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Designing a Bumdes Business Model Based on Canvas and ISM to Support Food Security

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Abstract

Village food security is a strategic issue that is not only related to fulfilling the basic needs of the community but is also closely linked to local economic independence. Village Owned Enterprises (BUMDes) play a significant role in strengthening the village economic base through the organized management of local resources. However, weaknesses in business model design often hinder the sustainability and effectiveness of BUMDes. This study aims to design a BUMDes business model based on the Business Model Canvas (BMC) combined with Interpretive Structural Modeling (ISM). The purpose is to comprehensively map business blocks while identifying the hierarchical structure of key success factors of BUMDes in supporting food security. The research employs a combination of qualitative and quantitative descriptive methods. Primary data were collected through questionnaires and interviews with 30 BUMDes in East Java, while the analysis was conducted using BMC mapping and the development of hierarchical relationships among factors through ISM. The findings indicate that the integration of BMC and ISM can formulate a more adaptive and systematic BUMDes business model aligned with local characteristics. The ISM analysis highlights the presence of key driving factors in human resources and strategic partnerships, which are then integrated into the BMC blocks to reinforce the value proposition and revenue streams of BUMDes. This study contributes theoretically by integrating the BM-ISM approach within the context of rural development and offers practical implications in the form of a business model framework that can be utilized by village governments, BUMDes managers, and stakeholders to strengthen food security and foster local economic independence.

Keywords: BUMDes; Business Model; Business Model Canvas; Food Security; Interpretive Structural Modeling.

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Introduction

Food security is one of the most crucial agendas in sustainable development, particularly in Indonesia (Rahmanto et al., 2020; Otsuka, 2021). As an agrarian country, villages play a pivotal role in ensuring the availability, accessibility, and distribution of food in a sustainable manner (Tomiyama et al., 2020; Dulkadir et al., 2024; Sobczak-Malitka & Drejerska, 2024). Within this context, Village Owned Enterprises (BUMDes) have emerged as strategic instruments to enhance local economic independence, strengthen food supply chains, and improve community welfare (Badaruddin et al., 2020; Yudaruddin et al., 2023; Kasmawati et al., 2024).

Despite their strategic role, many BUMDes face significant operational challenges in designing adaptive and sustainable business models, which directly undermine their capacity to contribute to food security outcomes at the village level. Inadequate business model configurations often result in inefficient food production planning, weak distribution mechanisms, limited market access for local farmers, and unstable revenue structures, ultimately affecting the availability, affordability, and

continuity of food supply within rural communities (Yaya et al., 2022; Kusmulyono et al., 2023. Previous studies highlight that most BUMDes lack structured strategies to identify customer segments, define value propositions, manage resources, and design reliable revenue streams (Yaya et al., 2022). Moreover, limited understanding of the interrelations among strategic factors such as social capital, managerial capacity, and market access often hinders their ability to sustain operations in a competitive and dynamic environment (Kusmulyono et al., 2023; Pawitan et al., 2025).

Extant literature has examined BUMDes from institutional, social, and entrepreneurial perspectives (Sutrisno et al., 2024; Wahyono et al., 2025; Harinurdin et al., 2025), and research on business model innovation in the food sector has emphasized digitalization, inclusive innovation, and food system approaches (Nosratabadi et al., 2020; Danse et al., 2020; Wangu, 2021; Stella et al., 2022). Studies on food security at the village level also underline the importance of social dynamics, ecological systems, and financial access (Rosmalah et al., 2025; Yusriadi & Cahaya, 2022; Pienaah & Luginaah, 2024; Idamokoro & Hosu, 2022). However, these studies have yet to explore how business model design at the village level particularly within BUMDes can directly strengthen food security.

