



BUSINESS MODELS FOR SMES IN THE BEEF INDUSTRY: MARKET INTEGRATION AND SUSTAINABILITY STRATEGIES

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Abstract

This study examines the development of business models for Micro, Small, and Medium Enterprises (MSMEs) in the beef industry, with particular emphasis on market integration and sustainability strategies. The study adopts an integrative literature review approach to synthesize recent scholarly discussions on MSMEs, beef supply chains, business model development, digital transformation, and sustainability. The review draws on peer-reviewed publications indexed in Scopus and ScienceDirect from 2020 to 2025 and employs thematic synthesis to identify major patterns and conceptual linkages across the literature. The findings indicate that MSMEs play a strategic role in the beef industry as intermediaries in distribution, contributors to local price stability, and generators of employment; however, their performance remains constrained by fragmented supply chains, weak market integration, limited technological adoption, and restricted access to strategic partnerships. The review further shows that adaptive business models are strengthened through the integration of value creation, value delivery, and value capture, supported by digitalization, vertical coordination, and collaborative networks. In addition, sustainability-oriented approaches grounded in resource optimization, dynamic capabilities, and sustainable value chain thinking are consistently associated with greater business resilience and long-term competitiveness. By integrating these perspectives, this study offers a conceptual understanding of how MSMEs in the beef industry can strengthen competitiveness and adaptability in an increasingly complex food-system environment. The study also provides practical insight for the development of more integrated and sustainable MSME strategies in the agribusiness sector.

Keywords: MSMEs, Beef Industry, Business Model, Market Integration, Sustainability

A. INTRODUCTION

The global food system is undergoing profound structural transformation as a consequence of population growth, rapid urbanization, shifting dietary patterns, and increasing pressure on the sustainability of production and distribution systems. Within this broader transformation, the beef industry occupies a strategically important position because it contributes not only to the provision of animal protein, but also to employment generation, regional trade, and the overall stability of food supply systems. At the same time, however, the sector faces mounting economic, logistical, and environmental pressures. Rising demand for animal protein creates significant opportunities for agribusiness development, yet it also intensifies concerns regarding production efficiency, supply chain resilience, and the environmental footprint of livestock systems, particularly in relation to emissions, land use, and resource consumption (Godde et al., 2021; Lam et al., 2021).

From an agribusiness perspective, the beef industry is not merely a production sector, but a complex value chain that links upstream producers, intermediaries, processors, distributors, retailers, and final consumers. Because of this multi-actor structure, the performance of the sector is strongly influenced by the quality of market coordination, the efficiency of logistics, and the distribution of information and bargaining power across actors. Gereffi (2020) argues that contemporary value chains are shaped not only by productive capabilities, but also by institutional arrangements and unequal market power, both of which affect how value is created and captured. In a similar vein, Christopher (2016) emphasizes that supply chain performance

depends fundamentally on integration, coordination, and responsiveness. When such coordination is weak, agribusiness systems tend to experience high transaction costs, fragmented distribution, and unstable market outcomes. These concerns are especially relevant to the beef sector, where product perishability, quality assurance, and price volatility require timely coordination across the chain.

These structural challenges are even more apparent in developing countries such as Indonesia, where the beef market continues to be shaped by fragmented distribution channels and a dualistic market structure. On the one hand, modern retail has expanded and introduced more standardized marketing arrangements; on the other hand, traditional markets remain dominant in the circulation of fresh beef, especially in urban and peri-urban areas. This coexistence of traditional and modern channels often creates coordination gaps, uneven price transmission, and limited market integration. Saptana and Ilham (2018) note that the Indonesian beef supply chain remains lengthy and weakly coordinated, resulting in distribution inefficiencies and price instability. Under such conditions, the challenge is not only how to increase supply, but also how to improve market integration so that beef products can move more efficiently and reach consumers at more stable and affordable prices.

Within this fragmented market environment, Micro, Small, and Medium Enterprises (MSMEs) perform a highly strategic role. MSMEs act as intermediaries between upstream producers and downstream consumers, particularly in local and traditional markets where formal supply chain coordination remains limited. They contribute to the continuity of local distribution, support price stabilization at the community level, and absorb labor in both direct and indirect economic activities. In the broader development literature, MSMEs are widely recognized as a pillar of inclusive economic growth because of their flexibility, local embeddedness, and ability to sustain everyday market functions (Kraus, Filser, et al., 2020; Yolanda, 2024). In agribusiness settings, this role becomes even more important because MSMEs often serve as the operational bridge between production systems and household-level food access. Yet their strategic significance is not always matched by strong internal capacity or favorable structural conditions.

Indeed, one of the principal challenges faced by MSMEs in the beef industry is the persistent gap between their strategic role and their actual operational capability. Many MSMEs continue to face limited access to finance, weak digital literacy, low levels of technological adoption, and insufficient integration with modern market systems. Nambisan et al. (2019) argue that digital transformation can significantly reshape entrepreneurship by reducing transaction costs, improving information flows, and expanding access to wider markets. Similarly, Vahdanjoo et al. (2025) underline that digitalization in the agri-food sector has become a key mechanism for improving coordination, traceability, and market responsiveness. However, the benefits of digitalization are not automatically distributed across all actors. In the context of MSMEs in the beef industry, low technological adoption continues to constrain market access, reduce operational efficiency, and weaken competitiveness in increasingly dynamic food markets.

