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Risk management in developing marketing strategy for organic rice in Kediri Regency

[Manajemen risiko dalam pengembangan strategi pemasaran beras organik di Kabupaten Kediri]

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ABSTRACT

The current development of marketing has been experiencing growth over time. Every activity carried out by marketing efforts results in impacts or risks. Assessing marketing activity risks allows marketers to control and monitor each risk and ultimately achieve their company's strategies. This research aimed to analyze the marketing risks of organic rice in Kediri Regency and formulate risk mitigation strategies for marketing organic rice in Kediri Regency. Expert respondents in this study were seven individuals selected through a census method who were organic rice marketers in the Kediri Regency. This study used nine marketing risk variables and 22 marketing risk indicators. The methods employed included Fuzzy Failure Mode Effect Analysis (FFMEA) and Analytical Hierarchy Process (AHP). FFMEA aimed to identify risks and provide risk assessments, while AHP aimed to determine alternative strategies for marketing risks. The results of the study showed that the highest priority risk levels and marketing risks included uncertainty in organic rice demand, price competition, limitations in sales areas, consumers' lack of familiarity with the target product, limited knowledge about sustainable technology, sorting practices that did not meet standards, packaging that affected product durability, minimal knowledge related to digital payments, and lack of partnership information. Nine strategies were proposed to minimize the existing risks, namely expanding digital marketing channels, offering product bundles, strengthening sales through cooperation with local stores, creating promotional media, conducting marketing management training, optimizing existing processes, improving packaging quality according to standards, financial planning related to business development, and improving information flow between partnerships.

Keywords: marketing, marketing risk, marketing strategy, organic rice

ABSTRAK

Pemasaran terus berkembang pesat dari waktu ke waktu. Setiap aktivitas yang dilakukan oleh pemasaran dalam melakukan usaha menimbulkan dampak atau risiko. Menilai risiko kegiatan pemasaran memungkinkan pemasar untuk mengontrol dan memantau setiap risiko dan pada akhirnya mencapai strategi perusahaan mereka. Penelitian ini bertujuan untuk menganalisis risiko pemasaran beras organik dan merumuskan strategi mitigasi risiko pemasaran beras organik di Kabupaten Kediri. Penelitian ini menggunakan responden ahli sebanyak 7 orang dengan metode pengambilan sensus yang merupakan pemasar beras organik di Kabupaten Kediri. Penelitian ini menggunakan 9 variabel dan 22 indikator risiko pemasaran. Metode yang digunakan menggunakan metode *Fuzzy Failure Mode Effect Analysis* (FFMEA) dan *Analytical Hierachy Process* (AHP). FFMEA bertujuan untuk mengidentifikasi risiko dan memberikan penilaian risiko. AHP bertujuan untuk menentukan alternatif strategi pada risiko pemasaran. Hasil menunjukkan bahwa tingkat prioritas dan nilai risiko pemasaran tertinggi meliputi ketidakpastian permintaan beras organik, persaingan harga, keterbatasan wilayah penjualan, konsumen kurang mengenal produk target, keterbatasan pengetahuan tentang teknologi berkelanjutan, pensortiran yang dilakukan belum memenuhi standar, kemasan produk yang membuat produk tidak mudah tahan lama, minimnya pengetahuan terkait pembayaran digital, dan kurangnya informasi kemitraan. Terdapat sembilan strategi yang dapat digunakan sebagai upaya meminimalkan risiko yang ada, yaitu memperluas saluran pemasaran digital, memberi paket gabungan produk, memperkuat penjualan dengan kerjasama dengan toko-toko daerah, membuat media promosi beras organik, mengadakan pelatihan manajemen pemasaran, pengoptimalan proses yang sudah ada, meningkatkan kualitas kemasan produk sesuai standar, melakukan perencanaan keuangan terkait perkembangan bisnis, dan melakukan perbaikan aliran informasi antar kemitraan.

Kata kunci: beras organik, pemasaran, risiko pemasaran, strategi pemasaran

Introduction

Marketing development has expanded over time, becoming vital not only for large corporations but also for SMEs (Fajarini & Nursanti, 2021). Marketing is a social and managerial process where individuals or groups fulfill their needs by creating and exchanging products of value (Kotler & Amstrong, 2019). However, every company activity involves risks—potential situations that may lead to adverse outcomes, requiring an understanding of their likelihood (Rodríguez-Espíndola et al., 2022).

