International Journal of Advances in Applied Sciences (IJAAS)
Vol. 15, No. 2, June 2026, pp. 749~759
ISSN: 2252-8814, DOI: 10.11591/ijaas.v15.i2.pp749-759

Food security-based strategies for Subak Kedisan organic rice sustainability

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Article Info

Article history:

Received Sep 20, 2025
Revised May 4, 2026
Accepted May 23, 2026

Keywords:

Food security
Marketing
Quantitative strategic planning matrix
Strengths weaknesses opportunities threats
Sustainability

ABSTRACT

The Petani Kedisan Mandiri as farmers group in Subak Kedisan has implemented an organic rice farming system and obtained organic certification from Seloliman Organic Certification Agency (LeSOS). However, the group faces challenges in product marketing and limited promotion. This study aims to identify internal and external factors influencing organic rice marketing, formulate alternative marketing strategies, and determine priority strategies for the group. The research applied strengths, weaknesses, opportunities, and threats (SWOT) and quantitative strategic planning matrix (QSPM) analyses. The results identified six internal strengths, with high-quality organic rice as the main strength, and eight weaknesses, with reliance on word-of-mouth marketing as the primary limitation. Six external opportunities were found, particularly the increasing market demand for organic rice, while five major threats were identified, including market segmentation limited to upper-middle-class consumers. Based on the analysis, twelve alternative strategies and one priority strategy were formulated. The main strategy is to enhance digital promotion capacity through training in social media and e-commerce utilization. Recommendations include improving digital literacy, strengthening collaboration with external stakeholders, developing digital infrastructure, leveraging healthy consumption trends, and implementing regular monitoring and evaluation.

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1. INTRODUCTION

Rice is a staple food that plays a crucial role in ensuring food security, particularly in Asian countries where it constitutes the primary source of daily caloric intake. Globally, rice is consumed by more than half of the world's population and is deeply embedded in the dietary patterns of countries such as China, Japan, Korea, and Southeast Asian nations. Rice is not only essential for nutritional sustenance but also serves as a strategic commodity influencing socio-economic stability and agricultural sustainability in developing countries [1]. In China, almost 60% of the population significantly contributes to national food security and fulfills the community's dietary needs. The vast size of consumption renders the sustainability of rice production a critical aspect in food stability, particularly in the context of climate change and population growth [2]. High rice consumption typically correlates with market price stability and the possibility of enhanced farmer earnings. Moreover, rice serves not only as a core food commodity but also possesses strategic significance in ensuring national food security; thus, variations in rice consumption patterns can

influence the market balance and governmental policy about food [3], [4]. Rice farming systems are categorized into three types: conventional, semi-organic, and organic. Organic rice farming is a technique that eschews commercial pesticides and chemical fertilizers, relying solely on organic inputs, nutrient recycling, and a focus on planting system design and biological pest management processes [5].

People today are becoming more aware of the importance of a healthy lifestyle. An illustration of this awareness is found in Malaysian society, which not only demonstrates their understanding of the significance of health maintenance but is also manifested in daily activities such as enhanced physical activity and a focus on a more balanced diet. Positive health behaviors indicate that public knowledge and awareness significantly influence quality of life [6]. Numerous international studies suggest that a healthy lifestyle, characterized by nutritious food intake, physical activity, and other positive habits, is advantageous not only for physical health but also for social and emotional well-being. In markets like Peru, a health-conscious lifestyle prompts customer to select nutritious food brands influenced by perceptions of quality, social significance, and emotional resonance [7]. The transition toward healthier lifestyles has contributed to the increasing availability and adoption of organic agricultural products, particularly organic rice. Research on organic farming practices has been conducted at various levels, including field, farm, and community scales, with different objectives such as improving soil fertility, enhancing rice productivity, and reducing environmental impacts. The authors [8], [9] demonstrated that the application of organic amendments in paddy fields not only improves soil nutrient status and crop yield but also contributes to environmental sustainability by mitigating methane emissions. Organic farming systems are currently undergoing swift advancement and expansion. This phenomenon is driven by the growing awareness of the importance of a healthy lifestyle, particularly through the consumption of organic food products. Increasing consumer concern regarding food safety, health benefits, and environmental sustainability has significantly contributed to the rising demand for organic rice. Rozaki *et al*. [10] highlighted that consumer preferences for organic rice are strongly influenced by perceptions of health advantages, reduced chemical exposure, and environmentally friendly production practices.

