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Emerging Market Potential for Organic Farming Products

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Abstract

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Organic farming products need to be targeted towards specific market segments, particularly consumers who prioritize health and environmental concerns. However, the specialized market for organic agricultural products in Kota Batu is still in its infancy. This study aims to achieve the following research objectives: 1) assessing the potential and challenges of organic farming development, 2) identifying clusters within the organic farming sector, 3) developing an effective marketing system for organic farming products, and 4) determining optimal market locations for selling organic produce. The research was conducted in Kota Batu, East Java, in 2019, utilizing primary data gathered from farmers in fourteen villages. Quantitative descriptive analysis and the Analytical Hierarchy Process were employed to address the research objectives. The findings revealed the existence of organic farming clusters, including food crops (rice and corn), plantations (coffee), and horticulture (vegetables, fruits, and biopharmaceuticals). To develop the marketing system for organic agricultural products, emphasis was placed on organic certification, enhancing both the quality and quantity of products. Location development involved the centralization of markets, establishment of outlets for organic farming products, and improvements to infrastructure and facilities. To promote organic farming products, efforts were made to strengthen information dissemination through various media channels and foster a sense of community among consumers of organic farming products. The Town Square of Kota Batu and Central Market Batu emerged as the most strategically advantageous locations for marketing organic farming products, owing to their convenient accessibility for consumers.

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INTRODUCTION

Kota Batu, located in East Java, stands as a prominent area for the advancement of organic farming. This progress is backed by the city's medium-term development policy, which emphasizes sustainable agricultural development. Over the past decade, the City Government of Kota Batu, in collaboration with relevant agencies, has successfully implemented the "Batu Go Organic" program through a pilot project. Furthermore, there has been a noteworthy increase in the availability of outlets for organic farming products, including supermarkets, restaurants, organic enthusiasts' organizations, Non-Governmental Organizations (NGOs), and Organic Certification Institutions (Kementan-RI, 2016).

The "Batu Go Organic" program faces several challenges that encompass cultivation activities, production facilities, and marketing. In terms of cultivation activities, there is a concern regarding the limited extent of organic farming land and the persisting issue of high pollution resulting from the use of conventional farming chemicals. The production facilities for organic farming encounter delays in the distribution of necessary equipment, organic fertilizers, and the availability of organic pesticides, which are often limited in supply. Furthermore, the marketing of organic farming products presents a range of obstacles, including a restricted network for reaching potential consumers, the absence of dedicated venues for organic products, insufficient capital, a lack of product innovation and packaging design, intensified competition concerning both quality and quantity, and challenges related to pricing, particularly in comparison to imported products.

To address the challenges and potential of implementing the "Batu Go Organic" program in Kota Batu, a comprehensive scientific research study is warranted. This study draws upon previous national and international research on organic farming as a foundation for designing the research and establishing its objectives. Extensive literature review reveals that organic farming is widely acknowledged as a viable solution for ensuring the availability of healthy food in the future (Muller et al., 2017; Rahmann et al., 2017; Tal, 2018). Research conducted in various countries has examined and explored a diverse range of organic food products, spanning from production to marketing, such as organic vegetables, eggs, and rice (Ariadi et al., 2021; Ferdous et al., 2021; Relawati, Szymoniuk, et al., 2022; Safitri et al., 2022). These studies provide valuable insights and serve as a valuable resource for informing the design and focus of the research in Kota Batu.

The marketing of organic farming products faces an initial hurdle in the form of higher price differentials compared to conventional farming products (Bezawada & Pauwels, 2013; Pearson & Henryks, 2008; Relawati, Szymoniuk, et al., 2022). Consequently, it becomes essential to raise consumer awareness regarding the significance of organic farming products as a source of nutritious food and environmentally friendly cultivation (Bezawada & Pauwels, 2013; Kuboń & Olech,

2018; Sobocińska et al., 2021). Notably, previous studies have not examined the process of determining the initial market development of organic farming products within a specific region.

This research introduces a novel approach by examining the initial plan for developing a market for organic farming products based on the regional potential in Kota Batu. The study holds significant interest as the market development of organic farming products necessitates a comprehensive assessment of the marketing mix elements, namely product, price, place, and promotion. Therefore, scientifically investigating the potential and development strategies of organic farming products becomes crucial. The study aims to achieve the following objectives: 1) assessing the existing conditions, potential, and challenges of organic farming development in Kota Batu, 2) identifying organic farming clusters based on specific commodities within each area, 3) developing a comprehensive marketing system for organic farming products in Kota Batu, and 4) determining optimal market locations for organic farming products within Kota Batu.

RESEARCH METHOD

To ensure the success of the "Batu Go Green" program, it is crucial to scientifically identify and study the existing potential in accordance with objective and systematic criteria. The development of organic farming products should be concentrated in areas that possess potential from both production and economic perspectives, making the identification of such potential an essential initial step. Additionally, clustering the potential of organic farming products becomes imperative as it allows for a strategic focus on each type of organic product. This clustering facilitates the subsequent determination of a detailed marketing system. A comprehensive examination of the potential, clustering, and marketing systems serves as the foundation for considering the optimal locations for the distribution and sale of organic farming products. *Figure 1* provides a visual representation of the research framework, elucidating the interconnections between these crucial elements.