At the same time, business development in the beef sector can no longer be discussed solely in terms of short-term profitability or market access. Sustainability has emerged as a central concern in agribusiness strategy because food production and distribution systems are increasingly evaluated not only by economic performance, but also by their social and environmental consequences. Livestock systems, including beef production and distribution, are associated with climate-related pressures and broader sustainability challenges, thereby requiring more responsible and adaptive business configurations (Godde et al., 2021; Lam et al., 2021). In this regard, the triple bottom line logic and the notion of shared value offer an important conceptual basis for understanding how firms can align economic objectives with

social responsibility and environmental stewardship (Diantoro et al., 2024). For MSMEs, this means that competitiveness must be linked to their ability to create value in ways that are not only economically viable, but also socially and environmentally sustainable.

A substantial body of literature has already explored important dimensions of this issue. Supply chain studies stress the importance of coordination and integration in improving efficiency (Christopher, 2016), while digital entrepreneurship literature highlights the transformative role of technology in enabling business model innovation (Nambisan et al., 2019). Research on SMEs also emphasizes flexibility, adaptability, and business model innovation as crucial capabilities in uncertain business environments (Kraus, Clauss, et al., 2020; Teece, 2018). Furthermore, business model scholarship has long established that value is generated not only through products, but also through the design of activities, partnerships, and mechanisms of value capture (Teece, 2010; Zott & Amit, 2010). However, these strands of literature remain largely fragmented. They tend to discuss business models, market integration, digital transformation, and sustainability as separate concerns, rather than as interdependent dimensions of MSME development in the beef industry. This fragmentation is particularly evident in the Indonesian context, where relatively few studies have examined how MSMEs can develop business models that simultaneously improve supply chain integration, enhance competitiveness, and support long-term sustainability.

Against this background, the present study adopts an integrative literature review approach to synthesize prior research on MSME business models, market integration, and sustainability in the beef industry. Rather than treating these issues as separate analytical concerns, this study brings them together within a single conceptual discussion to explain how MSMEs can strengthen competitiveness and business resilience in a fragmented and rapidly changing food-system environment. In doing so, the article seeks to contribute to the agribusiness and entrepreneurship literature by providing a more holistic understanding of the strategic position of MSMEs in the beef industry.

Accordingly, this study aims to: (1) analyze the strategic role of MSMEs in the structure of the beef industry; (2) examine business model elements that can support market integration and supply chain efficiency; and (3) formulate sustainability-oriented strategies that can enhance the long-term competitiveness and resilience of MSMEs. Through this focus, the study is expected to offer both conceptual insight and practical relevance for business actors and policymakers in designing more integrated, adaptive, and sustainable MSME development strategies in the food sector.

B. LITERATURE REVIEW

1. SMEs in the Agribusiness Economy

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as one of the most important pillars of economic development, particularly in emerging and developing economies. Their importance lies not only in their contribution to employment generation and income distribution, but also in their role in maintaining the continuity of local production and distribution systems. In the Indonesian context, MSMEs are closely associated with inclusive economic development because they absorb labor, create local economic linkages, and support the circulation of essential goods across regions (Yolanda, 2024). This role becomes especially significant in agribusiness, where market access, distribution efficiency, and local responsiveness are central to the functioning of the food system.

In agribusiness settings, MSMEs often occupy an intermediary position between primary production and end consumption. They operate in environments characterized by fluctuating demand, seasonality, logistical constraints, and uneven information flows. Such conditions require a high degree of flexibility, and this is precisely one of the defining strengths of

MSMEs. Gustika and Susena (2022) note that MSMEs generally possess adaptive capacity in responding to local conditions, although they frequently remain constrained by limited access to capital, technology, and market information. This means that while MSMEs are institutionally important, their actual capacity to scale, innovate, and compete depends heavily on the quality of the ecosystem in which they operate.

From a broader entrepreneurship perspective, MSMEs should not be viewed merely as small business units, but as strategic actors whose survival and competitiveness are shaped by their ability to combine internal flexibility with external market connectivity. Kraus, Filser, et al. (2020) emphasize that SMEs derive resilience from their adaptability and embeddedness in local markets. In agribusiness, this embeddedness enables MSMEs to remain responsive to consumer preferences and local distribution needs. However, such embeddedness may also become a structural limitation when firms remain disconnected from broader market systems, modern supply chains, and technology-enabled business opportunities. Therefore, understanding MSMEs in the beef industry requires more than a descriptive view of their economic role; it requires an examination of how they create value, participate in market systems, and adapt to competitive and sustainability pressures.

