

SUPPLY CHAIN SELF-RELIANCE AND PRICE STABILITY IN CULINARY MICROENTERPRISES: A STRUCTURAL RESPONSE TO MARKET DISTORTIONS



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Abstract

Market distortions and volatility in food raw material prices place culinary microenterprises in a vulnerable position due to their limited control over cost structures. This study aims to explain how upstream supply chain self-reliance is developed as a structural response to market distortions in culinary microenterprises. Employing a qualitative approach with a case study design, this research examines Warung Mie Ayam Bakso Putra Kelana in Krui, Lampung. Data were collected through in-depth interviews with the business owner and supporting informants and were analyzed using thematic analysis based on a conceptual framework. The findings reveal that upstream sector integration through self-managed cattle farming, feed management and slaughtering processes in accordance with halal standards, as well as the development of a chili cultivation plot, functions as an internal buffering mechanism against price volatility. Such supply chain self-reliance limits the transmission of market price fluctuations to the internal cost structure, enabling the enterprise to maintain price stability and operational sustainability amid volatile input prices. This study contributes a case-based conceptual insight into the role of upstream supply chain self-reliance as an internal stabilization mechanism for culinary microenterprises operating within distorted food markets.

Keywords: Supply Chain Self-Reliance, Price Stability, Market Distortions, Culinary Microenterprises

INTRODUCTION

Global supply chains represent complex and highly interconnected networks of economic activities; however, in practice, they often generate price stability disparities among market actors, particularly disadvantaging microenterprises that occupy the most vulnerable positions within food market structures (Cagri Gurbuz et al. 2023; He et al. 2023). The development of modern supply chains, driven by technological advancement, trade liberalization, and cost-efficiency orientation, has intensified market integration across regions and sectors (Hidayatuloh, Uswatun Kasanah, and Arini 2024).

In culinary microenterprises such as *mie ayam bakso* food stalls, price stability is largely determined by the structure of supply chains for key raw materials that are inherently volatile, particularly beef and chili. High dependence on specific distributors and suppliers limits business actors' control over production costs, causing upstream price increases to directly compress profit margins at the downstream level (Pratama, 2024; Hasibuan et al. 2025). This condition aligns with the findings Meyer and von Cramon Taubadel (2004), who demonstrate that market power asymmetry within supply chains amplifies price transmission from upstream to downstream, thereby placing a disproportionate adjustment burden on small scale enterprises.

This vulnerability is further exacerbated by the characteristics of beef prices as those of a strategic food commodity with high volatility and pronounced seasonal fluctuation patterns (Komalawati et al. 2021). In Indonesia, beef prices tend to increase significantly during the second quarter, particularly around March–April, coinciding with major national religious observances (Badan Pangan Nasional 2025). Such price volatility reflects underlying structural distortions in the governance of the national food supply chain, which directly affect the sustainability of culinary microenterprises.

In response to these conditions, some culinary microenterprises have moved beyond short-term survival strategies based solely on price adjustments and have instead developed upstream supply chain self-reliance and strengthened local supplier networks (Munir and Dwiyanto 2018). These strategies include diversifying sources of raw materials, shortening distribution channels, and establishing direct ownership over strategic input sources to enhance operational efficiency (Kartini 2023; Sumarsono and Muflihah 2021). Such approaches strengthen bargaining power, support sustainable price stability, and signal a shift in the role of microenterprises from passive price takers to active agents that independently construct supply chain structures to mitigate market distortions (Kartini 2023; Sari, Aulia, and Talitha 2025).

In the international literature, approaches such as short food supply chains and supply chain resilience are commonly associated with distribution efficiency, sustainability, and organizational adaptive capacity in response to supply disruptions (Kot 2018; Lebosse, Taghipour, and Canel-Depitre 2017; Wieland and Durach 2021). Empirical studies indicate that shortening distribution channels and strengthening producer relationships enable business actors to dampen price volatility and stabilize food market dynamics (Mosadegh Sedghy, Nematollahi, and Tajbakhsh 2024). In the Indonesian context, findings by Widianarko *et al.*, (2025) in Semarang affirm that short food supply chain models based on strengthened local networks optimize distribution efficiency, reinforce urban food resilience, and elevate the bargaining position of small-scale enterprises.