To address this research gap and the urgent operational challenges faced by BUMDes, this study proposes the integration of the Business Model Canvas (BMC) and Interpretive Structural Modeling (ISM) as a contextually appropriate approach for business model design in village-owned enterprises. BUMDes operate within complex socio-economic environments characterized by limited managerial capacity, resource constraints, fragmented markets, and strong social embeddedness, conditions that require both a holistic business framework and a systematic understanding of interdependent strategic factors. In this regard, BMC is particularly suitable for BUMDes as it provides a simple yet comprehensive structure to articulate value creation, resource utilization, stakeholder relationships, and revenue mechanisms in a manner that is accessible to community-based enterprises. Complementarily, ISM is well suited to capture the hierarchical relationships and causal linkages among critical success factors such as governance quality, social capital, market access, and operational capability that are often inadequately addressed in conventional business planning. The integration of BMC and ISM is therefore essential to respond to the pressing need for adaptive, coherent, and actionable business models that enable BUMDes to function more effectively as local food system actors and to strengthen their contribution to sustainable food security.

The significance of this study lies in its theoretical and practical contributions. Theoretically, it extends the discourse on strategic management in rural development by integrating the Business Model Canvas and Interpretive Structural Modeling within the context of community-based enterprises, thereby offering a more systematic perspective on business model design in village-owned organizations. Practically, this study provides a structured blueprint for village governments, BUMDes managers, and relevant stakeholders to develop business models that are adaptive, sustainable, and aligned with local socio-economic conditions. Accordingly, the primary objectives of this study are: (1) to design a BUMDes business model using the Business Model Canvas that reflects the specific characteristics of village-based food enterprises, and (2) to identify and structure the key strategic factors influencing BUMDes performance in supporting local food security through Interpretive Structural Modeling.

Literature Review

1. BUMDes and Their Role in Village Development

Village-Owned Enterprises (BUMDes) have become strategic instruments in strengthening rural economies. Previous studies highlight various dimensions of BUMDes, ranging from institutional and legal aspects (Sutrisno et al., 2024), empowerment through social capital (Badaruddin et al., 2020), to orientations toward social entrepreneurship and economic inclusion (Wahyono et al., 2025; Harinurdin et al., 2025). Yet they have not provided an indepth analysis of business model designs that are systematic and adaptive to the dynamics of food security (Fatchurrohman & Khakim, 2023; Fatchurrohman & Elisabeth, 2024).

2. Business Model Innovation in the Food Sector

The literature on business model innovation within food supply chains emphasizes the importance of digitalization, inclusive innovation, and food system approaches. For instance, Nosratabadi et al. (2020), Danse et al. (2020), Wangu (2021), and Stella et al. (2022) demonstrate how innovative business models can contribute to food security through global approaches and large-scale food industries. However, these studies have not specifically examined the application of such models within the context of BUMDes, which operate as community-based enterprises with limited resources.

3. Food Security at the Village Level

Research on village-level food security highlights the influence of social dynamics, ecological systems, and financial access on local food systems. Studies by Rosmalah et al. (2025), Yusriadi and Cahaya (2022), Pienaah and Luginaah (2024), and Idamokoro and Hosu (2022) indicate that external factors play a decisive role in determining the level of food security in rural areas. Nonetheless, this body of literature focuses more on environmental systems and external access, rather than on the internal business model design of village enterprises as a mechanism to strengthen food security.

4. Village Development Strategies and BUMDes

Studies by Irianto et al. (2023), Effendi et al. (2023), and Fafurida et al. (2022) discuss SWOT analysis, academic–industry collaboration, and the competitive dynamics between BUMDes and local businesses. Although providing diagnostic insights, these approaches have not yet advanced to prescriptive and implementable business model design.

5. Integration of Business Model Canvas (BMC) and Interpretive Structural Modeling (ISM)

The Business Model Canvas (BMC) has been widely applied to structure and visualize key business components, including value propositions, customer segments, resources, and revenue streams, particularly in small-scale and community-based enterprises. However, prior studies predominantly employ BMC as a descriptive tool, offering limited explanation of how interdependencies among strategic, organizational, and contextual factors influence business model effectiveness. As a result, BMC-based analyses often overlook the causal mechanisms underlying business performance.