Beef Supply Chain and Market Integration

The beef supply chain is a complex agribusiness system involving multiple actors, including cattle farmers, traders, slaughterhouses, distributors, retailers, and final consumers. Because beef is a perishable commodity with strict quality, freshness, and safety requirements, the efficiency of this supply chain depends heavily on coordination, information flow, and timely distribution. Ramadhan and Anggriani (2025) describe the beef chain as a multi-actor structure in which various intermediaries play important roles in moving products from farm to market. In principle, such diversity of actors can enhance reach and accessibility, but in practice it often produces fragmentation, inefficiency, and uneven bargaining positions.

Supply chain management literature has consistently shown that longer and less coordinated chains generate higher transaction costs and lower system efficiency. Christopher (2016) argues that effective supply chains are built on integration, responsiveness, and coordination across actors. In the beef industry, where time sensitivity and quality assurance are essential, poor coordination can quickly translate into higher costs, unstable prices, and distribution losses. This is particularly relevant in developing markets, where traditional trade channels often dominate and market information does not flow efficiently across regions.

Empirical studies also indicate that fragmented supply chains tend to produce weak market integration. Nurpauji and Pratiwi (2025) show that poor supply chain management among small-scale actors reduces efficiency in raw material distribution and constrains business development. Similarly, Saptana and Ilham (2018) emphasize that the Indonesian cattle and beef commodity chain still suffers from distribution inefficiencies, long marketing channels, and weak institutional coordination. These conditions prevent prices from adjusting efficiently across locations and reduce the ability of smaller actors to respond to changes in supply and demand.

Market integration, therefore, is not simply a matter of physical distribution; it is also a matter of connectivity among actors, information transparency, and the ability of firms to participate in broader value networks. Gereffi (2020) explains that integration into wider value chains affects not only efficiency, but also access to markets, innovation opportunities, and competitiveness. For MSMEs in the beef industry, weak market integration often means dependence on intermediaries, limited bargaining power, and vulnerability to price fluctuations. This suggests that market integration should be treated not as an external condition alone, but as a core component of business model development in agribusiness.

2. Business Model Perspective for MSMEs

A business model refers to the logic through which a firm creates, delivers, and captures value (Teece, 2010). In MSME settings, the business model is especially important because small firms often operate with limited resources and must therefore make strategic choices regarding customers, distribution channels, partnerships, and cost structures. Rather than focusing solely on products, business model analysis enables researchers to understand how firms organize activities and relationships to achieve continuity and competitiveness.

One of the most widely used frameworks in business model analysis is the Business Model Canvas, which consists of nine interrelated components: value proposition, customer segments, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. This framework is useful for MSMEs because it translates strategic logic into manageable organizational elements. In the context of the beef industry, the business model perspective is particularly relevant because competitiveness is not determined only by the quality of beef products, but also by how firms coordinate procurement, distribution, customer trust, and partnership networks.

The literature has increasingly recognized business model innovation as a major source of competitive advantage. Teece (2018) argues that firms can improve performance not only by developing better products, but also by reconfiguring the way they organize value creation and value capture. Zott and Amit (2010) similarly show that the design of activity systems can shape firm competitiveness by influencing efficiency, novelty, complementarities, and lock-in effects. For MSMEs in the beef industry, this means that business development depends on their ability to redesign how value is created through quality, freshness, and trust; how value is delivered through effective distribution and customer access; and how value is captured through pricing, partnerships, and operational efficiency.

This perspective is especially important in dynamic agribusiness markets, where small firms must continuously adjust to changing consumer preferences, digital transformation, and supply chain disruptions. Hence, the business model should be understood as a strategic lens that connects internal resources with external market opportunities. In this study, the business model dimension serves as an analytical bridge between MSME capabilities and the broader issues of market integration and sustainability.

3. Sustainability in Agribusiness Business Models

In recent years, sustainability has become a central issue in agribusiness and food-sector research. The concept of sustainability in business goes beyond short-term profitability and instead emphasizes a balance between economic viability, social responsibility, and environmental stewardship. This orientation is commonly associated with the triple bottom line perspective, which highlights the need to create value across the dimensions of profit, people, and planet. In agribusiness, this perspective is particularly relevant because production and distribution systems directly affect natural resource use, environmental pressure, and rural livelihoods.

The beef industry is one of the sectors in which sustainability concerns are especially salient. Livestock-related activities are frequently associated with greenhouse gas emissions, land use pressures, and resource-intensive production systems (Godde et al., 2021; Lam et al., 2021). As a result, the long-term competitiveness of firms in this sector increasingly depends on their ability to align business operations with environmental and social expectations. Diantoro et al. (2024) show that the idea of sustainable business is becoming increasingly relevant among MSME actors, particularly as firms are expected to integrate economic goals with broader societal and ecological responsibilities.

For MSMEs, sustainability should not be interpreted merely as compliance with environmental standards, but as part of a broader strategic orientation. Sustainable business practices can improve efficiency, reduce waste, strengthen consumer trust, and enhance resilience in uncertain markets. This is consistent with the broader literature on value creation, which suggests that firms can strengthen competitiveness when they combine economic performance with social and environmental relevance. In agribusiness, sustainability therefore becomes closely linked to business model design: firms that can integrate responsible sourcing, efficient logistics, local partnerships, and adaptive innovation are more likely to build resilient business systems.

