

Longitudinal Development of Indonesia's Beverage Manufacturing (KBLI Division 11) Micro and Small Enterprises

Erna Maulina¹✉
Ria Arifianti²
Mochammad Rifky Pamungkas³

^{1,2,3}Department of Business Administration, Faculty of Social and Political Science, Universitas Padjadjaran, Indonesia.
(✉ Corresponding Author)

Abstract

Micro and Small Enterprises (MSEs) in Indonesia's beverage manufacturing industry play an important role in industrial development, employment generation, and regional economic growth. However, limited evidence is available regarding their structural development during the post-pandemic period. This study examines the longitudinal development of MSEs operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia from 2020 to 2024. Using a descriptive quantitative approach, the research analyses secondary data published by Statistics Indonesia (BPS) covering seven structural indicators: enterprise development, sources of business capital, innovation participation, types of innovation, business partnership participation, types of business partnerships, and partnership schemes. The findings reveal that the sector experienced strong post-pandemic recovery accompanied by structural transformation rather than simple business expansion. Beverage manufacturing MSEs remained predominantly self-financed, while innovation participation and collaborative business activities increased substantially throughout the observation period. Marketing and distribution innovation emerged as the most widely adopted innovation strategy, whereas partnerships increasingly focused on strengthening market access and production continuity. These findings indicate that industrial resilience is shaped by the interaction between financial independence, innovation capability, and collaborative networks. The study contributes nationally representative longitudinal evidence that enriches the literature on manufacturing SMEs and provides practical insights for strengthening industrial competitiveness, innovation ecosystems, and evidence-based policy development in Indonesia.

Keywords: Beverage Manufacturing, Business Partnerships, Industrial Resilience, Innovation, Micro and Small Enterprises.

1. Introduction

Micro and Small Enterprises (MSEs) constitute the backbone of Indonesia's manufacturing sector and play a crucial role in employment generation, local economic development, and industrial inclusiveness. Among manufacturing industries, KBLI Division 11 (Beverage Manufacturing) represents a strategically important subsector due to its close linkages with agriculture, food security, local raw materials, and consumer markets. Beverage manufacturing MSEs contribute not only to value addition within agro-industrial supply chains but also to regional economic diversification through the production of traditional beverages, processed drinks, bottled water, and various locally based products. During the period 2020–2024, however, the industry experienced significant adjustments following the COVID-19 pandemic, changes in consumer preferences towards healthier products, increasing food safety standards, digitalisation of distribution channels, and intensifying market competition. These developments required beverage manufacturing enterprises to continuously strengthen their adaptive capacity in order to sustain competitiveness and business continuity (BPS-Statistics Indonesia, 2025; UNIDO, 2024).

Recent literature suggests that the development of manufacturing MSEs should not be evaluated solely through changes in the number of enterprises but also through broader structural characteristics that determine industrial resilience and long-term competitiveness. From the perspective of the Resource-Based View (RBV), financial resources represent strategic assets that enable firms to maintain production continuity, improve operational efficiency, and respond to changing market conditions (Barney, 1991). Innovation Theory further argues that continuous innovation in products, production processes, packaging, and marketing enhances firms' ability to create competitive advantage within increasingly dynamic markets (Distanont & Khongmalai, 2018). In addition, Network Theory emphasises that collaboration among enterprises, suppliers, distributors, financial institutions, and government agencies facilitates access to external resources, market information, and business opportunities, thereby strengthening enterprise resilience (Humphrey & Schmitz, 2002). Collectively, these theoretical perspectives suggest that the development of beverage manufacturing MSEs should be examined through multiple interconnected dimensions rather than solely by business population growth.

Contemporary studies have further highlighted that the resilience of manufacturing SMEs increasingly depends on their ability to integrate internal capabilities with external ecosystems. Industrial resilience is no longer viewed merely as the capacity to survive economic shocks but as the capability to adapt, innovate, and transform organisational resources in response to structural changes within the business environment. Likewise, innovation ecosystems involving governments, financial institutions, universities, industry associations, and private-sector organisations have become increasingly important in facilitating technology adoption, knowledge diffusion, and market expansion among manufacturing SMEs. These developments indicate that enterprise growth, financing patterns, innovation behaviour, and business partnerships should be understood as complementary components of industrial transformation rather than isolated organisational attributes (OECD-UNIDO, 2019).

Despite the growing importance of Indonesia's beverage manufacturing industry, previous studies have predominantly focused on food safety, halal certification, consumer behaviour, product quality, marketing strategies, and the competitiveness of individual beverage products. Comparatively limited attention has been devoted to examining the structural development of Micro and Small Enterprises within KBLI Division 11 using nationally representative official statistics. More importantly, little empirical evidence is available regarding how enterprise growth, business capital, innovation activities, partnership participation, and partnership schemes have evolved simultaneously during the post-pandemic recovery period. Consequently, a comprehensive understanding of the structural transformation occurring within Indonesia's beverage manufacturing MSEs remains limited, despite the sector's strategic contribution to manufacturing development and regional economies (Tambunan, 2019).

The annual publication *Profile of Micro and Small Industries* issued by Statistics Indonesia (BPS) provides nationally representative statistical information that enables longitudinal assessment of manufacturing industries across Indonesia. Compared with firm-level case studies, these official statistics provide consistent evidence for analysing structural changes over time through indicators including enterprise population, sources of business capital, innovation activities, business partnerships, and partnership schemes. Nevertheless, the analytical potential of these official datasets has rarely been utilised to construct a comprehensive industrial profile specifically for KBLI Division 11 (Beverage Manufacturing). This limitation creates an important research opportunity to better understand the structural dynamics of Indonesia's beverage manufacturing industry using consistent national statistical evidence.

Against this background, this study aims to analyse the development trends of Micro and Small Enterprises operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024 using secondary data published by Statistics Indonesia. Specifically, the study examines seven structural indicators, namely (1) enterprise development, (2) sources of business capital, (3) innovation participation, (4) types of innovation, (5) business partnership participation, (6) types of business partnerships, and (7) partnership schemes. By integrating these dimensions into a longitudinal analysis, this study contributes to the literature by providing a comprehensive statistical profile of Indonesia's beverage manufacturing industry while offering evidence-based insights to support industrial policy, innovation development, enterprise collaboration, and the long-term resilience of manufacturing MSEs.

2. Literature Review

2.1. Micro and Small Enterprises in Beverage Manufacturing

Micro and Small Enterprises (MSEs) constitute an essential component of Indonesia's manufacturing sector, contributing significantly to employment generation, regional economic development, and industrial diversification. Within this sector, beverage manufacturing (KBLI Division 11) possesses distinctive characteristics because its production activities are closely linked to agricultural commodities, local natural resources, consumer preferences, and food-processing industries. Beverage manufacturing MSEs range from traditional beverage producers to modern processed beverage enterprises, making the sector an important contributor to value-added creation across regional economies (Tambunan, 2019).

Unlike many other manufacturing industries, beverage manufacturing is characterised by rapid product turnover, changing consumer demand, stringent food safety regulations, and increasing competition from both domestic and imported products. Consequently, enterprises operating within this sector require continuous adaptation in production processes, product quality, marketing strategies, and business management practices to sustain long-term competitiveness. These characteristics make beverage manufacturing an appropriate context for examining industrial development and enterprise resilience over time (UNIDO, 2024).

2.2. Industrial Resilience of Manufacturing SMEs

Industrial resilience refers to the capability of enterprises to withstand external shocks, adapt to changing business environments, and recover while maintaining operational continuity and competitiveness. Recent literature extends this concept beyond crisis survival by emphasising organisational adaptation, learning capability, innovation, and collaborative resource utilisation as fundamental components of long-term resilience (UNIDO, 2024). Within manufacturing SMEs, industrial resilience is reflected through several interconnected dimensions, including enterprise growth, financial sustainability, innovation capability, and business collaboration. Rather than relying on a single indicator, resilience should therefore be understood as a multidimensional process in which organisational resources continuously evolve in response to changing market conditions (OECD, 2023).

2.3. Resource-Based View and Business Capital

The Resource-Based View (RBV) argues that organisational competitiveness originates from valuable, rare, inimitable, and non-substitutable resources owned by firms (Barney, 1991). Among these resources, financial capital represents one of the most important strategic assets because it enables firms to maintain production continuity, invest in innovation, and respond to emerging market opportunities. For Micro and Small Enterprises, limited access to external financing frequently increases dependence on internally generated capital. Consequently,

financial structure influences not only operational sustainability but also firms' capacity to innovate, expand production, and strengthen long-term competitiveness.

2.4. Innovation Theory

Innovation Theory explains that organisational competitiveness depends upon firms' ability to continuously improve products, production processes, marketing practices, and organisational systems. Innovation does not necessarily involve radical technological breakthroughs; incremental innovation frequently generates substantial competitive advantages for resource-constrained SMEs because it requires relatively lower investment while improving customer value (Distanont & Khongmalai, 2018). Within beverage manufacturing, innovation commonly includes new beverage formulations, packaging improvements, flavour diversification, production efficiency, branding strategies, and marketing innovation. Such innovation enables firms to respond more effectively to changing consumer preferences and competitive market dynamics.

2.5. Network Theory and Business Partnerships

Network Theory proposes that firms achieve superior performance by establishing collaborative relationships with external stakeholders. Business partnerships facilitate access to knowledge, technology, suppliers, customers, financial resources, and broader markets, thereby reducing organisational constraints faced by SMEs (Humphrey & Schmitz, 2002). Within manufacturing industries, partnership schemes such as subcontracting, operational cooperation, marketing collaboration, supplier relationships, and strategic alliances strengthen industrial resilience by improving production continuity, knowledge exchange, and market integration. Consequently, collaboration has become an increasingly important component of sustainable industrial development.

3. Research Method

3.1. Research Design

This study employed a descriptive quantitative research design using a longitudinal approach to examine the structural development of Micro and Small Enterprises (MSEs) operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024. A descriptive design was selected because the primary objective of the study was to provide a comprehensive statistical profile of industrial development rather than to examine causal relationships among variables. Meanwhile, the longitudinal approach enabled changes in industrial characteristics to be observed across consecutive years, allowing the identification of development patterns, structural adjustments, and emerging trends within the beverage manufacturing sector (Bryman, 2012; Saunders et al., 2019). Rather than focusing on individual enterprises, this study examined sectoral development at the national level by analysing official industrial statistics. This approach provides a broader understanding of structural transformation within Indonesia's beverage manufacturing industry and supports evidence-based industrial policy by capturing changes that occur over time.

