kota (64.72.09), Samarinda Ilir (64.72.04), Palaran (64.72.01), and Loa Janan Ilir (64.72.10). Each sub-district is divided and represented by 985 respondents. Figure 4 also illustrates the coordinates of the market and the locations for buying and selling corn commodities in Samarinda City.

It carried the identification of the interview time out during December 2021. It is important to remember that the respondents reaction to the demand for corn is relevant to the celebration of the new year. To make it easier for researchers, samples were collected through Google Forms, which is promoted on social media such as WhatsApp and Facebook.

The research model was limited to the variables of consumer demand and produce supply as these two components are factors that influence market behavior. Each variable comprises four items. The demand side includes interests, traditions, tastes, and prices, while opportunity, profit, distribution, and production costs support the supply side (see Figure 5).

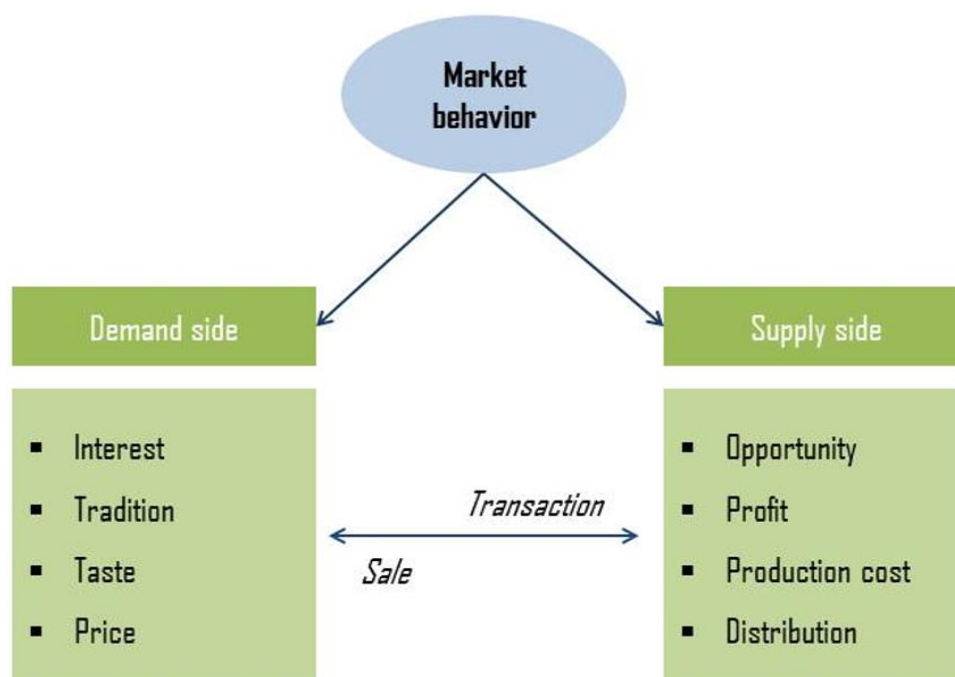


Figure 5. Conceptual framework.

Source: Adapted from Naumova, Bilan, & Naumova (2019); Roufagalas (1994); Li, Wang, Yin, Kull, & Choi (2012); Xie, Gao, & Xie (2020); Sanchez (2003).

The data processing structure was developed with the feasibility of testing correlation, reliability, and validity (e.g., De Barros Ahrens, Da Silva Lirani, & De Francisco (2020); Dewi et al. (2021). SPSS software was used to analyze the research findings.

4. RESULTS AND DISCUSSION

The respondents' profiles are presented in Table 1. The sample sourced from household groups is divided into five units. Of the 9,850 household heads, 55.3 percent are male and 44.7 percent are female. Additionally, 26 percent of respondents are single, 52.7 percent are married, 18.4 percent are divorced, and the remaining 2.8 percent are widows/widowers.

Interestingly, 40 percent of respondents belong to the 16–26 age group and consume the most corn on New Year's Eve. The 49–59 age group has the fewest people, making up only 9.8 percent of respondents. When viewed based on their occupational background, the number of those classified in the labor force (already working and openly unemployed) is far higher than those classified in the non-labor force (attending school, taking care of the household, and other activities) with figures of 65.3 percent and 34.7 percent, respectively. The logical reason is that from the frequency of buying corn, as much as 3–6 kg or 41.5 percent, 41 percent is used and processed to become regular corn to accompany the turn of the new year celebrations.