4. Analytical Linkages Among the Four Perspectives

Taken together, the four strands of literature above suggest that the development of MSMEs in the beef industry cannot be adequately explained through a single lens. The role of MSMEs in agribusiness explains why small firms are strategically important in food distribution and local economic systems. Supply chain and market integration literature clarifies the structural challenges that shape their performance. Business model theory explains how these firms organize value creation, delivery, and capture under conditions of limited resources. Sustainability literature, meanwhile, expands the discussion beyond efficiency by emphasizing long-term viability and multidimensional value creation.

Accordingly, this study positions MSME business models in the beef industry at the intersection of three core analytical dimensions: **business model development, market integration, and sustainability strategy**. This integrative perspective is important because MSMEs do not compete only through products, but through the way they connect internal capabilities, market relationships, and sustainability-oriented practices. It is from this theoretical synthesis that the present study develops its conceptual discussion on how MSMEs in the beef industry can strengthen competitiveness and resilience in a fragmented yet evolving market environment.

C. RESEARCH METHOD

This study employed an **integrative literature review** combined with **thematic synthesis** to examine MSME business models in the beef industry, particularly in relation to market integration and sustainability strategies. This approach was selected because the relevant literature is dispersed across several interconnected domains, including agribusiness, supply chain management, entrepreneurship, business model innovation, and sustainability studies. An integrative review is therefore appropriate for bringing these strands together into a coherent analytical perspective, while also enabling the development of a broader conceptual understanding of MSME competitiveness in the beef industry (Snyder, 2019).

Unlike a strictly procedural systematic review designed for exhaustive evidence mapping, the present study aims to synthesize and interpret relevant literature in order to clarify how business model development, market integration, and sustainability may be understood as interrelated dimensions of MSME development. In this respect, the method is interpretive as well as analytical. It seeks not only to identify recurring findings in the literature, but also to explain how those findings can be organized into a meaningful framework for understanding the strategic position of MSMEs in the beef industry.

The literature search was conducted using two major scientific databases, namely **Scopus** and **ScienceDirect**, because both databases provide broad access to peer-reviewed research in business, agribusiness, innovation, and supply chain studies. To ensure the relevance and currency of the review, the search was limited to publications issued between **2020 and 2025**. The search process focused on studies related to MSMEs or SMEs, the beef industry or

livestock supply chains, business model development, market integration, digital transformation, and sustainability. Keyword combinations included terms such as “SME,” “MSME,” “beef industry,” “livestock supply chain,” “business model,” “market integration,” and “sustainability.” These keywords were used in various combinations to retrieve studies relevant to the conceptual focus of the article.

To maintain analytical relevance, this review applied explicit selection criteria. The included studies were limited to peer-reviewed journal articles published within the specified time period and directly related to at least one of the core dimensions of the present study, namely MSMEs, the beef industry or livestock-related agribusiness, business models, market integration, digitalization, or sustainability. Publications that were clearly unrelated to the focus of the study, non-scientific documents, inaccessible full texts, and duplicate records were excluded from the review process. The purpose of these criteria was not to establish exhaustive numerical coverage, but to ensure that the final body of literature remained conceptually relevant, academically credible, and suitable for synthesis.

After the relevant publications had been selected, the articles were reviewed through a **thematic synthesis** procedure. Each study was read in full and examined in terms of its analytical focus, conceptual contribution, and relevance to the development of MSME business models in the beef industry. The analysis concentrated on repeated patterns and recurring discussions across the literature, particularly those related to: (1) the strategic role of MSMEs in the beef industry, (2) business model dimensions and value creation processes, (3) market and supply chain integration, and (4) sustainability-oriented business strategies. This process enabled the reviewed studies to be grouped into broader themes rather than treated as isolated references.

The use of thematic synthesis was particularly important because the present article does not merely summarize individual studies; rather, it seeks to identify conceptual convergence across them. In line with Braun and Clarke (2021), thematic analysis allows the researcher to move from descriptive coding toward higher-order interpretation by identifying patterns of meaning across texts. In this study, the thematic synthesis generated four major analytical categories that subsequently structured the **Results and Discussion** section. The first category concerns the **strategic role of MSMEs in the beef industry**, especially in relation to local distribution, price stabilization, and employment generation. The second concerns **business model development**, which is discussed through the dimensions of value creation, value delivery, and value capture. The third concerns **market integration and supply chain strengthening**, including digitalization, partnerships, and vertical coordination. The fourth concerns **sustainability strategies**, especially those linked to internal capability development, adaptive business practices, and sustainable value chain thinking.

To strengthen interpretive coherence, the thematic findings were then connected through **conceptual synthesis**. This stage was intended to integrate the reviewed literature into a broader analytical framework rather than leaving the discussion at the level of fragmented observations. The synthesis drew on business model theory (Teece, 2010; Teece, 2018), supply chain and value chain perspectives (Christopher, 2016; Gereffi, 2020), and sustainability-oriented approaches in agribusiness. By combining these perspectives, the study developed an integrated explanation of how MSMEs in the beef industry may improve resilience and competitiveness through adaptive business model design, stronger market connectivity, and sustainability-oriented practices.

