

Developing Traditional Food Supply Chains to Support Food Independence and Security: NRBV, MICMAC and ISM Approaches

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ABSTRACT

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Traditional food SMEs play a crucial role in driving the economy, preserving cultural heritage, and supporting food security. However, they face numerous challenges in building sustainable supply chains, including limited knowledge of the roadmap for developing them. This study aims to propose a new conceptual hierarchy model to guide the development of a Natural Resource Based View (NRBV)-based supply chain in traditional food SMEs. In contrast to the RBV which focuses on internal resources, the NRBV provides a framework for business organizations to align their internal capabilities with the demands of the natural environment in order to achieve sustainable competitive advantage. This study employed a mixed-methods survey to collect and analyze data to answer the research questions. The surveyed companies were eight traditional food processing companies in West Bandung Regency, West Java Province. Twelve experts are involved as respondents and 64 consumers as data sources, and employed the Delphi process, MICMAC, and Interpretative Structural Modeling (ISM) as data analysis methods. The analysis identified 13 key success factors relevant to developing an NRBV-based supply chain for traditional food SMEs. Of these factors, five factors categorized as dependent factors (association/professional support, green financing, raw material management, logistics system, and consumer development), three factors categorized as connecting factors (human resource quality, supplier development and environmentally friendly packaging), and five factors categorized as independent factors (information technology implementation, green technology adoption, government policies and support, company leadership commitment, and pollution prevention and waste management). The contribution of this study is to provide implications concerning the importance of practitioners in concert with policymakers to enhance their waste management, product management, and sustainability in developing an NRBV-based supply chain.

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1. Introduction

Traditional food, defined as dishes and culinary practices passed down from generation to generation, is an integral part of a culture or region's distinctive identity. Traditional foods are often served at celebrations, rituals, and communal gatherings, reflecting the cultural values and history of

a region. Traditional foods also play a vital role in community well-being by providing essential nutrients derived from local ingredients (Nurhayati, 2025). Similarly, Ghosh et al. (2023) suggest that traditional foods play a crucial role in a region's cultural identity and community bonding. Traditional foods connect communities to their traditions and cultural heritage and strengthen social bonds through shared experiences such as rituals and celebrations. Furthermore, traditional foods also play a role in improving community nutrition. Many traditional foods are rich in specific vitamins and minerals, although their nutritional impact can vary.

Specifically, the literature cites those traditional foods are crucial for food security, particularly for people living in rural areas, as they are often nutritious, affordable, and suited to local conditions. There are several reasons why traditional foods are related to food security. First, they are often rich in nutrients essential for a healthy diet. Second, they are often more affordable and accessible to families, especially in rural and peri-urban areas. Third, traditional foods can be adapted to regional conditions, helping maintain the diversity of agricultural systems and resilience to climate change. Fourth, the production and sale of traditional foods can support small- and medium-sized industries (SMEs) and contribute to local economic growth (Aworh, 2023; Nyholm et al., 2024).

While numerous experts cite traditional foods as a pillar of economic, social, and food security growth, the literature has highlighted various factors that threaten their sustainability, including climate change and resource depletion. These conditions can disrupt weather patterns, damage harvests, and lead to biodiversity loss. Other threats include cultural shifts and globalization, as well as food depletion throughout the supply chain, at both the producer and consumer levels. The neglect of traditional foods will result in the erosion of traditional food knowledge, practices, and sustainability (Ghosh et al., 2023). Therefore, many experts have called for further studies on how to develop traditional food supply chain models to support sustainable food security. These supply chain models help inform decision-makers and practitioners in developing policies and practices to ensure food security and increase the availability and access to traditional foods (Nurhayati, 2025; G. Wang et al., 2024).