3.2. Data Source and Unit of Analysis

The study relied exclusively on secondary data obtained from the annual publication *Profile of Micro and Small Industries* issued by Statistics Indonesia (BPS). The dataset covered the period 2020–2024 and consisted of nationally representative statistics for Micro and Small Enterprises classified under KBLI Division 11 (Beverage Manufacturing). As Indonesia's official statistical agency, BPS applies standardised data collection procedures that ensure data consistency, comparability, and reliability across observation periods (BPS-Statistics Indonesia, 2025). The unit of analysis comprised Micro and Small Enterprises operating within KBLI Division 11. Rather than analysing firm-level behaviour, the study investigated sectoral structural characteristics using aggregated national statistics, enabling a comprehensive assessment of industrial development at the national level.

3.3. Research Variables

The analytical framework was organised into seven structural indicators representing key dimensions of industrial development: (1) enterprise development, (2) sources of business capital, (3) innovation participation, (4) types of innovation, (5) business partnership participation, (6) types of business partnerships, and (7) partnership schemes. These indicators collectively describe the structural characteristics of beverage manufacturing MSEs from the perspectives of enterprise growth, financial sustainability, innovation capability, and collaborative business development. The selection of these indicators was informed by Resource-Based View, Innovation Theory, Network Theory, and industrial resilience perspectives, which collectively suggest that industrial development should be assessed through multiple complementary dimensions rather than relying solely on enterprise population statistics.

3.4. Data Analysis

Data were analysed using descriptive statistical techniques combined with longitudinal trend analysis. Descriptive statistics were first employed to summarise frequencies, proportions, and percentage distributions for each analytical indicator. Subsequently, longitudinal analysis was conducted to identify changes occurring throughout the observation period. Annual growth rates (Year-on-Year Growth) were also calculated to measure the magnitude and direction of industrial development between consecutive years (Field, 2018). The analytical findings were presented using tables, bar charts, line graphs, and proportional charts to facilitate interpretation of industrial trends. This combination of descriptive statistics and longitudinal analysis provides an appropriate approach for examining structural changes in nationally aggregated industrial datasets without requiring inferential statistical modelling. The analytical findings were presented using tables, bar charts, line graphs, and proportional charts to facilitate interpretation of industrial trends. This combination of descriptive statistics and

longitudinal analysis provides an appropriate approach for examining structural changes in nationally aggregated industrial datasets without requiring inferential statistical modelling.

3.5. Research Procedures & Limitations

The research procedure consisted of four sequential stages. The first stage involved identifying variables relevant to beverage manufacturing MSEs from the annual BPS publications. The second stage focused on extracting, verifying, and compiling statistical data into a unified longitudinal database covering 2020–2024. The third stage involved calculating frequencies, proportions, and annual growth rates for each analytical indicator. Finally, the results were interpreted to explain the structural development of Indonesia's beverage manufacturing industry based on the observed statistical trends.

Several methodological limitations should be acknowledged. First, the study relied exclusively on nationally aggregated secondary data published by Statistics Indonesia, which did not permit analysis of firm-level behavioural characteristics or regional heterogeneity. Second, the descriptive longitudinal approach was designed to identify structural patterns and development trends rather than to establish causal relationships among business capital, innovation, partnerships, and enterprise performance. Consequently, inferential statistical techniques, such as regression analysis or structural equation modelling, were beyond the scope of this study. Future research is encouraged to integrate firm-level or regional datasets and employ mixed-method approaches or inferential analyses to provide deeper insights into the determinants of industrial resilience and enterprise competitiveness (Creswell & Cresswell, 2023).

4. Result and Discussion

4.1. Development of Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024

Figure 1 presents the development in the number of Micro and Small Enterprises (MSEs) operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024, together with the corresponding annual growth rates. Overall, the beverage manufacturing industry exhibited a dynamic pattern characterised by rapid expansion, temporary contraction, subsequent recovery, and gradual stabilisation. Rather than demonstrating continuous linear growth, the sector experienced structural fluctuations that reflect the adjustment process of manufacturing MSEs following the COVID-19 pandemic and the subsequent transition towards a more stable industrial environment.

As illustrated in Figure 1, the number of beverage manufacturing MSEs increased substantially from 93,285 enterprises in 2020 to 112,559 enterprises in 2021, representing an annual growth rate of 17.12%, the highest observed during the study period. This remarkable expansion indicates that the beverage manufacturing sector recovered more rapidly than many other manufacturing subsectors during the initial post-pandemic phase. The reopening of economic activities, recovery of household consumption, increasing mobility, and the restoration of distribution networks likely stimulated demand for both traditional and processed beverage products. Beverage manufacturing also benefits from relatively flexible production systems and continuous domestic demand because beverages constitute essential consumer goods rather than discretionary products. Consequently, the sector demonstrated relatively strong adaptive capacity during the early recovery stage.

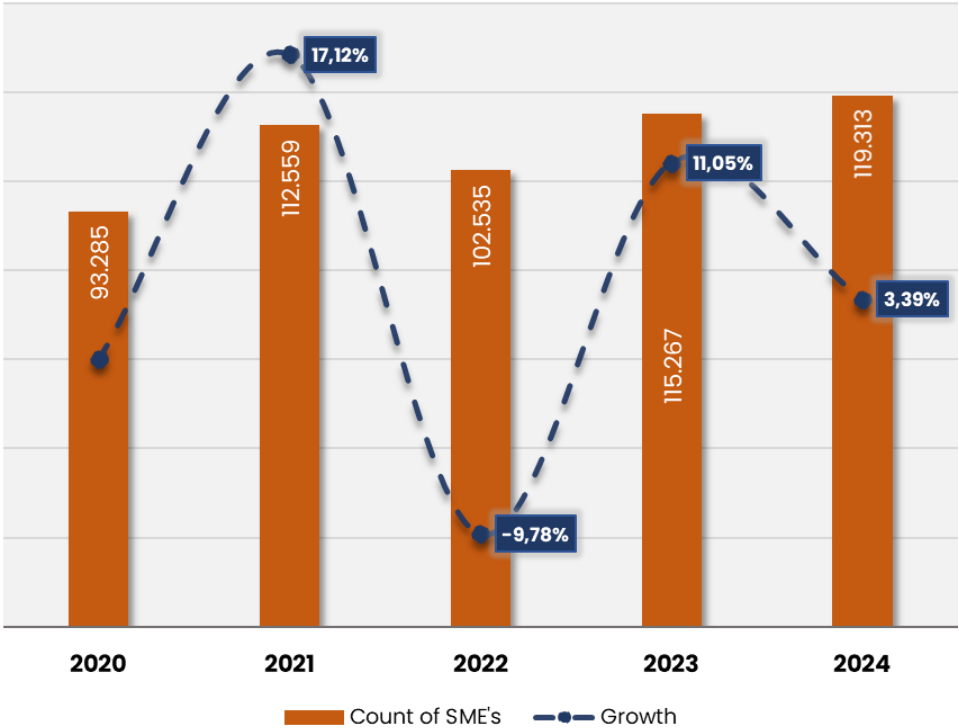


Figure 1. Number of Micro and Small Enterprises and Annual Growth in KBLI Division 11 (Beverage Manufacturing) in Indonesia, 2020–2024.

Despite this strong performance, the number of enterprises declined to 102,553 establishments in 2022, corresponding to a 9.78% contraction. Although this decrease appears substantial, it should not necessarily be interpreted as evidence of industrial deterioration. Instead, the decline may indicate a period of market correction and structural consolidation following exceptionally rapid expansion in the previous year. During this phase, enterprises were required to adjust to rising production costs, increasing prices of agricultural raw materials, changing consumer purchasing behaviour, and intensifying market competition. Manufacturing sectors commonly

experience such temporary corrections after periods of accelerated growth because only enterprises capable of maintaining operational efficiency and responding to market uncertainty remain competitive over time. Similar patterns have been reported in recent international industrial assessments, which emphasise that post-pandemic industrial recovery is often accompanied by structural reallocation rather than uninterrupted business expansion.

The beverage manufacturing industry demonstrated renewed recovery in 2023, with the number of enterprises increasing to 115,267, equivalent to annual growth of 11.05%. This rebound suggests that many enterprises successfully adapted their business models to evolving market conditions through improved operational management, stronger customer orientation, product diversification, and more efficient resource utilisation. Growth continued into 2024, when the enterprise population reached 119,313, although the annual growth rate moderated to 3.39%. The lower growth rate should not necessarily be interpreted as weakening industrial performance; rather, it may indicate that the industry entered a more mature stage characterised by gradual and sustainable expansion instead of rapid post-crisis recovery. Stable growth following substantial fluctuations often reflects improved industrial equilibrium, where enterprise creation and market competition become more balanced.'

From the perspective of industrial resilience, the observed development demonstrates that the recovery of beverage manufacturing MSEs cannot be explained solely through changes in enterprise numbers. Instead, resilience should be understood as the capacity of firms to absorb economic shocks, reorganise operational resources, and adapt business strategies while maintaining production continuity. The ability of the sector to recover after the decline recorded in 2022 indicates that beverage manufacturing enterprises possessed sufficient adaptive capability to respond to external uncertainty and changing market conditions. Contemporary industrial policy literature similarly argues that resilient manufacturing sectors are characterised not only by their ability to survive disruptions but also by their capacity to transform organisational capabilities into sustainable long-term competitiveness (UNIDO, 2024). The findings also support the Resource-Based View (RBV), which proposes that enterprise performance depends on the effective utilisation of strategic internal resources. For beverage manufacturing MSEs, these resources include entrepreneurial knowledge, locally available raw materials, production flexibility, customer relationships, and accumulated operational experience. Rather than relying exclusively on large-scale investment, many enterprises appear to have strengthened competitiveness through incremental improvements and efficient resource allocation. Such behaviour is consistent with recent evidence showing that dynamic capabilities and sound financial behaviour significantly accelerate the recovery and long-term sustainability of food and beverage MSMEs after the pandemic (Supramono et al., 2025).