Accordingly, the methodological orientation of this study is both **integrative** and **theory-building**. It is integrative because it consolidates literature from several related research streams into a unified discussion. It is theory-building because the final objective is not only to review prior studies, but also to formulate a conceptual understanding of how MSME business

models in the beef industry can respond to fragmented markets, digital transformation, and sustainability demands. In this way, the method remains consistent with the article's broader purpose of offering a comprehensive and conceptually grounded perspective on business model development in the beef-industry MSME sector.

D. RESULTS AND DISCUSSION

Based on the integrative literature review and thematic synthesis, four interrelated themes emerged from the reviewed studies: **(1) the strategic role of MSMEs in the beef industry, (2) business model development, (3) market integration and supply chain strengthening, and (4) sustainability strategy.** These themes are closely aligned with the objectives formulated in the Introduction and reflect the analytical procedure described in the Method section. Rather than treating the literature as a collection of separate observations, this section synthesizes prior studies into a coherent interpretation of how MSMEs in the beef industry can strengthen competitiveness, improve market integration, and enhance long-term resilience through adaptive and sustainability-oriented business models. The resulting discussion therefore addresses the three research aims of this article, namely understanding the strategic role of MSMEs, identifying business model elements that support integration and efficiency, and formulating sustainability-oriented strategic directions for the sector.

1. The Strategic Role of MSMEs in the Beef Industry

The reviewed literature consistently positions MSMEs as essential actors in the beef industry, especially in developing-country food systems where traditional distribution channels remain highly influential. In this context, MSMEs serve not merely as small-scale traders, but as operational intermediaries linking production, processing, local distribution, and final consumption. This role is particularly significant in fragmented markets, where the continuity of product flow often depends on the flexibility, local embeddedness, and relational networks of small business actors. The original literature used in this article already highlights that MSMEs function as a bridge between producers and consumers, while also contributing to local price stabilization and employment generation. Recent studies further reinforce this interpretation by showing that MSME resilience in agri-food systems depends substantially on their ability to remain responsive to local demand conditions while gradually upgrading their business practices and market linkages (Kraus, Filser, et al., 2020; Yolanda, 2024; Pellegrini et al., 2023; Bruni et al., 2024).

In the beef industry specifically, the strategic role of MSMEs becomes more visible because the commodity requires speed, quality assurance, and strong market responsiveness. Beef distribution involves multiple actors, product perishability, and frequent fluctuations in supply and price, which means that small firms with local proximity often play a decisive role in ensuring product availability at the consumer level. The reviewed literature indicates that MSMEs are especially important in last-mile distribution, where they help maintain product circulation in local and peri-urban markets that are not always fully connected to modern retail systems. This observation is broadly consistent with studies on beef and halal supply chains in Indonesia, which show that weak coordination and fragmented distribution continue to limit system-wide efficiency, while local actors remain central to keeping the chain functional (Saptana & Ilham, 2018; Mahbubi & Uchiyama, 2020; Nazaruddin et al., 2024).

The reviewed studies also suggest that MSMEs indirectly contribute to price stabilization, although their influence is often limited by weak information systems and uneven bargaining positions. At the micro level, they help absorb local demand fluctuations and sustain product accessibility, but their ability to shape broader price structures remains constrained by long chains, asymmetrical information, and dependence on intermediaries. This means that

MSMEs should be understood as strategically important but structurally constrained actors. Their contribution is real and significant, yet it does not automatically translate into high competitiveness. In this respect, the literature points to a central finding: the strategic role of MSMEs in the beef industry can only be fully realized when it is supported by stronger business models, better supply chain coordination, and more integrated market structures. This directly answers the first research objective of the study.

2. Business Model Development in the Beef-Industry MSME Context

The synthesis indicates that the business model perspective offers a strong analytical lens for understanding how beef-industry MSMEs survive, adapt, and compete in a resource-constrained environment. In line with the original draft, the reviewed literature shows that business model development can be meaningfully interpreted through the interconnected dimensions of **value creation, value delivery, and value capture**. This perspective is especially relevant in the beef industry because competitiveness depends not only on the product itself, but also on how the firm organizes sourcing relationships, customer trust, distribution channels, partnerships, and cost structures. Contemporary agri-food research likewise shows that business model innovation in SMEs is increasingly associated with sustainability goals, technological upgrading, and the reconfiguration of activities across the value chain (Teece, 2010; Teece, 2018; Zott & Amit, 2010; Pellegrini et al., 2023; Bruni et al., 2024; Hansson et al., 2023).