Although food market conditions in developing countries exhibit distinct institutional characteristics, the dynamics of market distortion and asymmetric price transmission faced by microenterprises constitute a globally relevant phenomenon within the food supply chain literature. International scholarship tends to position microenterprises primarily as entities affected by market distortions, rather than as actors capable of formulating structural responses to price asymmetry and supply volatility

This limitation leaves a critical gap in understanding how microenterprises, particularly within the food sector, develop internal mechanisms to maintain price stability and business sustainability under distorted market conditions. By examining culinary microenterprises in Indonesia as the unit of analysis, this study contributes to the discourse on supply chain resilience and market distortion by demonstrating that supply chain self-reliance at the micro level can function as a structural response rather than merely a short-term operational adaptation.

Accordingly, this study aims to explain how culinary microenterprises construct supply chain self-reliance through upstream sector integration as a response to market distortions and asymmetric price transmission. Through a case study approach, the research seeks to provide conceptual insights into the internal mechanisms that enable microenterprises to sustain price stability and business continuity amid fluctuating food market dynamics.

LITERATURE REVIEW

Food Supply Chains and Market Asymmetry in the Context of Microenterprises

Food supply chains constitute complex systems that manage the flow of products from raw material provisioning and production transformation to distribution to end consumers (Dzikriansyah et al. 2023; He et al. 2023). In culinary microenterprises, supply chains function not only as mechanisms for input–output distribution but also as structural determinants of business actors’ bargaining positions within the market. Limited resources, dependence on suppliers, and restricted access to price information place microenterprises in a vulnerable position within this structure.

The literature on Food Sustainable Supply Chain Management (FSSCM) emphasizes that supply chain management should not be oriented solely toward economic efficiency but should also account for supply sustainability, product quality, and social environmental responsibility (Palazzo and Vollero, 2021). In the context of culinary microenterprises, these principles serve as an important conceptual prerequisite for business continuity, although their implementation is often partial and adaptive rather than systematic.

At the microenterprise level, quality management practices within sustainable food networks are manifested through strategic mechanisms such as the selection of reliable suppliers, hygienic raw material inventory management, and consistency in menu quality (Burgess, Sunmola, and Wertheim-Heck 2023). These practices are not conceptualized as formal management systems but rather as forms of operational adaptation aimed at maintaining consumer trust and stabilizing demand amid market dynamics.

The SDG-oriented supply chain approach further reinforces the importance of long-term relationships, ethical procurement, and the mitigation of social and environmental risks within supply chains (Camarano *et al.*, 2022). In relation to culinary microenterprise case studies, the Sustainable Development Goals (SDGs) are understood as a normative

framework that highlights the significance of local supplier relationships and supply sustainability, rather than as quantitatively measured performance indicators. The adoption of these principles by culinary microenterprises remains contextual and highly dependent on the internal capacities of business actors.

The vulnerability of microenterprises within food supply chains becomes more pronounced when market asymmetry and price distortions occur simultaneously. The phenomenon of asymmetric price transmission indicates that input price increases are transmitted more rapidly to output prices than price decreases, reflecting imperfect market structures and information asymmetry (Meyer and von Cramon-Taubadel 2004). In culinary microenterprise case studies, this condition directly affects profit margins, as business actors must adjust selling prices quickly in response to rising input costs, while having limited flexibility to reduce prices when costs decline. When such price asymmetry coincides with market distortions, such as dependence on intermediaries and supply fluctuations, the vulnerability of microenterprises becomes increasingly complex (Bolarín, Frutos, and Lisec 2011; Ika et al. 2025; Kulsaputro et al. 2025).

Supply Chain Self-Reliance as a Conceptual Mechanism in Case Study Research

Supply chain self-reliance can be understood as a firm's capacity to independently manage the flow of raw material supplies, thereby reducing dependence on external suppliers and enhancing operational flexibility (Kot 2018; Wieland and Durach 2021). Within a conceptual case study, supply chain self-reliance is not positioned as a generic variable but rather as a mechanism that explains how microenterprises respond to market distortions within specific contextual settings.