However, the literature emphasizes that developing traditional food supply chains is a complex endeavor. The complexity of traditional food supply chains arises from several factors, including the large number of stakeholders involved, the perishable nature of traditional foods, and the need for cross-sector coordination (Jayalath et al., 2025). G. Wang et al. (2024) added that traditional food supply chains involve many actors, including farmers, storage facilities, producers, distributors, and retailers. Due to their perishable nature, traditional foods require rapid delivery, careful handling, and a logistics system that can slow spoilage. Furthermore, traditional food supply chains involve interconnected systems, including procurement systems for raw materials, fuel, and financial services. Therefore, traditional food supply chains require the smooth flow of materials, information, and finances throughout the system.

Furthermore, the literature also highlights the link between traditional food supply chains and environmental issues. In this regard, several experts argue that the food supply chain also contributes to global environmental pressures, including air pollution, wastewater, and biodiversity loss. Food raw material suppliers have environmental impacts from the exploitation of agricultural land, transportation, processing, and packaging. The food processing industry has environmental impacts through energy-intensive production and packaging processes, transportation and distribution systems, and wastewater discharge and air pollution. Consumers also impact the environment through dietary choices, food waste, and other irresponsible practices (Mengoni et al., 2025). These conditions demand concrete action from all parties, including food raw material suppliers, food processing producers, policymakers, consumers, and other supply chain actors, to create a more environmentally friendly food supply chain (Rojas-Reyes et al., 2024).

Furthermore, the literature has proposed several perspectives on how a company achieves competitive advantage, including the Natural Resource-Based View (NRBV) theory. In general, NRBV refers to the theory that a company's competitive advantage stems from its capabilities related

to environmental sustainability, including pollution prevention, product management, and sustainable development (G. Wang et al., 2024). Pollution prevention can generate benefits such as increased productivity and lower costs by preventing waste and emissions from the start, rather than treating them at the end of the process. Product stewardship relates to a company's ability to manage the environmental impacts of its products throughout its supply chain. Sustainable development concerns a company's ability to achieve long-term economic, social, and environmental sustainability, which, in turn, will generate new market opportunities and enhance the company's overall sustainability (Münch et al., 2022).

Several studies have been conducted to explore the supply chain of traditional food SMEs. However, some of these previous studies still have several limitations, including: focusing on measuring supply chain performance (Chung et al., 2025; Mkansi et al., 2025), measuring the impact of supply chain practices on financial performance (Ndoka et al., 2025), measuring the impact of collaboration on economic, social, and environmental performance (Aldahash, 2025), selecting green suppliers for developing a circular economy framework for traditional food (Jayalath et al., 2025), a literature review on risk management in food supply chains (Rojas-Reyes et al., 2024), theoretical perspectives on sustainability in food supply chains (Yang et al., 2023), developing a conceptual model of the food supply chain as a driver of sustainability (Mishrif & Khan, 2023), and identifying success factors in the supply chain to increase consumer satisfaction (Karuppiah et al., 2023). These findings indicate that an integrated framework for building a supply chain for traditional food SMEs remains underexplored. Yet, an efficient and effective supply chain for traditional food SMEs plays a crucial role in supporting operational performance, reducing costs, and increasing market competitiveness. Therefore, this study believes that further study of the framework for building a supply chain for traditional food SMEs is essential.

While much literature has cited the NRBV as a strategic perspective for achieving corporate sustainability (Bulo et al., 2026; Naeem et al., 2026), literature reviews indicate that its implementation in supply chains is still relatively limited. Therefore, many experts have called for further research on how to develop NRBV-based supply chain models to achieve sustainable competitive advantage (Li & Lemke, 2025; Rana et al., 2026). This study aims to fill this gap in the literature by developing a hierarchical model that illustrates the roadmap for building an NRBV-based supply chain for traditional food SMEs.

Referring to Ahmad (2024), this study argues that building a supply chain model is a complex challenge, particularly in the food supply chain. This complexity arises from factors including the involvement, interconnectedness, and interests of supply chain entities from upstream to downstream. To solve this complex problem, this study uses a system thinking methodology to understand how each supply chain entity is interconnected and influences one another, and to build a conceptual mindset and framework (Siddiquei et al., 2025).