Food security is important for the sustainability of society. Law No. 18 of 2012 on Food, article 1 defines food security as a state wherein a country's food needs are met at the individual level, characterized by the availability of adequate food in terms of quantity, quality, safety, diversity, nutrition, distribution, affordability, and alignment with the community's religious, belief, or cultural practices, enabling individuals to live more actively, healthily, and productively in a sustainable manner. Food security refers to sustainable access to sufficient, safe, and nutritious food. This can be supported through the development of sustainable agricultural systems and increased public awareness of healthy and safe food consumption. Diana *et al.* [11] emphasized that strengthening sustainable agriculture, particularly organic-based production systems, plays a crucial role in ensuring long-term food availability while maintaining environmental integrity and improving community well-being. This aligns with the findings of Widhianthini *et al.* [12], who designed a food security action plan toward food independence in Bali Province through interconnected collaboration among farmers, government, private companies, financial institutions, and agricultural cooperatives. This collaborative framework supports the development of sustainable agriculture to ensure sufficient, safe, nutritious, equitable, and environmentally friendly food availability for the community.

According to the Indonesian Ministry of Research and Technology 2005-2025, one of the problems encountered in empowering local food security is that food products often do not meet food health standards [13]. The presence of organic rice bolsters the government's food security initiative, shown in the adequacy of food for nutrient content, quality, safety, and distribution. This aligns with the findings [14] indicating that organic rice farming can attain food security through its yields, however sufficient financial resources are necessary for farmers to sustain production and stabilize commodity prices.

The aforementioned situation has demonstrated that organic rice farming provides numerous benefits such as reduced production costs, improved soil and water quality, enhanced biodiversity, and improved human health outcomes, which encourage farmers to adopt organic methods in pursuit of long-term sustainability [15], [16]. In Bali, these benefits are particularly relevant in the traditional Subak system, a UNESCO-recognized cultural heritage irrigation network that regulates rice farming. Darmawan *et al.* [17] examined the sustainability of Subak in the context of Denpasar City's urbanization and identified changes across four dimensions (mindset, artifacts, institutions, and functions) that threaten its sustainability. This mindset-driven approach aligns with the adoption of organic rice farming practices, which improve soil fertility and reduce chemical dependence. By integrating organic methods into Subak-based rice farming, farmers can strengthen resilience to urbanization and climate stress while maintaining the cultural, ecological, and productive integrity of the traditional Balinese rice system [18], [19].

Petani Kedisan Mandiri as farmers group in Subak Kedisan has implemented an organic rice farming system and is certified organic by Seloliman Organic Certification Agency (LeSOS). However, the Petani Kedisan Mandiri is currently facing challenges, particularly in marketing, due to inadequate planning

for product marketing and minimal promotion efforts by the group. This stems from the fact that most members are still not focused on selling rice to the general public, as they prioritize independent consumption for their own needs. This situation aligns with findings [20], who observed that rice farmers in Denpasar City, Bali, frequently adopt a practical marketing system as a solution to urban farming constraints. In this system, farmers sell their rice based on estimated yields before harvest to intermediaries (commonly called penebas), who assess the standing crop and set the price accordingly. This approach eliminates the need for farmers to organize harvest labor, transportation, drying, or active promotion and market outreach. Consequently, such a system reduces the burden of marketing planning and public promotion, which is particularly relevant for farmer groups that, like Petani Kedisan Mandiri, still emphasize self-consumption over widespread commercial sales. This study was aimed at identifying factors in the internal and external environment in the marketing of organic rice, formulate alternative marketing strategies and priority strategies applied in the marketing of organic rice in the Petani Kedisan Mandiri. The purpose of this study was to increase organic rice sales in order to support business sustainability in Subak Kedisan.