Adaptive strategies constitute a key dimension of supply chain self-reliance. Novia Ramadhani and Hapsari (2025), emphasize that micro, small, and medium enterprises (MSMEs) facing price volatility and supply uncertainty must develop flexible capabilities in both production adjustment and raw material procurement. In the context of this case study, adaptive strategies are understood as a series of operational decisions undertaken by business actors to maintain cost stability and production continuity, rather than as formalized or standardized strategic frameworks.

Furthermore, the integration of supply chain self-reliance with internal logistics and financial management enhances the effectiveness of such adaptive strategies (Deshpande, 2025). Monitoring raw material inventories enables more efficient production planning and tighter control over operational costs, thereby minimizing risks arising from price volatility (Mubarok, Komalawati, and Setiadi 2024). In addition, compliance with halal standards and food safety requirements can be better ensured, as full control over production processes remains with the business actor (Rahmatiah et al. 2023; Rizki et al. 2023).

Conceptually, the literature indicates that supply chain self-reliance may function as a structural mechanism that enables culinary microenterprises to respond more adaptively to market distortions. However, most existing studies continue to situate sustainability and supply chain self-reliance within the context of large-scale firms. Therefore, conceptual case studies of food-related microenterprises are essential to elucidate how supply chain self-reliance mechanisms operate in practice and how they contribute to price stability and business sustainability within specific local contexts.

Research Conceptual Framework

This study employs a case study based conceptual framework to explain the mechanisms through which culinary microenterprises respond to distortions in food markets. The framework is not intended to function as a broadly generalizable model, but rather as an analytical tool for understanding structural and adaptive dynamics within a specific microenterprise context.

The conceptual framework begins with conditions of food market distortion, characterized by asymmetric input prices, dependence on suppliers, and volatility in raw material supply. These conditions create structural vulnerability for culinary microenterprises, manifested in pressure on profit margins, uncertainty in production costs, and weak bargaining power within the supply chain. In this context, microenterprises face not only economic risks but also risks to operational sustainability.

In response to these vulnerabilities, microenterprises develop supply chain self-reliance as a structural response. In this study, supply chain self-reliance is understood as a form of upstream integration of raw material sources that enables business actors to reduce dependence on external markets. In the case of *mie ayam bakso* food stalls, this self-reliance is realized through direct management of strategic raw material sources, thereby preventing upstream price fluctuations from being fully transmitted to the enterprise's internal cost structure.

Supply chain self-reliance subsequently operates through internal adaptive mechanisms, including control over input costs, flexibility in production planning, and stability in raw material supply. These mechanisms enable business actors to respond to changing market conditions more rapidly and in a more controlled manner, without resorting to drastic adjustments in selling prices. In this sense, supply chain self-reliance functions not merely as an operational strategy but as an internal stabilization mechanism.

The outcomes of these mechanisms are reflected in selling price stability and microenterprise sustainability. Price stability within this framework is not defined as fixed pricing, but rather as the enterprise's ability to maintain relative price consistency amid market fluctuations, thereby preserving consumer trust and ensuring business continuity. This conceptual framework underscores that, in the context of culinary microenterprises, price stability emerges from structural and adaptive responses to market distortions rather than from external market conditions alone.

RESEARCH METHOD

This study employs a qualitative approach with a case study design to examine in depth the practice of supply chain self-reliance as a structural response to market distortions in culinary microenterprises. This approach is selected because it enables a contextual understanding of business actors' adaptive strategies in responding to raw material price volatility (Fadli 2021; Tomaszewski, Zarestky, and Gonzalez 2020). The conceptual case study design is not intended to produce statistical generalizations, but rather to elucidate conceptual mechanisms emerging from a specific empirical context.

The research object is *Warung Mie Ayam Bakso Putra Kelana*, located in Krui, Lampung Province, Indonesia. The selection of this case is based on the consideration that the enterprise represents a culinary microenterprise that has developed supply chain self-reliance practices through upstream sector integration in the procurement of strategic raw materials, such as beef and chili. Positioning the microenterprise as the unit of analysis aims

to capture the active role of business actors as structural agents in independently constructing supply chain governance amid resource constraints and unequal market relations.