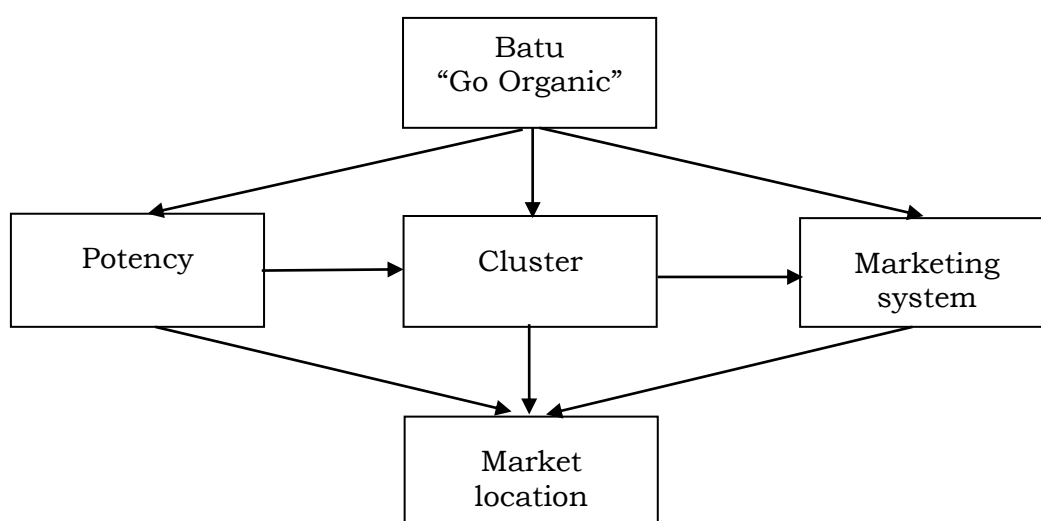


Figure 1. Research framework

The research was conducted in Kota Batu, located in East Java. A total of 14 villages within Kota Batu were selected as sample research locations. These villages include *Sumberejo*, *Temas*, *Sisir*, *Sumberbrantas*, *Giripurno*, *Tulungrejo*, *Pandanrejo*, *Gunungsari*, *Junrejo*, *Pendem*, *Torongrejo*, *Mojorejo*, *Beji*, and *Dadaprejo*. The rationale for choosing these specific locations was their active participation in the "Batu Go Organic" program. The selection of respondents was performed using the purposive sampling method, which resulted in a total of 54 participants. The respondents comprised farmer group leaders, administrators/members, organic farming business actors, and agricultural extension workers. Data collection was carried out through various techniques, including in-depth interviews, observations, and focus group discussions (FGDs). These methods were employed to ensure comprehensive data gathering and to capture diverse perspectives on organic farming in the research area.

The first objective of the research is analyzed using a quantitative descriptive method, which aims to provide an explanation of the conditions, potential, and challenges associated with the development of organic agriculture in Kota Batu. The second objective utilizes a quantitative descriptive approach to analyze the clustering of organic farming based on different commodities within each region of Kota Batu. The subsequent objective involves the quantitative descriptive analysis of the phenomenon surrounding the development of a marketing system for organic farming products in Kota Batu. The final objective utilizes the Analytical Hierarchy Process (AHP) method for analysis. AHP is a decision-making tool that considers factors such as experience, preference, perception, and intuition. In this research, the AHP method is applied to determine the optimal locations for the distribution and sale of organic farming products in Kota Batu. By employing a combination of quantitative descriptive methods and the Analytical Hierarchy Process, the research aims to provide a comprehensive analysis of the various aspects involved in the development and marketing of organic farming products in Kota Batu.

RESULT AND DISCUSSION

Potential and Challenges of Organic Farming Development in Kota Batu

The potential for organic farming development in Kota Batu was assessed by considering various factors such as land conditions, results of soil sample testing, land availability, and the types of organic commodities suitable for cultivation. To gather data on soil composition, soil samples were collected from 14 different locations distributed across three sub-districts: *Bumiaji*, *Batu*, and *Junrejo*. The detailed results of the soil sample testing are presented in Table 1, providing valuable insights into the composition and characteristics of the soil in the research area.

The findings presented in Table 1 indicate that the land in Kota Batu exhibits nutrient deficiency. To address this issue and enhance soil fertility, the application of organic fertilizer is recommended. It is suggested to apply organic fertilizer at a rate of at least 20 tonnes per hectare. Moreover, it is worth noting that Kota Batu possesses an ample amount of agricultural land that can support farming production. This availability of land resources provides a favorable foundation for the expansion and development of farming activities, including organic farming, within the region.

Table 1. Land condition for organic farming development in 2020

Description	Area (Ha)	%
Land slope		
Flat: Land with a slope less than 3%.	1,578.8	7.89
Slightly sloping: Land with a slope ranging from 3% to 8%.	2,072.02	10.36
Sloping: Land with a slope ranging from 8% to 15%.	3,041.10	15.30
Somewhat steep: Land with a slope ranging from 15% to 30%.	4,292.28	21.45
Steep: Land with a slope ranging from 30% to 40%.	2,066.24	18.05
Erosion level		
Light	8,836	41
Heavy	3,750	19
Very heavy	7,456	40
Soil sample		
Test results of soil samples		
Content and specific gravity of soil		low
Result of soil porosity		mostly medium
The organic C content of the soil		all are low
Organic matter content in the sample		low
NPK availability in plant soil		low

Source: Agriculture Office of Kota Batu (2020).

According to the data presented in Table 2, the total available farming land in Kota Batu encompasses an area of 17,685.78 hectares, spanning across the three sub-districts of Batu, Bumiaji, and Junrejo. Among these sub-districts, Junrejo stands out with the largest area of paddy fields. Consequently, it is deemed suitable for the development of organic rice and vegetable products. On the other hand, Bumiaji exhibits the largest extent of non-field farming land. This characteristic makes it a favorable location for the development of organic vegetables and fruits.