2. METHOD

2.1. Research design

This study was carried out in Subak Kedisan Kaja, Kedisan Village, Tegallalang District, Gianyar Regency. The research location was selected purposefully over a duration of three months, from May to August 2025. This study incorporated qualitative and quantitative data. It utilized both primary and secondary data as sources. This study employed key informants selected for their expertise in pertinent social or cultural elements within the community, consisting of eight respondents, including pekaseh, agricultural extension, retailers, farmers, administrators, and influencers. Key informants provided in-depth qualitative data through in-depth interviews and structured interviews, which were used to validate quantitative data from questionnaires. This study employed interviews, surveys, documentation, and literature reviews as means of gathering data.

2.2. Research procedure

2.2.1. Identification of research problems

The problem identification stage aims to comprehensively formulate the present problems in the subject. Petani Kedisan Mandiri has a positive impact on the environment, enhances health, and provides increased market value. They have adopted an organic rice farming system and is certified organic by LeSOS. However, they are now facing challenges, particularly in marketing, due to inadequate marketing strategies and insufficient promotional efforts. The majority of the farmers group members remain concentrated on personal rice consumption rather than marketing it to the general public.

2.2.2. Literature review

Literature review is a systematic process of evaluating previous scientific works related to research, including strategies, marketing, organic rice, food security, and business sustainability. It also covers analyses such as internal factor analysis summary (IFAS) and external factor analysis summary (EFAS), as well as strengths, weaknesses, opportunities, and threats (SWOT) analysis. Finally, it includes quantitative strategic planning matrix (QSPM) analysis.

2.2.3. Formulation of research objectives

The present study aimed to identify factors in the internal and external environment of organic rice marketing. It also sought to formulate alternative marketing strategies for organic rice. Finally, the study determined the priority strategies to be applied in organic rice marketing within the Petani Kedisan Mandiri.

2.2.4. Identification of research methods

This study employed a mixed-method research approach, integrating quantitative and qualitative methodologies. The collection and preparation of data are essential phases for acquiring and processing data in alignment with research requirements, as this study employed both quantitative and qualitative data. Specifically, quantitative data were derived from weight calculations, ratings, and scores from SWOT analysis, while qualitative data consisted of survey responses and in-depth interviews.

2.2.5. Identification of population and sample

This study employed key informants to obtain more in-depth information on aspects related to the research aims. Key informants were selected for their expertise in the social and cultural aspects of the community. Eight respondents were included: pekaseh, agricultural extension officers, retailers, farmers, administrators, and influencers.

2.2.6. Data collection

This study employed four data collection methods in Subak Kedisan: surveys to gather an overview of the location through observation, interviews or questionnaires (both in-depth and structured) to investigate key informants' perspectives on organic rice marketing strategies, and documentation comprising written notes, photographs, and videos of activities. It also used literature reviews from diverse sources, including books, articles, and journals. These sources were pertinent to food security-oriented organic rice marketing strategies for business sustainability.

2.2.7. Conclusions and recommendations

The conclusion and suggestion phase aimed to summarize the research findings derived from the test results and analysis. The results include an evaluation of the effectiveness of the proposed marketing strategies in achieving the research objectives, including efficiency and accuracy, along with its theoretical and practical ramifications. The documentation of this stage is compiled systematically to support scientific publication and ensure that the research contributions can be reproduced and further developed.

2.3. Data acquisition

Interviews, surveys, documentation, and literature studies were the data collection techniques used in this study. Data collection included both in-depth and structured interviews with relevant informants. These methods aimed to identify the SWOT of the marketing strategies.

2.4. Testing methods or data analysis

This study employed SWOT and QSPM analyses to identify factors in both internal and external environments, facilitating the formulation of alternative marketing strategies and prioritizing options for implementation. This is in line with research [21] that applied SWOT and QSPM analyses to systematically identify internal and external factor influences, enabling the formulation and prioritization of alternative marketing strategies based on strategic weightings and attractiveness scores. Figure 1 shows the SWOT diagram, Table 1 shows the SWOT matrix, and Table 2 shows QSPM matrix.