Furthermore, the cyclical pattern observed throughout the study period suggests that enterprise growth should be interpreted within a broader framework of structural transformation. Changes in the number of enterprises provide only one dimension of industrial development and do not fully capture improvements in financial capability, innovation performance, or collaborative business relationships. Consequently, analysing enterprise population together with business capital, innovation, partnership participation, and partnership schemes provides a more comprehensive understanding of industrial development than relying solely on business demographics. Recent UNIDO reports similarly emphasise that sustainable manufacturing development increasingly depends on the interaction between enterprise capability, innovation, collaboration, and supportive industrial ecosystems (UNIDO, 2024).

Overall, Figure 1 demonstrates that the post-pandemic trajectory of Indonesia's beverage manufacturing MSEs followed a sequence of rapid recovery, market adjustment, renewed expansion, and progressive stabilisation. These findings indicate that the sector has demonstrated considerable resilience despite continued economic uncertainty. However, understanding the long-term competitiveness of beverage manufacturing enterprises requires further examination of additional structural dimensions, particularly financial structure, innovation behaviour, and business partnerships, which collectively determine the adaptive capacity of manufacturing MSEs.

4.2. Sources of Business Capital among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024

Figure 2 presents the evolution of business capital sources among Micro and Small Enterprises (MSEs) operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia between 2020 and 2024. Business capital is classified into three financing categories: entirely self-financed, partly financed by external sources, and entirely financed by external sources. Overall, the results reveal that Indonesia's beverage manufacturing MSEs remain overwhelmingly dependent on internally generated capital throughout the observation period, while the utilisation of external financing remains relatively limited.

As illustrated in Figure 2, enterprises relying exclusively on their own capital consistently represented the largest financing category. The number of entirely self-financed enterprises increased from 84,626 businesses in 2020 to 100,012 in 2021, before declining to 92,681 in 2022. Subsequently, the figure recovered to 99,493 enterprises in 2023 and further increased to 105,281 enterprises in 2024, representing the highest value during the study period. This trend indicates that internal financing remained the dominant source of business capital despite fluctuations in the broader economic environment. The persistent reliance on self-financing suggests that business owners continue to prioritise retained earnings, personal savings, and family resources when establishing or expanding their enterprises rather than seeking formal debt financing.

A different pattern can be observed for enterprises that combined internal and external funding sources. The number of partly externally financed enterprises increased from 6,691 in 2020 to 10,114 in 2021, declined to 7,885 in 2022, rose substantially to 13,434 in 2023, and slightly decreased to 11,920 in 2024. Although considerably smaller than the self-financed group, this financing category exhibited greater volatility, suggesting that external financing was utilised primarily as complementary capital rather than as the principal source of business investment. This behaviour reflects the cautious financing decisions commonly observed among micro and small enterprises operating under uncertain economic conditions.

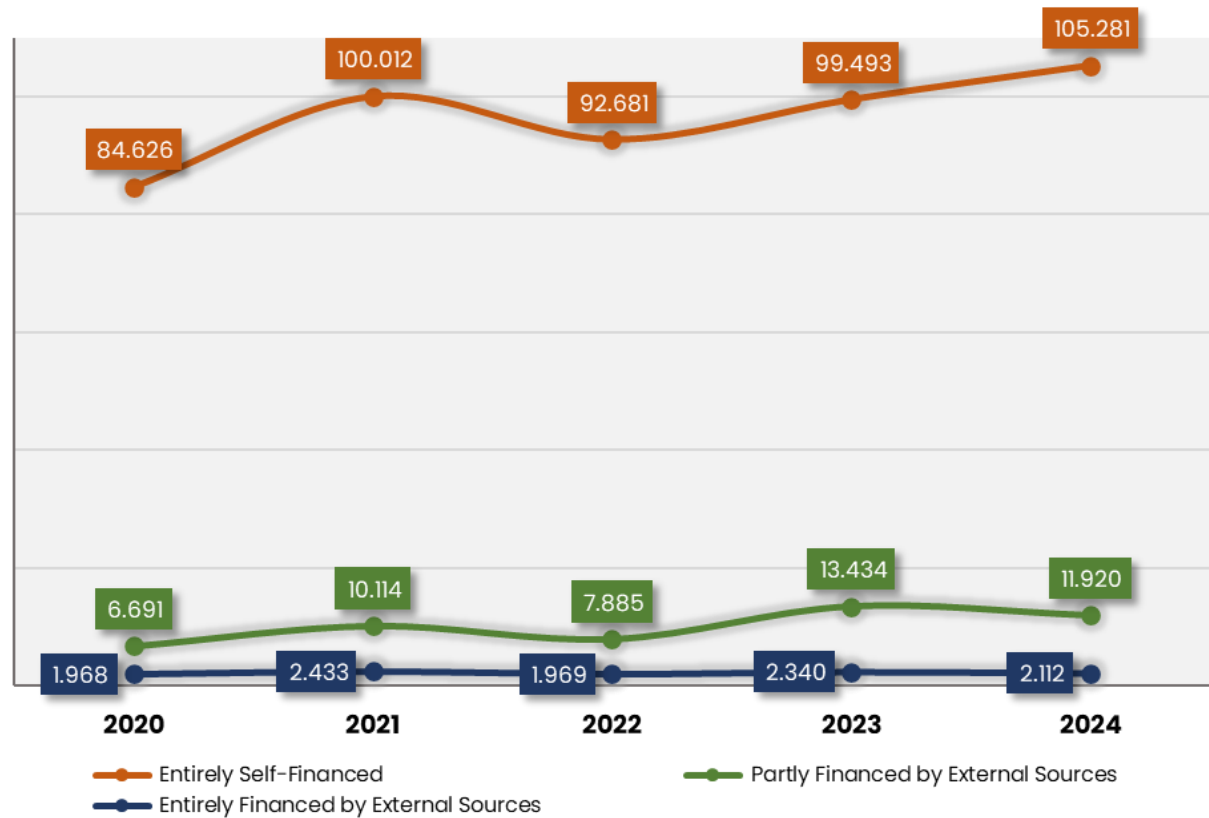


Figure 2. Sources of Business Capital among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

Meanwhile, enterprises relying entirely on external financing remained consistently limited throughout the observation period. Their number fluctuated only marginally, increasing from 1,968 enterprises in 2020 to 2,433 in 2021, decreasing to 1,969 in 2022, rising again to 2,340 in 2023, and ending at 2,112 enterprises in 2024. The persistently low proportion of businesses financed exclusively through external sources indicates that formal credit institutions have not yet become the primary financing mechanism for beverage manufacturing MSEs. Instead, external borrowing appears to function as a supplementary instrument for selected enterprises rather than a dominant financing strategy.

From the perspective of the Pecking Order Theory, these findings strongly suggest that beverage manufacturing MSEs follow a financing hierarchy in which internal funds are preferred over external debt and equity because internally generated capital involves lower transaction costs, reduced information asymmetry, and greater managerial autonomy. The overwhelming dominance of self-financing throughout the study period reflects the tendency of small enterprises to minimise financial risk by avoiding debt obligations whenever possible. Recent empirical evidence from Indonesian SMEs similarly confirms that financing decisions continue to follow the pecking order sequence, particularly among owner-managed businesses characterised by relatively limited financial literacy and strong preferences for maintaining business independence (Sulistianingsih & Santi, 2023).

The predominance of self-financing may also reflect persistent financial constraints faced by Indonesian manufacturing MSEs. Despite numerous government financing programmes, access to formal credit remains uneven because many micro enterprises continue to encounter collateral requirements, limited financial records, inadequate business documentation, and relatively high borrowing costs. Recent analysis by the International Monetary Fund demonstrates that financing constraints continue to reduce productivity growth and business expansion among Indonesian MSMEs, particularly for younger and domestically owned enterprises (International Monetary Fund - Asia and Pacific Dept, 2024). Likewise, recent evidence on Indonesian banking shows that credit accessibility remains strongly influenced by enterprise characteristics, financial capability, and banking assessment mechanisms rather than merely financing demand (Ismanto et al., 2024).

From the standpoint of the Resource-Based View (RBV), the dominance of internally generated capital may also indicate that entrepreneurs consider financial resources as strategic assets that should remain under direct managerial control. Internal capital provides greater flexibility in production planning, investment timing, and operational decision-making because firms are not constrained by repayment obligations or lender requirements. Such financial independence may enhance organisational agility, particularly in small manufacturing businesses where rapid operational adjustments are often required to respond to changing consumer demand and fluctuations in raw material prices. However, excessive dependence on internally generated capital may simultaneously constrain long-term business expansion because investment capacity remains limited by the enterprise's own financial accumulation.

The increasing number of enterprises utilising mixed financing after 2022 deserves particular attention. This development suggests that a growing proportion of beverage manufacturing MSEs have gradually become more capable of integrating external financing into their capital structure while maintaining financial prudence. Rather than replacing internal capital, external funds appear to complement existing financial resources to support production expansion, equipment acquisition, and market development. Similar financing behaviour has been observed among manufacturing SMEs across Southeast Asia, where business owners generally adopt conservative financing strategies by combining retained earnings with selective borrowing in order to balance financial flexibility and growth opportunities (Asian Development Bank, 2024).

Compared with evidence reported across ASEAN economies, Indonesia exhibits financing characteristics that are broadly consistent with neighbouring developing countries. Studies conducted in Malaysia, Thailand, and Vietnam indicate that small manufacturing enterprises continue to rely predominantly on internally generated funds because limited collateral, information asymmetry, and relatively high financing costs reduce their

willingness to utilise bank loans extensively. Consequently, the financing structure observed in Indonesia reflects a broader regional pattern in which self-financing remains the principal foundation of SME development despite continuous efforts by governments to improve financial inclusion (Na & Kang, 2019).