Today's marketing strategies focus on optimizing decision-making, but marketing risks are unavoidable and inherent in every action (Santana et al., 2023). Assessing these risks enables organizations to monitor and control them, aiding in the achievement of marketing goals (Azadnia et al., 2021). Comprehensive risk assessment methods are essential to address uncertainties and ambiguities in risk analysis. While many researchers have studied supply chain risks like supplier performance and transportation disruptions (Collier et al., 2021; Dohale et al., 2022), marketing risks, especially demand-side risks, remain under explored (Azadnia et al., 2021).

One of the commodities susceptible to marketing risks is organic rice. Cultivated through organic farming methods that exclude chemical fertilizers and pesticides, it is healthier than conventionally grown rice. Organic rice also offers advantages such as better appearance, aroma, sweeter taste, and improved texture when cooked (Ruan et al., 2023). Additionally, it contains higher dietary fiber and protein while having lower fat and reducing sugars compared to conventional rice (Handayani et al., 2018; Nirmagustina & Handayani, 2020). However, the complex cultivation process results in higher prices, ranging from IDR 15,000–17,000/kg, making it less competitive. Organic farming, guided by principles of health, ecology, fairness, and care, is recognized as an efficient practice for environmental sustainability (David et al., 2023).

Marketing organic rice in Kediri Regency faces significant challenges. Marketers struggle with limited market access and consumer outreach. Additionally, the higher price of organic rice compared to conventional alternatives discourages consumers from purchasing it (Abadi & Herwin, 2019). his price disparity influences purchasing decisions, reducing its attractiveness. Other barriers include weak pricing structures, information asymmetry, poor marketing institutions, inadequate handling and packaging of farm products, and insufficient farmer coordination (Donkor et al., 2021; Ntow et al., 2023). Addressing these marketing risks is crucial for increasing sales and overcoming obstacles to growth.

Research on marketing risks remains limited, with most studies focusing on supply chain risks such as supplier performance, quality, and transportation disruptions (Abdel-Basset & Mohamed, 2020; Collier et al., 2021; Dohale et al., 2022). However, demand-related risk factors, particularly in marketing, remain underexplored. As marketing risks evolve with current developments, it is essential to investigate these risks to fill the research gap. This study adopts the marketing mix theory of Kotler & Amstrong (2019) as its framework and introduces nine additional variables to better capture contemporary marketing risks in organic rice. To mitigate risks, this study employs Fuzzy Failure Modes and Effect Analysis (Fuzzy FMEA) and the Analytical Hierarchy Process (AHP).

Fuzzy FMEA, an improvement on conventional FMEA, addresses the subjectivity and uncertainty inherent in expert risk assessments by integrating fuzzy set theory (Hassan et al., 2023; Yucesan et al., 2021). Traditional FMEA assumes equal importance for severity (S), occurrence (O), and detection (D), but Fuzzy FMEA assigns variable significance, offering more accurate risk prioritization and obtaining accurate responses (Balaraju et al., 2019; Calache et al., 2021; Laali, 2021). Meanwhile, AHP is a decision-making tool that aids in understanding a system, predicting outcomes, and selecting priority strategies and products based on pairwise comparisons (Liu et al., 2020). In this study, Fuzzy FMEA was used to measure and prioritize identified marketing risks, while AHP was applied to develop risk management strategies for the highest-priority risks.

Based on the background above, this research aims to analyze the marketing risks of organic rice in the Kediri Regency and formulate mitigation strategies to address these risks effectively. By achieving these objectives, this research aims to provide insights and practical recommendations that can help stakeholders in Kediri Regency manage and optimize the marketing of organic rice.

Materials and method

Collected data

This study employed a quantitative approach, utilizing primary data from numerical information from in-depth interviews conducted with each informant. The research location was determined purposively in the Kediri district and was conducted from November 2023 to January 2024. Expert respondents were purposively selected based on their ability to provide relevant insights for the research. Key informants, chosen for their expertise, contributed primary data to complement quantitative findings, such as organizational records or external data (Cossham & Graeme, 2019). The Agriculture and Extension Office in Kediri identified seven organic rice marketers meeting specific criteria: membership in an organic rice farmers' group, at least three years of marketing experience, and active involvement in organic rice marketing in Kediri. These key informants provided insights into marketing risks and potential mitigation strategies, offering a comprehensive understanding of the region's organic rice marketing challenges and solutions.

Materials

The data used in this research is divided into two types: primary data and secondary data. The primary data collection tool was a questionnaire, and the secondary data used data obtained from the Kediri agriculture department and literature review. The variables in this study were determined using the marketing mix (Kotler & Amstrong, 2019), which consists of four elements: product, place, price, and promotion. While these marketing mix variables remain relevant today, they are considered inadequate to explain the complexities of modern marketing. Therefore, additional variables have been introduced to update the marketing mix: people, process, payment, and packaging (Sari et al., 2019). Based on previous research and direct interviews with expert respondents, 22 marketing risk indicators relate to organic rice. Table 1 presents the marketing risk factors.