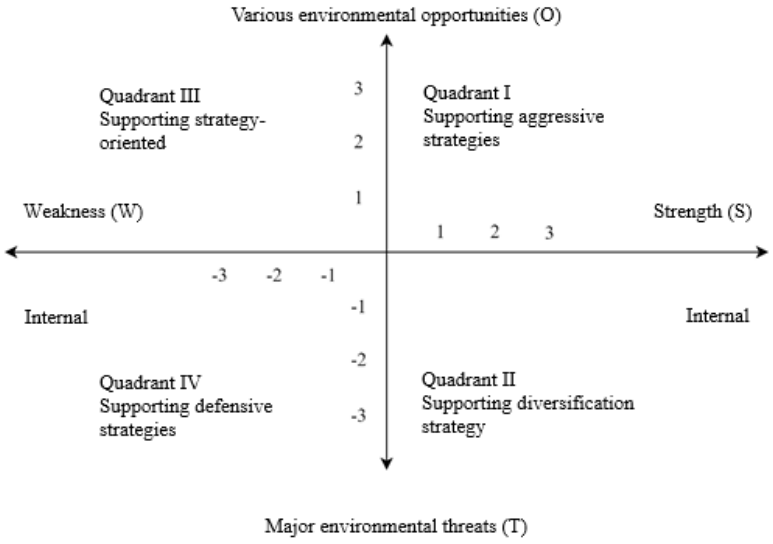

Figure 1. SWOT diagram

Table 1. SWOT matrix

IFAS / EFAS	Strength (S) Determine the internal strength factors	Weakness (W) Identify internal weakness factors
Opportunities (O) Determine the internal opportunity factors	Strategy (S-O) Create strategies that use strength to seize opportunities	Strategy (W-O) Create strategies that minimize weaknesses to seize opportunities
Threats (T) Identify internal threat factors	Strategy (S-T) Create strategies that use force to overcome threats	Strategy (W-T) Create strategies that minimize weaknesses and avoid opportunities

Table 2. QSPM matrix [22]

Critical success factors	Alternative strategies								
	Strategy I			Strategy II			Strategy III		
	Weight	AS	TAS	Weight	AS	TAS	Weight	AS	TAS
Strengths									
1.									
2.									
Weaknesses									
1.									
2.									
Opportunities									
1.									
2.									
Threats									
1.									
2.									
Total amount attractiveness									

3. RESULTS AND DISCUSSION

3.1. Respondent characteristics

Respondent characteristics were examined based on age, gender, highest level of education, primary occupation, and region of origin. Based on a percentage of 100% in the productive age range, the gender of respondents was 62% male and 38% female. Based on the highest level of education, 63% had completed high school. Their main occupations included farmers, field agricultural extension officer (PPL), retailers, and administrators. Based on their region of origin, 88% were from Gianyar.

3.2. Internal factor analysis summary and external factor analysis summary matrices

IFAS analyses originate from SWOT theory, helping to identify internal and external factors that affect business or organizational performance. IFAS and EFAS analyses enable the systematic identification of factors influencing companies, aiming to optimize the utilization of internal strengths and external opportunities, while minimizing impact of internal weaknesses and external threats. The Authors [23], [24] demonstrated how IFAS and EFAS enable precise identification of strategic priorities, optimizing strengths and opportunities while addressing competitive pressures. IFAS and EFAS analyses enable the systematic identification of factors that influence a company, aiming to maximize the utilization of internal strengths and external opportunities, while minimizing the impact of internal weaknesses and external threats from competitors or the external environment.

3.2.1. Internal factor analysis summary

Table 3 indicates that the highest strength factor in marketing is the high-quality organic rice product “Srigati”, which received a total score of 0.29. This product is distinguished by its high nutritional value and safety, as it is cultivated using an organic farming system that excludes chemical pesticides and synthetic fertilizers. The strength of this certification is bolstered by endorsement from the LeSOS, which guarantees adherence to organic standards and enhances consumer confidence, particularly among health-and environmentally-conscious segments. Research indicates that high product quality reflected in cleanliness, freedom from chemical residues, and superior nutritional content is perceived as more valuable when produced through environmentally sustainable farming practices and strict quality control standards. Haque *et al.* [8] emphasized that consumers tend to associate organic rice with safer consumption, better health benefits, and environmentally friendly production processes, which significantly influence their purchasing preferences.