Overall, Figure 2 demonstrates that the financing structure of beverage manufacturing MSEs in Indonesia remains fundamentally self-financing-oriented, with external funding serving primarily as complementary rather than primary capital. This financing behaviour illustrates a relatively conservative approach towards business growth and risk management. While such financial independence may strengthen business resilience during periods of economic uncertainty, improving access to affordable formal financing remains essential for supporting technological upgrading, production expansion, innovation investment, and long-term industrial competitiveness. Accordingly, strengthening financial inclusion should not merely increase credit availability but also improve financial literacy, business governance, and institutional support to enable MSEs to utilise external financing more effectively for sustainable industrial development.

4.3. Innovation Participation among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024

Figure 3 presents the participation of Micro and Small Enterprises (MSEs) in innovation activities within KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024. Overall, the findings indicate that although the majority of beverage manufacturing MSEs had not yet undertaken innovation, the number of innovative enterprises increased substantially throughout the observation period. This trend suggests that innovation has gradually become an increasingly important strategic response for beverage manufacturers in adapting to changing market conditions, evolving consumer preferences, and intensifying competition following the COVID-19 pandemic.

As illustrated in Figure 3, enterprises that did not undertake innovation continued to dominate the sector throughout the five-year observation period. Their number increased from 91,231 enterprises in 2020 to 109,875 enterprises in 2021, before declining to 94,884 enterprises in 2022. Subsequently, the number rose again to 105,437 enterprises in 2023, before slightly decreasing to 102,515 enterprises in 2024. Although the population of non-innovative enterprises remained considerably larger than innovative firms, the gradual decline observed after 2023 indicates that an increasing proportion of beverage manufacturers have begun incorporating innovation into their business activities.

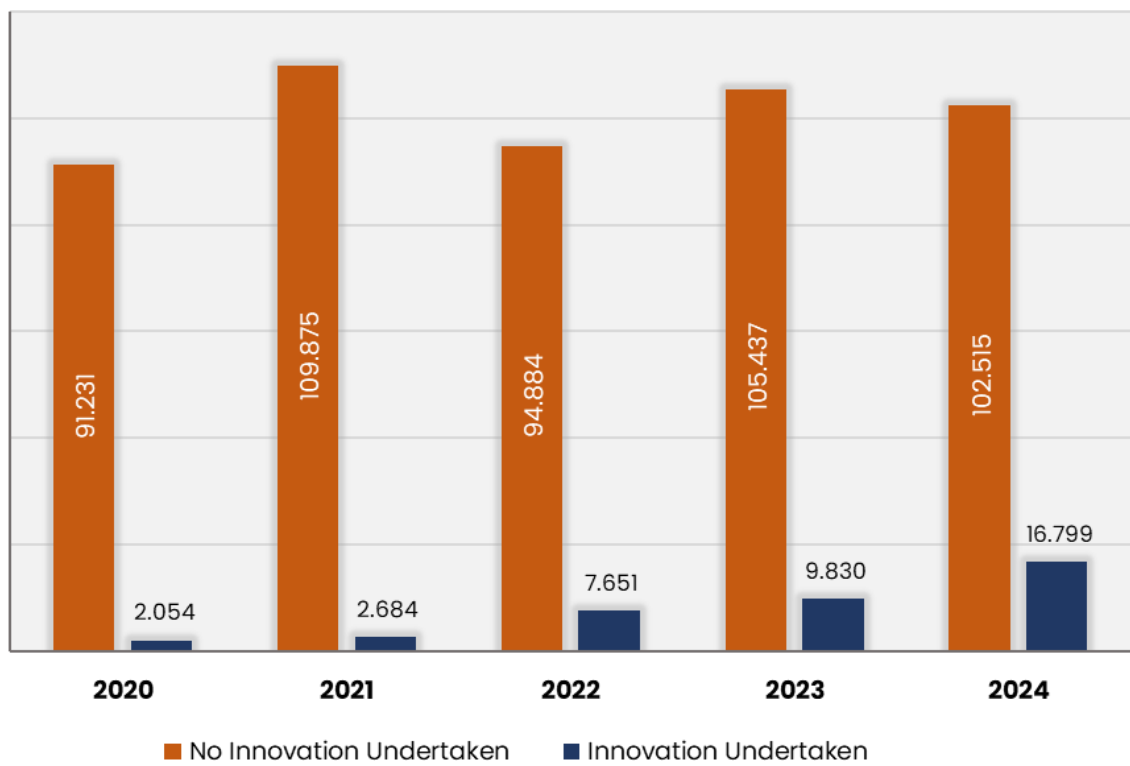


Figure 3. Number of Micro and Small Enterprises Undertaking Innovation in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

In contrast, enterprises undertaking innovation demonstrated a consistently positive development pattern. The number of innovative enterprises increased from only 2,054 businesses in 2020 to 2,684 businesses in 2021, before recording a remarkable increase to 7,651 enterprises in 2022. The upward trend continued during 2023, reaching 9,830 enterprises, and accelerated further in 2024, when the number of innovative enterprises rose sharply to 16,799 businesses. Compared with the baseline year, the number of innovative beverage manufacturing MSEs increased more than eightfold over the five-year period, indicating a significant improvement in firms' willingness to introduce new products, improve production activities, and strengthen market competitiveness.

The substantial increase in innovation participation after 2022 reflects the structural transformation occurring within Indonesia's beverage manufacturing industry. During the immediate post-pandemic period, many enterprises were required to redesign their business models in response to shifting consumer behaviour, stronger demand for healthier and more diversified beverage products, increasing digital market penetration, and rising competitive pressure. Consequently, innovation became not merely an option for business expansion but an essential capability for maintaining operational continuity and sustaining competitiveness in an increasingly dynamic manufacturing environment.

These findings are strongly aligned with Innovation Theory, which argues that innovation constitutes one of the principal drivers of enterprise competitiveness and long-term business sustainability. Rather than being limited

to technological breakthroughs, innovation within Micro and Small Enterprises frequently occurs through incremental improvements involving products, production processes, marketing practices, and organisational routines. Such incremental innovation is particularly important for resource-constrained manufacturing SMEs because it enables continuous performance improvement without requiring substantial financial investment. Recent studies demonstrate that incremental innovation significantly strengthens organisational resilience, business adaptability, and firm performance among manufacturing SMEs operating in developing economies (Hameed et al., 2021).

From the perspective of Dynamic Capability Theory, the observed increase in innovation participation suggests that beverage manufacturing enterprises have gradually strengthened their capability to sense market changes, seize emerging opportunities, and reconfigure internal resources. Dynamic capabilities enable firms to renew organisational competencies continuously in response to changing external environments. The rapid increase in innovative enterprises between 2022 and 2024 therefore indicates that Indonesian beverage manufacturers have become increasingly adaptive rather than merely reactive, allowing them to respond more effectively to evolving consumer demand and intensifying market competition (Ferreira et al., 2019; Teece, 2018).

The findings further support the concept of Industrial Resilience, which emphasises that enterprise resilience depends not only on financial resources but also on firms' ability to continuously learn, innovate, and transform organisational capabilities following external shocks. The sustained increase in innovation participation suggests that beverage manufacturing MSEs have gradually shifted from short-term survival strategies towards long-term capability development. Rather than simply restoring pre-pandemic business operations, many enterprises appear to have utilised the recovery period to improve products, strengthen operational efficiency, and enhance market responsiveness. Similar conclusions have been reported by Belitski et al., (2022), who found that innovation capability became one of the primary determinants of SME resilience during and after the COVID-19 crisis.

The results of this study are consistent with recent evidence reported in Indonesia, where innovation has been identified as a significant determinant of SME competitiveness and long-term sustainability. Prasetyo et al., (2020) demonstrated that innovation capability significantly improves SME competitiveness by strengthening operational flexibility and market responsiveness. Likewise, Purwati et al., (2021) found that continuous innovation positively influences organisational performance and business sustainability among Indonesian SMEs, particularly during periods of environmental uncertainty. Comparable findings have also been reported across the Asia region. Research conducted by Abdul-Halim et al., (2019) indicates that innovation capability significantly enhances SME resilience through organisational learning and technological adaptation. Similarly, studies by Alegre et al., (2022) found that manufacturing SMEs introducing continuous product and process innovation achieved higher productivity and stronger export competitiveness than firms relying on conventional production systems. Ngo (2023) reported that innovation capability enables food and beverage SMEs to create superior customer value while responding more effectively to rapidly changing consumer preferences.

More broadly, evidence across Asia demonstrates that innovation ecosystems involving universities, governments, financial institutions, and industrial networks substantially improve SME innovation performance. Firms embedded within collaborative innovation ecosystems generally exhibit stronger adaptive capabilities, higher productivity growth, and greater business resilience than enterprises operating independently (Giniuniene & Jurksiene, 2015). Overall, Figure 3 demonstrates that although most beverage manufacturing MSEs had not yet adopted innovation during the observation period, innovation participation increased substantially between 2020 and 2024. This development indicates a gradual structural shift towards a more adaptive and competitive industrial ecosystem. Nevertheless, increasing the number of innovative enterprises alone does not fully explain the innovation capacity of the industry. A deeper understanding requires examining the types of innovation implemented by beverage manufacturing MSEs, which are discussed in the following section. This approach enables a more comprehensive assessment of how innovation contributes to the long-term competitiveness and resilience of Indonesia's beverage manufacturing sector.

4.4. *Types of Innovation among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024*

Table 1 presents the distribution of innovation types implemented by Micro and Small Enterprises (MSEs) operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024. The innovations are classified into four categories, namely product innovation, marketing and distribution innovation, technology/production process innovation, and other innovations. Overall, the results demonstrate a substantial increase in innovation activities across all major categories over the five-year period. More importantly, the pattern indicates that innovation among beverage manufacturing MSEs has gradually shifted from isolated product improvements towards a broader combination of market-oriented and process-oriented innovation strategies.