In contrast, Interpretive Structural Modeling (ISM) has been used to analyze complex systems by identifying hierarchical and causal relationships among critical success factors. Applications of ISM in the agri-food sector, such as dryland rice agribusiness studies (Rosmalah et al., 2025), demonstrate its ability to reveal key drivers within production and supply subsystems. Nevertheless, existing ISM studies remain confined to specific operational domains and have rarely been extended to comprehensive business model design, particularly in the context of village-owned enterprises.

The limitations of both approaches indicate a methodological gap between business model representation and structural factor analysis. Integrating BMC and ISM addresses this gap by combining the strengths of both methods, enabling systematic business model design while accounting for hierarchical interdependencies among key factors. This integration is especially relevant for BUMDes, given their socially embedded and resource-constrained operational environments.

6. Research Gaps

Based on the existing literature, several critical research gaps remain. Prior studies on BUMDes predominantly focus on regulatory and institutional governance, with limited attention to how these institutional arrangements interact with social dynamics and business model design. Research on food business innovation is largely concentrated on global or large-scale industrial contexts, thereby neglecting the socially embedded and institutionally constrained nature of village-level enterprises such as BUMDes. Moreover, while Interpretive Structural Modeling has been applied to analyze isolated operational factors, it has not been integrated with the Business Model Canvas to simultaneously capture institutional structures, social capital, and core business components within a unified framework. Existing studies are also largely conceptual or based on single case analyses, offering limited empirical generalizability. Addressing these gaps, this study introduces a novel integrative

framework that systematically combines institutional, social, and business dimensions through the joint application of BMC and ISM to design adaptive and context-sensitive BUMDes business models that support village-level food security.

Research Method

This study employs a descriptive qualitative approach supported by quantitative analysis based on Likert scale scoring. The purpose of this design is to formulate an integrative BUMDes business model through the combination of the Business Model Canvas (BMC) and Interpretive Structural Modeling (ISM). The BMC is utilized to map the core building blocks of the BUMDes business model, while ISM is applied to analyze the hierarchical relationships among key success factors that influence BUMDes performance and sustainability. The research was conducted on 30 BUMDes in East Java BUMDES that supports food security only.

The data for this study were derived from two complementary sources. Primary data were collected through a structured questionnaire based on a five-point Likert scale (1–5), administered to BUMDes managers, village officials, and community leaders. The questionnaire was designed to capture respondents' assessments of the nine Business Model Canvas (BMC) blocks and the key factors incorporated in the Interpretive Structural Modeling (ISM) framework. To complement and enrich the survey data, semi-structured interviews were conducted with selected respondents to clarify survey responses, explore underlying rationales, and identify contextual factors that could not be fully captured through standardized questions. These interviews enabled triangulation by validating quantitative patterns, resolving ambiguities in Likert-scale responses, and providing deeper insights into operational practices, institutional constraints, and social dynamics influencing BUMDes performance. Secondary data were obtained from official documents and relevant academic literature to strengthen the empirical and conceptual grounding of the study.

The analysis was carried out in three main stages. First, the Business Model Canvas (BMC) analysis was conducted by calculating mean Likert-scale scores for each BMC block to identify relative strengths and weaknesses across the sampled BUMDes. Prior to analysis, the questionnaire items were subjected to validity and reliability testing. Content validity was ensured through expert review involving academics and practitioners with expertise in BUMDes and rural business development, while construct validity was examined using item–total correlation analysis. Reliability was assessed using Cronbach's alpha, with values exceeding the acceptable threshold, indicating internal consistency of the measurement instrument. Second, Interpretive Structural Modeling (ISM) analysis was performed by developing the Structural Self-Interaction Matrix (SSIM), converting it into a reachability matrix, and classifying factors based on driver power and dependence. Finally, the BMC and ISM results were integrated to formulate a comprehensive and context-sensitive BUMDes business model.

Result and Discussion

Business Model Canvas (BMC) Data Processing

The BMC analysis was conducted on four BUMDes operating in the sectors of agriculture, fisheries, trade, and financial services. Each BMC block was evaluated using a Likert scale (1–5), and the mean scores were calculated, as presented in Table 1 below.