2.1 Value Creation

The reviewed studies suggest that value creation among beef-related MSMEs is shaped not only by product availability, but also by product-associated attributes such as freshness, food safety, halal assurance, reliability of sourcing, and trust-based relationships with customers. In this sector, value is therefore not limited to the physical commodity; it is also embedded in confidence, service responsiveness, and the perceived integrity of the supply chain. This is particularly relevant in the Indonesian context, where halal assurance and confidence in product handling influence consumer expectations and where sustainability concerns increasingly shape agrifood value creation (Mahbubi & Uchiyama, 2020; Mehrabi et al., 2024). The literature further indicates that firms with stronger local knowledge, more stable supplier relationships, and greater capability to align products with consumer preferences are better positioned to create differentiated value in competitive markets.

Innovation also emerges as a key mechanism through which value creation can be strengthened. While large-scale technological innovation may remain difficult for many MSMEs, the literature indicates that incremental innovation in handling, storage, packaging, communication, and customer engagement can substantially improve perceived value. Recent studies on agri-food SMEs show that technology-driven business model innovation often begins with selective adjustments rather than radical transformation, especially among smaller firms that must balance innovation ambitions with resource limitations (Pellegrini et al., 2023; Bruni et al., 2024). In this sense, value creation in the beef industry is best understood as an adaptive process through which MSMEs combine internal capabilities, product quality, and customer-oriented innovation in order to remain relevant under changing market conditions.

2.2 Value Delivery

Value delivery concerns how created value is transferred to customers through distribution systems, logistics arrangements, and market access channels. In the beef industry, this dimension is particularly critical because value can deteriorate quickly when delivery systems are inefficient. The original manuscript correctly emphasized that the sector is

characterized by long distribution chains and imperfect coordination, and this observation is strongly supported by more recent literature on agrifood digitalization and supply chain risk management. Studies published in the last few years show that digital transformation is becoming increasingly important not merely as an efficiency tool, but as a mechanism for redesigning market interaction, improving transparency, and strengthening responsiveness across supply chain actors (Vahdanjoo et al., 2025; Plakantara et al., 2025).

For beef-industry MSMEs, digital tools such as messaging applications, social media, digital payments, and online sales interfaces may improve communication with customers and suppliers while reducing dependence on conventional intermediaries. The reviewed studies do not suggest that digitalization alone is sufficient to transform MSME performance, but they consistently indicate that digital adoption can improve information flow, widen market reach, and support more flexible delivery models. This is particularly relevant in hybrid market environments where traditional offline trade remains dominant but firms increasingly experiment with online coordination and customer engagement. Thus, value delivery is strengthened when MSMEs are able to combine physical distribution with digital responsiveness in a more integrated way.

2.3 Value Capture

The third dimension, value capture, refers to the ability of MSMEs to obtain economic returns and strategic advantage from the value they create and deliver. The literature indicates that this remains one of the most difficult challenges in the beef industry, largely because small firms often operate with narrow margins, volatile procurement costs, and weak bargaining power vis-à-vis larger intermediaries or upstream suppliers. The original draft already highlighted vertical integration and partnership strengthening as important responses to these challenges. Recent studies reinforce this view by showing that agri-food SMEs improve value capture when they gain greater control over key activities, reduce excessive dependency on intermediaries, and redesign their business models to align profitability with long-term value creation (Mehrabi et al., 2024; Hansson et al., 2023).

Moreover, the literature increasingly suggests that value capture should not be interpreted narrowly as short-term financial return. In SME sustainability research, performance is closely linked to the interaction between business practices and broader competitive outcomes, including trust accumulation, network position, and adaptive capability (Zaman et al., 2025). For MSMEs in the beef industry, this implies that value capture also includes the strategic benefits derived from stronger customer loyalty, more stable partnerships, and better positioning within the supply chain. Accordingly, the reviewed studies indicate that effective business model development in the beef industry depends on the integration of value creation, value delivery, and value capture within a flexible and sustainability-aware business logic. This directly addresses the second objective of the study.

3. Market Integration and Supply Chain Strengthening

A central finding of the review is that market integration and supply chain strengthening are not peripheral issues, but core determinants of MSME competitiveness in the beef industry. The literature consistently identifies fragmented distribution, weak coordination, information asymmetry, and the dominance of intermediaries as major constraints that reduce efficiency and limit market access for smaller actors. These constraints are especially problematic in the beef sector because product freshness, price responsiveness, and trust in supply-chain handling are all highly sensitive to disruptions in coordination. The original manuscript had already emphasized these challenges, and recent evidence from Indonesian and broader agri-food contexts further confirms that weak supply-chain integration remains one of the main barriers

to more stable and efficient market systems (Mahbubi & Uchiyama, 2020; Nazaruddin et al., 2024; Plakantara et al., 2025).

Digitalization emerges in the reviewed studies as one of the most important pathways toward stronger market integration. Digital technologies increase visibility across transactions, facilitate communication among supply-chain actors, and support quicker access to demand, price, and logistics information. In the agri-food sector, digital transformation has been shown to reshape not only operations, but also business models and relationships between producers, intermediaries, and consumers (Vahdanjoo et al., 2025). For MSMEs, this means that digitalization can reduce the disadvantages associated with scale by improving transparency and responsiveness, although the actual benefits depend on capabilities, infrastructure, and the willingness of firms to adopt new routines. Studies on technology-driven business model innovation in agri-food SMEs similarly show that digital transition is often mediated by managerial strategy, perceived barriers, and access to supporting networks (Pellegrini et al., 2023).