Table 1. Number of Micro and Small Enterprises by Type of Innovation in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

Year	Product	Marketing & Distribution	Technology/ Production Process	Others
2020	814	1.014	1.583	23
2021	1.244	994	1.659	-
2022	3.141	4.385	3.109	90
2023	4.675	5.058	3.819	55
2024	9.349	10.153	6.454	48

As shown in Table 1, marketing and distribution innovation consistently represented the most dominant innovation category. The number of enterprises implementing this type of innovation increased from 1,014 enterprises in 2020 to 10,153 enterprises in 2024, representing almost a tenfold increase within five years. The remarkable expansion suggests that beverage manufacturing MSEs increasingly recognised the importance of improving market access, promotional activities, distribution channels, and customer engagement as strategic responses to changing consumer behaviour (Nurliza et al., 2021). The rapid expansion of digital commerce, online food delivery platforms, and social media marketing following the COVID-19 pandemic likely accelerated this

transformation by encouraging firms to adopt more market-oriented innovation strategies. Similar evidence from Indonesian food and beverage SMEs demonstrates that marketing innovation significantly improves market performance through stronger customer interaction and wider market reach (Faisal et al., 2021).

The second largest innovation category was product innovation, which increased steadily from 814 enterprises in 2020 to 9,349 enterprises in 2024. This development indicates that beverage manufacturing enterprises increasingly diversified product variants, improved product quality, introduced healthier formulations, redesigned packaging, and responded more effectively to evolving consumer preferences. Product innovation has become particularly important within the beverage industry because consumer demand changes rapidly in response to health awareness, lifestyle trends, convenience, and product differentiation (Suhermawan, 2026). Rather than competing solely through price, beverage manufacturers increasingly compete by creating higher customer value through product uniqueness and quality enhancement. Recent studies on Indonesian food and beverage SMEs similarly report that continuous product innovation strengthens competitive advantage and significantly improves marketing performance, particularly during periods of economic uncertainty (Ambarwati et al., 2023).

Innovation related to technology and production processes also exhibited substantial growth, increasing from 1,583 enterprises in 2020 to 6,454 enterprises in 2024. Although the number remained below product and marketing innovation, the consistent upward trend indicates that beverage manufacturing MSEs have gradually adopted more efficient production methods, improved processing technology, strengthened quality control systems, and optimised resource utilisation. Process innovation is particularly valuable for manufacturing SMEs because it contributes directly to production efficiency, cost reduction, product consistency, and operational flexibility. Previous studies on Indonesian food and beverage enterprises demonstrate that process innovation frequently emerges through incremental improvements rather than radical technological transformation, allowing SMEs to improve productivity despite limited financial and technological resources (Prihadyanti, 2013).

Conversely, other innovation activities remained relatively limited throughout the observation period. The number fluctuated between 23 and 90 enterprises, suggesting that innovation beyond the three principal categories has not yet become a major strategic priority among beverage manufacturing MSEs. This finding reflects the relatively simple organisational structures typically found in micro and small enterprises, where innovation efforts are primarily concentrated on activities generating direct commercial benefits rather than broader organisational or institutional transformation. From the perspective of the Oslo Manual innovation framework, the observed distribution indicates that Indonesian beverage manufacturing MSEs predominantly pursue incremental innovation rather than radical innovation. Enterprises appear to prioritise innovations capable of generating immediate commercial returns, particularly through improvements in products, marketing, and production processes. Such innovation behaviour is characteristic of manufacturing SMEs operating in emerging economies, where resource constraints encourage firms to adopt gradual improvements rather than high-risk technological breakthroughs. Similar conclusions have been reported for food and beverage SMEs in Indonesia, where innovation is generally customer-driven, practical, and closely associated with market demand rather than formal research and development activities (Candra et al., 2022).

These findings are also consistent with the Resource-Based View (RBV), which suggests that sustainable competitive advantage originates from firms' ability to develop valuable, rare, and difficult-to-imitate capabilities. Product innovation strengthens differentiation, marketing innovation enhances customer relationships and market penetration, while process innovation improves operational efficiency. The simultaneous growth of these innovation categories therefore indicates that beverage manufacturing MSEs have gradually developed complementary strategic capabilities rather than relying on a single source of competitive advantage. The findings further support the concept of Dynamic Capabilities, whereby enterprises continuously renew internal competencies to respond to environmental change. The rapid increase in marketing innovation after 2022 illustrates that firms were not only introducing new products but also transforming the way products reached customers. Such adaptive behaviour reflects firms' ability to sense emerging market opportunities, seize them through strategic innovation, and reconfigure organisational resources accordingly. Evidence from Indonesian foodpreneurs similarly demonstrates that innovation processes increasingly involve market learning, customer feedback, and external collaboration rather than relying solely on internal entrepreneurial intuition (Pranowo et al., 2022).

Overall, Table 1 demonstrates that innovation among Indonesia's beverage manufacturing MSEs has become increasingly multidimensional. Although marketing and distribution innovation emerged as the dominant innovation type, substantial growth was also observed in product and production-process innovation. These findings suggest that the competitiveness of beverage manufacturing enterprises is increasingly supported by the simultaneous development of market capability, product differentiation, and production efficiency. Consequently, future industrial development policies should encourage integrated innovation ecosystems that facilitate technological adoption, market expansion, knowledge sharing, and collaborative innovation networks among beverage manufacturing SMEs.

4.5. Business Partnership Participation among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024

Figure 4 illustrates the participation of Micro and Small Enterprises (MSEs) in business partnerships within KBLI Division 11 (Beverage Manufacturing) in Indonesia during the period 2020–2024. Overall, the findings reveal that although most beverage manufacturing MSEs continued to operate independently without formal business partnerships, the number of enterprises participating in collaborative business arrangements gradually increased throughout the observation period. This pattern indicates that inter-firm collaboration has become increasingly recognised as an important mechanism for strengthening competitiveness, expanding market access, and improving business resilience within Indonesia's beverage manufacturing industry.

As presented in Figure 4, enterprises without business partnerships consistently dominated the industry during the five-year observation period. The number of non-partnered enterprises increased from 91,969 enterprises in 2020 to 106,668 enterprises in 2021, before declining to 97,539 enterprises in 2022. Subsequently,

the number increased again to 109,857 enterprises in 2023 and reached 110,656 enterprises in 2024. Despite these fluctuations, the consistently large number of enterprises operating independently indicates that collaboration has not yet become the prevailing business model among Indonesian beverage manufacturing MSEs. Many micro-scale enterprises continue to rely primarily on internally managed production systems and local marketing networks rather than formal strategic alliances.

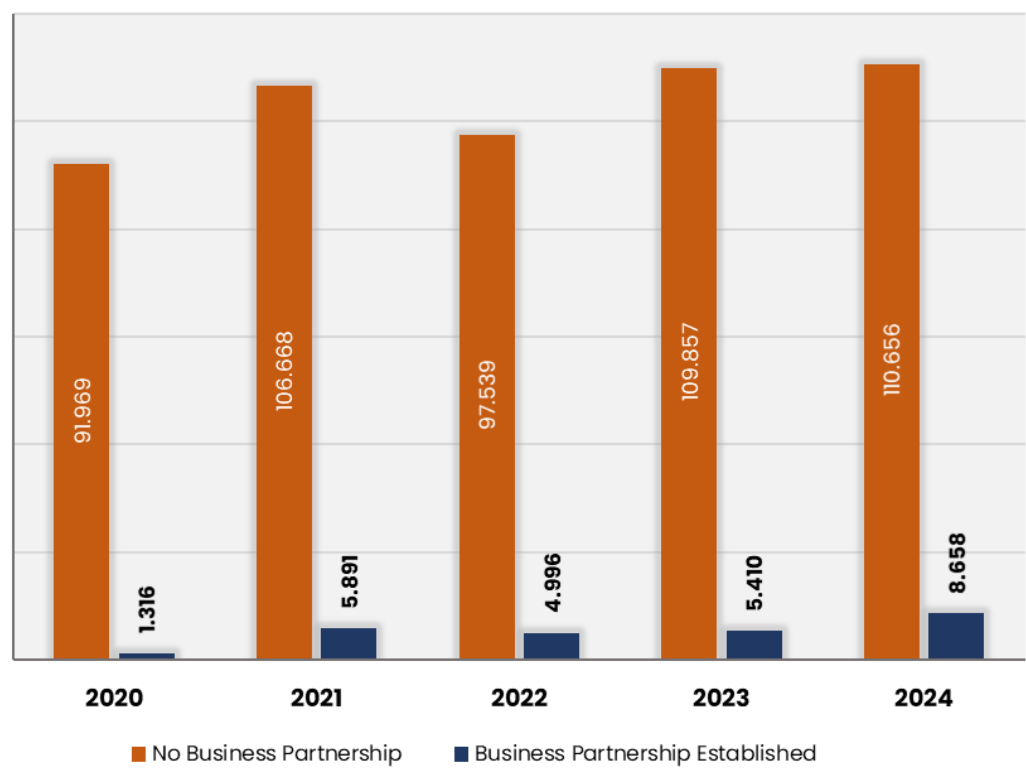


Figure 4. Number of Micro and Small Enterprises Engaged in Business Partnerships in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

Conversely, enterprises establishing business partnerships exhibited a gradual but encouraging upward trend. The number increased from only 1,316 enterprises in 2020 to 5,891 enterprises in 2021, slightly declined to 4,996 enterprises in 2022, and subsequently increased to 5,410 enterprises in 2023, before reaching 8,658 enterprises in 2024. Compared with the initial observation year, the number of enterprises participating in partnerships expanded by more than six times, suggesting that collaboration has become increasingly important during the post-pandemic recovery period. Although partnership participation still represents a relatively small proportion of the overall enterprise population, the upward trend reflects a growing awareness among beverage manufacturers regarding the strategic benefits of collaborative business relationships.

The gradual increase in partnership participation may be interpreted as a response to the increasingly complex competitive environment faced by beverage manufacturing MSEs. Rising production costs, stronger market competition, higher product quality standards, and expanding digital marketing ecosystems have encouraged enterprises to seek external collaboration in order to improve business efficiency and market competitiveness. Partnerships enable firms to access wider distribution channels, reliable suppliers, market information, technological knowledge, and complementary business resources that would otherwise be difficult to obtain independently. Similar evidence from Indonesian food and beverage manufacturing demonstrates that production partnerships significantly contribute to improving operational performance and supply chain effectiveness, particularly during periods of market uncertainty (Ongkowijoyo, 2024).