Table 1. BMC Data Processing

BMC Block	Agriculture	Fisheries	Trade	Financial Services	Average
Customer Segments	4.7	4.3	4.7	4.3	4.5
Value Proposition	5.0	4.3	4.0	4.3	4.4
Channels	4.3	3.7	4.7	3.3	4.0
Customer Relationship	4.3	3.3	3.7	4.0	3.8
Revenue Streams	4.3	4.0	5.0	4.7	4.5

Key Resources	3.3	3.3	3.7	3.7	3.5
Key Activities	4.3	4.0	4.0	4.0	4.1
Key Partnerships	4.7	4.7	4.0	4.3	4.4
Cost Structure	3.7	3.7	4.0	3.7	3.8

The results of the analysis indicate that Customer Segments (4.5) and Revenue Streams (4.5) represent the strongest elements, demonstrating that BUMDes are capable of identifying their primary customer segments and generating relatively stable revenue streams. This finding suggests that both the attractiveness of BUMDes products and their consumer base are reasonably solid.

In contrast, Key Resources (3.5) and Customer Relationships (3.8) received the lowest scores, indicating limitations in critical resources (particularly human resources and technology) as well as weaknesses in building long term relationships with customers. Such weaknesses may hinder business sustainability if not addressed through appropriate strengthening measures.

Overall, the BUMDes analyzed in East Java exhibit a strong tendency toward market oriented aspects (demand side) but remain relatively weak in terms of internal capacity (supply side).

Interpretive Structural Modeling (ISM) Data Processing

The ISM analysis was employed to identify the key success factors of BUMDes in supporting food security. The mean scores obtained from all respondents yielded several significant findings, as summarized in Table 2 below.

Table 2. ISM Data Processing

BMC Block	Agriculture	Fisheries	Trade	Financial Services	Average
Role of Village Government	5.0	5.0	5.0	4.0	4.8
Human Resources	3.0	3.0	3.0	3.0	3.0
Community Participation	5.0	4.0	4.0	4.0	4.3
Access to Capital	4.0	4.0	4.0	5.0	4.3
Village Infrastructure	4.0	4.0	4.0	3.0	3.8
Technological Innovation	3.0	3.0	3.0	3.0	3.0
Strategic Partnerships	4.0	5.0	4.0	4.0	4.3
Transparency & Accountability	4.0	3.0	5.0	5.0	4.3
Local Food Security	5.0	5.0	4.0	3.0	4.3
Business Sustainability	4.0	4.0	3.0	4.0	3.8

Source: Processed data, 2025

The factors exerting the strongest driving influence on BUMDes development are reflected in the high driver power scores of several key aspects. The role of the Village Government occupies the most dominant position with a score of 4.8, serving as the primary foundation for strengthening and sustaining BUMDes. In addition, other factors with significant influence include Community Participation, Access to Capital, Strategic Partnerships, Transparency and Accountability, and Local Food Security, each scoring 4.3. These factors act as enablers of BUMDes performance by fostering synergy across social, economic, and governance dimensions.

Conversely, factors with relatively weak or dependent influence include Human Resources (HR) and Technological Innovation, each scoring 3.0. These two factors function as bottlenecks, as insufficient reinforcement may hinder the effective implementation of the positive impacts generated by the primary drivers.

The ISM hierarchical structure derived from this analysis illustrates three levels of roles. At the first level (drivers), fundamental factors include the Role of the Village Government, Community Participation, and Access to Capital. At the second level (enablers), Strategic Partnerships,

Transparency and Accountability, and Local Food Security serve to support and reinforce the drivers. Finally, at the third level (outcomes), the expected results of the synergy among all factors are manifested in the form of enhanced customer segments, revenue streams, and a strengthened value proposition for BUMDes.

BMC and ISM Integration

The integration of Business Model Canvas (BMC) and Interpretive Structural Modeling (ISM) analyses provides a more comprehensive understanding of the interconnections between BUMDes business blocks and the structural factors that influence them. Strong customer segments and revenue streams identified in the BMC are shown to be significantly shaped by the level of community participation and the availability of capital access, as revealed through ISM. Accordingly, the higher the involvement of village residents and the smoother the access to financing, the greater the market potential that can be reached and the broader the opportunities for revenue diversification that BUMDes can optimize.