Specifically, the framework proposed in this study has two key novelties. First, it focuses on small and medium-sized industries, particularly in the context of traditional food SMEs in West Java province, where respondents include both external and internal stakeholders. This sector plays a crucial role in preserving cultural heritage, improving the local economy, promoting culinary tourism, and fostering sustainable practices (Singh & Kumar, 2024). Second, it applies the NRBV concept to supply chain development and translates it into a roadmap for building a sustainable supply chain using the ISM methodology. While the NRBV emphasizes the importance of business entities integrating their environmental capabilities into economic business strategies to achieve sustainable competitive advantage (Münch et al., 2022), ISM translates this view into a concrete framework by identifying fundamental elements, visualizing interdependencies between elements, and structuring their hierarchies (Ranjan et al., 2024).

This study offers five main contributions to theory and practice. First, it identifies key factors for the success of an NRBV-based supply chain in traditional food SMEs. Second, it identifies relationships among factors, including each factor's level of importance. Third, it analyzes

relationships between factors and builds a visual model. Fourth, it classifies factors based on their driving forces and dependencies. Fifth, it provides a clear visual representation of the roadmap for building an NRBV-based supply chain, organized by a hierarchy of factors. This roadmap serves as a basis for decision-makers and practitioners in formulating policies and developing practices that support the realization of an NRBV-based supply chain in traditional food SMEs, thereby supporting food security and increasing the availability and access to traditional foods.

2. Method

2.1. Research Method

This research employs a mixed-methods approach (quantitative and qualitative) to gain a deeper, more comprehensive understanding of the supply chain and to lay the foundation for developing a model that provides a framework and roadmap for building an NRBV-based supply chain for traditional food SMEs. Specifically, this research is categorized as an "exploratory-structural modeling study." Exploratory studies are a research approach to gain deeper insights into the supply chain and to identify key elements of the supply chain for more structured research in the future, not to provide definitive and conclusive answers about sustainable supply chains in traditional food SMEs. This research is also a "structural modeling study," which is an approach used to describe complex sustainable supply chain problems by breaking them down into simpler, interconnected elements and representing them in a directed graph. [Fig. 1](#) depicts methodological flowchart of the study.

2.2. Data collection

In general, this research will utilize several methods to collect data, including literature studies, in-depth interviews, questionnaire distribution, and field observations. The literature review and interviews aim to identify key factors relevant to developing an NRBV-based supply chain for traditional food SMEs. This study conducted a field survey to obtain a general overview of the traditional food SME business processes. Respondents involved in the study were classified into two groups: an expert group (12 people) and a consumer group (64 people). In this case, the expert involved must meet two criteria: their position as manager or owner of a traditional food SME, and they must have worked for more than five years.

Based on these two criteria, this study argues that they have sufficient competence to determine relevant elements of supply chain success and their interrelationships. In particular, they were relatively homogeneous, as the majority were owners of SMEs producing traditional foods. According to [Jiang et al. \(2024\)](#), there are three approaches that can be used to determine the size of the expert group: ranging from 10 to 30 for heterogeneous experts and ranging from 10 to 15 for homogeneous experts. However, a larger group is needed for high-level studies involving very diverse stakeholders. Data collection will be conducted from July to September 2025. [Fig. 1](#) depicts methodological flowchart of the study.

2.3. Research Location

This study examines the development of a supply chain based on NRBV in traditional food SMEs through a survey of traditional food SMEs in West Bandung Regency, West Java Province. In this study, the SMEs involved were six companies producing wajit and two companies producing gurilem. The following are considerations in selecting these two traditional foods. First, the wajit and gurilem industries are important to the community because they play a crucial role in supporting food security and job creation. Second, wajit and gurilem are traditional foods widely recognized as cultural heritage of the people of West Bandung Regency and play an important role in providing nutrition for the local community. Third, the wajit and gurilem industries are increasingly under pressure due to the globalization of manufactured foods. As cultural heritage products, all parties should preserve the wajit and gurilem industries. [Fig. 1](#) depicts methodological flowchart of the study.