These findings are consistent with Network Theory, which argues that organisational performance is increasingly determined by firms' ability to establish and maintain productive relationships with external stakeholders rather than relying exclusively on internal resources. Business partnerships facilitate knowledge exchange, resource sharing, technological learning, and access to broader value chains, thereby reducing transaction costs and improving firms' adaptive capacity (Wixe et al., 2023). For resource-constrained MSEs, collaborative networks become valuable strategic assets because they compensate for limitations in capital, technology, and managerial capability. Recent empirical studies on food and beverage SMEs confirm that knowledge sharing and collaborative learning significantly enhance innovation capability and business performance through stronger organisational learning mechanisms (Fauziah et al., 2021).

From the perspective of the Resource-Based View (RBV), business partnerships also function as mechanisms through which firms gain access to valuable external resources that are difficult to develop internally. Rather than competing individually, beverage manufacturing enterprises increasingly strengthen their competitiveness through collaborative access to production inputs, distribution systems, technological expertise, financial resources, and market intelligence. Such complementary resources enhance firms' ability to improve productivity while simultaneously reducing operational risk. Consequently, partnerships should not merely be viewed as contractual relationships but as strategic capabilities that contribute to long-term competitive advantage. The observed pattern further supports the concept of Open Innovation, which suggests that enterprises increasingly rely on external knowledge and collaborative interactions to complement internal innovation activities. Instead of generating all innovations independently, SMEs benefit from partnerships with suppliers, distributors, customers, universities, government agencies, and other business actors that facilitate continuous organisational learning and innovation diffusion.

Overall, Figure 4 demonstrates that although independent business operations continue to dominate Indonesia's beverage manufacturing industry, participation in business partnerships has increased steadily

throughout 2020–2024. The findings indicate that collaborative business networks are gradually becoming an important component of industrial development, particularly as enterprises seek greater resilience, innovation capability, and market competitiveness. Nevertheless, understanding partnership participation alone is insufficient to explain the strategic orientation of collaboration within the industry. A more comprehensive understanding requires further examination of the types of business partnerships established by beverage manufacturing MSEs, which are discussed in the following section.

4.6. *Types of Business Partnerships among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024*

Table 2 presents the distribution of business partnership types established by Micro and Small Enterprises (MSEs) operating in KBLI Division 11 (Beverage Manufacturing) in Indonesia between 2020 and 2024. The partnerships are classified into five categories, namely financial capital support, raw material supply, marketing support, capital goods support, and other forms of collaboration. Overall, the findings indicate that although various partnership schemes were implemented, beverage manufacturing MSEs relied predominantly on partnerships that strengthened production continuity and market access rather than those providing direct financial assistance. This pattern suggests that operational and commercial collaboration has become increasingly important for sustaining business activities in the post-pandemic environment.

Table 2. Number of Micro and Small Enterprises by Type of Business Partnership in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

Year	Financial Capital Support	Raw Material Supply	Marketing Support	Capital Goods Support	Other Forms of Support
2020	109	1.086	857	109	-
2021	1.725	3.095	2.273	789	236
2022	1.771	1.970	1.468	787	61
2023	1.462	2.420	1.638	331	152
2024	1.386	4.076	4.803	1.323	20

Among all partnership categories, raw material supply partnerships consistently represented one of the largest forms of collaboration. The number of enterprises engaged in this type of partnership increased substantially from 1,086 enterprises in 2020 to 4,076 enterprises in 2024, despite experiencing fluctuations during 2022 and 2023. The growing reliance on supplier partnerships reflects the strategic importance of securing continuous access to raw materials, maintaining production stability, and reducing supply-chain uncertainty. For beverage manufacturers, uninterrupted access to agricultural commodities, packaging materials, and production inputs directly influences product quality, production efficiency, and delivery reliability. Similar findings have been reported in Indonesian food and beverage SMEs, where stronger supply-chain relationships improve operational performance and organisational resilience, particularly during periods of economic disruption (Upe & Aswan, 2022).

Another notable trend concerns marketing support partnerships, which experienced the most remarkable expansion during the observation period. The number of enterprises participating in marketing partnerships increased from 857 enterprises in 2020 to 4,803 enterprises in 2024, representing more than a fivefold increase. This rapid growth demonstrates that beverage manufacturing MSEs increasingly recognise the importance of collaborative marketing through distributors, retailers, digital marketplaces, social media platforms, and promotional partners. The increasing adoption of digital commerce has transformed traditional marketing practices, encouraging enterprises to expand their customer reach through external business networks rather than relying exclusively on direct selling (Sudarti & Dewi, 2023) Previous studies similarly conclude that collaborative marketing, customer orientation, and knowledge sharing significantly strengthen marketing performance and product competitiveness among food-processing SMEs in Indonesia (Poerwanto et al., 2022).

Partnerships involving financial capital support also increased considerably compared with the baseline year, rising from only 109 enterprises in 2020 to 1,725 enterprises in 2021, before stabilising at approximately 1,386 enterprises in 2024. Although the number remained considerably lower than partnerships involving raw materials and marketing, the upward trend suggests that access to external financing has gradually improved following the pandemic. Financial partnerships enable enterprises to expand production capacity, invest in new technologies, improve product quality, and strengthen working capital. Nevertheless, the relatively limited participation indicates that many micro enterprises continue to depend primarily on internal financing and personal capital rather than formal financial institutions.

A similar pattern is observed in capital goods support partnerships, which increased from 109 enterprises in 2020 to 1,323 enterprises in 2024. These partnerships generally involve cooperation related to machinery, production equipment, processing technology, and other physical assets required to improve manufacturing capability. Compared with financial support, partnerships focusing on production equipment directly contribute to technological upgrading, production efficiency, and product standardisation. For manufacturing SMEs with limited investment capacity, collaborative access to production facilities represents an effective mechanism for improving productivity without requiring substantial capital expenditure. Conversely, other forms of business partnerships remained relatively limited throughout the observation period, fluctuating between 20 and 236 enterprises. The small number suggests that collaboration beyond conventional business functions has yet to become widespread among Indonesian beverage manufacturing MSEs. Most enterprises continue to prioritise partnerships that generate direct operational and commercial benefits, while strategic collaboration involving research institutions, universities, innovation intermediaries, or technology developers remains relatively uncommon.

From a theoretical perspective, the observed partnership pattern strongly reflects the principles of Resource Dependence Theory (RDT), which argues that organisations establish external relationships to obtain critical resources unavailable within their own organisational boundaries. Beverage manufacturing MSEs appear to prioritise partnerships capable of reducing dependence on uncertain markets, unstable supply chains, and financial

constraints. Supplier collaboration secures production inputs, marketing partnerships expand customer access, while financial and capital goods partnerships reduce investment barriers. Consequently, partnerships function as strategic mechanisms for reducing environmental uncertainty while improving organisational adaptability. The findings also support the concept of Open Innovation, whereby firms combine internal capabilities with external knowledge, technologies, and market resources to improve innovation performance. Rather than developing capabilities independently, beverage manufacturing enterprises increasingly collaborate with suppliers, distributors, customers, and other business actors to accelerate learning, knowledge exchange, and innovation diffusion. Empirical evidence from Indonesian food and beverage SMEs demonstrates that knowledge sharing, organisational learning capability, and open innovation significantly improve business performance through stronger external collaboration and learning networks (Mulyono & Syamsuri, 2023).

The present findings are consistent with previous empirical studies conducted in Indonesia. Pranowo et al., (2022) reported that collaborative knowledge sharing and organisational learning significantly improve open innovation and business performance among food and beverage SMEs in Bogor. Similarly, studies of Indonesian food-processing SMEs show that digital knowledge sharing and collaborative marketing strengthen product innovation capability and market performance by facilitating continuous interaction with customers and business partners. Comparable evidence has also emerged in broader SME contexts. Yulianto & Supriono (2023) found that open innovation influences firm performance through product and process innovation by strengthening inbound and outbound knowledge flows among Indonesian SMEs. Likewise, recent studies emphasise that collaboration, social capital, and inter-organisational knowledge sharing enhance innovation capability and long-term competitiveness, particularly for resource-constrained manufacturing SMEs (Hilmawati et al., 2023).

Overall, Table 2 demonstrates that business partnerships among beverage manufacturing MSEs have become increasingly oriented towards resource accessibility, market expansion, and production continuity rather than direct financial assistance alone. Raw material supply and marketing support emerged as the dominant partnership forms, highlighting the importance of collaborative business ecosystems in strengthening industrial competitiveness. These findings indicate that future SME development policies should encourage broader multi-stakeholder partnerships involving suppliers, distributors, financial institutions, universities, and innovation support organisations to accelerate sustainable industrial transformation.

4.7. Partnership of Scheme among Micro and Small Enterprises in KBLI Division 11 (Beverage Manufacturing) in Indonesia During 2020–2024

Table 3 presents the partnership schemes adopted by Micro and Small Enterprises (MSEs) in KBLI Division 11 (Beverage Manufacturing) during 2020–2024. The observed partnership arrangements include nucleus–plasma schemes, subcontracting, general trading, profit-sharing arrangements, operational cooperation, joint ventures, and other partnership schemes. Overall, the results indicate that beverage manufacturing MSEs predominantly established market-oriented and operational partnerships rather than equity-based strategic alliances. This finding suggests that collaboration among Indonesian beverage manufacturers remains largely focused on improving business continuity, expanding market access, and strengthening operational efficiency instead of pursuing long-term ownership integration.

Table 3. Number of Micro and Small Enterprises by Partnership Scheme in KBLI Division 11 (Beverage Manufacturing), 2020–2024.

Year	Nucleus–Plasma Scheme	Subcontracting	General Trading	Profit-Sharing Arrangement	Operational Cooperation	Joint Venture	Other Partnership Schemes
2020	-	-	1.151	130	922	-	7
2021	69	244	3.251	787	972	140	1.143
2022	138	366	2.044	455	1.061	49	1.367
2023	200	330	2.019	505	988	25	1.866
2024	155	402	4.689	1.576	998	590	1.277

Among all partnership schemes, general trading partnerships consistently represented the dominant form of collaboration. The number of participating enterprises increased from 1,151 enterprises in 2020 to 4,689 enterprises in 2024, despite a temporary decline during 2022–2023. This substantial increase demonstrates that beverage manufacturing MSEs increasingly rely on commercial trading networks involving distributors, wholesalers, retailers, and intermediary business actors to broaden market coverage and stabilise product distribution. Such collaboration allows enterprises to reach wider customer segments while reducing marketing costs and market uncertainty. Similar evidence reported for food firms shows that external collaboration with customers and commercial partners significantly enhances firms' innovation capability and market responsiveness.