Value propositions and key partnerships also demonstrate a strong dependency on strategic alliances and the role of the village government. Adequate regulatory support, well established partner networks, and facilitation by the village government are critical in determining the added value of products and services offered by BUMDes to consumers. Meanwhile, key resources and technological innovation remain weak points requiring targeted intervention. Efforts to strengthen human resource capacity, provide entrepreneurship training, and implement digital technologies are crucial steps to accelerate BUMDes transformation and enhance adaptability to market dynamics.

Furthermore, customer relationships are closely associated with transparency. Transparent governance fosters community trust, enabling customer relationships to be not only maintained but also sustainably strengthened.

Designing a BUMDes Business Model (BMC-ISM)

Based on the integration of BMC and ISM, a hierarchical business model for BUMDes in supporting food security can be formulated, as illustrated in Figure 1 below.

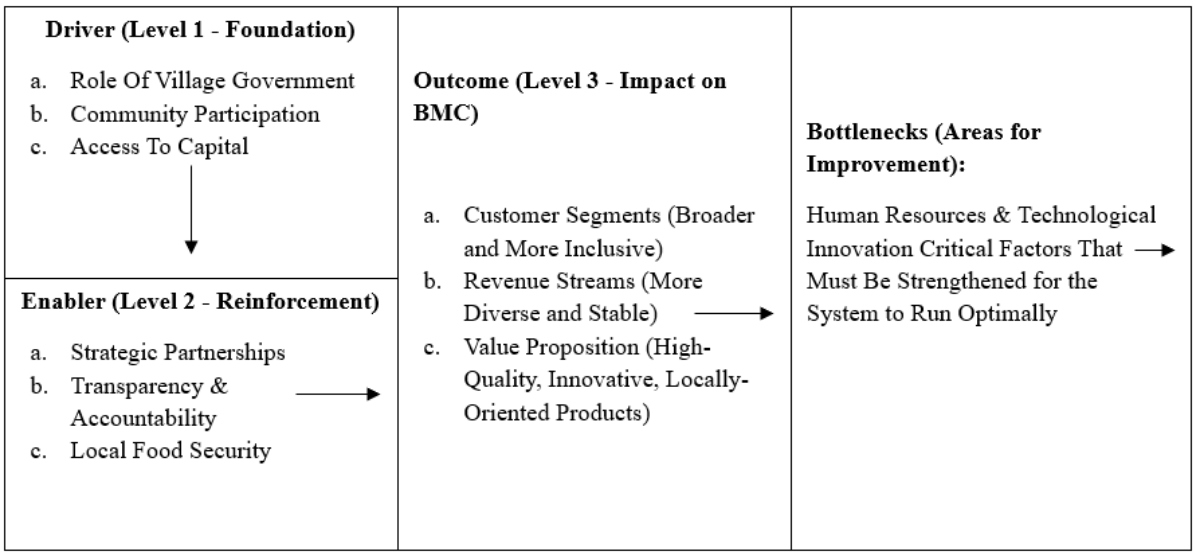

Figure 1. BMC and ISM Bumdes Business Models in supporting food security

This model demonstrates that the success of Village Owned Enterprises (BUMDes) depends not only on managerial aspects captured by the Business Model Canvas (BMC), but also on the socio economic structures underpinning them, as revealed through Interpretive Structural Modeling (ISM). The findings of this study yield several important insights with both theoretical and practical implications. First, a clear asymmetry is evident between the external and internal strengths of BUMDes. While BUMDes appear relatively stronger in demand driven market aspects, they still exhibit weaknesses in resource driven internal capacities. Second, the hierarchy of success factors positions the role of village government and community participation as the fundamental pillars shaping the trajectory of BUMDes development. This condition underscores the critical importance of village governance in fostering a

healthy and sustainable business ecosystem that accommodates community interests. Third, the integration of the Business Model Canvas (BMC) and Interpretive Structural Modeling (ISM) produces a more comprehensive framework for designing community based business models. Theoretically, this study advances the application of the BMC through a structural ISM approach, enabling business models to be understood not only as static blocks but also as hierarchically organized cause effect relationships.