Strategic partnerships constitute a second major mechanism for market integration. The reviewed studies indicate that MSMEs are more resilient when they are embedded in collaborative arrangements involving farmers, slaughterhouses, distributors, retailers, or service providers. Such partnerships facilitate information exchange, improve supply reliability, and expand access to resources that small firms may not possess independently, including logistics support, quality assurance, financing, and market intelligence. Recent studies on SME supply chain sustainability show that organizational agility and cross-actor coordination are central to improving resilience and long-term performance (Primadasa et al., 2025). This is fully consistent with the original draft's emphasis on partnerships as a key business model component in the beef sector.

The literature also strongly supports the importance of vertical integration or at least tighter vertical coordination. Although full integration may not be feasible for most MSMEs, greater control over sourcing, quality assurance, logistics, or customer-facing channels can reduce transaction costs and improve bargaining position. In the beef industry, where coordination failures can quickly translate into losses of quality or margin, closer alignment between stages of the chain has strategic value. Recent work on sustainable and innovative business models in agri-food value chains shows that value-chain redesign is increasingly important for internalizing risks, reducing inefficiencies, and generating more balanced distribution of value and responsibility across actors (Mehrabani et al., 2024). Taken together, these findings show that business model development and market integration are inseparable in the beef-industry MSME context.

4. Sustainability Strategy and Long-Term MSME Resilience

The fourth major theme generated by the review concerns sustainability strategy. The literature increasingly demonstrates that competitiveness in agri-food SMEs cannot be assessed only through short-term profitability or market expansion, but must also be understood in relation to long-term resilience, responsible resource use, and social legitimacy. This point is particularly relevant for the beef industry, which is closely associated with environmental pressure, resource intensity, quality assurance concerns, and rising expectations regarding responsible value creation. The original draft already linked sustainability to the Resource-Based View, Dynamic Capabilities, and Sustainable Value Chain thinking. Recent studies provide stronger international support for this framing. Research on SME sustainability shows that the concept is multidimensional and should be understood through the relationship between sustainability practices and performance outcomes rather than through isolated indicators alone (Zaman et al., 2025).

From a resource-based perspective, the reviewed studies indicate that MSMEs strengthen resilience when they effectively mobilize internal resources that are difficult to imitate, such as trusted supplier relationships, localized knowledge, product-handling skills, and customer loyalty. These resources are particularly important in the beef industry because differentiation often depends on quality assurance, consistency, and trust rather than on scale alone. However, the literature also shows that resource possession is not enough; sustainability-oriented transformation requires managerial willingness to redesign business practices in ways that support broader environmental and social value creation. Hansson et al. (2023) show that the initiation of sustainable business model innovation in agriculture is shaped by both drivers and barriers, especially those related to managerial cognition, perceived profitability, and the willingness to take a long-term view.

Dynamic capability offers a second explanatory lens. Across the reviewed studies, adaptive capacity emerges as a key determinant of long-term viability, especially in volatile and uncertain environments. MSMEs that can sense new market conditions, seize available opportunities, and reconfigure resources accordingly are better positioned to respond to disruptions, price volatility, and changing customer expectations. In the agri-food sector, this often includes selective digital adoption, channel diversification, new partnership formation, and changes in operational routines. Bruni et al. (2024) emphasize that future-oriented business model innovation for agri-food SMEs is strongly shaped by the interaction between sustainability goals and emerging technologies, while Pellegrini et al. (2023) show that technology-driven transformation depends on how firms strategically navigate barriers and opportunities rather than simply adopt tools. These findings support the argument that resilience in beef-industry MSMEs depends not only on stability, but also on the ability to evolve.

The third sustainability-related dimension concerns value-chain sustainability. The reviewed studies suggest that sustainability becomes more meaningful for MSMEs when it is operationalized through better logistics, reduced waste, stronger traceability, and more equitable forms of coordination across the chain. This is consistent with recent agri-food research on circularity, digital traceability, and value-chain sustainability. For example, Nattassha et al. (2020) show in the Indonesian agri-food context that circular economy implementation depends heavily on actor interaction and communication, while Plakantara et al. (2025) demonstrate that digital technologies are increasingly central to safety and quality risk management in agrifood supply chains. Likewise, Mahbubi and Uchiyama (2020) show that the sustainability of the Indonesian halal beef supply chain depends not only on economic performance, but also on social and environmental dimensions. Together, these studies reinforce the argument that sustainability in the beef industry should be treated as a multidimensional business strategy rather than as a narrow compliance issue.

5. Discussion

Taken together, the four themes above suggest that MSME development in the beef industry cannot be adequately explained through a single analytical lens. The literature does not support a simplistic view in which competitiveness depends only on internal firm efficiency, nor does it support the opposite view that market structure alone determines outcomes. Instead, the reviewed studies point to a more integrated explanation: MSMEs become more competitive when business model development, market integration, and sustainability strategy reinforce one another. This is consistent with the argument developed in the Introduction and with the integrative literature review approach described in the Method section.

