# Jackfruit Demand by Megono Rice Seller in Karangsari Village Karanganyar District Pekalongan Regency

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**Abstract.** Karangsari Village in Pekalongan District is one of the main centers for trading megono, a traditional dish made from young jackfruit. Frequent price fluctuations of young jackfruit have become a major concern for megono traders and form the basis of this study. The demand for young Jackfruit represents a derived input demand, as it depends on the demand for megono itself. This research aims to determine the total amount of young jackfruit needed by megono traders in Karangsari and to identify the factors that influence this demand. A total of 30 traders were selected using the snowball sampling method, and the data were analyzed using multiple linear regression. The findings indicate that megono traders require 2,520 kg of young jackfruit, and seven variables significantly affect demand: megono production volume, the price of citronella, galangal, bay leaves, lime leaves, tempeh, and future price expectations. Given the high and consistent need for young jackfruit in Karangsari, government intervention is necessary to ensure stable availability of this commodity. An improved procurement system and basic price stabilization policies could help meet demand more effectively and reduce the economic burden on megono traders.

## 1 Intorduction

Foreign cuisine may be increasingly favored by the millennial generation in Indonesia today, but traditional Indonesian cuisine still holds its allure. Nusantara cuisine utilizes abundant local ingredients, and one standout is jackfruit, which is plentiful in Indonesia and boasts a unique flavor. Jackfruit is incorporated into various dishes such as es cendol, gudeg, megono, and sayur lodeh. Jackfruit is recognized for its rich nutritional profile, particularly its content of vitamins A and C, key minerals, and various phytochemical compounds that support human health [1]. One region that prominently features jackfruit as a primary ingredient in its traditional cuisine is Pekalongan, a coastal area on the northern coast of Java. Young Jackfruit is preferred for its dense texture and neutral taste, making it the main ingredient in their renowned dish known as "megono”. Megono has gained widespread popularity among the people of Pekalongan, thanks to the unique combination of flavor and texture derived

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from young jackfruit, In addition to its delicious taste, young jackfruit is also rich in nutritional content and vitamins [2]. In every 100 grams of young jackfruit, there are 57 calories, 11.3 grams of carbohydrates, and 2 grams of protein. Furthermore, young jackfruit contains vitamin C, B1, B2, and various other essential nutrients [3].

Previous studies on traditional foods in Indonesia have mostly focused on cultural preservation, nutritional values, and culinary heritage [4]. However, limited attention has been given to the economic and supply chain aspects of raw materials, particularly young jackfruit, which is the main ingredient of *megono*. This gap is critical, since price fluctuations and unstable supply of young jackfruit directly affect the sustainability of small-scale food vendors. Therefore, this study seeks to address this gap by analyzing the factors influencing the demand for young jackfruit among *megono* traders and its implications for local economic stability and food policy.

Megono, a distinctive dish from Pekalongan, is made from finely chopped young jackfruit cooked with a variety of spices. The demand for young jackfruit by megono rice stalls serves as an example of input demand. Input demand is considered a derived demand because it is based on the demand for other products, whereas output demand is referred to as primary demand as it arises directly from human needs as consumers [5]. Derived demand is the demand for a product used as an input in the production of goods or services by a company [6].

Nearly every eatery in Pekalongan features megono as one of its signature dishes. Some establishments even specialize in serving megono rice, often accompanied by mendoan. Despite Pekalongan offering a variety of other dining options, such as Tegal stalls with diverse side dishes, Lamongan stalls with pecel lele, Padang rice stalls with rendang, and angkringan with its "nasi kucing," megono remains a favorite across different demographics. Megono rice has a distinctive savory taste, usually served with sambal (spicy condiment) and fried snacks as complements. Due to its key ingredient being young jackfruit, the supply of young jackfruit often poses a challenge for megono rice vendors. Fluctuating prices and the difficulty in sourcing young jackfruit in the market are frequently encountered obstacles [7]. However, megono rice sales continue almost every day, with the people of Pekalongan remaining loyal customers. As a result, megono rice vendors must continuously adapt to the fluctuating market. At times, they may even have to adjust their megono recipes if the supply of young jackfruit is scarce. Based on these challenges, there is a need for research on the demand for young jackfruit and the factors influencing it.