The first model describes the value of descriptive statistics and correlations. Table 2 summarizes the output mean, standard deviation (SD), and Pearson correlation. The largest mean score is for the interest factor ($M = 3.738$) and the lowest is for the production cost factor ($M = 2.667$). For SD, the highest is the price factor ($SD = 0.735$), while the production cost is the lowest ($SD = 0.046$). Considering that causality between factors is very important, the calculation based on SPSS estimates all of them in the positive path, although not all factors have a significant effect ($p < 0.01$).

Table 1. Demographic of samples (n = 9,850).

Units	N	%
Sex		
• Female	4.403	44.7
• Male	5.447	55.3
Status		
• Single	2.565	26
• Married	5.192	52.7
• Divorced	1.816	18.4
• Widow/widower	277	2.8
Age group		
• 16–26 years	3.940	40
• 27–37 years	1.189	12.1
• 38–48 years	2.258	22.9
• 49–59 years	961	9.8
• 60+ years	1.502	15.2
Main activity		
• Economically active	6.431	65.3
• Economically inactive	3.419	34.7
Purchase frequency		
• 2 kg	1.001	10.2
• 3–6 kg	4.086	41.5
• 7–10 kg	3.846	39
• 11+ kg	917	9.3
Diversification of corn		
• Fried corn	2.594	26.3
• Roasted corn	3.217	32.7
• Boiled corn	4.039	41

Source: Survey recapitulation.

Table 2. Descriptive statistics and correlation matrix.

Items	Mean	SD	1	2	3	4	5	6	7	8
Interest	3.738	0.114	1	0.011 (0.473)*	0.071 (0.321)*	0.305 (0.021)*	0.167 (0.136)*	0.056 (0.358)*	0.064 (0.337)*	0.429 (0.000)*
Tradition	3.597	0.545	0.011 (0.473)*	1	0.574 (0.000)*	0.099 (0.258)*	0.136 (0.186)*	0.543 (0.000)*	0.325 (0.015)*	0.201 (0.391)*
Taste	3.602	0.396	0.071 (0.321)*	0.574 (0.000)*	1	0.174 (0.126)*	0.092 (0.275)*	0.991 (0.000)*	0.122 (0.212)*	0.656 (0.157)*
Price	3.713	0.735	0.305 (0.021)*	0.099 (0.258)*	0.174 (0.126)*	1	0.281 (0.031)*	0.166 (0.137)*	0.300 (0.023)*	0.478 (0.000)*
Opportunity	3.498	0.112	0.167 (0.136)*	0.136 (0.186)*	0.092 (0.275)*	0.281 (0.031)*	1	0.103 (0.251)*	0.437 (0.001)*	0.513 (0.417)*
Profit	3.606	0.287	0.056 (0.358)*	0.543 (0.000)*	0.981 (0.000)*	0.166 (0.137)*	0.103 (0.251)*	1	0.098 (0.261)*	0.772 (0.106)*
Production Cost	2.667	0.046	0.064 (0.337)*	0.325 (0.015)*	0.122 (0.212)*	0.300 (0.023)*	0.437 (0.001)*	0.098 (0.261)*	1	0.180 (0.097)*
Distribution	3.574	0.204	0.272 (0.013)*	0.166 (0.032)*	0.293 (0.145)*	0.317 (0.289)*	0.345 (0.167)*	0.470 (0.047)*	0.155 (0.000)*	1

Source: SPSS output. Note: * p-value < 0.01.

The results of further investigations also confirmed the two-way relationship between interest and distribution ($C = 0.429$ and $p = 0.000$), tradition and taste ($C = 0.574$ and $p = 0.000$), taste and profit ($C = 0.991$ and $p = 0.000$), price and distribution ($C = 0.478$ and $p = 0.000$), opportunity and production cost ($C = 0.437$ and $p = 0.001$), profit and taste ($C = 0.981$ and $p = 0.000$), production cost and opportunity ($C = 0.437$ and $p = 0.001$), and distribution and production cost ($C = 0.155$ and $p = 0.000$). Production costs and distribution are considered the most dominant of all the factors.