The primary weakness affecting organic rice marketing activities, as indicated by the IFAS matrix analysis, is insufficient participation in product marketing, resulting in a total score of 0.12. This obstacle is exacerbated by limitations in tools, such as the inadequate quality of cell phone cameras to visually document or promote products, which is essential in today’s digital era. This is in line with Rozaki *et al.* [10], which found that the lack of active participation from farmer group members or business actors in marketing activities is a major obstacle. This hinders the ability to promote organic rice widely and achieve optimal sales.

To overcome this problem, a more inclusive approach is needed. This can be done by involving more members in promotional strategies. The authors [17], [25] emphasized that farmers’ bargaining position in selling products is still weak, the market information they obtain is still limited, and the market absorption of the products produced is not maximized.

Table 3. IFAS matrix for organic rice marketing strategy in Subak Kedisan

Category	Internal strategic factors	Weight	Rating	Score
Strengths	High-quality organic rice products labeled as "Srigati."	0.07	3.88	0.29
	Farmers have experience in organic rice farming systems.	0.08	3.25	0.25
	Regular meetings are held within the Petani Kedisan Mandiri	0.08	3.50	0.27
	Variety of products offered	0.07	3.13	0.23
	Becoming a leading brand in Subak	0.07	3.38	0.24
	Abundant supply of organic rice from Subak	0.06	2.63	0.17
Weaknesses	Lack of promotional activities, especially digital marketing	0.07	2.00	0.14
	Lack of market information	0.07	2.13	0.15
	Limited capital	0.07	2.38	0.17
	Underutilization of communication technology by farmer group members	0.07	2.50	0.18
	Lack of participation in product marketing	0.07	1.75	0.12
	Lack of personnel specializing in product marketing	0.07	2.25	0.15
	Word-of-mouth marketing and one social media platform (Instagram)	0.07	3.00	0.20
	No store for selling organic rice products	0.08	2.38	0.19
	Total	1		2.74

3.2.2. External factor analysis summary

Table 4 shows that the most prominent opportunity factor that can be exploited by "Srigati" organic rice is the increasing demand for organic rice in the market, with a total score of 0.69, reflecting the great potential in utilizing digital platforms. This high-demand trend is supported by great interest from both local and foreign consumers, demonstrating the appeal of Srigati organic rice in various market segments. This aligns with research [26], indicating that the demand trend for organic rice is driven by consumer awareness of health and environmental issues, providing a strong foundation for attracting the attention of local and global markets as a safe and nutritious food.

The most significant threat factor based on the EFAS matrix analysis is the lack of interest among rural youth in working as farmers, with a total score of 0.14. The lack of interest among rural youth in working as farmers represents a major threat to "Srigati" organic rice, as a shortage of young labor could disrupt the long-term sustainability of production. This finding is consistent with [27], which reported that limited interest among young people in engaging in agriculture may slow down the adoption of modern agricultural technologies. The study highlights that youth participation is crucial for accelerating technological innovation and improving production efficiency, as younger farmers tend to be more receptive to digital tools, mechanization, and climate-smart agricultural practices. In a similar Bali-specific context, Darmawan *et al.* [28] found that in West Denpasar District, Denpasar City, a significant majority of rice farmers reported that their children had no engagement in agricultural activities primarily due to preferences for stable non-agricultural careers and professional opportunities.

Table 4. EFAS matrix for organic rice marketing strategy in Subak Kedisan

Category	External strategic factors	Weight	Rating	Score
Opportunities	The prevalence of healthy lifestyles within the community is increasing.	0.10	4.00	0.41
	Income levels within the community are rising due to the sales of organic rice.	0.09	3.38	0.31
	The soil conditions are conducive to organic farming practices.	0.10	3.88	0.38
	The government is providing support.	0.10	3.50	0.34
	The market demand for organic rice is on the rise.	0.09	8.00	0.69
	Marketing is executed via e-commerce platforms and various social media platforms.	0.10	3.75	0.37
Threats	Lack of interest of rural youth in agricultural jobs	0.09	1.63	0.14
	Marketing remains predominantly focused on upper-middle-class consumers.	0.09	2.38	0.20
	Competitors from outside the region	0.07	2.38	0.17
	Unpredictable climatic conditions	0.09	2.25	0.20
	Product prices that are difficult to compete with in the market	0.09	2.13	0.19
	Total	1		3.41