Table 1. Risk factors of marketing

Variables	Risk factor	Description
Product (Kotler & Amstrong, 2019)	Easily damaged during storage	Organic rice's susceptibility to damage during prolonged storage lowers quality, affecting selling price and profits (David et al., 2023)
	Uncertain demand for organic rice	Uncertainty of demand for organic rice leads to stock accumulation and various subsequent risks (Ali et al., 2019)
Price (Kotler & Amstrong, 2019)	Price competition	The presence of similar products at different prices (Mangla et al., 2015)
	Lack of knowledge regarding price information	Marketers in Kediri lack price knowledge due to dispersed marketing areas and personalized pricing practices (Handayani et al., 2019).
	Price is less competitive with similar products	Several factors make consumers prefer non-organic food products, including price (Abadi & Herwin, 2019).
Place (Kotler & Amstrong, 2019)	Sales area limitations	Limited market information and unclear channels create uncertain conditions for locally marketed organic rice (Handayani et al., 2019)
	Hard to reach the location	Consumers find it difficult to access organic rice products (David et al., 2023)
	The emergence of new competitors	There is a growing number of organic rice marketers (Khorniawati, 2014).

Variables	Risk factor	Description
Promotion (Kotler & Amstrong, 2019)	Consumers are less familiar with the target product	Lack of awareness about organic rice products among consumers (David et al., 2023)
	Promotional plans are inefficient	Promotional plans fail to achieve their objectives effectively (Khairani, 2022)
People (Sari et al., 2019)	The difficulty of finding human resources	Insufficient understanding of marketing leads to poor sales (Jaya, 2020)
	Lack of HR expertise	The supply chain lacks professional human resources at the production and processing levels (Sjaf et al., 2022).
	Limited knowledge of marketing technologies	Lack of flexibility and adaptation to technological changes (Mangla et al., 2015; Sjaf et al., 2022).
Process (Sari et al., 2019)	The sorting carried out does not meet the standards	Non-standard sorting processes result in customer complaints due to negligence.
	Lack of expertise in quality maintenance	Product quality is closely linked to customer satisfaction, as quality determines the ability to satisfy customers (Kotler & Amstrong, 2019).
Packaging (Sari et al., 2019)	Product packaging makes the product not durable	Non-standard packaging reduces product durability and shelf life (Ridla et al., 2023)
	Distribution permit or product legality	Licensing issues and unmet criteria hinder organic rice marketers from entering modern markets (Ali et al., 2019)
	Incomplete product information	Individual interest fuels information seeking and shapes initial product attitudes (Lestari et al., 2021).
Payment (Sari et al., 2019)	The lack of transaction bookkeeping	Poor bookkeeping leads to ignorance of available cash flow (Ali et al., 2019).
	Lack of knowledge regarding digital payments	Limited payment options marketers provide result in customer transaction failures (Tarantang et al., 2019).
Partnership (Sari et al., 2019)	Breach of agreement	Activities that violate business ethics in the workplace.
	Lack of partnership information	Poor communication causes misunderstandings in business practices (Sjaf et al., 2022).

Analysis method

Data analysis involves using Fuzzy FMEA for marketing risk analysis and AHP for marketing risk mitigation, with Microsoft Excel employed for data processing. FFMEA identifies potential issues in products or processes by evaluating risks based on occurrence, severity, and detectability, calculating a Risk Priority Number (RPN) for each. Corrective actions are then recommended to minimize or eliminate these risks (Noor, 2022). Meanwhile, AHP facilitates decision-making by prioritizing strategies and products through pairwise comparisons, aiding system understanding and outcome prediction (Liu et al., 2020).

The FMEA analysis process using fuzzy logic (Wang et al., 2009) involves determining the values for Severity (S), Occurrence (O), and Detection (D). Fuzzy ratings for these factors are then calculated using relevant equations and aggregating their importance weights. The Fuzzy Risk Priority Number (FRPN) is computed for each failure mode, with risk rankings based on FRPN values. The highest FRPN indicates the most critical risk that requires immediate attention and a proposed solution. Severity (S) quantifies the seriousness of a failure on a 1–10 scale, with 10 being the most severe (Table 2). Occurrence (O) measures the likelihood of a failure, ranging from 1 (rare) to 10 (most frequent) (Table 3). Detection (D) indicates the likelihood of a failure escaping controls, using fuzzy rankings from the variables (Table 4).

