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Formulation of stability strategies for business BSF maggot cultivation under hold and maintain conditions at Bumi Farm

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ABSTRACT

Food loss and food waste are critical issues at both the national and regional levels. Various efforts have been made to address the accumulation of food waste, one of which is through Black Soldier Fly maggot cultivation. However, previous studies have tended to focus on general strategies and have not specifically integrated a comprehensive analysis of internal and external environments to align business strategies with the company's position. Therefore, this research aims to formulate a comprehensive alternative business strategy for BSF maggot farming at Bumi Farm in accordance with the business's position. This Research is a descriptive study. The data used consists of qualitative and quantitative data obtained through observation, interviews, questionnaire, and literature review. The data obtained were analyze using IFE, EFE, IE Matrix, and SWOT analysis. The results of this research indicate Bumi Farm achieved an IFE score of 2.38 and an EFE score of 2.69, both falling into the moderate category. These values place Bumi Farm in Cell V of the IE Matrix with a hold and maintain position. This position indicates that the business's internal and external conditions are relatively stable but not yet strong enough for expansion. The recommended strategic alternative based on the SWOT matrix is a strategy of stabilizing and strengthening the business internally. The results of this research indicate that the sustainability of the maggot farming business depends not only on expansion but also on strengthening internal capacity and operational stability in the face of business environment dynamics.

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1. INTRODUCTION

Food loss and food waste are crucial issues that require serious attention, as they can affect various sectors, including food security, the environment, and the economy at the global, regional, and national levels (Ikhwan et al., 2025). At the national level, food waste is the largest type of waste produced. In 2025, out of a total of 25.038.955,77 tons of waste produced daily in Indonesia, 39.37% was food waste. In addition to the national level, regional levels such as the city of Bogor have similar problems. Of the 779.81 tons

of waste produced daily in Bogor, the largest composition of waste is food waste, amounting to 40% (SIPSN, 2025). This highlights the importance of food waste management, both at the national and regional levels.

Various efforts have been made by the government, where at the national level, the president formed a national waste management task force, which focuses on waste management infrastructure, funding and financial support, coordination with local governments, and conducting education and national clean-up campaigns. At the regional level, the city and regency of Bogor are collaborating in waste management at the Galuga landfill, converting waste into electrical energy (Sekretariat Daerah Kabupaten Bogor, 2025). This indicates the government's seriousness in addressing the waste problem. With policy support and opportunities arising from waste management, various businesses have emerged that utilize waste, one of which is Bumi Farm, a Micro, Small, and Medium Enterprise (MSME) that processes food waste from hotels into economically valuable products using Black Soldier Fly (BSF) maggots.

Bumi Farm has been operating since 2020, utilizing food waste from three hotels in Bogor City. Bumi Farm itself has contributed significantly to food waste management in Bogor City, reducing 500 kg of food waste every day. The establishment of Bumi Farm as a waste management business in Bogor City is a strategic move, where food waste that has no economic value is processed into economically valuable products. This aligns with the concept of a circular economy, which aims to minimize waste and maximize resource use by keeping the value of products and materials circulating within the economic cycle (Risnawati & Gumilang, 2026). The presence of Bumi Farm in Bogor City is a solution to the waste problem, especially based on data from the Coordinating Ministry for Economic Affairs of the Republic of Indonesia in 2025, MSMEs contribute 60% of the total Gross Domestic Product and absorb nearly 97% of the workforce in Indonesia (Kementerian Koordinator Bidang Perekonomian Republik Indonesia, 2025). This shows the vital role of MSMEs in the Indonesian economy, making the development of MSMEs a strategic step to improve the Indonesian economy and promote community welfare (Marliani et al., 2025). Unfortunately, Bumi Farm, as one of the MSMEs that plays a significant role in waste management in the city of Bogor, has experienced various obstacles, such as stagnant sales over the past five years, requiring an effective business development strategy to improve Bumi Farm.