The research subjects consist of seven informants: the business owner, one supporting informant, and five regular customers as external informants. The business owner serves as the key informant, as they exercise full control over the supply chain system, including raw material procurement, production management, and price-setting decisions. The supporting informant is directly involved in upstream supply chain management and is included to strengthen data validity through confirmation of upstream integration practices and internal cost control mechanisms. Regular customers are included in a limited capacity as sources of external confirmation to capture collective perceptions regarding price stability, product affordability, and quality consistency following the implementation of supply chain self-reliance. Customer data are not analyzed to explain consumer behavior but rather to corroborate patterns of perceived outcomes.

Data collection was conducted through interviews held online using the Zoom platform. The use of online media is methodologically recognized in contemporary qualitative research, as it enables the researcher to overcome geographical constraints without diminishing the essence of face to face interaction (Archibald et al. 2019; Khan and MacEachen 2022). Semi structured interviews were employed to explore experiences, strategic decisions, and adaptive mechanisms adopted by business actors in developing supply chain self-reliance. Interviews with customers focused on perceptions of price changes, product affordability, and quality consistency in the periods before and after the implementation of supply chain self-reliance, with the objective of identifying consistency in perception patterns rather than conducting quantitative measurement. All interviews were audio recorded with participants' consent and transcribed verbatim.

Data analysis was conducted using thematic analysis with a conceptual framework-based approach. The analytical process involved stages of initial coding, theme development, and interpretation of findings by linking them to the concepts of market distortion, supply chain self-reliance, and internal adaptive mechanisms in culinary microenterprises (Braun and Clarke 2021). The entire research process adhered to ethical research principles, including informed consent and data confidentiality. To ensure the credibility of the findings, the researcher conducted participant confirmation of results to verify the alignment between the interpretations and the informants' empirical experiences.

RESULTS AND DISCUSSION

Raw Material Price Distortions and the Initial Responses of Microenterprises

Interview findings indicate that *Warung Mie Ayam Bakso Putra Kelana* experienced significant pressure due to volatility in the prices of key raw materials, particularly beef and chili, during the 2020–2021 period. According to the business owner, beef prices in the local Krui market reached IDR 140,000–150,000 per kilogram during certain periods, while chili prices surged to approximately IDR 90,000–100,000 per kilogram in 2021, especially during episodes of seasonal supply disruption.

These findings underscore that food market distortions at the local level are not solely driven by national market dynamics but are also shaped by geographical factors and limited access to distribution networks. Krui's vulnerability to landslides and transportation disruptions has resulted in irregular inflows of raw materials from outside the region, thereby

intensifying price volatility at the microenterprise level. This condition aligns with the findings of Mosadegh Sedghy, Nematollahi and Tajbakhsh (2024), who argue that local distribution disruptions can amplify price volatility for small enterprises even when national level raw material supplies remain relatively adequate.

Price pressures were also reflected in consumer experiences. Prior to the implementation of supply chain self-reliance, regular customers recalled seasonal price increases which, although relatively modest, were nonetheless perceived as affecting local purchasing power.

Tabel 1. Comparison of Interview Findings and National Food Price Data

Aspect	Interview Findings	National Food Agency (2021)
Pure beef price	IDR 140,000–150,000/kg	IDR 121,574/kg
Highest bird's eye chili price	IDR 90,000–100,000/kg	IDR 71,355/kg
Red Bird's Eye Chili Price	Sharp price fluctuations (2021)	IDR 92,473 (January–December 2021)
Selling Price Response	Increase of IDR 2,000 per portion (seasonal)	-

Data from the National Food Agency (Bapanas) for 2021 reinforce that price fluctuations in red bird's eye chili and beef occurred systemically at the national level. However, the discrepancy between national price levels and those faced by business actors in Krui indicates the presence of additional pressures in areas with limited distribution access. This disparity reflects unequal food distribution structures and intensifies the cost burden borne by microenterprise actors in remote regions.