Table 2. Total Land Use Area by Sub-district in Kota Batu for 2020

Sub-district	Land Use (Ha)			Total (Ha)
	Paddy Fields	Non-Paddy Fields	Non-Field Farming Land	
Batu	716.23	2,436.52	1,393.06	4,545.8
Bumiaji	683.46	11,393.75	720.66	12,797.87
Junrejo	1,028.00	1,427.82	109.21	2,565.02
Kota Batu	2,427.69	15,258.09	2,222.93	19,908.70

Source: Agriculture Office of Kota Batu (2020).

Kota Batu offers potential advantages for agricultural development, primarily due to its altitude, which results in lower temperatures and higher humidity levels. Such conditions are highly favorable for farming activities, particularly the cultivation of horticultural crops. The City Government of Kota Batu has taken initiatives to promote sustainable and environmentally friendly farming systems through the implementation of the "Batu Go Organic" program as a pilot project. This project aims to encourage organic farming practices within the region. Table 3 provides an overview of organic crop commodity production in Kota

Batu. It highlights the various organic crops cultivated in the area and offers insights into the diversity of organic farming practices within the region. It is worth noting that the sustainable development of organic farming products in Kota Batu relies heavily on supportive land conditions. This is in line with the findings of Grubor et al. (2018) and Rozaki *et al.* (2020), emphasizing the importance of favorable land conditions to ensure the long-term sustainability and success of organic farming initiatives.

In Kota Batu, the cultivation of organic crops encompasses three primary commodities: food crops such as rice and corn, plantation crops like coffee, and organic horticulture. Within the realm of horticultural development, these commodities branch out into three distinct directions. Firstly, there are organic vegetable commodities comprising lettuce, leeks, garlic, spinach, cauliflower, mushrooms, kale, water spinach, beet, mustard greens, tomatoes, and carrots. Secondly, organic fruit commodities encompass guava and orange. Lastly, the region also focuses on the production of biopharmaceutical commodities, notably ginger.

In 2019, the highest food commodity production in Kota Batu was rice, with a total yield of 10.89 tons. Although this amount represents a small percentage (2.2%) compared to the overall rice production in Kota Batu, which reached 5,025.83 tons in the same year, it marks a significant step forward in the organic product development. Among the vegetable group, a diverse range of types is cultivated organically, with the highest production achieved by mustard plants at 13.99 tons. The fruit group yielded a production of 16.96 tons, consisting of 8.67 tons of oranges and 8.29 tons of guava. Furthermore, within the biopharmaceutical plant group, ginger stood out as the organically cultivated crop, with a production of 2.17 tons.

Table 3. Organic Crop Production in Kota Batu for 2018

No.	Type of Commodity	Type of Crop	Total Production (Ton)
1.	Organic Food	Rice	10.89
		Corn	1.63
2.	Organic Plantation	Coffee	1.05
	Organic Horticulture	Vegetables	69.27
3.		1. Mustard greens	13.99
		2. Cauliflower	9.35
		3. Mushrooms	8.68
		4. Kale	7.40
		5. Beet	6.61
		6. Carrot	6.15
		7. Lettuce	5.75
		8. Spinach	4.68
		9. Water spinach	3.14
		10. Leeks	1.59
		11. Tomatoes	1.17
		12. Garlic	0.73
	Fruits	16.96	
	1. Orange	8.67	
	2. Guava	8.29	
	Biopharmaca	2.17	
	1. Ginger	2.17	

Source: LAKIP Disperta (2018)

Despite the favorable conditions and abundant natural resources and agricultural potential in Kota Batu, the organic farming program faces certain obstacles in its implementation. The identified problems in the organic farming implementation in Kota Batu were determined based on the results of the Focus Group Discussion (FGD), as presented in Table 4.

Table 4. The Issues in Implementing Organic Farming in Kota Batu.

No.	Issues	Detail
1.	Cultivation of Organic Farming	Relatively limited area available for cultivation High levels of conventional farming chemical pollution Pest/plant disease attacks
2.	Production Facilities	Delay in distribution of production facilities Limited organic fertilizer Limited organic pesticides
3.	Marketing	Limited market network The absence of a designated place for organic farming Insufficient capital Lack of product innovation and packaging design Competition in quality, quantity, and price of imported products

Source: Primary Data (2019)

The allocation of land area for the development of organic farming products still faces competition from inorganic farming products, as not all farmers have adopted organic farming practices. This situation is not unique to Kota Batu but is also observed in other locations (Hendri et al., 2020). In fact, some farmers have even begun implementing organic farming on village croplands (Farikhah et al., 2018).

Identifying Organic Agriculture Clusters By Commodities

The objective of cluster determination is to ascertain the distinctiveness of each organic farming development zone through an understanding of the unique commodity characteristics within each area and its interconnections with other regions. This endeavor aims to formulate a strategic framework for organic farming development, while also ensuring market stability in terms of pricing for organic farming products. The distribution of organic farming commodities across various sub-districts (Batu, Bumiaji, Junrejo), as well as Kota Batu, is outlined in Table 5.

Consistent with the findings of this investigation, a separate clustering of consumers who prioritize sustainable food consumption has been documented (Verain et al., 2016). However, there remains a diverse range of consumer perceptions regarding organic farming products (Gracia, 2016; Radojević et al., 2021; Roitner-Schobesberger et al., 2008) In a similar vein, clustering of agricultural products has been employed in marketing strategies for small-scale enterprises in Eastern Poland (Barbara Szymoniuk, 2003, 2004). Furthermore, cluster development has also been employed in the management of the rice supply chain in China (De Silva & Yamao, 2010).