In this integrated interpretation, the strategic role of MSMEs provides the starting point because these firms remain deeply embedded in local food distribution systems. However, their contribution becomes stronger when supported by adaptive business models that improve value creation, value delivery, and value capture. These business-model elements, in turn, are enhanced by stronger market integration through digitalization, partnerships, and tighter supply-chain coordination. Long-term competitiveness then depends on whether these processes are aligned with sustainability-oriented strategies that optimize internal resources, improve adaptability, and strengthen value-chain responsibility. Recent international studies on agri-food SMEs and sustainability increasingly converge on this point: business model innovation, digital transformation, supply-chain agility, and sustainability goals are most effective when treated as mutually reinforcing rather than separate strategic domains (Pellegrini et al., 2023; Bruni et al., 2024; Primadasa et al., 2025; Zaman et al., 2025).

Accordingly, the synthesis produced in this article indicates that the future strength of MSMEs in the beef industry lies in their ability to operate not as isolated small firms, but as strategically connected actors within a broader agribusiness system. This conclusion directly answers the three research objectives of the study. First, MSMEs are confirmed as strategic actors in the beef-industry structure. Second, effective business model development depends on the integration of value creation, value delivery, and value capture with stronger market and supply-chain coordination. Third, long-term resilience is most likely to be achieved when these business-model and integration processes are aligned with sustainability-oriented strategies. In this sense, the reviewed literature supports the broader proposition that more adaptive, integrated, and sustainability-based business models are essential for strengthening MSMEs in an increasingly complex food-system environment.

E. CONCLUSION

This study has examined MSME business models in the beef industry through an integrative literature review focusing on three interrelated dimensions: **business model development, market integration, and sustainability strategy**. The synthesis shows that MSMEs occupy a strategically important position in the beef industry because they function as local distribution intermediaries, support product availability, contribute to employment, and help sustain food-market accessibility, especially in fragmented and traditional market environments. However, the review also indicates that the strategic role of MSMEs is still constrained by structural challenges, particularly weak market integration, fragmented supply chains, limited technological adoption, and restricted access to strategic partnerships.

With regard to business model development, the findings suggest that MSME competitiveness in the beef industry is closely associated with the integration of **value creation, value delivery, and value capture**. Value creation is strengthened through product quality, trust, safety assurance, and responsiveness to local market needs. Value delivery depends on more efficient and adaptive distribution channels, including the gradual use of digital tools to improve communication, responsiveness, and customer reach. Value capture, meanwhile, is enhanced when MSMEs are able to improve efficiency, reduce excessive dependency on intermediaries, and strengthen their bargaining position through closer coordination across the value chain. In this sense, business model development in the beef industry should be understood not as a purely internal managerial issue, but as a dynamic process shaped by the interaction between firm capabilities and external market structures.

The review further demonstrates that **market integration and supply chain strengthening** are indispensable for improving MSME performance. Stronger coordination, digitalization, vertical alignment, and collaborative partnerships consistently emerge as important mechanisms for reducing information asymmetry, improving operational efficiency,

and widening market access. Accordingly, the study suggests that MSMEs in the beef industry are more likely to become competitive when they are embedded in better-connected and more transparent supply systems rather than operating as isolated actors in fragmented markets.

In relation to long-term resilience, the literature indicates that **sustainability strategy** should be treated as a central component of MSME development. Sustainability in this context is not limited to environmental concern alone, but also includes adaptive capability, responsible resource use, stronger value-chain coordination, and the ability to generate economic, social, and operational value simultaneously. The review therefore suggests that MSME resilience in the beef industry is more likely to be strengthened when firms combine internal resource optimization, adaptive business practices, and sustainability-oriented value-chain thinking.

Overall, this study concludes that the development of **adaptive, integrated, and sustainability-oriented business models** is essential for strengthening MSMEs in the beef industry. The findings support the argument that business model development, market integration, and sustainability should not be treated as separate concerns, but as mutually reinforcing dimensions of competitiveness and long-term viability in the food-sector context.

From a practical perspective, the findings imply that MSME development strategies in the beef industry should prioritize at least three areas. First, business actors need to strengthen business model elements related to product quality, customer trust, and flexible delivery channels. Second, policymakers and supporting institutions should encourage stronger market integration through digital infrastructure, supply-chain coordination, and partnership facilitation. Third, sustainability-oriented support programs should move beyond compliance and focus on helping MSMEs build adaptive capability, improve operational efficiency, and participate more effectively in responsible value chains.

This study has several limitations. First, as an integrative literature review, the article does not provide primary empirical evidence from specific MSMEs or regions. Second, the review is limited to publications accessed through selected scientific databases and to studies published within the 2020–2025 period, which means that some relevant earlier or non-indexed studies may not have been included. Third, the conceptual synthesis developed in this article has not yet been tested empirically in a specific beef-industry MSME setting. Future research is therefore recommended to validate the proposed conceptual relationships through field-based studies, comparative case analysis, or quantitative testing in different regional and institutional contexts.

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