This phenomenon is consistent with the literature on asymmetric price transmission, which suggests that input price increases are transmitted to business actors more rapidly than price decreases (Meyer and von Cramon-Taubadel 2004). In the context of culinary microenterprises, such conditions render price adjustment strategies ineffective in the long term. The limited flexibility in adjusting selling prices subsequently motivates business actors to pursue structural solutions, namely the development of supply chain self-reliance through independent management of raw material sources. This approach serves to mitigate market pressures, maintain selling price stability, and preserve business margins.

Upstream Supply Chain Self-Reliance as an Integrated Mechanism

The findings indicate that the limited effectiveness of price adjustment strategies prompted business actors to undertake structural changes within their supply chains. After being able to increase selling prices by only IDR 2,000 per portion on a seasonal basis during the 2020–2021 period, the business owner recognized that price-based strategies alone were insufficient to ensure business sustainability. This realization marked the starting point for the development of upstream supply chain integration as a response to raw material market distortions.

Upstream supply chain self-reliance was realized through the direct integration of key raw material sources, namely beef and chili. The business actor manages an independent cattle farm as a primary source of beef supply and cultivates forage grass for livestock feed, utilizing cattle manure as fertilizer. This scheme establishes an internal production cycle that reduces dependence on external markets while lowering input costs. Livestock operational costs remain relatively stable, averaging approximately IDR 100,000 per day, thereby preventing fluctuations in market beef prices from directly affecting the enterprise's cost structure

Beyond production activities, cattle slaughtering mechanisms are also managed independently with careful adherence to halal standards. Interview findings indicate that slaughtering is conducted by individuals with knowledge of halal slaughtering procedures, encompassing compliance with animal eligibility requirements, slaughtering techniques, and post-slaughter meat handling. These practices align with the findings of Rizki *et al.*, (2023), who emphasize that controlling slaughtering processes within small-scale food supply chains plays a critical role in maintaining halal integrity, product quality, and consumer trust.

In addition to cattle farming integration, the business actor has also developed an independent chili garden with an initial investment of approximately IDR 2,000,000 to meet sambal production needs. This practice functions as a buffer against chili price volatility, particularly during seasonal periods. By sourcing chili directly from its own garden, the culinary microenterprise gains greater production flexibility while reducing exposure to sudden market price surges.

These findings are further reinforced by confirmations from regular customers, who consistently reported that menu prices and product quality remained stable despite fluctuations in raw material prices in the market. This indicates that upstream supply chain self-reliance generates tangible implications at the consumption level, reinforcing both price stability and perceived value.

Tabel 2. Upstream Supply Chain Self-Reliance Mechanisms and Impacts

Component	Form of Integration	Impact
Beef	Independent cattle farming	Supply and cost stability
Slaughtering	Independent process in accordance with halal standards	Quality assurance and consumer trust
Livestock feed	Self-produced forage with organic fertilizer	Efficiency and sustainability
Chili	Independent chili cultivation	Reduction of price volatility
Operational costs	IDR 100.000 per day	More controlled cost structure

Conceptually, upstream supply chain self-reliance operates as an integrated mechanism that links input control, halal assurance, cost stability, and operational sustainability. Upstream integration enables microenterprises to partially disconnect price

transmission from the market to their internal cost structures, while simultaneously maintaining product quality standards. As a result, selling price stability and consumer trust can be sustained without the need for repeated price adjustments.

These findings are consistent with the literature on supply chain shortening and small business resilience (Kot 2018; Wieland and Durach 2021), and extend the work of Rizki *et al.*, (2023) on the importance of controlling halal processes within small-scale food supply chains. This study demonstrates that, in the context of culinary microenterprises, upstream supply chain self-reliance functions not only as an economic strategy but also as an institutional mechanism that strengthens business legitimacy in the eyes of consumers.