Discussion

The findings of this study demonstrate that the design of a Village Owned Enterprise (BUMDes) business model based on the Business Model Canvas (BMC), combined with Interpretive Structural Modeling (ISM), is effective in identifying key business blocks and the hierarchical relationships among BUMDes success factors. The results indicating that Customer Segments and Revenue Streams constitute the strongest elements, while Key Resources and Customer Relationships are relatively weaker, align with the Resource Based View (RBV), which emphasizes the importance of capabilities and resources as drivers of organizational competitiveness. However, this study enriches the RBV perspective by integrating institutional and social factors captured by ISM, particularly the role of village government and community participation, which are consistent with Institutional Theory.

Furthermore, the finding on the relationship between transparency accountability and customer relationships reinforces the principles of Social Capital Theory, wherein trust and social networks serve as the primary basis for sustaining community based enterprises. The integration of these three theoretical lenses RBV, Institutional Theory, and Social Capital Theory provides a novel theoretical foundation for designing BUMDes business models. It suggests that the competitiveness of BUMDes is determined not only by internal capabilities but also by institutional legitimacy and social trust that underpin interactions among village actors.

The literature gap reveals that research on BUMDes or Village Owned Enterprises (VOEs) over the past two decades has predominantly emphasized the normative and institutional dimensions regulating their existence. For instance, Sutrisno et al. (2024) highlight institutional and legal aspects, Badaruddin et al. (2020) emphasize empowerment based on social capital, while Wahyono et al. (2025) and Harinurdin et al. (2025) explore social entrepreneurship orientation and economic inclusion. Nevertheless, these studies have not yet provided an in depth elaboration of systematic and adaptive business model designs to address the challenges of food security at the village level.

On the other hand, the literature on business model innovation in food supply chains, as discussed by Nosratabadi et al. (2020), Danse et al. (2020), Wangu (2021), and Stella et al. (2022), places greater emphasis on digitalization, inclusive innovation, and food system approaches. However, their research contexts remain largely focused on large scale and global food industries, rendering them less directly relevant to the needs of Village Owned Enterprises (BUMDes), which operate as community based entities with distinctive characteristics.

Furthermore, studies by Rosmalah et al. (2025), Yusriadi and Cahaya (2022), Pienaah and Luginaah (2024), as well as Idamokoro and Hosu (2022), on village level food security indicate that food related issues are more strongly influenced by social, ecological, and financial access dynamics. These studies predominantly emphasize external factors without elaborating on how the internal design of BUMDes business models can strengthen the village's role as a key actor within local food systems.

Meanwhile, research on village development strategies conducted by Irianto et al. (2023), Effendi et al. (2023), and Fafurida et al. (2022) highlights SWOT analysis, academic industry collaboration, and competitive dynamics with local businesses. However, such approaches tend to be diagnostic and descriptive in nature, and have yet to reach the stage of prescriptive business model design that can be operationalized to support village level food security.

Accordingly, this study makes a tangible contribution by addressing these gaps in the literature through the development of a conceptual framework that integrates business, institutional, and social dimensions. The integration of the Business Model Canvas (BMC) with Interpretive Structural Modeling (ISM) enables the mapping of core business blocks, such as customer segments and revenue streams, while simultaneously strengthening institutional legitimacy through the role of village

government and fostering social trust through community participation. This approach offers a more comprehensive perspective for designing BUMDes business models oriented toward food security.
In addition, another critical gap lies in the absence of a conceptual framework that connects business aspects (such as customer segments and revenue streams) with institutional dimensions (the role of village government) and social dimensions (community participation). The findings of this study contribute to filling this gap by offering a more comprehensive methodological and theoretical integration.