Table 5. Distribution of Organic Farming Commodities in Kota Batu, 2018

No.	Organic Farming Commodities	Organic Farming Area		
		Batu	Bumiaji	Junrejo
1.	Rice	<i>Temas</i>	<i>Giripurno</i>	<i>Junrejo, Mojorejo, Dadaprejo, Pendem, Beji</i>
2.	Corn	<i>Sisir, Temas</i>	<i>Giripurno, Pandanrejo, Tlekung, Bulukerto</i>	<i>Junrejo, Mojorejo, Dadaprejo, Pendem, Beji, Torongrejo</i>
3.	Coffee	<i>Sumberejo, Pesanggrahan</i>	-	-
4.	Vegetables	<i>Sisir, Pesanggrahan, Sumberejo, Temas,</i>	<i>Giripurno, Pandanrejo, Sumberbrantas, Bulukerto, Gunungsari, Sumbergondo, Tulungrejo</i>	<i>Dadaprejo, Pendem, Beji, Torongrejo, Junrejo, Mojorejo, Tlekung,</i>
5.	Fruits	-	-	<i>Dadaprejo, Mojorejo, Tlekung</i>
6.	Biopharmaca			

Source: LAKIP Disperta (2018)

Marketing System Development for Organic Agricultural Products

The marketing of organic farming products poses a significant challenge for farmers in Kota Batu, who frequently voice their concerns in this regard. While farmers are aware of the potential for higher prices associated with organic farming products, they struggle to achieve satisfactory sales at such prices. It is imperative for stakeholders in the organic farming sector to focus on key elements of the marketing system or marketing mix. This approach aligns with the comprehensive concept of the marketing mix, which emphasizes the holistic management of product, price, place, and promotion (Kotler & Armstrong, 2014). The subsequent section provides a detailed discussion of these essential aspects in the context of organic farming product development in Kota Batu.

Product

Organic farming products represent tangible goods accompanied by a range of visual representations and services aimed at fulfilling consumer needs (Wangge & Noni, 2021). A crucial characteristic of organic farming products lies in their inherent quality, which is supported by organic certifications. The certification process entails a series of ongoing inspections, audits of quality assurance systems, and final product assessments. The presence of an organic label plays a significant role in fostering consumer confidence in organic farming products (Relawati, Ariadi, et al., 2022; Relawati, Szymoniuk, et al., 2022). Additionally, it is essential to emphasize the importance of maintaining an adequate quantity and consistent production of organic farming products in Kota Batu. This aspect is

crucial for upholding the trust and loyalty of consumers within the organic farming product market in Kota Batu.

Price

Price plays a pivotal role in influencing consumers' shopping decisions (Wangge & Noni, 2021). In the context of organic farming, the significant costs associated with improving land quality and environmental factors contribute to higher prices of organic farming products. Nevertheless, when the quality of organic farming products is upheld, the elevated price becomes inconsequential. Previous research on the purchase of environmentally friendly products, including organic farming products, has demonstrated consumers' willingness to pay premium prices (Kai et al., 2013; Relawati, Szymoniuk, et al., 2022).

Location

To establish an effective marketing channel for organic farming products in Kota Batu, collaboration with hotels, malls, and supermarkets proves to be a viable alternative. This approach can be further reinforced by regional regulations that mandate the sourcing of organic food or commodities sold in these establishments from local organic farming production in Kota Batu. Government support for organic farming product marketing would also significantly enhance the prospects for development (Kotler & Keller, 2012; Purwaningsih et al., 2017).

Promotion

Table 6. Concept of Organic Farming Product Marketing System Development in 2019

Product	Price	Location	Promotion
Certification for Organic Farming Product	Price Guarantee	Market Centralization	Promotion Media
Quality	Price Information	Outlet for Organic Farming Products	Strengthening the Community among consumers of organic farming products
Quantity	Price Competition	Infrastructure	
Post-harvest handling		Facilities	

Source: Primary data processed (2019)

Promotion, as a crucial component of the marketing mix, plays a pivotal role in making the presence of products known to the public through effective communication by producers. Organic farming business operators must engage in continuous promotional activities to establish ongoing communication with customers, ensuring that they are consistently aware of the products and remain interested in purchasing them. Collaborating with hotels and supermarkets in Kota Batu not only serves as a strategy for generating organic consumer market demand in the area but also acts as a promotional medium to highlight the

commitment of the Kota Batu City Government in realizing the "Batu Go Organic" slogan.

Previous research findings indicate that effective promotion of organic farming products is more impactful than low prices (Bezawada & Pauwels, 2013). Drawing from the results of focus group discussions (FGDs) and secondary data, organic farming actors must consider specific components within the marketing system of their products. The marketing prospects for organic farming products are promising, as several previous studies have demonstrated an increasing demand for such products driven by heightened public awareness of health-related values (Ferdous et al., 2021; Kuboń & Olech, 2018; Murdayanti et al., 2021).

Determining the Market Location of Organic Farming Products

During the FGD, the profile and distribution of potential market locations for organic farming products in Kota Batu were established. The participants selected for the FGD comprised individuals and organizations with a vested interest in the development of organic farming areas within Kota Batu. The identified potential market locations for organic farming products are outlined in Table 7.

Table 7. Potential Locations for Organic Farming Products Market in Batu City, 2019

No.	Location	Village	Sub-district	Land Use	FGD selection (%)
1.	Town Square of Kota Batu	<i>Sisir</i>	<i>Batu</i>	Stores	20.7
2.	Central Market of Kota Batu	<i>Temas</i>	<i>Batu</i>	City Scale Market	3.4
3.	Land owned by City Government of Kota Batu	<i>Punten</i>	<i>Bumiaji</i>	Vacant Buildings and Vacant Land	13.8
4.	Former Office of the Village Government of Giripurno	<i>Giripurno</i>	<i>Bumiaji</i>	Vacant Buildings	10.3

Source: Primary data processed (2019)

Table 7 illustrates the selection of the most suitable marketing locations for organic farming products, with the Town Square of Kota Batu identified as the top choice. This particular location is deemed strategically advantageous in terms of marketing success. The second and third prioritized market locations are situated on land owned by the Kota Batu City Government and the former office of the Giripurno Village Government, both located in Bumiaji. These locations offer benefits such as ample space availability and proximity to the popular apple-picking tour, which serves as a tourist attraction.