The factors influencing the decision to purchase young jackfruit by megono rice vendors reflect the dynamics of young jackfruit demand in this sector. These factors include the price of the commodity itself, prices of other goods related to it, per capita income levels, preferences, expectations of future prices, intensity of need, producer efforts to boost sales, and population size [8].

The prices of related goods, total population, and per capita income significantly affect demand [6]. In addition, research shows that the prices of related goods, consumer income, and the number of dependents also significantly influence the quantity of demand [9]. According to other studies, the prices of related goods, complementary goods, income, population size, and expected future prices significantly impact the current quantity of demand. In general, the prices of related goods (substitutes), consumer income, population, and expectations of future prices are key factors that influence demand.

In the context of food and beverages, raw material planning and management are crucial to ensure product quality and meet market needs. Quality raw materials are a priority when purchasing from suppliers as they contribute to high-quality product outcomes. Proper processing is also essential, as studies show that boiling young jackfruit for 45 minutes produces the optimal texture, improves water-holding capacity, and results in the highest sensory acceptance, thereby enhancing the overall quality of the final product [9]. For instance, in the crackers industry, maintaining sufficient inventory is vital to avoid market shortages and minimize storage and purchase costs. Ordering and grouping raw material inventory based on priority needs are essential to minimizing target capacity. This principle also applies to other businesses having ample inventory and ensuring raw material quality are crucial to producing high-quality products and meeting market demands.

Existing research has extensively covered raw material management, but there is a gap in studies related to the demand for culinary raw material inputs. Therefore, this research will focus on analyzing the demand for raw material inputs, specifically in the megono industry. The study aims to identify the quantity of young jackfruit demanded by megono rice vendors to fulfill consumer demands for megono in the Karangsari Village, Karanganyar District, Pekalongan Regency, particularly monthly.

It is hypothesized that the demand for young jackfruit by megono rice vendors in Karangsari Village, Karanganyar District, Pekalongan Regency, is influenced by factors such as the price of young jackfruit, prices of complementary goods, business income levels, promotions, and sales portions.

## 2 Material and Methods

This research was conducted in August 2023, using a basic quantitative method with a quantitative descriptive analysis approach. In data collection, the methods employed were interviews and documentation. The interview method involved sampling from the population using a questionnaire as a tool. The research location was purposively chosen in Karangsari Village, Karanganyar Subdistrict, Pekalongan Regency, as this village was considered to have a significant number of sellers of "nasi megono" (a traditional Indonesian dish), which constituted the study population. Karangsari Village was selected due to being a central hub in the subdistrict with markets, hospitals, and a diverse range of community activities.

Respondent determination in this study used the snowball sampling method. This method begins with one individual providing information about other subjects that meet the sample criteria, and this process continues until a sufficient sample size is reached [10]. This method was chosen because the exact population size for this study was unknown.

The data in this research consisted of primary and secondary data. Primary data were obtained directly from the owners of "nasi megono" stalls through unstructured interviews. Secondary data were sourced from various outlets such as the Central Statistics Agency (BPS) and previous relevant research. To analyze the demand for young jackfruit by "nasi megono" sellers, descriptive statistics were used to present data in table form and illustrate the available data. Factors influencing the demand for young jackfruit were analyzed using the Cobb-Douglas production function and multiple linear regression tests. The model function used was as follows:

$$Y = b0X_1{}^{b1} X_2{}^{b2} X_3{}^{b3} X_4{}^{b4} D_1 D_{2e\mu} \quad (1)$$

This function model was transformed into natural logarithmic form as follows:
LnY = Lnbo + b1LnX1 + b2Ln X2 + b3LnX3 + b4LnX4 + dD1 + dD2 + μ
Y = Demand for young jackfruit (kg/month)
b0−b8 = Coefficients
X1 = Price of young jackfruit (Rp/kg)
X2 = Trader's income level (Rp/month)
X3 = Megono production quantity (kg/day)
X4 = Price of complementary goods (Rp/kg)
D1 = Promotion
D2 = Estimated future price

M = Error

The collected data were processed using statistical software SPSS, and then statistical tests were performed, including the coefficient of determination test, F-test, and T-test, to assess the impact of independent variables on the dependent variable. The coefficient of determination was used to measure how independent variables explain the dependent variable. The F-test assessed the joint influence of independent variables, while the T-test evaluated the individual influence of each independent variable.