The second most rapidly growing partnership pattern concerns profit-sharing arrangements, which expanded from 130 enterprises in 2020 to 1,576 enterprises in 2024. This remarkable increase reflects the growing preference for flexible cooperative arrangements requiring relatively limited capital investment while allowing both parties to share commercial risks and business returns. Profit-sharing mechanisms are particularly attractive for micro-enterprises because they reduce financial constraints and facilitate business expansion without requiring complex contractual ownership structures. Recent studies on Indonesian culinary MSMEs similarly demonstrate that strategic partnerships substantially improve business sustainability by strengthening cooperation among business actors and expanding access to external resources (Widyanti et al., 2025).

Partnerships involving subcontracting also exhibited a positive long-term trend, increasing from no recorded partnerships in 2020 to 402 enterprises in 2024. Although the number remains relatively modest, subcontracting provides beverage manufacturers with opportunities to integrate into broader production networks through outsourcing and specialised manufacturing activities. Participation in subcontracting arrangements enables smaller enterprises to improve production capacity, maintain product quality standards, and acquire industrial experience from larger firms. Such collaborative production systems are frequently recognised as important pathways through which SMEs gradually strengthen technological capability and organisational learning (Wixe et al., 2023).

Meanwhile, operational cooperation remained relatively stable throughout the observation period, fluctuating between 922 and 1,061 enterprises. This stability suggests that operational collaboration has become a routine business practice among beverage manufacturing enterprises, particularly in logistics, procurement, transportation, storage, and production support activities. Unlike general trading partnerships that primarily target market expansion, operational cooperation focuses on improving production efficiency, reducing operational costs, and ensuring smoother business processes. Such collaborative operational arrangements contribute to organisational resilience by enabling firms to respond more effectively to supply-chain disruptions and changing market conditions (Ambarwati et al., 2023).

The development of joint ventures presents a particularly interesting pattern. No joint venture partnerships were recorded in 2020, whereas participation gradually emerged after 2021 and reached 590 enterprises in 2024, representing the highest level during the observation period. Although still relatively limited compared with other partnership schemes, the increasing adoption of joint ventures indicates that some beverage manufacturing MSEs have begun pursuing more strategic forms of collaboration involving shared investment, joint production, and collective business development. This finding may reflect the gradual maturation of selected enterprises seeking higher levels of business integration and long-term competitiveness. In contrast, nucleus–plasma partnerships remained relatively uncommon, increasing from 69 enterprises in 2021 to 155 enterprises in 2024, while other partnership schemes fluctuated considerably over time. These findings suggest that formal institutional partnership models involving larger anchor firms have yet to become widely implemented within Indonesia's beverage manufacturing MSE sector. Many enterprises continue to prefer flexible market-based collaboration that requires lower administrative complexity and offers greater operational autonomy.

From a theoretical perspective, the observed partnership pattern strongly supports Social Capital Theory, which emphasises that business relationships constitute valuable intangible assets facilitating trust, information exchange, resource mobilisation, and collective problem-solving. Rather than relying exclusively on internal organisational capabilities, beverage manufacturing enterprises increasingly develop external relational capital through distributors, suppliers, customers, and collaborative business networks. Such social capital enables enterprises to access market intelligence, commercial opportunities, and complementary resources that are otherwise difficult to obtain independently. Recent empirical evidence confirms that collaborative marketing innovation and entrepreneurial networks significantly strengthen MSME competitiveness by enhancing knowledge exchange and collective learning (Muna et al., 2024). The findings are equally consistent with the principles of Open Innovation, which argues that firms generate superior performance by combining internal competencies with externally acquired knowledge. Partnership schemes such as subcontracting, operational cooperation, and joint ventures facilitate knowledge transfer, technological learning, and innovation diffusion among collaborating organisations.

Overall, Table 3 demonstrates that partnership schemes among beverage manufacturing MSEs have evolved towards more commercially oriented and collaborative business models. General trading partnerships remain the dominant arrangement, while profit-sharing, subcontracting, and joint ventures exhibit the most dynamic growth. These findings indicate that Indonesian beverage manufacturing MSEs increasingly recognise partnerships not merely as transactional relationships but as strategic mechanisms for improving competitiveness, organisational learning, and long-term business sustainability.

5. Conclusion

This study provides a comprehensive longitudinal assessment of Micro and Small Enterprises (MSEs) operating in Indonesia's KBLI Division 11 (Beverage Manufacturing) during the period 2020–2024 by examining seven interrelated structural dimensions, namely enterprise development, sources of business capital, innovation participation, types of innovation, business partnership participation, types of business partnerships, and partnership schemes. The findings indicate that the post-pandemic development of Indonesia's beverage manufacturing industry should not be interpreted solely through changes in the number of enterprises but rather as a broader process of industrial restructuring characterised by evolving financing behaviour, increasing innovation activities, and progressively expanding collaborative business networks. Although beverage manufacturing MSEs remained highly dependent on internally generated capital and most enterprises continued to operate independently, the substantial increase in innovation participation, the growing emphasis on marketing and production-process innovation, and the gradual expansion of market-oriented partnership arrangements collectively demonstrate that enterprises have increasingly strengthened their competitiveness through adaptive and incremental organisational development rather than radical structural transformation. Overall, the findings suggest that the resilience of Indonesia's beverage manufacturing industry has been shaped by the interaction between internal capabilities and external collaboration, enabling enterprises to maintain business continuity while responding to changing consumer preferences, technological developments, and increasingly competitive market conditions.

From a theoretical perspective, this study contributes to the literature by integrating the Resource-Based View (RBV), Pecking Order Theory, Innovation Theory, Dynamic Capability Theory, Network Theory, Resource Dependence Theory, Social Capital Theory, Open Innovation, and the broader perspective of Industrial Resilience into a single analytical framework for understanding the structural evolution of manufacturing MSEs. While previous studies have generally examined financing, innovation, or collaboration separately, this research demonstrates that these dimensions develop simultaneously and reinforce one another throughout the industrial transformation process. The findings indicate that enterprise resilience depends not only on the availability of financial resources but also on firms' capability to transform those resources into innovation, strengthen organisational learning, establish collaborative partnerships, and expand market opportunities through increasingly integrated business ecosystems. Furthermore, by employing nationally representative longitudinal statistics published by Statistics Indonesia, this study extends the predominantly firm-level evidence available in previous research and provides a broader empirical understanding of structural changes occurring within Indonesia's beverage manufacturing sector.

The findings also generate important managerial and policy implications. For policymakers, strengthening the competitiveness of beverage manufacturing MSEs requires integrated industrial policies that extend beyond financing assistance by simultaneously promoting innovation capability, digital transformation, supply-chain development, collaborative business ecosystems, and managerial capacity building. Particular attention should be directed towards improving access to affordable financing, encouraging technology adoption, facilitating marketing digitalisation, and expanding institutional support that enables enterprises to participate more actively in collaborative production and distribution networks. For enterprise owners and managers, long-term competitiveness depends not only on maintaining prudent financial management but also on continuously investing in product development, production efficiency, market innovation, and strategic partnerships that facilitate knowledge sharing, resource accessibility, and market expansion. These complementary strategies are expected to strengthen the adaptive capability of beverage manufacturing enterprises while improving their resilience against future economic uncertainty and industrial transformation.

Nevertheless, several limitations should be acknowledged. First, the analysis relies exclusively on nationally aggregated secondary data published by Statistics Indonesia, preventing examination of firm-level behaviour, managerial decision-making, enterprise heterogeneity, and regional differences across provinces. Second, the descriptive longitudinal approach successfully identifies structural development patterns but does not establish causal relationships among financing structure, innovation, business partnerships, and enterprise performance. Consequently, the study cannot fully explain the mechanisms through which these structural dimensions influence organisational competitiveness. Future research is therefore encouraged to integrate official statistical data with primary surveys, qualitative interviews, or mixed-method approaches in order to capture behavioural and contextual factors influencing enterprise development. In addition, the application of panel-data analysis, structural equation modelling, multilevel analysis, or other inferential techniques would provide deeper insights into the causal relationships among financial capability, innovation behaviour, collaborative networks, and industrial resilience. Comparative studies across manufacturing subsectors or different regional contexts are also recommended to identify sector-specific characteristics that influence the long-term competitiveness and sustainability of manufacturing MSEs in Indonesia.

From a broader industrial development perspective, this study highlights the importance of building a more integrated manufacturing ecosystem involving government institutions, financial organisations, research institutions, universities, industry associations, suppliers, distributors, and digital business platforms. Such collaboration would facilitate technology diffusion, knowledge transfer, innovation adoption, market expansion, and production efficiency while strengthening the resilience of beverage manufacturing MSEs. As Indonesia continues to pursue industrial upgrading and inclusive economic growth, reinforcing the interaction between financial capability, innovation, and collaborative partnerships will become increasingly important for supporting the sustainable transformation of manufacturing MSEs and enhancing their contribution to national industrial competitiveness.