The value output for FFMEA is categorized into nine distinct levels based on the numerical range (Maulida & Andriani, 2022; Rayesa et al., 2019; Wang et al., 2009). An output value between 0 and 1.11 is classified as Very Low (VL), while values from 1.12 to 2.22 fall into the Very Low-Low (VL-L) category. The Low (L) category covers values from 2.23 to 3.33, and Low-Moderate (L-M) is assigned to values from 3.34 to 4.44. Moderate (M) is defined for the range 4.45 to 5.55, and Moderate-High (M-H) includes values from 5.56 to 6.66. The High (H) category corresponds to values between 6.67 and 7.77, while High-Very High (H-VH) applies to the range of 7.78 to 8.88. Lastly, values from 8.9 to 10 are categorized as Very High (VH).

Following Leal (2020), the AHP analysis method involves several steps. First, the decision-making issue and goal are structured hierarchically within the context of related decision elements. Next, pairwise comparisons are conducted using a questionnaire or paired comparison method, where each criterion is compared with others. Finally, the consistency ratio (CR) is calculated using the formula CR = CI/RI to validate the results of the AHP.

Table 2. Severity scale (Maulida & Andriani, 2022; Rayesa et al., 2019; Wang et al., 2009)

Rating	Effect	Severity Effect	Fuzzy Number
10	*Hazardous without warning* (HWOW)	Extremely severe impact with no warning.	9, 10, 10
9	*Hazardous with warning* (HWW)	Extremely severe impact with a warning.	8, 9, 10
8	*Very High* (VH)	Affects marketing resources, causing operational failure without compromising safety.	7, 8, 9
7	*High* (H)	Reduces functionality and performance, severely impacting profit.	6, 7, 8
6	*Moderate* (M)	Loss of primary functions, moderately reducing profit.	5, 6, 7
5	*Low* (L)	Decline in functionality, negatively impacting profit.	4, 5, 6
4	*Very Low* (VL)	Over 75% disruption, a visible risk, significantly impacts marketing resources but does not affect profit.	3, 4, 5
3	*Minor* (MR)	Over 50% disruption, visible risk, minor profit impact.	2, 3, 4
2	*Very Minor* (VMR)	Over 25% disruption, visible risk, no profit impact.	1, 2, 3
1	*None* (N)	No effect on marketing activities.	1, 1, 2

Table 3. Occurrence scale (Maulida & Andriani, 2022; Rayesa et al., 2019; Wang et al., 2009)

Rating	Effect	Fuzzy Number
Very High (VH)	Risks that cannot be avoided.	8, 9, 10, 10
High (H)	Risks that occur repeatedly.	6, 7, 8, 9
Moderate (M)	Risks that sometimes happen.	3, 4, 6, 7,
Low (L)	Risks that occur infrequently.	2, 3, 4
Remote (R)	Risks that are unlikely to occur	1

Table 4. Detection scale (Maulida & Andriani, 2022; Rayesa et al., 2019; Wang et al., 2009)

Rating	Effect	Severity Effect	Fuzzy Number
10	Absolute Uncertainty (AU)	No control tools can detect the causes of failure and subsequent failure modes.	9, 10, 10
9	Very Remote (VR)	Very small chance of detecting risk.	8, 9, 10
8	Remote (R)	Small chance of detecting risk.	7, 8, 9
7	Very Low (VL)	Very low chance of detecting risk.	6, 7, 8
6	Low (L)	Low chance of detecting risk.	5, 6, 7
5	Moderate (M)	Moderate chance of detecting risk.	4, 5, 6
4	Moderately High (MH)	Fairly high chance of detecting risk.	3, 4, 5
3	High (H)	High chance of detecting risk.	2, 3, 4
2	Very High (VH)	Very high chance of detecting risk.	1, 2, 3
1	Almost Certain (AC)	Can detect risk.	1, 1, 2

Results and discussion

Marketing risk analysis of organic rice

Based on the analysis, expert respondents identified several risks and assessed their occurrence using Fuzzy FMEA, which involves calculating the FRPN. This number aggregates values for Occurrence (frequency), Severity (impact), and Detection (detectability) for each identified risk. The calculation of FRPN for each risk/failure will be ranked from highest to lowest priority, resulting in an assessment of risks that

most significantly affect the organic rice marketing process. Table 5 shows the results of identification and FPRN values of marketer failure modes.