The determination of the organic farming market location is conducted using the score weight method, specifically the Analytical Hierarchy Process (AHP). Table 8 presents the weight assigned to each criterion utilized in the process of determining the organic farming market location.

Table 8. Weight of Each Criterion for Determining the Location of Organic Farming Products Market in 2019

No.	Criteria	Weight
1.	Proximity to organic farming location	26.30
2.	Proximity to consumers	14.37
3.	Availability of labor	7.96
4.	Availability of transportation	10.19
5.	Land status	11.91
6.	Direction of city development	7.63
7.	Physical condition of land	6.92
8.	Presence of protection	9.24
9.	Presence of human settlements	5.48

Source: Primary data processed (2019)

The selection criteria for potential organic farming product market locations are delineated based on various considerations. The first criterion is the proximity of consumer distance to the organic farming area. The distances between the potential market locations and the entrance gate of Kota Batu, as well as the distribution of tourist areas, are presented in Table 9.

Table 9. Distance of Potential Sites to Tourism Sites and Entrance Gates of Kota Batu in 2019

No.	Location	Village	Distance from Entrance Gates of Kota Batu (km)	Distance from Tourism Sites (km)	Average Distance (km)
1.	Town Square of Kota Batu	<i>Sisir</i>	8	0	4
2.	Central Market of Kota Batu	<i>Temas</i>	7.6	0.5	4.05
3.	Land owned by the City Government of Batu	<i>Punten</i>	7.3	1.3	4.3
4.	Former Office of the Village Government of Giripurno	<i>Giripurno</i>	1	1.6	1.3

Source: Primary Data (2019)

Another significant consideration is the availability of labor. According to the 2020 data from the Central Statistics Agency (BPS-Kota-Batu, 2020), the total labor force in the productive age group (above 15 years old) in Kota Batu is 114,572 people. This comprises 111,733 individuals employed, and 2,839 individuals categorized as open unemployment. Within the primary sector in Batu City, there are 26,925 individuals employed in agriculture. This figure indicates that 24.09% of the labor force population prefers to work in agriculture, which is a higher percentage compared to the manufacturing sector, which stands at 16.72%. Additionally, the 2,839 individuals in the open unemployment category may consider opportunities in the agricultural sector, particularly in organic farming.

Transportation availability is indeed an important consideration when determining the market location. Table 10 presents the distances between

potential locations and transportation network elements in Kota Batu, which further informs the decision-making process.

Table 10. Distance between Potential Location and Transportation Network Elements in Kota Batu in 2019

No.	Location	Village	Road Hierarchy	Route Availability	Distance to Transportation Nodes (km)
1.	Town Square of Kota Batu	<i>Sisir</i>	Primary Collector	√	1.7
2.	Central Market of Kota Batu	<i>Temas</i>	Secondary Collector	√	0
3.	Land owned by the City Government of Batu	<i>Punten</i>	Primary Collector	√	1
4.	Former Office of the Village Government of Giripurno	<i>Giripurno</i>	Primary Collector	√	0.7

Source: Primary Data (2019)

Table 11 presents an overview of the land status in potential locations that are deemed viable for the cultivation and sale of organic farming products. The ownership of land by the City Government has significantly facilitated the development of organic farming areas within Kota Batu. This advantageous situation not only grants the City Government of Kota Batu easier access but also allows for substantial cost savings when acquiring land for organic farming initiatives.

Table 11. Land status of potential locations as organic farming products markets in 2019

No.	Location	Village	Sub-district	Land Status
1.	Town Square of Kota Batu	<i>Sisir</i>	Batu	Owned by the City Government
2.	Central Market of Kota Batu	<i>Temas</i>	Batu	Owned by the City Government
3.	Land owned by the City Government of Batu	<i>Punten</i>	Bumiaji	Owned by the City Government
4.	Former Office of the Village Government of Giripurno	<i>Giripurno</i>	Bumiaji	Village land (Bengkok)

Source: Primary Data (2019)

Table 12 showcases the distances between market locations, activity centers, and security facilities in Kota Batu. The determination of these distances is a key factor in selecting suitable locations. As emphasized by Kotler and Keller (2012) market location holds significant importance in consumer decision-

making. Similarly, the location of farms also influences consumer buying interest, as highlighted by Wangge and Noni (2021).

Table 12. Distance of Potential Location to Service Centers and Security Facilities in 2019

No	Location	Village	Distance from Service Center (Km)			Distance from Security Facilities (Km)	
			Center of City Service	Sub-center of City Service	Center of Neighborhood Service	Police Station	Fire Station
1.	Town Square of Kota Batu	Sisir	1.3	1.3	2.0	0.5	0.3
2.	Central Market of Kota Batu	Temas	2.6	2.6	0.9	2.0	2.3
3.	Land owned by the City Government of Batu	Punten	4.0	0.9	1.0	0.7	3.7
4.	Former Office of the Village Government of Giripurno	Giripur no	5.0	6.9	2.7	6.8	5.1

Source: Primary Data (2019)

Physical Condition of Land

Table 13 illustrates the land conditions at potential market locations, specifically in terms of erosion disaster vulnerability. All of the identified locations are classified as having a very rare level of vulnerability (class 1) to erosion disasters.