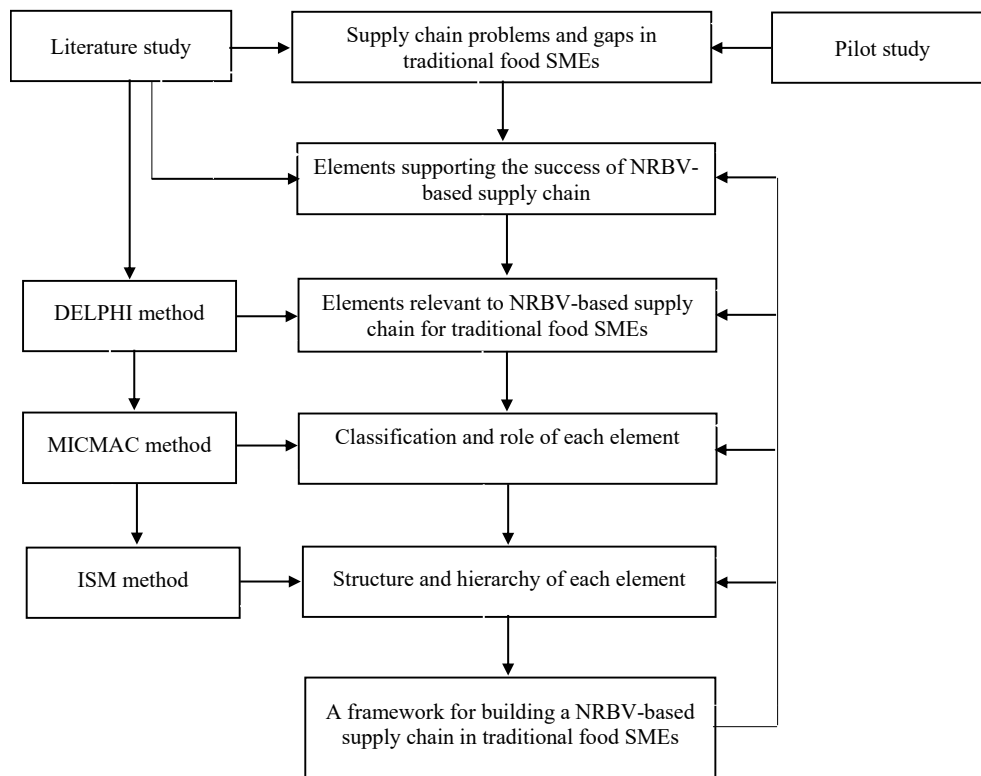


Fig. 1. Methodological framework of the study

2.4. Research Variables

Table 1. Driving factors for the success of NRBV-based supply chains

Coding	Main factors	References
FS-1	Implementation of information technology	(Lyu et al., 2024)
FS-2	Adoption of green technology	(Ganesan, 2024; Obobisa & Ahakwa, 2024; X. Wang et al., 2024)
FS-3	Improving human resource competency	(Ebrahimi et al., 2023; Runtuk et al., 2023; J. Zhang et al., 2024)
FS-4	Association/professional support	(Gonzalez et al., 2022)
FS-5	Government policies and support	(Choi et al., 2021; Davidovic & Haring, 2020; Prasannath et al., 2024)
FS-6	Company leadership commitment	(Rahadian & Al, 2024; Wahyono et al., 2021; Widyaningrum et al., 2022)
FS-7	Green financing	(Liu et al., 2025; Nepal et al., 2024; Qing et al., 2024)
FS-8	Supplier development	(Glavee-Geo, 2019; Glock et al., 2017; Yawar & Seuring, 2018)
FS-9	Material storage and management	(Bruch et al., 2025; Gu et al., 2024; Tamraparni et al., 2025)
FS-10	Logistics system	(Al Humdan et al., 2020; Iwuoha et al., 2021)
FS-11	Pollution prevention and waste management	(Prasad, 2024; C. Zhang et al., 2018)
FS-12	Eco-friendly packaging	(Hariyani et al., 2024; Nazir et al., 2024)
FS-13	Consumer development	(Alamsyah et al., 2021; Weiyi & Lee, 2022; Y. Zhang et al., 2023)

This study argues that success factors are qualitative variables relevant to the development of NRBV-based supply chains in traditional food SMEs. [Table 1](#) presents the success factors identified in the literature and confirmed by respondents as relevant to the development of NRBV-based supply chains for traditional food SMEs.