Table 5. Identification results and FRPN values of marketer failure modes

Variables	No	Statement	FRPN	Ranking
Product	1	Uncertainty in demand for organic rice	9.38	1
	2	Easily damaged during storage	2.95	2
Price	1	Price competition	6.32	1
	2	Lack of knowledge regarding price information	5.73	2
	3	Price is less competitive with similar products	2.61	3
Place	1	Sales area limitations	3.90	1
	2	Hard to reach the location	3.11	2
	3	The emergence of new competitors	2.31	3
Promotion	1	Consumers are less familiar with the target product	6.70	1
	2	Promotional plans are inefficient	2.42	2
People	1	Limited knowledge of marketing technologies	3.93	1
	2	The difficulty of finding human resources	2.24	2
	3	Lack of HR expertise	2.17	3
Process	1	The sorting carried out does not meet the standards	2.26	1
	2	Lack of expertise in quality maintenance	1.26	2
Packaging	1	Product packaging that makes the product not durable	2.99	1
	2	Distribution permit or product legality	1.34	2
	3	Incomplete product information	1.31	3
Payment	1	Lack of knowledge regarding digital payments	0.31	1
	2	The lack of transaction bookkeeping	0.26	2
Partnership	1	Lack of partnership information	1.18	1
	2	Breach of partnership agreement	1.15	2

Product variables

The Fuzzy FMEA calculation for the product variable in Table 5 shows the highest FRPN value, 9.38, associated with demand uncertainty for organic rice, categorized as Very High. This uncertainty can cause storage-related risks, such as excessive accumulation and spoilage due to delayed sales, often taking 2-5 months post-harvest. Extended storage exacerbates challenges related to space and time constraints (Jufriyanto, 2020). Addressing these issues is critical to prevent economic losses, such as reduced income and product degradation, including weight and nutrient loss. Visible weevil presence further reduces commercial value, as rice brands must be insect-free to maintain marketability (Okpile et al., 2021).

Price variables

The results of the Fuzzy FMEA calculation for the price variable in Table 5 indicate that the highest value, 6.32, corresponds to the indicator of price competition, categorized as Moderate-High. Developing an effective pricing strategy requires consideration of several factors, including the product or service offered, the target audience, market competition, and the company's objectives. A well-designed pricing strategy can drive business success and enhance profitability. However, intense price competition reduces profit margins for marketers (Gao, 2023). This competition intensifies as the number of marketers increases, leading to further declines in profitability.

The lack of access to accurate price information arises from marketers being dispersed across vast areas in Kediri Regency, making pricing unique to each marketer. Price competition often emerges when marketers have surplus stock due to uncertain demand. In such cases, some marketers lower their prices to clear old stock before the next planting season. Additionally, marketers located closer to urban centers

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benefit from transportation advantages. In contrast, those in remote regions face varying production costs influenced by differences in inputs, topography, and other factors (Monardo, 2021).

Place variables

The results of the Fuzzy FMEA calculation for the place variable in Table 5 show that the highest value, 3.90, is found in the indicator of limited sales area, categorized as Low Moderate. The limited sales area is a challenge for organic rice marketers in Kediri Regency, as about 80% of their customers are in their immediate vicinity. This restriction makes it difficult for marketers to expand their reach, as they must consider the costs involved in broadening their marketing efforts to attract a larger audience. Additionally, most marketers rely on digital marketing, with some use of social media sporadically but not optimizing its potential, often reverting to offline marketing methods. Location can influence product availability and ease of access for consumers (Kotler & Amstrong, 2019).

Difficulties in reaching consumers are exacerbated by most organic rice consumers in urban areas, whereas marketers have not yet expanded to market their products in urban stores. As a result, many consumers complain about the distance to access organic rice sellers. This aligns with consumer attitudes, intentions, and perceived green psychological benefits, which greatly influence their willingness to pay premium prices for organic food (Hu et al., 2024). Apart from pricing, the difficulty in reaching and accessing places that sell organic products is another contributing factor.

The emergence of new competitors is also significant, as organic rice marketers act as aggregators for organic rice farmers in marketing their products. Some farmers also directly market their organic rice to consumers, creating indirect competition that complicates marketers' efforts in product promotion. This situation is consistent with Abdel-Basset & Mohamed (2020) and Pervez et al. (2019), indicating that new competitors increase market capacity and market share demands, intensifying competition further.

Promotion variables

The results of the Fuzzy FMEA calculation for the promotion variable in Table 5 show that the highest value, 6.69, is found in the indicator of consumers having limited familiarity with the target product, categorized as Moderate-High. Consumers' lack of awareness about the product stems from their understanding that organic rice is healthier. However, they may not fully understand its specific benefits and nutritional content compared to conventional rice. This perception affects organic rice sales, as it fails to be perceived as superior to traditional rice.