Table 13. Land Condition at the Potential Location of the Organic Farming Products Market in 2019

No.	Location	Village	Description
1	Town Square of Kota Batu	Sisir	Flat ground with developed land use.
2	Central Market of Kota Batu	Temas	Flat ground with developed land use.
3	Land owned by the City Government of Batu	Punten	Slightly sloping land surface with undeveloped land use, bordering a small, relatively steep river.
4	Former Office of the Village Government of Giripurno	Giripurno	Located on a very steep river with a relatively strong current, making it vulnerable to disasters.

Source: Primary Data (2019)

Table 14 displays the results of calculating the load score for each potential market location based on the selection criteria weight. Settlements surrounding the market locations ensure the presence of sellers and buyers of organic agricultural products, along with supporting activities within the market vicinity. It is worth noting that all potential market locations are situated in proximity to residential areas, encompassing both existing and planned settlements.

Table 14. Calculation of Load Score of Potential Locations of Organic Farming Products Market in 2019

Criteria	Weight	Score				Weight x Score			
		Town Square of Kota Batu	Central Market of Kota Batu	Land owned by the City Government of Batu	Former Office of the Village Government of Giripurno	Town Square of Kota Batu	Central Market of Kota Batu	Land owned by the City Government of Batu	Former Office of the Village Government of Giripurno
Proximity to Organic Farming Locations	26.30	3	3	1	2	78.9	78.9	26.3	52.6
Proximity to Consumers	14.37	3	1	1	3	43.11	14.37	14.37	43.11
Availability of Labor	7.96	3	3	1	1	23.88	23.88	7.96	7.96
Availability of Transportation	10.19	2	3	3	3	20.38	30.57	30.57	30.57
Land Status	11.91	3	3	3	2	35.73	35.73	35.73	23.82
Direction of City Development	7.63	3	3	3	1	22.89	22.89	22.89	7.63
Physical Condition of Land	6.92	3	3	2	1	20.76	20.76	13.84	6.92
Presence of Protection	9.24	3	3	3	1	27.72	27.72	27.72	9.24
Presence of Population Settlement	5.48	2	2	2	3	10.96	10.96	10.96	16.44
		Total				284.33	265.78	190.34	198.29

Table 14 provides a comparison between the location determination of the organic farming market based on the results of Focus Group Discussions (FGDs) and the method of load score. This comparative analysis aims to identify alternative locations with the potential to serve as organic farming markets in Kota Batu. The outcomes of this comparison are presented in Table 15.

Table 15. Comparison of Organic Farming Products Market Location Based on FGD Results with the Method of Load Score in 2019

Location	Village	Result of FGD		Result of Load Score	
		Percentage	Ranking	Percentage	Ranking
Town Square of Kota Batu	<i>Sisir</i>	20.7%	1	284.33	1
Central Market of Kota Batu	<i>Temas</i>	3.4%	6	265.78	2
Land owned by the City Government of Batu	<i>Punten</i>	13.8%	4	190.34	5
Former Office of the Village Government of Giripurno	<i>Giripurno</i>	10%	5	198.29	4

Source: Primary Data (2019)

Based on the obtained results, the Town Square of Kota Batu emerges as the most strategic location for establishing a market dedicated to organic farming products. Its prime advantage lies in its central position within the city, which ensures easy accessibility for both local residents of Batu and visiting tourists.

Table 16 presents the findings of traffic studies conducted at potential locations for organic farming markets, specifically focusing on the Town Square of Kota Batu and the Central Market of Kota Batu. These locations have been identified as having the potential to serve as markets for organic farming products based on the determination derived from FGDs and Load Scores. The study examines the accessibility aspect, specifically the traffic conditions at these locations.

Table 16: Traffic Conditions at Potential Locations as Organic Farming Markets in 2019

No.	Location	Village	Traffic Conditions
1.	Town Square of Kota Batu	Sisir	The main road in the activity center of Kota Batu experiences consistently busy traffic conditions on weekdays and becomes congested during weekends and holidays.
2.	Central Market of Kota Batu	Temas	The entry and exit points designated for passenger and goods transportation contribute to the constant busyness of traffic on weekdays, weekends, and holidays.

Source: Primary Data (2019)

In planning the development of organic farming product markets, several scenarios can be considered. Firstly, if the realization of the north ring road from Giripurno to Pujon occurs, it is anticipated that traffic density will decrease, potentially alleviating congestion issues. Secondly, developing the organic farming markets at the aforementioned potential locations would not burden the existing road capacity. The development plan for the Organic Farming Market location is divided into two stages: short-term (5 years) and medium-term (10 years). This phased approach allows for systematic and gradual progress in the market's establishment and growth. According to Szymoniuk and Valtari (2018), marketing of organic farming products involves a distinct marketing system that effectively utilizes the power of social media. Consumers of organic farming products are willing to pay a premium price for the assurance of safe and organic produce (Zhang et al., 2018). The targeted market segment for organic farming products is the specialized market segment (Sarti et al., 2018).

Table 17. Potential Locations for Organic Farming Products Market in Kota Batu, 2019

Planning Stage	Planning Period	Market Design	Location
Short Term	2015-2020	Outlet for organic farming product	2 potential locations as outlet: Town Square of Kota Batu <i>Central Market</i> of Kota Batu
Long Term	2020-2025	Market for organic farming product	2 potential locations as market: Town Square of Kota Batu <i>Central Market</i> of Kota Batu

Source: Primary Data (2019)

CONCLUSIONS

The identification of development potential and clustering of organic products in Kota Batu has yielded suitable options in terms of products and locations. The food crop cluster, with organic rice as the primary focus, is located in Junrejo. The horticultural crop cluster, prioritizing organic vegetables, is situated in Bumiaji, while organic fruits are developed in Junrejo. The marketing system for these organic products encompasses the management of the marketing mix, which includes product, price, place, and promotion. This comprehensive approach ensures effective marketing strategies are implemented to reach the target market. In terms of market location, the Town Square of Kota Batu has been determined to be the most easily accessible to consumers. Its central position in the city ensures convenience for both local residents and visiting tourists seeking organic products.