Business development strategies are part of strategic management, which is a systematic process designed to help organizations achieve long-term goals through optimal resource allocation and responsiveness to external and internal changes (Purwanggono, 2025). Research conducted by (Gandhy et al., 2024; Hanim et al., 2021; Ikhawan, 2025) was analyze strategic for maggot cultivation business using IFE, EFE, IE and SWOT. However, the strategies derived from previous research are general in nature and have not specifically integrated a comprehensive analysis of the internal and external environments to align business strategies with the company's position, as research conducted by (Farida & Setiawan, 2022) indicates that business strategies need to be tailored to the specific position and conditions of each business. Thus, this study aims to formulate comprehensive alternative business strategies for BSF maggot farming that are suitable for the position and conditions of Bumi Farm.

2. RESEARCH METHOD

This type of research is descriptive research that aims to describe alternative business development strategies for BSF maggot cultivation at Bumi Farm (Zulkarnain et al., 2018). This location was selected purposively because Bumi Farm is a business that has been operating for 5 years and has the opportunity to develop further (Gandhy et al., 2025). The data used in this study consists of qualitative and quantitative data obtained from primary and secondary sources. Primary data was collected through observation, in-depth interviews, and structured questionnaires, while secondary data was obtained from

relevant literature and supporting documents (Gumilang et al., 2024). The population in this study consists of three individuals who possess the authority and direct involvement in formulating strategic business policies at Bumi Farm (Risnawati & Gumilang, 2026). Given that the population meeting these criteria is limited specifically three individuals, all members of the population were included as research informants using saturation sampling. These informants selected based on specific criteria, including active involvement in business operations, decision-making authority, and a comprehensive understanding of internal and external business conditions. To ensure the validity of the data, this study employed triangulation techniques by comparing information obtained from different informants, while methodological triangulation was conducted by cross-checking the results of observations, interviews, and questionnaires (Arianto, 2024). The analysis method used in this study is a business development strategy by conducting an internal and external environment analysis using IFE and EFE. The weights and ratings in the IFE and EFE were determined through a questionnaire distributed to respondents, namely the management and owners of Bumi Farm. The value of IFE, EFE analysis which are then grouped into an IE Matrix consisting of nine cells with the main strategies produced being Growth Strategy (Cells I, II, IV), Stability Strategy (Cells III, V, VII), and Withdrawal Strategy (Cells VI, VIII, IX). Subsequently, an analysis was conducted using the SWOT Matrix to formulate alternatives for identifying strategies based on conditions, namely Strength - Opportunity (SO), Weakness - Opportunity (WO), Strength - Threat (ST), and Weakness - Threat (WT) (Gandhy et al., 2024).

3. RESULTS AND DISCUSSIONS

Bumi Farm is a business that cultivates Black Soldier Fly (BSF) maggots, which has been operating since 2020 by converting food waste from three hotels in Bogor City into BSF maggots. Bumi Farm is capable of processing 500 kg of food waste per day from its hotel partners in Bogor City. Bumi Farm is located in Cipaku Village, South Bogor District, Bogor City. The business operates on government-owned land with a Business Use Right (HGU) permit covering 200 square meters (Risnawati & Gumilang, 2026). Operational activities at Bumi Farm begin with the daily collection of waste from the three hotels on a rotating basis, followed by feeding the food waste to BSF larvae, and finally harvesting and processing the cultivated products. The main products produced by Bumi Farm consist of fresh maggots and maggot eggs. In one month, Bumi Farm can produce 3 tons of maggots and 2 kilograms of BSF maggot eggs.

3.1 Internal Environment Analysis

Bumi Farm's marketing mix begins with its products. Bumi Farm sells BSF maggots and maggot eggs. Bumi Farm's pricing strategy is competitive, taking into account the purchasing power of small and medium-scale farmers. Bumi Farm's distribution is carried out through direct partnerships with farmers, waste supplier hotels, and fishing communities. Distribution is carried out offline through a network of partners and direct visits, as well as online through social media and marketplaces to expand market reach. Promotion at Bumi Farm is carried out through an educational approach by providing education on micro-scale waste management and through Facebook. Based on the results of interviews conducted, the key internal factors in Bumi Farm's business are as follows:

Table 1. Internal Factor of Bumi Farm

No	Internal Factor	Weight	Rating	Weighted Score
Strengths				
1	Has an MOU with 3 hotels for access to organic raw materials.	0,10	4	0,40
2	Relatively stable production of ±100 kg/day (±3 tons/month) with 22	0,12	3	0,36

No	Internal Factor	Weight	Rating	Weighted Score
	active biopons.			
3	Workforce available (3 people) with a regular work system.	0,08	3	0,24
4	One of the centers for education on food waste management in Bogor City.	0,10	4	0,40
5	Operational experience since 2020 and has an academic/research network.	0,10	3	0,30
Weakness				
1	No formal financial recording and management system.	0,10	1	0,10
2	No own operational fleet (high transportation costs of ±Rp4–4.5 million/month).	0,12	1	0,12
3	Maggot production capacity is unable to consistently meet large contract demands.	0,10	2	0,20
4	Limited production facilities and lack of innovative technology in cultivation.	0,08	2	0,16
5	The lack of digital marketing implementation.	0,10	1	0,10
	Total IFE	1,00		2,38

Source: Data Processed, 2026

The IFE matrix calculation results show a total score of 2.38. This indicates that Bumi Farm's internal conditions are still relatively weak and not yet fully capable of supporting aggressive business expansion. Despite having several significant strengths, structural weaknesses in the managerial and operational systems remain a major obstacle to improving competitiveness. Bumi Farm's main strength lies in its MOU with three hotels as suppliers of organic raw materials. This factor is very strategic because in the maggot cultivation business, the sustainability of raw material supply is a determining factor for production success. The stability of organic waste supply provides a competitive advantage over businesses that still depend on irregular supplies. Bumi Farm also has strength in terms of its reputation as a center for education on organic waste management in the city of Bogor. This provides non-financial added value in the form of social legitimacy and positioning as a circular economy-based business. This reputation can be used as capital to expand partnership networks.

As a business, Bumi Farm certainly has weaknesses. One of the main weaknesses of Bumi Farm is its production capacity, which has not been able to consistently meet large contract demands, indicating limitations in the scale of the business. This is a sign that market expansion must be accompanied by increased production capacity and operational efficiency. In addition, limited production facilities and a lack of innovation in cultivation technology show that the business is still at a semi-conventional level. In fact, technologies such as automatic humidity control systems or controlled fermentation can increase productivity while reducing the risk of odor.

3.2 External Environment Analysis

External environmental analysis is conducted through Political, Economic, Social, Technological, and Environmental (PESTEL) analysis. Politically, waste management businesses are a concern for the government, as outlined in Presidential Regulation No. 109 of 2025, which affirms the government's commitment to handling urban waste in a sustainable manner, including the integration of technology and circular economy facilities for the processing of organic waste from upstream to downstream. This policy opens up strategic opportunities for Bumi Farm to obtain regulatory support and partnerships with local governments in formally managing organic waste (Kementerian Lingkungan Hidup, 2025). Economically, Indonesia is incorporating circular economy principles into its national development planning, which aims to improve resource efficiency, create added value, and increase employment opportunities (Burhanuddin, 2024).

Social awareness of environmental issues is increasing among Indonesians. Research conducted by (Burhanuddin, 2024) shows that community participation, social

capital, and community empowerment have a significant positive impact on sustainable waste management practices, especially when communities are directly involved in the sorting, processing, and production of added value from organic waste. In addition, technological advances provide opportunities for Bumi Farm to improve operational efficiency and maggot cultivation productivity. As shown in research conducted by (Avila et al., 2022), automation technology and smart bins for organic waste management demonstrate that the integration of technologies such as sensors and monitoring systems can help control cultivation environmental conditions in real time, reduce manual monitoring costs, and increase production yields. Another factor, namely the environment, is highly relevant in organic waste management efforts due to the increasingly pressing issues of climate change, pressure on final disposal sites, and sustainability demands (Gumilang et al., 2025).