Product information is a critical factor influencing consumer purchasing decisions. Positive or negative information obtained by consumers significantly impacts their perception of a product. The timely dissemination of information is important to maintain its currency and relevance, hence promoting consumer loyalty (Yogatama, 2023).

Moreover, the promotion efforts conducted are deemed inefficient. Organic rice marketers attempt to introduce their products by creating brochures for every exhibition attended and employing various promotional methods. However, these efforts do not translate into increased sales, posing a challenge because the costs incurred do not yield profitable returns from promotional expenses. Septiano & Sari (2021) stated that promotion directly affects purchasing decisions. Sometimes, the costs associated with creating advertisements or running campaigns can be substantial, requiring careful planning to ensure that the outcomes justify the expenditure (Khairani, 2022).

People variables

The Fuzzy FMEA calculation results for the people variable in Table 5 indicate the highest value of 3.91 in the indicator of limited knowledge about sustainable marketing technology, categorized as Low Moderate. Many marketers, primarily around 50 years old, struggle with digital marketing technology,

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leading to a lack of adaptation to current trends. Most continue to use traditional marketing methods and have not embraced online marketing. This reluctance stems from viewing digital marketing as complicated, compounded by insufficient coaching and a lack of long-term strategies for promoting organic rice products. Additionally, many marketers hesitate to adopt new methods or lack marketing plans for agricultural products beyond their local markets (Sugandini et al., 2020).

The difficulty in finding skilled human resources (HR) is compounded by the scarcity of HR in the surrounding areas, necessitating HR recruitment from other regions. Moreover, many available HR are elderly, leading to delays in tasks due to reduced speed and precision. The quality of human resources has a positive and significant impact on product performance. This is attributed to the essential role played by skilled, trained, competent, and educated individuals in enhancing product performance (Jaya, 2020).

Process variables

The results of the Fuzzy FMEA calculation for the process variable in Table 5 show that the highest value, 2.26, is found in the indicator of sorting processes not meeting standards, categorized as Low. The improper sorting process is attributed to insufficient meticulousness, leading to occasional complaints about the presence of stones in the products sold. Additionally, marketers have not established sorting standards consistently, resulting in inconsistent sorting practices. Post-harvest sorting activities are often inadequate, resulting in unattractive products with reduced market value and potential customer dissatisfaction (Yanita & Saputra, 2019).

Furthermore, there is a lack of expertise in maintaining product quality. The lack of expertise in product quality is apparent, as organic rice marketers do not regularly check paddy storage or consistently clean the storage areas. This neglect results in declining product quality and reduces the availability of stored stock at both the beginning and end of the storage period. Additionally, prolonged storage times are worsened by challenges in meeting organic rice demand. Who emphasizes that product quality significantly influences customer satisfaction, as high-quality products enhance customer satisfaction and loyalty, thus bolstering a company's competitive edge (Kotler & Amstrong, 2019).

Packaging variables

Based on the Fuzzy FMEA calculation for the packaging variable in Table 5 the highest value obtained is 2.99, which maintains the indicator of product packaging that does not ensure durability, categorized as Low. Packaging issues have resulted in some products being returned due to leaks. Although returns are infrequent, around 1-3 for every 40 sales, the problem continues. The lack of durability in packaging often leads to leaks during shipping and storage, causing buyers to return products and ultimately resulting in losses for marketers. Storage conditions can degrade product quality due to increased moisture content, fungal growth, and insect infestation, resulting in changes in odor, color, taste, mycotoxin contamination, and nutrient loss (Ridla et al., 2023). Proper packaging material selection can mitigate such damage over extended storage periods (Ridla et al., 2023).

Another significant concern is the product's regulatory compliance or legal status. Organic rice marketers face challenges penetrating modern markets due to regulatory hurdles. Most organic rice marketers lack the necessary criteria specified by modern markets for market entry permits. The process of obtaining market clearance involves time-consuming procedures and costs. Insufficient product information exacerbates these challenges, as marketers often fail to provide comprehensive details about nutritional content and the advantages of organic rice. As a result, marketers struggle to effectively showcase the merits of organic rice products at various events, where individual interest drives information-seeking behavior, influencing initial attitudes toward the appealing product (Lestari et al., 2021).