RECOMMENDATION

The successful development of the organic farming product market in Kota Batu requires a comprehensive approach. This entails conducting socialization, training, and coaching programs to raise awareness among farmers about the benefits and practices of organic farming. Emphasis should be placed on maintaining high product quality and obtaining organic certification, providing consumers with reliable assurance. Market access expansion can be achieved through the creation of dedicated outlets and the establishment of a robust marketing information network. Technological advancements should focus on improving the availability of organic fertilizers and pesticides through farmer group associations. Premium pricing, tailored to the product type, will reflect the value and quality of organic products. Promotion efforts should involve stakeholders collaborating on both online platforms and direct engagement at exhibitions and similar events. By implementing these strategies collectively, the organic farming product market in Kota Batu can thrive and meet the growing demand for organic produce.

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REFERENCES

- Ariadi, B. Y., Relawati, R., Szymoniuk, B., & Khan, W. A. (2021). The Factors Influencing Purchase and Willingness to Pay for Organic Vegetables. *Sarhad Journal of Agriculture*, 37(1), 207–218. <https://doi.org/10.17582/journal.sja/2022.37.s1.207.218>
- Bezawada, R., & Pauwels, K. H. (2013). What Is Special About Marketing Organic Products? How Organic Assortment, Price, and Promotions Drive Retailer Performance. *Journal of Marketing*, 77(1), 31–51. <https://doi.org/10.1509/jm.10.0229>
- BPS-Kota-Batu. (2020). *Kota Batu dalam Angka 2020*. Badan Pusat Statistik Kota Batu. <https://batukota.bps.go.id/publication/2020/04/27/383dbaff7616e98ac9d0571c/kota-batu-dalam-angka-2020.html>
- De Silva, D., & Yamao, M. (2010). Rice pinch to war thrown nation: an overview of the rice supply chain of Sri Lanka and the consumer attitudes on government rice risk management. *Journal of Agricultural Sciences*, 4(2), 77. <https://doi.org/10.4038/jas.v4i2.1647>
- Dinas-Pertanian. (2020). *Laporan Penggunaan Lahan (SP Lahan)*. Dinas Pertanian

Kota Batu.

- Farikhah, S., Fatimah, N., & Luthfi, A. (2018). Pemberdayaan Masyarakat Desa Melalui Program Integrated Ecofarming (Studi Kasus di Desa Asinan Kecamatan Bawen Kabupaten Semarang). *SOCA: Journal on Socio-Economics of Agriculture and Agribusiness*, 12(1), 1–14. <https://doi.org/10.24843/soca.2018.v12.i01.p01>
- Ferdous, Z., Zulfiqar, F., Datta, A., Hasan, A. K., & Sarker, A. (2021). Potential and challenges of organic agriculture in Bangladesh: a review. *Journal of Crop Improvement*, 35(3), 403–426. <https://doi.org/10.1080/15427528.2020.1824951>
- Gracia, A. (2016). Consumers' willingness-to-pay for sustainable food products: the case of organically and locally grown almonds in Spain. *Journal of Cleaner Production*, 118, 97–104. <https://doi.org/10.1016/j.jclepro.2016.01.050>
- Grubor, A., Milicevic, N., & Djokic, N. (2018). Serbian organic food consumer research and bioeconomy development. *Sustainability (Switzerland)*, 10(12), 1–12. <https://doi.org/10.3390/su10124820>
- Hendri, L. W., Ismono, R. H., & Situmorang, S. (2020). Analisis Pendapatan Dan Keberlanjutan Usahatani Padi Sawah Organik dan Anorganik Di Kabupaten Pringsewu Provinsi Lampung. *Jurnal Ilmu-Ilmu Agribisnis*, 8(4), 547. <https://doi.org/10.23960/jiia.v8i4.4697>
- Kai, S. B., Chen, O. B., Chuan, C. S., Seong, L. C., & Kevin, L. L. T. (2013). Determinants of willingness to pay of organic products. *Middle East Journal of Scientific Research*, 14(9), 1171–1179. <https://doi.org/10.5829/idosi.mejsr.2013.14.9.1959>
- Kementan-RI. (2016). *Penguatan Sistem Pertanian Organik Indonesia Menuju Berkembangnya Desa Pertanian Organik & Menguasai Pasar Organik Dunia* (Issue April). <http://bbppmbtph.tanamanpangan.pertanian.go.id/index.php/berita/95>
- Kotler, P., & Armstrong, G. (2014). Principles of Marketing (Fifteenth Edition). In *The great impulse challenge*.
- Kotler, P., & Keller, K. L. (2012). *Marketing Management* (14th ed.). Prentice Hall. <https://doi.org/10.4324/9781315099200-17>
- Kuboń, M., & Olech, E. (2018). *Marketing of organic products in southern Poland*. 01014, 1–5. <https://doi.org/10.1051/bioconf/20181001014>
- LAKIP-Disperta. (2018). *Laporan Akuntabilitas Kinerja Instansi Pemerintah*. Kota Batu. Unpublished
- Muller, A., Schader, C., El-Hage Scialabba, N., Brüggemann, J., Isensee, A., Erb, K. H., Smith, P., Klocke, P., Leiber, F., Stolze, M., & Niggli, U. (2017). Strategies for feeding the world more sustainably with organic agriculture. *Nature Communications*, 8(1), 1–13. <https://doi.org/10.1038/s41467-017-01410-w>
- Murdayanti, M., Tarik Ibrahim, J., & Baroh, I. (2021). Farmer Empowerment Strategies Through Organic Vegetables Development. *SOCA: Jurnal Sosial, Ekonomi Pertanian*, 15(1), 108. <https://doi.org/10.24843/soca.2021.v15.i01.p10>
- Pearson, D., & Henryks, J. (2008). Marketing organic products: Exploring some of