3.3. Matriks internal-external

Based on the analysis results in Figure 2, the total IFAS matrix score of 2.74 is positioned on the horizontal axis of the internal-external (IE) matrix, while the total EFAS matrix score of 3.41 is placed on the vertical axis of the IE matrix. The two score points are then connected by vertical and horizontal lines, indicating the meeting point in cell II (2). Based on this position, it can be concluded that Subak Kedisan (Petani Kedisan Mandiri) is in a state of "grow and build" (growth and development). In an international strategic management study, [29] applied the IE matrix and found that the organization's combined IFE and EFE scores placed it in the grow and build quadrant, indicating that internal strengths and external

opportunities could be leveraged to recommend aggressive growth strategies such as market expansion, service improvement and integration.

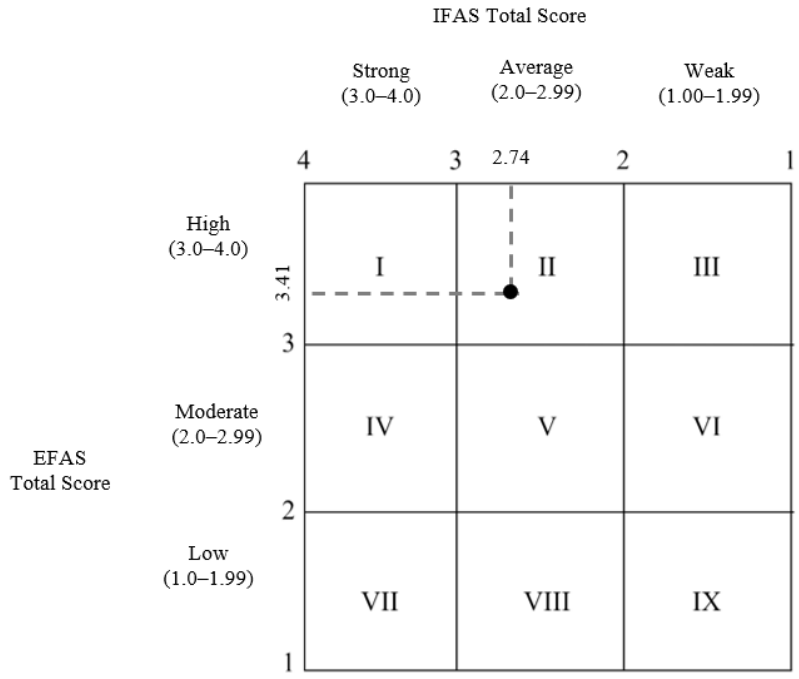

Figure 2. IE matrix for the marketing strategy of Subak Kedisan organic rice

3.4. Strengths, weaknesses, opportunities, and threats analysis

According to Figure 3, the resulting coordinates are located in Quadrant I at the point 1.01; 2.21. This position (S-O) signifies that the organization is in an ideal state, wherein dominant internal strengths may be fully utilized to capitalize on current external opportunities. The optimal strategic advice is an aggressive approach, suggesting that the organization is in an advantageous and stable condition. This is in line with the case study by [30], who applied a SWOT analysis. Their findings lead to an aggressive, growth-oriented strategy that utilizes internal strengths to capitalize on opportunities.