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Payment variables

The Fuzzy FMEA calculation for the payment variable in Table 5 shows the highest value of 0.31, linked to insufficient knowledge about digital payments, categorized as Very Low. Marketers often rely on direct transactions and perceive digital payments as adding costs, with most consumer purchases occurring offline. This reluctance to adopt digital payments affects consumer purchasing decisions. Handayani (2021) reported that digital payment ease enhances operational efficiency and reduces buyer effort in online shopping. Purchase decisions are crucial in consumer decision-making, as consumers choose based on available options (Kotler & Amstrong, 2019).

Furthermore, the lack of bookkeeping among organic rice marketers complicates profit assessment, as they rely on gross profit estimates based on years of experience in organic rice marketing. According to Mabonga et al. (2024), accounting record-keeping affects the performance of small-scale businesses and is vital for making decisions. It helps increase enterprise effectiveness and output, leading to better business performance. Additionally, enterprise modification and records enhance the likelihood of the business functioning successfully, achieving success, and providing data to manage the enterprise's finances effectively.

Partnership variables

Based on the Fuzzy FMEA calculation for the partnership variable in Table 5, the highest value obtained is 1.18, attributed to the indicator of product packaging that does not easily maintain longevity, categorized as Very Low. The lack of information exchange among partnerships is caused by insufficient communication between marketers and farmers regarding organic rice. This often results in marketers and farmers being unable to respond effectively to market demand and prices, leading to inadequate post-production handling.

Moreover, breaches of partnership agreements occur when organic rice marketers fail to comply with agreements regarding the products supplied by farmers. This lack of compliance can lead to mistrust among partners and even violations among marketers regarding minimum price limits set in the community. This results in decreasing market prices in the area and straining partnerships among marketers. The primary reason for these conflicting results is that most existing research on the relationship between partnership and alliance performance primarily examines the direct impact of partnerships on alliance performance, overlooking the intermediate effects between them (Yue et al., 2022).

Marketing risk mitigation strategy

Based on the calculation of FRPN (Fuzzy Risk Priority Number), the highest risks have been identified within each variable based on their FRPN values. These highest risks pose significant probabilities of causing additional risks, necessitating strategies to minimize these risk factors. Making appropriate strategic decisions can effectively mitigate these risks, with their prioritization weighted using the AHP method.

Table 6. Ratio consistency results and variable assessment priority analysis

No	Variables	*Consistency Ratio* (CR)	Weight Value	Ranking
	Marketing Risk Mitigation	0.053	-	-
1	Product	0.002	0.21	1
2	Price	0.009	0.19	2
3	Place	0.060	0.15	3
4	Promotion	0.003	0.11	4
5	People	0.034	0.07	7
6	Process	0.003	0.06	8
7	Packaging	0.060	0.08	5
8	Payment	0.004	0.05	9
9	Partnership	0.043	0.07	6

Based on Table 6, it can be observed that the consistency ratio (CR) values for each criterion are all less than 0.1 (<10%). This indicates that each criterion can be used and meets the standard for questionnaire fulfillment, eliminating the need for re-surveying. According to Saaty (2012), the consistency ratio assesses the consistency of responses in determining the validity of decision-making data, with values ideally less than 10%. With these values, the data processing for evaluation can proceed.

Table 7. Results of priority analysis for evaluation of variable strategy alternatives

Risk factor	Strategy	Weight	Ranking
Uncertainty in demand for organic rice	Expanding digital marketing channels	0.50	1
	Enhanced post-production partnerships	0.29	2
	Conduct inventory planning and control	0.21	3
Price competition	Providing bundle packages	0.42	1
	Setting minimum prices for local producers	0.33	2
	Providing special price offers	0.25	3
Sales area limitations	Expand sales areas by collaborating with local shops	0.44	1
	Increase the popularity of the store around the marketing area	0.31	2
	Creating organic rice educational tourism	0.25	3
Consumers are less familiar with the target product	Making organic rice promotional media	0.46	1
	Participate in bazaar activities to introduce products	0.38	2
	Using advertising on social media	0.17	3
Limited knowledge of sustainable marketing technologies	Training related to marketing management	0.44	1
	Training related to digital marketing	0.36	2
	HR related training	0.19	3
The sorting carried out does not meet the standards	Optimization of existing processes	0.45	1
	Creation of work standards	0.30	2
	Maintain product quality	0.26	3
Product packaging that makes the product not durable	Improve product packaging quality according to standards	0.43	1
	Diversifying product packaging based on demand	0.31	2
	Improving Legal Standing in the market	0.26	3
Lack of knowledge regarding digital payments	Conduct financial planning related to business development	0.43	1
	Conducting education related to financial literacy	0.40	2
	Expanding payment channels	0.18	3
Lack of partnership information	Improving the flow of information between partnerships	0.48	1
	Enhancing the partnership agenda	0.32	2
	Making a written partnership agreement	0.19	3