Table 2. External Factor Evaluation of Bumi Farm

No	External Factor	Weight	Rating	Weighted Score
Opportunity				
1	The circular economy and organic waste management trends are increasingly being promoted by the government.	0,12	4	0,48
2	Market demand for alternative feed (fish & poultry) continues to increase.	0,15	3	0,45
3	The availability of food waste as maggot feed is abundant in the city of Bogor.	0,10	4	0,40
4	Potential for large-scale food waste supply contracts from MBG (up to 300 kg/day).	0,13	2	0,26
5	Potential for product derivative development (pellets, packaged fertilizer, cultivation training).	0,10	3	0,30
Threats				
1	Dependence on DLH policies and bureaucracy related to licensing.	0,10	2	0,20
2	Competition in access to organic waste collection.	0,08	2	0,16
3	Unstable weather affecting egg production and BSF cycles.	0,07	2	0,14
4	Complaints from the community due to unpleasant odors.	0,08	2	0,16
5	Dependence on hotel supplies (if cooperation stops, raw materials are disrupted).	0,07	2	0,14
	Total EFE	1,00		2,69

Source: Data Processed, 2026

Based on the table, it is known that the total EFE score at Bumi Farm is 2.69, consisting of opportunities and threats. The biggest opportunity at Bumi Farm lies in the circular economy trend and organic waste management, which is increasingly being promoted by the government as a strategic opportunity and has the highest value. Progressive environmental policies create space for waste management-based businesses such as Bumi Farm to develop legally and socially. In addition, another key factor is the increasing demand for alternative feed for fish and poultry, which presents a significant market opportunity with a value of 0.45. The increase in the price of conventional feed has opened up opportunities for BSF maggots to be used as a more economical source of protein.

The biggest threat to Bumi Farm is its dependence on DLH policies and bureaucracy, which pose a regulatory threat that cannot be directly controlled by the company. This is because if Bumi Farm wants to collaborate with hotels for the disposal of food waste, it requires permission and notification from the local Environmental Agency. If there are changes to licensing regulations in the future, this could directly affect Bumi Farm's operations. In addition, complaints from the community due to unpleasant odors are another major threat to Bumi Farm. Thus, the total EFE matrix score of 2.69 indicates that Bumi Farm is relatively capable of responding to external opportunities quite well. This score is above average, which means that the external environment is actually quite supportive of business growth. The weights and ratings in

the IFE and EFE matrices are determined based on the expert judgment of informants who understand the company's operations. The weights reflect the level of importance of each factor, while the ratings indicate the company's actual conditions.

3.3 Internal External Matrix

The Internal–External (IE) Matrix is a strategic analysis tool that integrates IFE and EFE Matrix scores to determine an organization's position in nine generic strategy cells. According to (David, 2011), the IE Matrix helps companies determine whether the appropriate strategy is to grow and build, hold and maintain, or harvest and divest. Based on the analysis results, Bumi Farm obtained an IFE score of 2.38, which falls into the moderate category. This score indicates that internally, Bumi Farm has a balance between strengths and weaknesses, but is not yet strong enough to aggressively dominate the market. Meanwhile, an EFE score of 2.69 places Bumi Farm in the moderate category. This indicates that the company is quite responsive to external opportunities and threats, but is not yet optimal in maximizing industry momentum.

The combination of IFE scores of 2.38 and EFE scores of 2.69 places Bumi Farm in Cell V of the IE Matrix, which falls under the Hold and Maintain category according to the classification (David, 2011). This position describes the company as being in a stable condition, not in a phase of aggressive expansion, but also not in a state of decline. The recommended strategy for the Hold and Maintain position should emphasize stability and gradual performance improvement. In strategic management literature, the recommended strategies for Cell V are market penetration and limited product development (Gandhy & Kurniawati, 2018). This indicates that Bumi Farm needs to focus on market optimization and product development rather than major expansion. Bumi Farm's position within a hold and maintain strategy aligns with previous research indicating that waste-based businesses are generally in a consolidation phase. This situation calls for internal strengthening rather than aggressive expansion, particularly due to managerial constraints and social challenges. The results indicate that although market opportunities are substantial, internal weaknesses such as management and operational issues remain the primary obstacles. Additionally, external constraints, such as waste supply and negative public perception, also limit business growth. Therefore, the appropriate strategy is to focus on internal strengthening and stability, rather than expansion.