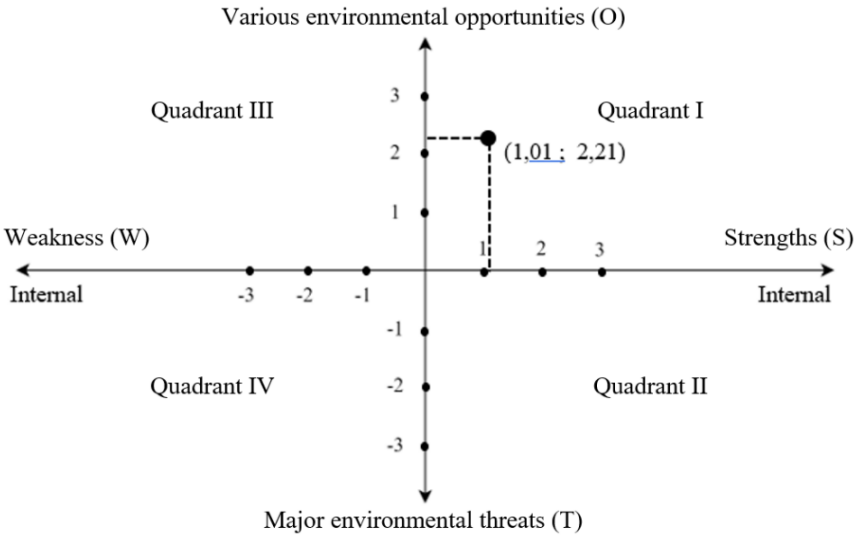

Figure 3. SWOT analysis diagram for organic rice marketing by Subak Kedisan

Among four strategy types in Table 5, several alternative strategies are provided for each of type.

i) The S-O (strengths-opportunities) strategy focuses on enhancing product quality and diversity in response to e-commerce and health-oriented trends, while leveraging farmers' expertise and supply to satisfy market demand.
ii) The W-O (weaknesses-opportunities) strategy includes improving digital promotion via e-commerce platform training and implementing corporate social responsibility (CSR) programs to facilitate the opening of physical stores and improve access to capital.
iii) The S-T (strengths-threats) strategy involves establishing partnerships with educational institutions to engage youth and leveraging prominent brands to establish a loyal market segment.
iv) The W-T (weaknesses-threats) strategy includes the implementation of community-based marketing to reduce reliance on social media and the diversification of products to alleviate competitive pressures.

Table 5. SWOT matrix for organic rice marketing strategy in Subak Kedisan

IFAS / EFAS	Strengths	Weaknesses
	i) High-quality "Srigati" products ii) Farmers have farming experience iii) Regular meetings among Kedisan farmer groups iv) Diversity of products v) Becoming a leading brand in Subak Kedisan vi) Abundant supply of organic rice	i) Lack of digital promotion activities ii) Lack of market information iii) Limited capital iv) Lack of communication technology v) Lack of participation in marketing vi) Lack of marketing personnel vii) Word-of-mouth marketing and social media
Opportunities i) The prevalence of healthy lifestyles within the community is increasing. ii) Income levels within the community are rising due to the sales of organic rice. iii) The soil conditions are conducive to organic farming practices. iv) The government is providing support. v) The market demand for organic rice is on the rise. vi) Marketing is executed via e-commerce platforms and various social media platforms.	**Strategies (S-O)** i) Optimizing product quality and variety for e-commerce and healthy living trends. (S1, S4, O3, O5, O6) ii) Leveraging farmer experience and supply for market demand. (S2, S6, O1, O5) iii) Promoting the Srigati brand as a symbol of sustainable agriculture via campaigns and governmental endorsement. (S4, S5, O1, O4)	**Strategies (W-O)** i) Enhancing digital promotion through e-commerce platform training. (W1, W7, O5, O6) ii) Launching CSR programs to support the opening of physical stores and access to capital. (W3, O2) iii) Encouraging collaboration with third parties to fill marketing personnel gaps. (W5, W6, O4, O6)
Threats i) Lack of interest of rural youth in agricultural jobs ii) Marketing remains predominantly focused on upper-middle-class consumers. iii) Competitors from outside the region iv) Unpredictable climatic conditions v) Product prices that are difficult to compete with in the market	**Strategies (S-T)** i) Establishing partnerships with educational institutions to engage the youth. (S3, T1) ii) Leveraging prominent brands to create loyal market segments. (S4, S5, T3, T5) iii) Employing cooperative distribution systems to diminish reliance on climatic conditions and external competition. (S6, T3, T4)	**Strategies (W-T)** i) Enhancing community-based marketing to reduce reliance on social media. (W2, W4, T2) ii) Creating product diversification to alleviate competitive strain. (W3, T3) iii) Establishing internal market knowledge to enhance farmers' adaptability to price fluctuations. (W2, W4, T5)