The Impact of Supply Chain Self-Reliance on Selling Price Stability and the Sustainability of Culinary Microenterprises

The implementation of upstream supply chain self-reliance has generated tangible effects on selling price stability at *Warung Mie Ayam Bakso Putra Kelana* in Krui. Interview findings indicate that the business actor implemented a single price adjustment of IDR 2,000 per portion in 2021, during a period when the enterprise had not yet established internal control over key raw material sources. Following the implementation of upstream supply chain integration, no further price increases were recorded, despite continued fluctuations in market prices for beef and chili. These findings suggest that supply chain self-reliance functions as an internal mechanism that absorbs cost pressures, preventing them from being fully transmitted to selling prices.

This observation is reinforced by confirmations from five regular customers, who consistently perceived menu prices as relatively stable over an extended period, with no significant changes following the implementation of supply chain self-reliance, while product quality remained well maintained. Customers also reported that price consistency enhanced their sense of security in making repeat purchasing decisions, as it was not accompanied by reductions in portion size or taste quality, thereby strengthening consumer loyalty toward the microenterprise.

Within this context, price stability is not understood as absolute price rigidity, but rather as the enterprise's capacity to reduce both the frequency and magnitude of price adjustments amid volatile raw material markets. Supply chain self-reliance enables business actors to maintain a more controlled cost structure through internal sourcing, allowing pricing decisions to be made more strategically rather than reactively. This pattern reflects a shift in the role of microenterprises from mere price takers to price stabilizers through strengthened internal control over supply chains, as articulated in resilience-oriented supply chain management approaches (Kot 2018; Sari *et al.* 2025; Wieland and Durach 2021).

The effects of price stability are also closely associated with the medium-term sustainability of culinary microenterprises. Consistency in selling prices and maintaining product quality, including assurance of halal raw materials, reinforce consumer trust and sustain demand continuity. The literature on sustainable food supply chains emphasizes that the sustainability of small enterprises is determined not only by cost efficiency but also by the ability to ensure supply consistency, product quality, and long-term consumer relationships (Burgess et al. 2023; Palazzo and Vollero 2021).

Furthermore, these findings demonstrate that the impacts of upstream supply chain self-reliance extend beyond short-term economic considerations. Integration of raw material sources enables business actors to build production systems that are more adaptive to market disruptions, while simultaneously enhancing business legitimacy in the eyes of consumers through quality and halal assurance. Consequently, price stability and business sustainability in this study do not emerge as outcomes of favorable market conditions, but rather as results of internally constructed supply chain restructuring.

Nevertheless, the impacts identified in this study are contextual in nature and are not intended to be generalized broadly. Consistent with the characteristics of a conceptual case study, price stabilization mechanisms through supply chain self-reliance are strongly influenced by resource capacity, local conditions, and the experiential knowledge of business actors (Tomaszewski et al. 2020). Therefore, the primary contribution of this study lies in explaining the conceptual mechanisms through which a specific microenterprise maintains price stability and business sustainability via internal supply chain control, rather than in formulating a universal model applicable to all culinary microenterprises.

CONCLUSION

Upstream supply chain self-reliance emerges as a relevant approach for culinary microenterprises in addressing distortions in food markets, particularly fluctuations in the prices of key raw materials. Strengthening internal control over supply sources enables business actors to reduce dependence on external markets and maintain operational stability amid uncertain price dynamics. These findings demonstrate that supply chain restructuring at the microenterprise level can contribute not only to selling price stability and business sustainability, but also to more stable price outcomes at the consumer level, thereby supporting adaptive business continuity.

Nevertheless, this study is subject to several limitations that warrant consideration. The analysis is based on a case study approach applied to a single microenterprise within a specific local context, and therefore the findings are not intended for broad generalization. Furthermore, although the study involved seven informants, comprising the business owner, a supporting informant, and five regular customers, consumer data were used in a limited manner as external confirmation rather than to analyze consumer behavior. As such, the perspective generated remains focused on internal business mechanisms.

Taking these limitations into account, this study is expected to provide an initial contribution to understanding the mechanisms of supply chain self-reliance in culinary microenterprises. Future research may adopt comparative approaches involving multiple business units, regions, or diverse data collection methods to enrich insights into the role of supply chain self-reliance in maintaining price stability and the sustainability of microenterprises.

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