2.5. Data Analysis Methods

The Delphi method is an approach to obtaining consensus from expert respondents on complex topics. This method has several features: multiple questionnaire rounds to reduce bias, anonymity to prevent biased opinions, feedback to respondents summarizing responses, and statistics to assess the level of respondent agreement. Generally, the Delphi method consists of several stages: selecting expert respondents, developing and distributing the first questionnaire, analyzing respondents' responses to the first questionnaire, developing and distributing the second questionnaire, and analyzing respondents' responses to the second questionnaire ([Agrawal et al., 2024](#)). Drawing on [Santos et al. \(2024\)](#), this study applies the Delphi method to assess the validity and relevance of NRBV-based supply chain success elements (derived from the literature) in the context of traditional food SMEs.

Interpretive Structural Modeling (ISM) is a method for creating a visual hierarchical model of the relationships among elements involved in a complex problem. The ISM method aims to transform complex problems into a structured, easily understood model ([Ahmad, 2024](#)). According to [Saeedi et al. \(2022\)](#), the ISM method comprises several main stages: identifying the main elements influencing the system, establishing pairwise relationships between elements, constructing a reachability matrix, building an ISM model, and analyzing the model. Specifically, this study applies the ISM method to transform the complexity of a traditional food supply chain into a visually understandable, hierarchical model. Furthermore, the ISM method aims to understand the problem structure, identify the most influential elements, and prioritize actions.

MICMAC (an acronym for Matrix Cross-Reference Multiplication Applied to a Classification) is a method for classifying elements within a complex system ([Nida et al., 2024](#)). Following [Kumar & Rao \(2023\)](#), this study uses the MICMAC method to classify the elements of NRBV-based supply chain success into four categories: autonomous, dependent, linkage, and independent. In general, the MICMAC method comprises three main stages: calculating driving forces, determining the level of dependency, and creating a two-dimensional graph to visualize each element's position relative to its driving forces and level of dependency. Specifically, this study uses the MICMAC method to identify key elements that support the success of NRBV-based supply chains in traditional food SMEs. Stakeholders should focus on these key elements in developing supply chain models for traditional food SMEs.

Through the application of the Delphi method, this study gained an understanding of the elements relevant to building a sustainable supply chain for traditional food SMEs. However, the Delphi method cannot provide further explanation regarding the driving forces and the level of relationships between elements. The MICMAC method overcomes this deficiency by identifying relationships between elements and grouping elements based on their driving forces and levels of interdependence within a complex system. The output of this method helps researchers understand the relationships between various elements, distinguishing between elements that drive success and elements that depend on them. However, the output of this method is not able to explain the hierarchical structure of these elements. The ISM method complements this output by identifying how each element interacts with each other and transforming unstructured elements into a hierarchical, visual, and easy-to-understand model.

3. Results and Discussion

3.1. Delphi analysis

The literature has identified several key elements as prerequisites for the successful development of NRBV-based supply chain (Table 1). Referring to the work of Nazlabadi et al. (2023), this study considers several factors in determining these elements, including stakeholders' involvement and participation in the determination process. Therefore, in line with Gupta & Srivastava (2024), this study believes that determining the key elements for the successful development of NRBV-based supply chain by considering the views of a group of experts is a relevant approach. The consensus of these experts, in turn, will help develop a model for NRBV-based supply chain development. To this end, this study has applied the Delphi method to identify valid and relevant elements for NRBV-based supply chain development in the traditional food SMEs. Specifically, the Delphi method aims to elicit opinions and build consensus among stakeholders by asking them about the relevance of elements identified in the literature to the actual conditions of the traditional food SMEs.