Bumi Farm's market penetration strategy can be achieved by increasing the intensity of educational promotions regarding the benefits of maggot farming and its derivative products. This effort is important because one of the main challenges facing the maggot industry is market perception and customer literacy levels. In addition, limited product development is also relevant. Bumi Farm can develop its products by creating derivative products from BSF maggots or improving quality. This approach aims to strengthen added value and increase customer loyalty, enabling the company to remain competitive in a dynamic market. Improving management systems, strengthening production SOPs, quality control, and cost efficiency are priorities to elevate the IFE score to the strong category in the next evaluation period.

3.3 Matrix SWOT

After identifying key internal and external factors and the IE matrix, the next step is the SWOT matrix. The SWOT matrix is used to formulate strategic alternatives based on the results of identifying strengths, weaknesses, opportunities, and threats. The results of the generic strategy at Bumi Farm are as follows:

Table 3. Generic Strategy using Matrix SWOT of Bumi Farm

Internal Factor	Strengths	Weakness
	Has an MOU with 3 hotels for access to organic raw materials. Relatively stable production of ±100 kg/day (±3 tons/month) with 22 active biopons. Workforce available (3 people) with a regular work system. One of the centers for education on food waste management in Bogor City. Operational experience since 2020 and has an academic/research network.	No formal financial recording and management system. No own operational fleet (high transportation costs of ±Rp4–4.5 million/month). Maggot production capacity is unable to consistently meet large contract demands. Limited production facilities and lack of innovative technology in cultivation. The lack of digital marketing implementation.
External Factor		
Opportunity	SO-Strategy	WO-Strategy
The circular economy and organic waste management trends are increasingly being promoted by the government. Market demand for alternative feed (fish & poultry) continues to increase.	Leveraging hotel MOU access and circular economy trends to establish positioning as the official partner for organic waste management in Bogor City.	Developing a simple digital financial management system to support increased market expansion.
The availability of food waste as maggot feed is abundant in the city of Bogor.	Developing diversified maggot derivative products.	Seeking investment/grant support for technological innovation at universities and pentahelix collaboration.
Potential for large-scale food waste supply contracts from MBG (up to 300 kg/day). Potential for product derivative development (pellets, packaged fertilizer, cultivation training).	Developing paid education programs/workshops to capture opportunities arising from growing interest in maggot cultivation.	Enhance cooperation with hotels to reduce the risk of unstable capacity.
Threats	ST-Strategy	WT-Strategy
Dependence on DLH policies and bureaucracy related to licensing. Competition in access to organic waste collection.	Optimization of cooperation between the three hotels and MBG through the addition of a source of food waste.	Implementation of production SOPs and odor management to prevent social conflicts and environmental regulations.
Unstable weather affecting egg production and BSF cycles.	Improvement of production operational standards and quality control.	Strategic partnerships to share operational and logistics fleets.
Complaints from the community due to unpleasant odors. Dependence on hotel supplies (if cooperation stops, raw materials are disrupted).	Reduction of waste retention time (no accumulation for more than three days) and acceleration of prepupa harvesting.	Collaboration with universities and research institutions to create BSF maggot cultivation technology that can minimize odor.

Sumber: Data processed, 2026

Based on the results of the analysis using the SWOT matrix, four types of strategies were obtained, as follows:

a. Strengths Opportunity Strategy (SO)

Leveraging hotel MOU access and circular economy trends to establish positioning as the official partner for organic waste management in Bogor City. This strategy aims to position Bumi Farm as a waste management partner in the city of Bogor through the concept of a circular economy. This concept emphasizes the use of waste as a new resource in a sustainable production system. Research conducted by (Geissdoerfer et al., 2017) explains that the circular economy creates value through closed-loop systems and cross-sector collaboration. In terms of positioning, Bumi Farm can shift its image from being merely a maggot farmer to a strategic partner in bioconversion-based organic waste

management. This model has been proven effective in reducing food waste using BSF, as explained by (Abbasi-Garravand et al., 2016), who stated that BSF larvae are capable of converting organic waste efficiently and economically.