# 3 Results and Discussion

## 3.1 Profile of Megono Rice Trader

Table 1 presents the characteristics of respondents engaged in the Megono rice trade. The table categorizes respondents based on gender, age, and length of business operation. These characteristics provide an overview of the demographic composition and experience levels of traders, which are essential for understanding the market structure and business sustainability.

**Table 1.** Characteristics of respondents are based on gender, age, and length of business.

| **Gender** | **Number of People** | **Percentage (%)** |
|---|---|---|
| Man | 9 | 30 |
| Woman | 21 | 70 |
| **Sum** | **30** | **100** |
| | | |
| **Age** | **Number of People** | **Percentage (%)** |
| 21-37 | 6 | 20 |
| 38-53 | 13 | 43 |
| 54-69 | 11 | 37 |
| **Sum** | **30** | **100** |
| | | |
| **Length of Business (years)** | **Number of People** | **Percentage (%)** |
| 2-12 | 15 | 50 |
| 13-22 | 10 | 33,3 |
| 23-32 | 2 | 6,6 |
| 33-42 | 3 | 10 |
| **Sum** | **30** | **100** |

Based on these results, it indicates that the megono rice merchant business is more dominated by female traders in the region. The dominant participation of women in this culinary business shows that the local culinary sector is one of the economic alternatives relied on by village women [11].

The age difference also reflects the diverse experience, skills, and knowledge among traders. The 38-53 age group may have inherited the megono rice tradition from previous generations, while the 21–37-year-old age group carries the potential for innovation. The age group of 54-69 years plays an important role in maintaining the authenticity and quality of this dish.

Based on these data, it also provides an overview of the long-standing distribution of megono rice traders in the region. The table shows that the average megono rice trader in Karangsari Village, Karanganyar District, Pekalongan Regency has been operating for approximately 15 years. This long duration of business activity reflects the stability and experience of the traders, which may also influence their ability to manage production efficiently. This is in line with previous research that discusses how managerial aspects and farmer profiles influence production efficiency [12].

### 3.2 Number of Requests for Young Jackfruit

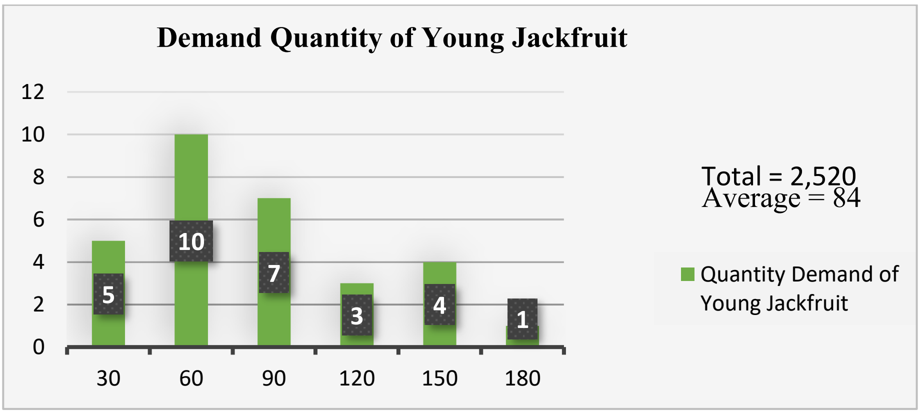


**Fig. 1.** Demand Quantity of Young Jackfruit.

Based on data on the number of young jackfruit requests, the demand for young jackfruit by megono rice vendors in Karangsari village amounts to 2,520 kg per month, this indicates that there are approximately 2,520 kg of young jackfruit absorbed by traders in Karangsari village, Karanganyar district every month, with the average each megono rice trader in Karangsari village, Karanganyar district, pekalongan regency requires 84 kg of fresh young jackfruit to be processed into megono. The data indicates the high level of young jackfruit needs needed by megono rice traders in Karangsari Village, Karanganyar District, Pekalongan Regency.

### 3.3 Factors in Demand Young Jackfruit

The results of the analysis showed that the model had a strong relationship between the independent variable and the dependent variable with a high R value (0.992). In addition, a high R Square (0.985) indicates that most of the variation in the number of young jackfruit purchases can be explained by independent variables in this model. A high F-count (34,457) shows a significant difference between the variation described by the model and the unexplained variation. A low P-value (0.000) indicates that overall, the independent variable has a significant impact on the number of young jackfruits demands.