Referring to the work of Jasiulewicz-Kaczmarek et al. (2021), the Delphi method applied in this study comprises the following stages: determining the scope, selecting expert respondents, developing the questionnaire, distributing the first questionnaire, distributing the second questionnaire, and analyzing the results. Furthermore, this study uses two parameters to determine the relevance of elements for the successful development of supply chain: the weighted average (WA) and the level of consensus (LC). In this case, elements with $LC \geq 0.7$ and $WA \geq 4.0$ are valid and relevant for the successful development of supply chain in the traditional food SMEs. Table 2 presents the valid and relevant elements for the successful development of supply chain in the traditional food SMEs.

Table 2. Relevance of elements for the successful development of NRBV-based supply chain

Elements	Relevance					WA	LC
	1	2	3	4	5		
Implementation of information technology	0	0	1	6	5	4.33	0.92
Adoption of green technology	0	0	2	4	6	4.33	0.83
Improving human resource competency	0	0	3	3	6	4.25	0.83
Association/professional support	0	0	1	5	6	4.25	0.75
Government policies and support	0	0	1	6	5	4.42	0.92
Company leadership commitment	0	0	2	4	6	4.33	0.92
Green financing	0	0	1	2	9	4.33	0.83
Supplier development	0	0	1	4	7	4.67	0.92
Material storage and management	0	0	1	6	5	4.50	0.92
Logistics system	0	0	0	6	6	4.33	0.92
Pollution prevention and waste management	0	0	2	3	7	4.50	1.00
Eco-friendly packaging	0	0	1	4	7	4.42	0.92
Consumer development	0	0	2	4	6	4.50	0.83

As shown in Table 2, this study found that all supply chain elements had WA values above 4.00 and LC values above 0.70. This finding indicates that expert respondents reached consensus that all elements proposed in this study are valid and relevant for the development of sustainable supply chain in traditional food SMEs. In other words, the majority of respondents expressed the view that all proposed elements are truly relevant for developing supply chains for traditional food SMEs. As mentioned in the previous section, the expert respondents were relatively homogeneous, as the majority were SME owners producing traditional foods.

Based on their experience, all of these elements are indeed relevant for developing sustainable supply chains in this sector. Furthermore, Table 2 shows that respondents considered four elements highly relevant to developing a sustainable supply chain for traditional food SMEs: supplier development (WA = 4.67), material storage and management (WA = 4.50), pollution prevention and waste management (WA = 4.50), and consumer development (WA = 4.50). These findings align with

the concepts proposed in the literature on the importance of supplier development [Hariyani et al. \(2024\)](#), material storage and management [Nazir et al. \(2024\)](#), pollution prevention and waste management, and consumer development in [Charalampidis et al. \(2023\)](#) to develop a sustainable supply chain.

3.2. MICMAC Analysis

This study uses MICMAC to examine the strength of the relationship between the driving and dependent factors of NRBV-based supply chain in the context of traditional food SMEs. Referring to [Jasiulewicz-Kaczmarek et al. \(2021\)](#), this study has categorized the supporting factors of NRBV-based supply chain into four clusters based on their driving and dependent factors. [Fig. 2](#) shows the MICMAC output of the supporting factors of NRBV-based supply chain.

As shown in [Fig. 2](#), this study found that the factors supporting the success of NRBV-based supply chain cluster into four groups. Cluster I (autonomous factors) comprise factors supporting the NRBV-based supply chain with weak driving forces and dependencies. In this case, the study found no autonomous factors supporting the NRBV-based supply chain. Cluster II (dependent factors) contains factors with strong dependencies and weak driving forces. In this case, the factors include association/professional support (FS-4), Green financing (FS-7), Material storage and management (FS-9), Logistics systems (FS-10), and Consumer development (FS-13). In the ISM model, these factors occupy the upper hierarchy and require supporting factors that collectively influence the success of NRBV-based supply chain.