Developing diversified maggot derivative products. This strategy aims to create diversified products derived from maggots. It is classified as a growth strategy recommended when a company has core competencies that can be expanded. Research conducted by (Makkar et al., 2014) shows that BSF maggots have potential as animal feed, organic fertilizer (frass), and alternative protein raw materials. Diversification increases revenue streams and reduces dependence on a single product type. According to the resource-based view (RBV) theory, competitive advantage is achieved when a company optimizes its unique resources. Maggots, prepupae, frass, and waste processing services are strategic assets of Bumi Farm. This strategy can be implemented by creating derivative products from BSF maggots, such as dried maggots, fish or poultry pellets (Prasetyo & Gumilang, 2025), thereby creating diversification and expanding the target market.

Developing paid education programs/workshops to capture opportunities arising from growing interest in maggot cultivation. This strategy aims to capture opportunities arising from the growing interest in maggot farming and food waste management, as well as providing assistance to communities that want to process waste. The growing interest in maggot farming has created opportunities for knowledge-based business monetization. This model is included in the related diversification strategy based on educational services. Research conducted by (Gao et al., 2017) found that the adoption of BSF technology is highly dependent on knowledge transfer and technical training. What Bumi Farm can do is to start by creating a 1-2 day training curriculum, followed by creating a training package, starter kit, and preparing training certificates and membership system. The paid training model has been proven to increase the sustainability of agribusiness MSMEs.

b. Weakness Opportunity Strategy

Developing a simple digital financial management system to support increased market expansion. Digital financial management improves the efficiency and transparency of MSMEs. According to research from the (Mukhlishin, 2024), financial digitization improves MSME performance through real-time recording and cash flow control. This strategy can be implemented by first learning and attending financial recording training, then continuing with the use of simple accounting applications, followed by separating business and personal accounts and preparing monthly cash flow reports.

Seeking investment/grant support for technological innovation at universities and pentahelix collaboration. This strategy arose from Bumi Farm's internal weaknesses in terms of production technology and capital constraints, while external opportunities indicated the availability of research support and innovation grant programs from universities and the government. The pentahelix collaboration model, which connects academia, business, government, community, and media, has been proven to increase the success of agribusiness sector innovation (Naswa & Gandhy, 2025). In the context of BSF cultivation, technological innovation plays an important role in increasing waste conversion efficiency and reducing operational risks. Research conducted by (Zhai et al., 2018) shows that research support significantly increases the productivity of commercial-scale BSF systems.

Enhance cooperation with hotels to reduce the risk of unstable capacity. Bumi Farm's weakness in supply stability can be overcome by strengthening cooperation contracts with hotels. Feedstock stability is a key factor in the success of BSF farming. Research conducted by (Roy et al., 2019) explains that substrate consistency greatly affects larval growth and biomass conversion. This strategy is not merely about

increasing the number of hotels, but deepening the quality of cooperation through a volume-based contract system and fixed schedules.

c. Strength–Threats Strategy

Optimization of cooperation between the three hotels and MBG through the addition of a source of food waste. This strategy is defensive-aggressive in nature, utilizing the strength of partnerships to deal with the threat of raw material fluctuations. Diversification of waste sources can reduce supply risk. Research conducted by (Diener et al., 2011) shows that variation in substrate sources increases the stability of BSF production. This strategy can be implemented by mapping the potential of additional waste sources such as MBG kitchens.

Improvement of production operational standards and quality control. This strategy aims to overcome regulatory threats and negative consumer perceptions by standardizing production. According to ISO-based agribusiness management studies, SOPs can improve output consistency and market trust (Spranghers et al., 2016).