The main product strategy is to expand digital marketing channels, highlighted in Table 7, with a weight of 0.50. Digital marketing is now diverse, including social media, content, influencers, online marketplaces, webinars, and affiliate marketing. This expansion is vital for helping consumers easily find product information and make purchases. Organic rice marketers can use social media (like Instagram, Facebook, and TikTok) and marketplaces (such as Shopee, Tokopedia, and Lazada). Different marketing objectives are achieved using social media, including creating brand affinity, increasing sales prospects, improving customer service, and driving favorable customer attitudes (Sedalo et al., 2022).

The primary strategy for the price variable, weighing 0.50, is to offer bundled packages catering to customer motivations like value and convenience. For example, bundling organic vegetables with organic rice at a lower price encourages spending by highlighting perceived savings. Bundles appeal due to price benefits, convenience (Volles et al., 2024), and ease of decision-making (Carroll et al., 2022). For the place variable, weighted at 0.44, the strategy focuses on expanding sales by partnering with local stores and ensuring demand while managing operational costs. This approach increases consumer awareness and demand by leveraging local outlets, aligning with Kotler & Amstrong (2019) who explained that market expansion doesn't always guarantee higher revenues due to operational expenses.

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The main strategy for the promotion variable is to create promotional media for organic rice weighing 0.46. This media can include social campaigns, video content, brochures, and more. Marketers must communicate messages about the rice products, highlighting their value, production processes, and marketing efforts. This promotional media can enhance product appeal and increase interest and demand for organic rice. According to As'ad & Putri (2023), promotion serves as a marketing communication tool to share information, influence, and encourage acceptance and loyalty among target markets. The purpose of promotion is to maximize sales and profits (Sukanteri et al., 2024)

The people variable emphasizes marketing management training, with a weight of 0.44. This training is designed for organic rice marketers and covers topics like inventory management, customer interaction, local marketing strategies, and market research. Its goal is to equip marketers with essential marketing management knowledge from production to post-production. By enhancing their marketing skills, the training empowers marketers to tackle challenges in promoting organic rice. It can boost participants' insights and inspire innovative thinking, leading to increased sales through effective promotions and improved service quality, ultimately enhancing customer loyalty (Baharsyah et al., 2023).

The main alternative strategy for the process variable is optimizing existing processes, with a weight of 0.45. This optimization aims to evaluate the processes from production inception to post-production by refining the existing processes. Its objective is to minimize losses from previous processes and enhance the profitability of these processes to achieve better outcomes. According to Nurhayaty (2022), the chosen process will have a long-term impact on efficiency and production, as well as on cost flexibility and the quality of the goods produced.

The main packaging strategy is to improve product packaging quality to meet standards, weighing 0.43. This improvement aims to reduce losses from low product quality and ensure better long-term storage, minimizing shrinkage and damage. Biodegradable materials like kraft paper, jute, or plastic align with organic principles. High-quality packaging helps maintain moisture and prevents rice from reacting with oxygen in the air (Prasetyo et al., 2023).

The main strategy for the payment variable is financial planning for business development, with a weight of 0.43. This planning can be done through simple cash flow projections, profit margin analysis, sales forecasting, and pricing strategies. According to Ompusunggu & Irenetia (2023), effective financial management consists of three key functions: financial planning, expenditure control, and financial decision-making. Financial planning aims to set long-term financial goals and create plans to achieve them. Financial control focuses on managing budgets, risks, and costs, while financial decision-making involves choosing appropriate investment projects, funding sources, and financial strategies.

The main strategy for the partnership variable, with a weight of 0.44, is to enhance the flow of information between partners. This can be achieved by scheduling regular meetings, using standardized reporting templates for sales data, inventory levels, and marketing outcomes, and creating social media groups for information exchange. The Partnership Strategy is a business strategy that involves collaboration between two or more business actors, aiming to achieve mutual benefits while adhering to the principles of mutual need and growth (Zahrah et al., 2022).

Conclusion

The findings identify the highest marketing risks based on FRPN levels, emphasizing mitigation starting with the most significant risks. The product variable, rated "Very High," requires immediate attention, with digital marketing expansion as the key solution due to its high potential loss. Promotion and price variables should follow, focusing on creating promotional media and expanding sales areas via local partnerships. Low-risk issues can be deferred, prioritizing critical risks for effective mitigation.

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