However, from the T-test, some variables such as the price of young jackfruit, the income of megono rice merchants, the price of coconut, the price of shallots, the price of garlic, the price of chili, the price of galangal, the price of coriander, the price of terasi, the price of candlenut, the price of rice, and promotion did not have a significant impact on the demand for young jackfruit by megono rice merchants. Meanwhile, the amount of megono production, lemongrass price, galangal price, bay leaf price, orange leaf price, tempeh price, and future price forecasts have a significant influence.

**Table 2.** Calculation data and analysis results of T-test, F-test, and R square.

| Variable | Average | T Test | |
|---|---|---|---|
| | | Regression coefficient | Significance |
| The price of young jackfruit | 13.067 | -0,086 | 0,661 |
| Trader revenue | 654.667 | -0,076 | 0,434 |
| production | 3 | 0.404*** | 0,000 |
| Lemongrass price | 19.733 | -0,461** | 0,011 |
| Coconut price | 6.767 | 0,249 | 0,362 |
| Galangal price | 41.367 | -0,360** | 0,044 |
| Bay leaf price | 22.967 | -0,883* | 0,062 |
| Orange leaf price | 23.567 | 0,673** | 0,049 |
| Shallot price | 32.200 | 0,336 | 0,275 |
| Garlic price | 38.733 | -0,005 | 0,994 |
| Chili price | 30.600 | 0,042 | 0,798 |
| Galangal price | 22.700 | 0,095 | 0,699 |
| Coriander price | 24.300 | -0,573 | 0,157 |
| Terasi price | 6.167 | -0,060 | 0,829 |
| Pecan price | 32.967 | 0,029 | 0,960 |
| Rice price | 11.550 | 2,143 | 0,189 |
| Tempeh price | 10.300 | -0,902* | 0,078 |
| Promotion | | 0,008 | 0,914 |
| Expected future prices | | 0,142** | 0,049 |
| | | | |
| R<br>R-squared<br>Adj R squared<br>F count<br>Sig.F<br>Signification Status (α) | = 0.992<br>= 0.985<br>= 0.956<br>= 34,457<br>= 0.000$^{b}$<br>= 5%, 1%,<br>= 10% | | |

Remarks: *** Significant at α = 1%, * Significant at α = 10%,
** Significant at α = 5%

The price of young Jackfruit is greatly influenced by its availability in the market, which fluctuates throughout the year. During the rainy season, when young jackfruit tends to be few, the price can reach Rp 50,000 per kilogram. Conversely, when there are many young jackfruits on the market, the price can drop to Rp 8,000 per kilogram. When this research was conducted, the price of young jackfruit tended to be stable with the average price of young jackfruit of Rp 13,067. This makes the price of young Jackfruit does not significantly affect the demand for young Jackfruit. Likewise, the income of traders does not significantly affect the demand for young jackfruit, where the size of the income of megono rice traders does not affect the number of young jackfruits purchased by megono rice traders.

Complementary goods have an inversely proportional influence on the amount of demand that occurs, meaning that if the price of complementary goods decreases by one unit, it will make demand increase by one unit [13].

Coconuts sold at the time this study was conducted had varying prices according to the size of the coconut purchased. The cheapest coconut price has a price of Rp5000/grain and the most expensive Rp8000/grain. In this study, the price of young coconuts did not have a significant effect because the price of young coconuts purchased by megono traders still tends to be cheap, namely Rp 6,767 / grain.

Factors such as the price of shallots, the price of garlic, the price of chili, the price of galangal, the price of coriander, the price of terasi, the price of candlenut, and the price of rice in this study have complementary properties because based on interviews conducted onion, garlic, chili, galangal, terasi, and candlenut are items that must be present in making megono with jackfruits as well as rice where rice is a complement that cannot be replaced in selling. In this study, these items exhibit complementary characteristics (complementary goods), in accordance with the concept of complementary goods in demand theory [7].

Of the total 30 megono rice traders sampled, only 40% (12 people) received promotions when buying young jackfruit. The remaining 60% (18 people) did not receive promotions. Based on the results of the interview, there are several forms of promotions obtained by megono rice traders when buying young jackfruit in the form of bonuses when making purchases. Respondents who received promotions said that the promotions obtained were in the form of bonuses, including more bonuses if you buy Jackfruit with a certain and get some spices when buying young Jackfruit.