Reduction of waste retention time (no accumulation for more than three days) and acceleration of prepupa harvesting. This strategy is intended to anticipate complaints from the surrounding community about odors caused by waste accumulation. Research conducted by (Grathwohl, 2014) shows that retention of more than three days increases the risk of anaerobic odor formation. This can be overcome by implementing a first in, first out (FIFO) system. In addition, feed fermentation can be carried out to reduce odors more quickly.

d. Weakness–Threats Strategy

Implementation of production SOPs and odor management to prevent social conflicts and environmental regulations. Odor is one of the biggest social risks in BSF maggot farming, especially if the production site is located near residential areas. If the odor is not controlled, the risk of social rejection can lead to operational restrictions and even business closure. This strategy aims to prevent this by creating a standard operating procedure (SOP) for controlling substrate moisture in the range of 60–70% to prevent anaerobic conditions.

Strategic partnerships to share operational and logistics fleets. Logistics costs are a significant component of operational costs in the organic waste processing business model. Research conducted by (Huang et al., 2020) in the context of urban food system logistics shows that distribution collaboration and fleet sharing systems can reduce transportation costs by 15–25% through route optimization and reduction of empty return trips. Bumi Farm itself can be implemented through a cost-sharing transport scheme with waste management partners or other agribusiness actors.

Collaboration with universities and research institutions to create BSF maggot cultivation technology that can minimize odor. This strategy aims to overcome the weaknesses of odor control technology while addressing environmental regulatory threats. Research conducted by (Tao et al., 2019) shows that pretreating the substrate before feeding it to BSF larvae can significantly reduce ammonia emissions. Additional technologies such as the use of zeolite or biochar are also effective in absorbing volatile nitrogen compounds. This strategy can be implemented by collaborating with universities or research institutions to find and apply BSF maggot cultivation technologies.

The results of this study underscore the importance of using an integrated strategic analysis approach when examining the development of circular economy-based businesses. The use of a combination of IFE, EFE, IE, and SWOT has proven capable of providing a more comprehensive picture of a business's strategic position and direction; this aligns with the findings of a study conducted by (David, 2011), which found that integrating various strategic analysis tools can improve the accuracy of business strategy formulation. The results of this study indicate that maggot farming business operators

need to prioritize strengthening internal capacity, particularly in the aspects of operational management, quality control, and community relations management. This is crucial for ensuring long-term business sustainability, especially in addressing the social and environmental challenges inherent in the organic waste processing industry (Geissdoerfer et al., 2017). Overall, the study's findings indicate that Bumi Farm's managers need to strengthen operational management based on standard operating procedures (SOPs). This is important for maintaining product quality consistency and reducing the risk of odors that could trigger social conflicts (Diener et al., 2011). Additionally, it is necessary to strengthen financial management systems and implement simple digital record-keeping, as indicated by the research conducted by (Risnawati & Gumilang, 2026). During the maintenance phase, cash flow stability becomes the top priority; therefore, Bumi Farm needs to track operational costs per production cycle to determine actual margins and break-even points more accurately, as well as optimize partnerships with hotels and selectively diversify waste sources, rather than pursuing large-scale expansion. Supply diversification must be carried out in a controlled manner to avoid overcapacity, which would actually increase the risk of odors and production irregularities. Finally, managers are advised to gradually develop value-added products, such as kasgot fertilizer, premium dried maggots, and pellets to increase margins without significantly increasing waste volume.

4. CONCLUSION

Based on the analysis, Bumi Farm obtained an IFE score of 2.38 and an EFE score of 2.69, both indicating moderate conditions and placing the business in Cell V of the IE Matrix (hold and maintain). This position suggests that the company is relatively stable but not yet strong enough for aggressive expansion. Therefore, the appropriate strategy focuses on internal stabilization and strengthening through improving operational efficiency, standardizing production processes, strengthening partnerships, and mitigating social and environmental risks. Business development should be conducted gradually and in a controlled manner. Theoretically, this study contributes by applying an integrated framework combining IFE, EFE, IE Matrix, and SWOT in the context of BSF maggot farming, providing a more comprehensive strategic analysis. Managerially, the findings highlight that business sustainability depends on internal readiness, requiring Bumi Farm to prioritize internal management improvements before expanding. Maintaining balance between production capacity, waste supply, and public acceptance is essential for long-term sustainability. Future research is recommended to incorporate additional tools such as QSPM or the Business Model Canvas.

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