Research Implications
This study contributes to the literature by proposing an integrative BMC-ISM framework that broadens the analytical scope of community based business models. It underscores the need to complement classical strategic management theories such as the Resource Based View (RBV) with institutional and social capital theories to capture the dynamics of Village Owned Enterprises (BUMDes). Accordingly, this study offers a theoretical insight that village based business models are inherently multidimensional, encompassing economic, social, and institutional dimensions.

The findings also provide a strategic roadmap for the sustainable development of BUMDes. The identification of key drivers—namely the role of village government, community participation, and access to capital—suggests that both village and local governments should act as catalysts by strengthening regulatory frameworks, expanding financial support mechanisms, and institutionalizing participatory governance practices. Simultaneously, the recognition of human resource capacity and technological innovation as critical bottlenecks highlights concrete policy directions, including the promotion of village entrepreneurship training, the digitalization of business processes, and the development of partnerships with private sector actors and higher education institutions. Importantly, the proposed BMC–ISM framework demonstrates strong potential for scalability and transferability, as it can be adapted to diverse regional contexts and extended to other forms of community-based enterprises beyond BUMDes with appropriate contextual adjustments. From a forward-looking perspective, these implications can inform the design of national village development policies and contribute to the implementation of SDG-aligned programs, particularly those related to poverty reduction, decent work, inclusive economic growth, and food security.

Research Contributions
This study advances the academic discourse on BUMDes business models by introducing an integrated BMC–ISM approach that explicitly bridges micro-level business design and macro-level structural analysis in the context of village-based social enterprises. At the micro level, the Business Model Canvas is employed to articulate and operationalize core business elements, such as value propositions, customer segments, resource configurations, and revenue mechanisms. At the macro-structural level, Interpretive Structural Modeling is applied to examine the hierarchical and causal relationships among institutional, social, and managerial factors that shape and constrain these business elements. By systematically linking micro business components with macro structural drivers, this study offers a novel methodological contribution that enables a more holistic understanding of BUMDes performance.
Furthermore, it underscores the importance of integrating Resource-Based View, Institutional Theory, and Social Capital Theory within a unified conceptual framework to capture the multi-level dynamics of village-based enterprises.
Overall, this study demonstrates that BUMDes business models cannot be understood solely from an economic perspective but must be approached as complex social and institutional systems. The integration of BMC and ISM enables sharper mapping of hierarchical interrelationships among factors while enriching strategic management theory with social and institutional dimensions. In doing so, this research addresses a critical gap in the literature and offers substantive contributions both academically and practically.

Conclusion

This study aimed to design a BUMDes business model based on the Business Model Canvas integrated with Interpretive Structural Modeling to support village-level food security. The findings demonstrate

that this integrative approach effectively identifies both the structural configuration of BUMDes business models and the hierarchical relationships among key success factors, with village government involvement, community participation, and access to capital emerging as primary drivers, and limitations in human resources and technology adoption identified as major constraints. While these results confirm the achievement of the research objectives, this study is subject to certain limitations. The analysis was confined to BUMDes operating in the food sector within East Java and relied on cross-sectional data, which restricts the generalizability of the findings and limits the assessment of long-term impacts. Accordingly, future research is encouraged to test the applicability of the proposed BMC–ISM model in other provinces and sectors, to conduct longitudinal studies examining the sustained effects of business model implementation, and to incorporate comparative or mixed-method approaches to further validate and refine the framework.

Based on these findings, several policy and strategic recommendations are proposed. Local and village governments should strengthen the institutional ecosystem of BUMDes through transparent and adaptive regulatory frameworks that promote active community participation and accountability. Prioritizing human resource development through entrepreneurship training, managerial support, and context-appropriate digitalization is essential for enhancing operational effectiveness. In addition, strategic partnerships with private sector actors, financial institutions, and educational organizations should be expanded to improve access to capital, markets, and innovation that supports village food security. Looking forward, BUMDes have the potential to serve as strategic pillars of national development by bridging grassroots economic empowerment with broader development objectives, including rural resilience, inclusive growth, and the achievement of Sustainable Development Goals. When supported by coherent policies and evidence-based business models, BUMDes can play a transformative role in strengthening Indonesia's village economy and advancing long-term national sustainability.

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