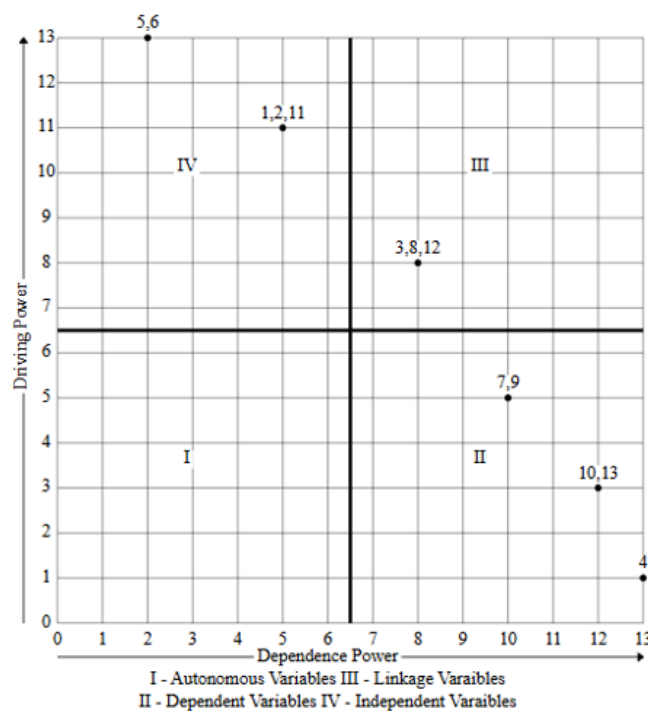


Fig. 2. MICMAC of the factors supporting the NRBV-based supply chain

Next is Cluster III (linkage factors), which includes factors with a strong driving force and strong interdependence. As shown in [Fig. 2](#), there are three supporting factors for the success of the NRBV-based supply chain that are classified as linkage factors: namely, human resource quality (FS-3), supplier development (FS-8), and eco-friendly packaging (FS-12). In the ISM model, these factors occupy the middle of the hierarchy. These three factors strongly influence the factors in the hierarchy above them. At the same time, these three factors are also influenced by factors at lower levels. According to [Gupta & Srivastava \(2024\)](#), linkage factors are unstable factors in a system due to their high dependence on other factors and their broad influence.

Finally, Cluster IV (independent factors) consists of driving factors with strong driving force but weak interdependence. In this regard, this study found that information technology implementation (FS-1), green technology adoption (FS-2), government policy and support (FS-5), corporate leadership commitment (FS-6), and pollution prevention and waste management (FS-11) are supporting factors for the success of a NRBV-based supply chain, which are categorized as independent factors. In the ISM model, these factors occupy the bottom of the hierarchy. These three factors strongly influence the factors in the hierarchy above them. This finding aligns with previous research that shows the important role of information technology implementation [Ahmad \(2024\)](#), green technology adoption [Nazir et al. \(2024\)](#), government policy and support, corporate leadership commitment, and pollution prevention and waste management [Hariyani et al. \(2024\)](#) in supporting the success of a more environmentally friendly supply chain. In the ISM model, these factors occupy the bottom of the hierarchy and exert a strong influence on the factors above them.

3.3. ISM Analysis

The structural hierarchy analysis aims to understand the hierarchy of key success factors relevant to developing an NRBV-based supply chain for traditional food SMEs. SMEs and stakeholders need to pay more attention to the hierarchy of these factors in their strategies for developing sustainable traditional food SMEs. This study uses the ISM method to construct the hierarchy of these factors. Using the SmartISM application, the hierarchy of these factors was obtained, as shown in [Fig. 3](#).