- the pervasive issues. *Journal of Food Products Marketing*, 14(4), 95–108. <https://doi.org/10.1080/10454440801986421>
- Purwaningsih, Y., Widiyanti, E., & Cahyadin, M. (2017). Trading system of food commodity. *Economic Journal of Emerging Markets*, 9(2), 172–180. <https://doi.org/10.20885/ejem.vol9.iss2.art6>
- Radojević, V., Tomaš Simin, M., Glavaš Trbić, D., & Milić, D. (2021). A profile of organic food consumers—Serbia case-study. *Sustainability (Switzerland)*, 13(1), 1–22. <https://doi.org/10.3390/su13010131>
- Rahmann, G., Ardakani, M. R., Bärberi, P., Boehm, H., Canali, S., Chander, M., David, W., Dengel, L., Erisman, J. W., Galvis-Martinez, A. C., Hamm, U., Kahl, J., Köpke, U., Kühne, S., Lee, S. B., Løes, A. K., Moos, J. H., Neuhof, D., Nuutila, J. T., ... Zanolli, R. (2017). Organic Agriculture 3.0 is innovation with research. *Organic Agriculture*, 7(3), 169–197. <https://doi.org/10.1007/s13165-016-0171-5>
- Relawati, R., Ariadi, B. Y., Bakhtiar, A., & Minarsih, I. (2022). *Perilaku Konsumen Pangan Organik*. Bildung.
- Relawati, R., Szymoniuk, B., Ariadi, B. Y., & Handayanto, E. (2022). Pricing Strategy for the Organic Eggs: Willingness to Pay and Hedonic Price Approaches. *SOCA: Jurnal Sosial Ekonomi Pertanian*, 16(1), 781–792. <https://doi.org/10.24843/SOCA.2022.v16.i01.p11>
- Roitner-Schobesberger, B., Darnhofer, I., Somsook, S., & Vogl, C. R. (2008). Consumer perceptions of organic foods in Bangkok, Thailand. *Food Policy*, 33(2), 112–121. <https://doi.org/10.1016/j.foodpol.2007.09.004>
- Rozaki, Z., Salassa, D. I., & Nugroho, R. B. (2020). Farmers' responses to organic rice farming in Indonesia: Findings from Central Java and South Sulawesi. *Open Agriculture*, 5(5), 703–710. <https://doi.org/10.1515/opag-2020-0070>
- Safitri, Y., Listiana, I., Yanfika, H., & Silviyanti, S. (2022). *Application Of Organic Vegetable Cultivation With The Utilisation Of The Yard*. 16(3), 279–289. <https://doi.org/10.24843/SOCA.2022.v16.i03.p05>
- Sarti, S., Darnall, N., & Testa, F. (2018). Market segmentation of consumers based on their actual sustainability and health-related purchases. *Journal of Cleaner Production*, 192, 270–280. <https://doi.org/10.1016/j.jclepro.2018.04.188>
- Sobocińska, M., Kociszewski, K., Mazurek-Iopacińska, K., Skowron, S., & Graczyk, A. (2021). The role of marketing in shaping the development of the market of organic farming products in Poland. *Sustainability (Switzerland)*, 13(1), 1–20. <https://doi.org/10.3390/su13010130>
- Szymoniuk, B., & Valtari, H. (2018). The REKO system in Finland: A new model of a sustainable marketing channel. *Problemy Ekorozwoju - Problems of Sustainable Development*, 13(2), 103–111. <https://doi.org/bwmeta1.element.baztech-8d4dbec9-fdc6-4b9f-93dc-1c46645ee2d2>
- Szymoniuk, Barbara. (2003). Rural Clusters in the Lublin Region (Eastern Poland) - Good Solutions for a Young Democracy. *43rd Congress of the European Regional Science Association*, 1–7.
- Szymoniuk, Barbara. (2004). Setting up rural clusters in Poland. *Europe at the Margins: EU Regional Policy, Peripherality and Rurality*, 1–8.

- Tal, A. (2018). Making conventional agriculture environmentally friendly: Moving beyond the glorification of organic agriculture and the demonization of conventional agriculture. *Sustainability (Switzerland)*, 10(4). <https://doi.org/10.3390/su10041078>
- Verain, M. C. D., Sijtsema, S. J., & Antonides, G. (2016). Consumer segmentation based on food-category attribute importance: The relation with healthiness and sustainability perceptions. *Food Quality and Preference*, 48, 99–106. <https://doi.org/10.1016/j.foodqual.2015.08.012>
- Wangge, R. K., & Noni, S. (2021). Strategi Bauran Pemasaran Sayuran Dalam Meningkatkan Minat Beli Konsumen. *Jurnal Agribisnis*, 10(1), 53–59. <https://doi.org/10.32520/agribisnis.v10i1.1523>
- Zhang, B., Fu, Z., Huang, J., Wang, J., & Xu, S. (2018). Consumers' perceptions, purchase intention, and willingness to pay a premium price for safe vegetables: A case study of Beijing, China Conventional vegetable. *Journal of Cleaner Production*, 197, 1498–1507. <https://doi.org/10.1016/j.jclepro.2018.06.273>