It was found that the increase in megono production had a very significant positive relationship to the demand for young jackfruit purchased by megono rice traders. This can mean that the more megono production by merchants, the greater the likelihood of purchasing young jackfruit. This happens because young jackfruit is the main ingredient in making megono, so increasing the price of the amount of megono rice traders will increase the amount of demand for young jackfruit by megono rice merchants. The increase in lemongrass prices is related to a decrease in demand for young jackfruit purchased by megono rice traders. It describes a characteristic pattern of complementary goods in which an increase in the price of a complementary good (lemongrass) can reduce demand for the main good (young jackfruit). Likewise with the price of galangal, the increase in galangal prices has a significant negative relationship with the demand for young jackfruit purchased by megono rice merchants. This indicates that the increase in galangal prices also has the potential to cause a decrease in demand for young jackfruit.

Bay leaf prices have a significant negative relationship to the demand for young jackfruit purchased by megono rice merchants. This suggests that the increase in bay leaf prices contributed to the decline in demand for young jackfruit in the context of megono rice. However, the price of orange leaves has a significant positive relationship to the demand for young jackfruit purchased by megono rice merchants. This indicates that the increase in the price of orange leaves is related to an increase in demand for young jackfruit. Based on interviews with megono rice traders as samples in this study, if the price of orange leaves increases significantly, megono rice traders choose not to use orange leaves in making megono and allocate expensive orange leaf purchase funds to buy young jackfruit, because according to respondents the use of orange leaves does not greatly affect the taste in making megono. Unlike the case with bay leaves, according to respondents who were interviewed researchers, the use of bay leaves in making megono is the key to improving the taste and aroma of megono produced.

The tempeh price variable has a significant negative relationship with the demand for young jackfruit purchased by megono rice merchants. This could be because megono rice merchants may consider tempeh and jackfruit prices as complementary to megono rice dishes, because tempeh, which is processed into mendoan, is often used as a companion in consuming megono rice. In addition, access to accurate and timely price information plays an important role in shaping merchants' purchasing decisions, especially when evaluating complementary products within the same consumption pattern [14].

Lastly, future price forecasts have a significant positive relationship to the demand for young jackfruit purchased by megono rice merchants. This could mean that while traders expect the price of young jackfruit to rise in the future, they tend to buy younger jackfruit now. The results of the interview conducted, when jackfruit production is declining, megono rice traders do several tricks in meeting the needs of their young jackfruit. In addition to buying young jackfruit in the market, young jackfruit traders also buy people directly, and there are even megono rice traders who buy young jackfruit that is still on the tree and take it little by little as needed. Half of young jackfruit traders consider price fluctuations to show their level of awareness of risk in their business. Sales forecasting is an important part of supply chain management for both retailers and distributors, manufacturers and suppliers. Timely and accurate sales forecasting is essential in bridging the gap between supply and demand, thereby reducing storage costs while keeping the possibility of running out of inventory. Price volatility is a significant risk in agricultural commodities, and this can fundamentally affect how traders assess their exposure to market risk and make purchasing decisions [15].

## 4 Conclusions

Based on the findings of this study on the demand for young jackfruit among megono rice traders in Karangsari Village, Karanganyar District, Pekalongan Regency, several conclusions can be drawn. The research shows that in August 2023, the total amount of young jackfruit required by megono traders reached 2,520 kg, with an average demand of 84 kg per trader. This substantial demand is influenced by seven key factors, namely the volume of megono production, the price of lemongrass, the price of galangal, the price of bay leaves, the price of lime leaves, the price of tempeh, and future price expectations. These variables collectively shape the purchasing behavior of megono traders and demonstrate the sensitivity of young jackfruit demand to changes in complementary input prices and market conditions.

In line with these findings, several recommendations are proposed to support the sustainability of young jackfruit availability in the region. Given the high and continuous demand for young jackfruit in Karangsari Village, it is essential for the local government to implement targeted measures to ensure the stability of this commodity. Establishing a more systematic procurement mechanism for young jackfruit could serve as one effective solution to accommodate the needs of megono traders and prevent shortages. Additionally, stabilizing basic market prices through local government policies is expected to reduce the economic burden on the community, particularly the megono rice traders who rely on stable raw material costs for their business operations. Strengthening market intervention and improving supply chain management may further contribute to long-term price stability and better support the livelihoods of local traders.

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