References

- Abdul-Halim, H., Ahmad, N. H., Geare, A., & Thurasamy, R. (2019). Innovation culture in SMEs: The importance of organizational culture, organizational learning, and market orientation. *Entrepreneurship Research Journal*, 9(3), 1–14. <https://doi.org/10.1515/erj-2017-0014>
- Alegre, J., Ferreras-Méndez, J. L., Fernández-Mesa, A., & Strange, R. (2022). Innovation capabilities and export performance in manufacturing SMEs. *Tec Empresarial*, 16(3), 55–71. <https://doi.org/10.18845/te.v16i3.6367>
- Ambarwati, D., Sudarmiatin, & Wardana, L. W. (2023). Do innovation and creativity in food and beverage products improve the marketing performance of MSMEs? The role of competitive advantage. *International Journal of Business and Applied Economics*, 2(6), 925–938. <https://doi.org/10.55927/ijbae.v2i6.6567>
- Asian Development Bank. (2024). *Asian Development Outlook: July 2024*. <https://doi.org/10.22617/FLS240353-3>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Belitski, M., Guenther, C., Kritikos, A. S., & Thurik, R. (2022). Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*, 58(2), 593–609. <https://doi.org/10.1007/s11187-021-00544-y>
- BPS-Statistics Indonesia. (2025). *Profile of micro and small industries 2024* (15th ed.). Directorate of Statistical Industry.
- Bryman, A. (2012). *Social research methods* (4th ed.). Oxford University Press.
- Candra, S., Wiratama, I. N. A. D., Rahmadi, M. A., & Cahyadi, V. (2022). Innovation process of micro, small and medium enterprises (MSMEs) in Greater Jakarta area: Perspective from foodpreneurs. *Journal of Science and Technology Policy Management*, 13(3), 542–560. <https://doi.org/10.1108/JSTPM-10-2020-0153>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage Publications.
- Distanont, A., & Khongmalai, O. (2018). The role of innovation in creating a competitive advantage. *Kasetsart Journal of Social Sciences*, 41, 1–7. <https://doi.org/10.1016/j.kjss.2018.07.009>
- Faisal, A. S., Ma'ruf, M., Lita, R. P., & Hidayat, T. (2021). Mengukur kinerja pasar melalui elemen inovasi pada UKM sektor makanan dan minuman di Kota Padang. *Jurnal Manajemen dan Kewirausahaan*, 9(2), 130–151. <https://doi.org/10.26905/jmdk.v9i2.6078>
- Fauziah, S., Rifin, A., & Adhi, A. K. (2021). Pengaruh kemitraan dan variabel lainnya terhadap keuntungan UMK industri makanan di Indonesia. *Jurnal AGRISEP: Kajian Masalah Sosial Ekonomi Pertanian dan Agribisnis*, 20(1), 195–206. <https://doi.org/10.31186/jagrisep.20.01.195-206>
- Ferreira, J. J. M., Fernandes, C. I., & Ferreira, F. A. F. (2019). To be or not to be digital, that is the question: Firm innovation and performance. *Journal of Business Research*, 101, 583–590. <https://doi.org/10.1016/j.jbusres.2018.11.013>
- Field, A. P. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). Sage Publications.
- Giniuniene, J., & Jurksiene, L. (2015). Dynamic capabilities, innovation and organizational learning: Interrelations and impact on firm performance. *Procedia – Social and Behavioral Sciences*, 213, 985–991. <https://doi.org/10.1016/j.sbspro.2015.11.515>
- Hameed, W. U., Nisar, Q. A., & Wu, H.-C. (2021). Relationships between external knowledge, internal innovation, firms' open innovation performance, service innovation, and business performance in the Pakistani hotel industry. *International Journal of Hospitality Management*, 92, 102745. <https://doi.org/10.1016/j.ijhm.2020.102745>
- Hilmawati, R. S., Samsir, S., Daulay, I. N., & Siregar, P. A. (2023). The effect of information sharing, knowledge sharing, and social capital on business performance mediated by innovation: Study on the small food industry in Pekanbaru City. *Indonesian Journal of Economics, Social, and Humanities*, 5(1), 65–84. <https://doi.org/10.31258/ijesh.5.1.65-84>
- Humphrey, J., & Schmitz, H. (2002). How does insertion in global value chains affect upgrading in industrial clusters? *Regional Studies*, 36(9), 1017–1027. <https://doi.org/10.1080/0034343002000022198>
- International Monetary Fund, Asia and Pacific Department. (2024). *Financing barriers and performance of micro, small, and medium enterprises (MSMEs)*. *IMF Staff Country Reports*, 2024(271), 52. <https://doi.org/10.5089/9798400284663.002>

- Ismanto, H., Atmaji, & Suhari, E. (2024). Determinants of MSMEs' credit access: Evidence from Indonesian banks. *Banks and Bank Systems*, 19(3), 230–241. [https://doi.org/10.21511/bbs.19\(3\).2024.19](https://doi.org/10.21511/bbs.19(3).2024.19)
- Mulyono, H., & Syamsuri, A. R. (2023). Organizational agility, open innovation, and business competitive advantage: Evidence from culinary SMEs in Indonesia. *International Journal of Social Science and Business*, 7(2), 268–275. <https://doi.org/10.23887/ijssb.v7i2.54083>
- Muna, N., Sukresna, I. M., & Praswati, A. N. (2024). Collaborative marketing innovation: How to energize social capital to enhance MSMEs' performance? *Asian Management and Business Review*, 4(2), 205–220. <https://doi.org/10.20885/AMBR.vol4.iss2.art3>
- Na, K., & Kang, Y.-H. (2019). Relations between innovation and firm performance of manufacturing firms in Southeast Asian emerging markets: Empirical evidence from Indonesia, Malaysia, and Vietnam. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(4), 98. <https://doi.org/10.3390/joitmc5040098>
- Ngo, Q.-H. (2023). The impact of entrepreneurial orientation on SMEs' performance in a transitional economy: The mediating role of differentiation advantages and innovation capability. *SAGE Open*, 13(4). <https://doi.org/10.1177/21582440231203035>
- Nurliza, N., Fitrianti, W., & Pamela, P. (2021). A study on the effects of innovation marketing process for Indonesian SMEs in the food and beverage sector. *Management Science Letters*, 11, 1747–1754. <https://doi.org/10.5267/j.msl.2021.2.008>
- OECD. (2023). *OECD SME and entrepreneurship outlook 2023*. OECD Publishing.
- OECD-UNIDO. (2019). *Integrating Southeast Asian SMEs in global value chains: Enabling linkages with foreign investors*. OECD-UNIDO Publishing.
- Ongkowijoyo, G. (2024). The effect of supply chain drivers on production performance in the Indonesian food and beverage manufacturing industry. *DeReMa (Development Research of Management): Jurnal Manajemen*, 19(1), 55. <https://doi.org/10.19166/derema.v19i1.8066>
- Poerwanto, I., Hussein, A. S., & Prabandari, S. P. (2022). Market orientation and innovation on corporate performance. *International Journal of Research in Business and Social Science*, 11(3), 27–32. <https://doi.org/10.20525/ijrbs.v11i3.1708>
- Pranowo, A. S., Irawan, T. T., Siregar, Z. M. E., & Jaya, R. I. K. (2022). Knowledge sharing, organizational learning capability, open innovation, and business performance: Evidence from food and beverage SMEs in Indonesia. *International Journal of Social Science and Business*, 6(4), 561–573. <https://doi.org/10.23887/ijssb.v6i4.51214>
- Prasetyo, E., Setyadharma, A., & Kistanti, N. R. (2020). The role of social capital in new products development and business competitiveness enhancement. *International Journal of Scientific & Technology Research*, 9(3), 1838–1843.
- Prihadyanti, D. (2013). Process and source of innovation in SMEs: Case of Indonesia's food and beverage firms. *Jurnal Manajemen Teknologi*, 12(3), 319–329. <https://doi.org/10.12695/jmt.2013.12.3.6>
- Purwati, A. A., Budiyanto, B., Suhermin, S., & Hamzah, M. L. (2021). The effect of innovation capability on business performance: The role of social capital and entrepreneurial leadership on SMEs in Indonesia. *Accounting*, 7, 323–330. <https://doi.org/10.5267/j.ac.2020.11.021>
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
- Sudarti, K., & Dewi, P. W. P. (2023). Improving marketing performance and product innovation capability through digital knowledge sharing: A case study in SMEs' food processing. *The Winners*, 23(2), 121–130. <https://doi.org/10.21512/tw.v23i2.8060>
- Suhermawan, D. (2026). Product innovation, organizational ambidexterity, and marketing performance of SMEs during crisis recovery: Evidence from the food and beverage sector in Indonesia. *Journal of Managerial Sciences and Studies*, 4(1), 1311–1319. <https://doi.org/10.61160/jomss.v4i1.124>
- Sulistianingsih, H., & Santi, F. (2023). Do SMEs' financing decisions follow the pecking order pattern? The role of financial literacy, risk preference, and home bias in SME financing decisions. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2023.2174477>
- Supramono, S., Damayanti, T. W., & Adhitya, D. (2025). Dynamic capabilities and financial behavior to accelerate MSME performance recovery and its impacts on business sustainability. *Journal of Innovation and Entrepreneurship*, 14(1), Article 10. <https://doi.org/10.1186/s13731-024-00456-7>
- Tambunan, T. (2019). Recent evidence of the development of micro, small and medium enterprises in Indonesia. *Journal of Global Entrepreneurship Research*, 9(1), Article 18. <https://doi.org/10.1186/s40497-018-0140-4>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- United Nations Industrial Development Organization. (2024). *Industrial development report 2024*. United Nations Industrial Development Organization.
- Upe, A. J., & Aswan, A. (2022). Internal factors improving viability of small food and beverage businesses: The case of Indonesia. *Problems and Perspectives in Management*, 20(1), 117–127. [https://doi.org/10.21511/ppm.20\(1\).2022.11](https://doi.org/10.21511/ppm.20(1).2022.11)
- Widyanti, O., Siringoringo, H., & Kuswanto, A. (2025). Pengaruh kemitraan, teknologi informasi, dukungan eksternal, dan inovasi terbuka terhadap keberlanjutan UMKM kuliner (Studi kasus: Bogor dan Depok). *Jurnal Manajemen dan Organisasi*, 16(3), 306–323. <https://doi.org/10.29244/jmo.v16i3.65951>
- Wixe, S., Nilsson, P., Naldi, L., & Westlund, H. (2023). The role of collaboration and external knowledge for innovation in small food firms. *The Annals of Regional Science*, 70(1), 135–155. <https://doi.org/10.1007/s00168-021-01087-6>
- Yulianto, E., & Supriono. (2023). Effect of open innovation on firm performance through type of innovation: Evidence from SMEs in Malang City, East Java, Indonesia. *Cogent Business & Management*, 10(3), Article 2262671. <https://doi.org/10.1080/23311975.2023.2262671>