The second parameter is validity testing, as measured by confirmatory factor analysis (CFA). The Kaiser–Meyer–Olkin measure of sampling (KMO-MSA) is an index of the distance comparison between the correlation

coefficient and its partial correlation coefficient. If the sum of the squares of the partial correlation coefficients from all pairs of variables is small compared to the sum of the squares of the correlation coefficients, it will produce a KMO-MSA value close to 1. The KMO-MSA gain is sufficient if it is < 0.5 (Hair, Black, Babin, Enderson, & Tatham, 2006). Another projection from Bartlett's test shows that there is a sufficient correlation between the variables to apply, provided that the p-value is < 0.01 (e.g., Melati (2018)).

Assumptions in construct validity are based on Bartlett's test of sphericity, and content validity is determined by the KMO test. Table 3 explains that the achievement of the correlation between indicators for the consumer demand variable is high ($KMO = 0.632$ and $Bartlett's\ test = 0.000$), so the factor analysis process is workable allowing the analysis to continue.

Table 3. Construct validity and content validity in the first element.

Measurement	Score
KMO-MSA	0.632
Approx. Chi-square	315.11
Df.	90849
Prob.	0.000

Source: SPSS output.

Table 4. Construct validity and content validity in the second element.

Measurement	Score
KMO-MSA	0.580
Approx. Chi-square	207.69
Df.	90849
Prob.	0.000

Source: SPSS output.

Overall, Bartlett's test resulted in a p-value of 0.000 and a KMO-MSA of 0.580. This shows that both meet the requirements because the KMO-MSA has a value of > 0.5 and a significance of < 0.01 , so it is prioritized for the next process (see Table 4).

In the third session, identification of the assumption that must be met is reliability. We packed reliability testing with Cronbach's alpha (CA) coefficients. Classification of Cronbach's alpha is possible if the coefficient value is > 0.7 , which means that the reliability is met. It also makes sense if the coefficient is > 0.8 , which suggests that all items are reliable and all tests are internally consistent because they have strong reliability (Hoekstra, Vugteveen, Warrens, & Kruijen, 2018; Peterson, 1994). Table 5 summarizes the coefficient gains of Cronbach's alpha.

It can be interpreted that if the alpha coefficient is low, it is possible that one or more indicators is not reliable, so it makes sense to investigate with a per item analysis procedure. This test is a continuation of the previous series to determine if certain indicators do not meet the requirements. Through this process, unreliable indicators can be discarded so that other alphas can further support their value (Tavakol & Dennick, 2011).

Table 5. Cronbach's alpha for all indicators.

Items	CA	Remark
Interest	0.587	Moderate reliability
Tradition	0.749	High reliability
Taste	0.687	Moderate reliability
Price	0.682	Moderate reliability
Opportunity	0.705	High reliability
Profit	0.934	Almost perfect reliability
Production cost	0.820	High reliability
Distribution	0.717	High reliability

Source: SPSS output.

The advancement of people's perspectives and ways of thinking determine what food is worth consuming at an affordable price. They are drawn towards selecting products with relatively cheap prices but without neglecting practicality and nutritional composition. The other side is the level of need that is increasing along with accessibility. The importance of corn is a signal to farmers that this type of plant is also easy to grow from narrow land, open space, in all seasons with sufficient light intensity, soil fertility level, and rainfall level. With the harvest period in intervals of 2–3 months, it is possible for corn farmers to achieve maximum productivity. They will certainly see a significant market demand, especially towards the end of the year. Each period, the consumption of corn soars sharply, so preparation for farming starts in September or October.

In the context of economic development and food security, the agricultural industry has played a key role for decades (Zyl, 1989). Directly, the best options are in rural areas, where a large part of the world's population also depends on this sector for their livelihoods (Udemezue & Osegbue, 2018). As the migration of people to cities and the world's population explodes, it has a systematic impact on the proportion of growth in food production.