3.5. Quantitative strategic planning matrix analysis

The priority order of alternative strategies has been established based on the QSPM matrix analysis results presented in Table 6, following the processing of data from the questionnaires distributed to respondents. The analysis identified increasing digital promotion capacity through training in social media and e-commerce platforms as the highest priority alternative strategy, achieving an average total attractiveness score (TAS) of 12.93. The elevated TAS value reflects the significant level of interest of respondents in this strategic alternative, making it a top priority in the strategic plan, including: i) digital literacy training, ii) collaboration with external parties, iii) digital infrastructure development, and iv) utilization of healthy consumption trends.

Table 6. Results of QSPM matrix analysis of organic rice marketing in Subak Kedisan

No	Alternative strategies	TAS
1	Enhancing digital promotion skills through training in social media and e-commerce platform utilization.	12.93
2	Securing funding through CSR initiatives or government grants to facilitate the establishment of physical stores and enhance capital access.	12.17
3	Encouraging collaboration with external entities, such as start-ups, students, and volunteers, to address shortcomings in marketing personnel.	12.03
4	Promoting the Srigati brand as a symbol of sustainable agriculture via digital campaigns that align with healthy consumption trends and governmental endorsement.	11.96
5	Establishing a community-based marketing system to reduce reliance on social media and word-of-mouth strategies.	11.39
6	Utilizing community-based or cooperative distribution systems to lessen reliance on weather conditions and external competitors.	11.19
7	Utilizing farmers' experience and ample supply to meet increasing market demand.	10.70
8	Establishing partnerships with educational or training institutions to engage youth through modern agricultural branding.	10.62
9	Leveraging prominent brands and high product quality to establish a dedicated market segment, regardless of price competitiveness.	10.47
10	Enhancing the quality and diversity of organic rice products to meet the demands of the e-commerce market and align with healthy lifestyle trends.	10.38
11	Establishing a straightforward internal market information system to enhance the adaptability of farmer groups to fluctuations in prices and demand.	10.17
12	Developing a product diversification strategy to target lower-middle-class consumers and reduce competitive pressures.	9.90

4. CONCLUSION

The Petani Kedisan Mandiri in Subak Kedisan has implemented an organic rice farming system and obtained organic certification from LeSOS, yet it faces challenges in marketing and limited promotion. This study identifies internal and external factors affecting organic rice marketing and formulates priority strategies using SWOT and QSPM analyses. The findings highlight high product quality as the main strength, word-of-mouth reliance as a key weakness, increasing organic rice demand as a major opportunity, and limited upper-middle-class segmentation as a significant threat, resulting in twelve alternative strategies with digital promotion capacity enhancement as the primary priority. The study recommends strengthening digital literacy, expanding collaboration with external stakeholders, improving digital infrastructure, and conducting continuous monitoring and evaluation, thereby contributing to scientific knowledge through an integrated strategic framework for sustainable organic rice marketing.

ACKNOWLEDGMENTS

We express our gratitude to the Faculty of Agriculture, Udayana University, for funding this activity, which facilitated its realization in accordance with the target. We extend our gratitude to the Kedisan Village Government, Subak Kedisan Kaja, The Petani Kedisan Mandiri, and the Srigati organic rice marketing team for their assistance in securing the necessary permits and providing the venue for this activity.

FUNDING INFORMATION

This research was funded by the DIPA PNBP of Udayana University for the 2025 academic year, as per the research implementation assignment agreement letter number: B/229.90/UN14.4.A/PT.01.03/2025, dated April 28, 2025.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
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I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

INFORMED CONSENT

Informed consent has been obtained from all participants in this study.

ETHICAL APPROVAL

Research involving human subjects has adhered to all relevant national regulations and institutional policies, aligning with the principles of the Declaration of Helsinki, and has received approval from the author's institutional review board or an equivalent committee.

DATA AVAILABILITY

Data supporting the findings of this study are available upon request from the corresponding author, [NMCS].

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