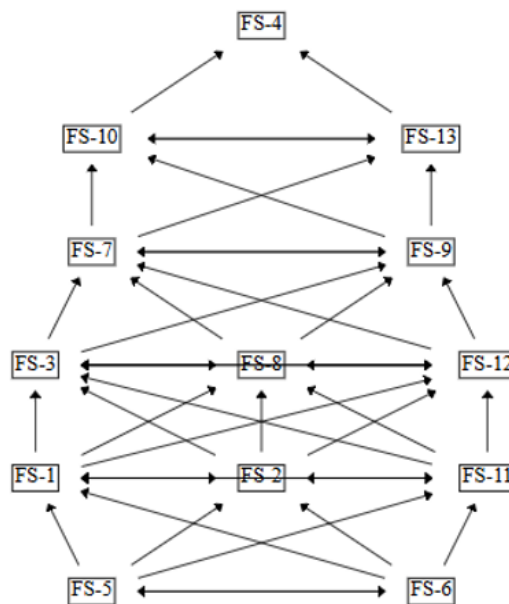


Fig. 3. ISM model for developing NRBV-based supply chains in the traditional food SMEs

As shown in [Fig. 3](#), each supporting factor for the success of the NRBV-based supply chain in traditional food SMEs is arranged in a hierarchy according to its level of consequence. In this study, the relationship between the supporting factors for the success of an NRBV-based supply chain in traditional food SMEs is determined from the bottom of the model (level 1) to its top (level 6). These supporting factors are shown by arrows from the bottom to the top of the model. Based on this hierarchical model, this study finds that the most significant factors supporting the success of the NRBV-based supply chain in traditional food SMEs are government policy and support (FS-5) and company leadership commitment (FS-6) at level 6. These two factors form the basis of the ISM hierarchy and have high driving power and low dependency power.

Meanwhile, the implementation of information technology (FS-1), adoption of green technology (FS-2), and pollution prevention and waste management (FS-11) also occupy the bottom of the hierarchy (level 2). These three factors also play a significant role in supporting the success of the

NRBV-based supply chain. Other supporting factors for the success of the NRBV-based supply chain are improving human resource competency (FS-3), supplier development (FS-8), and environmentally friendly packaging (FS-12) at level 3; green financing (FS-7) and storage and material management (FS-9) at level 4; logistics systems (FS-10) and consumer development (FS-13) at level 5, and association/professional support (FS-4) at level 6.

As stated by [Eltalhi et al. \(2025\)](#), government policies and support are crucial for SMEs in developing their supply chains. Through various instruments such as tax incentives, subsidized loans, and green innovation assistance, these elements will address resource constraints, improve operational efficiency, encourage environmentally friendly practices, and reduce environmental impact. Meanwhile, as cited by [Sugandini et al. \(2020\)](#), SME leadership commitment drives supply chain management development by providing a clear green vision and allocating the necessary resources to address existing obstacles. Such commitment will encourage green practices and strengthen external collaboration, leading to improved economic, social, and environmental performance.

4. Conclusion

Developing a sustainable supply chain is a crucial strategy for traditional food SMEs to improve operational efficiency, enhance competitiveness, and ensure timely product delivery. However, building a sustainable supply chain is a complex issue due to the interconnectedness of its elements. Therefore, it is crucial to develop a model that illustrates a framework or roadmap for developing a supply chain that can improve economic and operational performance while simultaneously strengthening environmental performance. This study has developed a visual model that demonstrates a framework for building a supply chain based on the NRBV (Non-Reactive Value) using a combination of the DELPHI, MICMAC, and ISM methods. The findings of this study provide theoretical contributions by identifying 13 elements relevant to developing an NRBV-based supply chain for traditional food SMEs, classifying these elements based on their driving power and level of interdependence, and mapping their hierarchical structure.

The results of this study provide practical implications regarding the importance of effective government regulation and support, including tax incentives, subsidized loans, and green mentoring, to achieve a green transition for traditional food SMEs. Furthermore, SME leaders are also required to have a clear environmental vision and a commitment to allocate the necessary internal resources to realize the green transition in this sector. While the research findings provide insights into how to build a supply chain based on NRBV, it has two major limitations. First, the study focused on traditional food SMEs in West Java Province. Therefore, the research findings may not be applicable to SMEs in other sectors or to other regions in Indonesia. Second, the expert group involved was relatively homogeneous, with the majority being owners of SMEs producing traditional foods. Different results might emerge when the expert group involved is heterogeneous. Therefore, further research is needed on SMEs in other sectors, involving a more heterogeneous group of experts and combining different analytical methods.

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