Martin, Groenewegen, & Pidgeon (1980) found that the uniqueness of market characteristics highly depends on the specifics of corn in Southwestern Ontario (Canada) where corn farmers saw a tremendous opportunity to create

welfare value. Global corn prices influenced the retail of corn-based products in the manufacturing sector (Ratray, 2012). This is a determinant of price policy by major food companies. High global corn prices have affected final retail and consumer products. Even though the market conditions for agriculture and food companies were fluctuating, they corn farmers could still benefit. Sibanda, Mushunje, & Mutengwa (2016) highlight valuable steps adopted by small-scale maize farmers in OR Tambo and Amatole (Eastern Cape, South Africa). Samples from households were asked for their response to maize, and the findings confirm that planning and decision-making in the maize market highly depend on seed availability, farmer perceptions, land area, income, access to credit, and access to extension services. The application of superior seeds and the absorption of corn commodities has played an important role in the productivity of corn farmers.

During the period from 1948–1970, the supply of maize acreage in the US underwent a significant change due to the government's price intervention and acreage control program. Empirical analysis examines area restrictions, transfers, support, and lending rates for maize farmers. Houck & Ryan (1972) suggested that policy variables should be selected and applied to maize as part of government priorities.

Production and land management decisions strongly influenced land conservation and crop. Farmers in the Liandaowan area (Northeast China) make decisions based on motivation as a key factor in implementing government policies. Most of the farmers there insist on growing maize despite facing various obstacles, such as striking comparative advantage, farmer preferences, age and education, low temperatures, drought, technical help, low income, and availability of machinery. The experimental results obtained by Liu, Zhang, Liu, & He (2019) emphasized the need for promotions to adjust for corn diversity because the level of demand was stable.

The theoretical justification for these findings is in line with the investigations of Mišečka, Ciaian, Rajčániová, & Pokrivčák (2019), who emphasized that agricultural commodity prices are driving consumer awareness. On an international scale, behavior towards agricultural products, such as corn, is permanently and causally connected to the demand factor, and the corn prices confirm both relationships.

Other aspects, such as campaigns against 'green consumption', brands, channels, prices and marketing strategies, can stimulate agricultural products in Wuhan (China). Yi (2017) revealed that the safety of people's lives there for agricultural products depends not only on stability but also on sustainable agricultural development. Farm household investigated their perceptions and levels of knowledge based on purchasing behavior, work background, income level, region, age, and gender.

The causality highlighted by Gao, Huang, Zhong, Chen, & Lu (2013) and Horská, Petrilák, Šedík, & Nagyová (2020) regarding the sale of local agricultural products is not only influenced by the behavior of farmers, but also by the driving forces of the market. In China, in 16 villages in Anhui, Jiangsu and Shanghai, households earn higher profits. They see economic developments in the agricultural market, thus shifting from food crops to cash crops. Aspects of capital and production costs are the more dominant input factors, where they know that if they want to achieve a large output, then the production input becomes a big investment. In this way, agricultural products gain market enthusiasm because the selling price is more significant than government subsidies. Market sales orientation supported the independence of agricultural households based on product quality improvement strategies (Hunt, 2007). Unlike the case with local farmers in Slovakia, the sales of agricultural products depend on the supply chain. This was driven by a short distribution route so that the product can go directly to consumers. Customer loyalty is motivated by locality, freshness, and quality factors. That way, the marketing approach is a surefire technique to save time, cost, and effort.

5. CONCLUSION

This study analyzed the influence of the demand and supply sides on the behavior of the corn market in Samarinda City, Indonesia, and it was found that the two are closely related as both consumers and producers respond to each other based on the quantity of corn. Towards the end of the year, demand from consumers increased in line with the supply of producers. However, the supply side variable determines the market the most because the two indicators (production cost and distribution) have the highest coefficients with a positive path.

This study contributes to the theoretical aspect. Extension services to seasonal corn farmers in Samarinda City, are not only based on certain moments (such as New Year's celebrations and festivals), but also follow market patterns that follow demand trends. For the future, there is a need for policies on distribution, training, extension, knowledge, and promotion services for corn farmers. We expect the implications for industry practitioners and academics to attract attention to highlight and expand knowledge regarding the factors that influence market behavior for corn besides the supply and demand factors.

The limitation of this study is in the variables used. The sample range and observation period can be expanded to produce more extensive findings. In order to support socioeconomic sustainability in agriculture, these findings require scientific references and foundations based on a more constructive scale.

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