

Empowerment Needs, Challenges, and Strategies for Food Processing MSMEs in Wonosobo Regency

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in promoting local economic growth, generating employment, and improving rural livelihoods. Despite their importance, MSMEs face multidimensional challenges that constrain their sustainability and competitiveness. This study aims to analyze the challenges affecting MSME development in the villages of Blederan, Kalibeber, and Kejiwan in Wonosobo Regency, Indonesia. A qualitative descriptive approach was employed through field observations, focus group discussions, and in-depth interviews with MSME actors. Data were analyzed thematically across five dimensions: production and operations, marketing and sales, finance and funding, human resources and technology, and regulation and bureaucracy. The findings reveal that limited access to finance, weak digital marketing capabilities, low innovation capacity, inadequate human resource competencies, and regulatory complexity are the primary barriers to MSME development. These constraints reduce productivity, restrict market expansion, and weaken competitiveness. The study further demonstrates that strengthening entrepreneurial capacity, improving digital technology adoption, expanding inclusive financial access, and enhancing institutional support are critical mechanisms for overcoming these challenges. Theoretically, this study extends the empowerment and capability perspectives by highlighting the importance of institutional capability, adaptive capacity, and collaborative governance in transforming MSME resources into sustainable competitive advantage. Practically, the findings underscore the need for integrated and multi-stakeholder empowerment strategies involving government agencies, financial institutions, universities, and community organizations to foster inclusive and sustainable rural economic development.

Keywords: MSMEs, empowerment, capability approach, rural development, competitiveness

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are a strategic sector in national economic development because they play a role as drivers of the people's economy, job creators, and instruments for equitable development. In the context of the local economy, MSMEs function not only as productive economic activities but also as a means of community empowerment to improve welfare and economic independence of the community. However, in academic studies, there is still a theoretical debate regarding the effectiveness of empowerment interventions in improving MSME performance. The participatory development perspective emphasizes that empowerment interventions through training, business mentoring, access to financing, and strengthening institutional capacity can increase the competitiveness and sustainability. Conversely, the structural perspective criticizes that various empowerment programs are often top-down, unsustainable, and pay little attention to the real needs of business actors, resulting in relatively limited impact on improving MSME performance (Abdul et al., 2023; Meranti et al., 2025; Syahza et al., 2025). This debate indicates that the success of MSME development is influenced not only by the internal capacity of business actors but also by the quality and effectiveness of empowerment interventions carried out by the government and other stakeholders.

Empirically, MSMEs contribute substantially to Indonesia's economy, accounting for 61.07% of national GDP (IDR 8,573.89 trillion) and absorbing approximately 97% of the national workforce across more than 64 million business units (Kementerian Koperasi dan UKM RI, 2024). One sector with significant potential is food processing MSMEs, as they are directly related to the utilization of local resources, strengthening household economies, and developing creative industries based on local food (Ahmad, 2022; Herissuparman et al., 2024; Sulistyono et al., 2022). This pattern is mirrored in Wonosobo Regency, where the manufacturing sector contributed 17.99% to regional GDP and employed 60.79 thousand workers (13.39% of the regency's workforce) in 2022, with micro and small industries dominating this sector at 24.23 thousand business units, 96.02% of which are micro-scale enterprises employing only 1–4 workers (BPS Kabupaten Wonosobo, 2024). This structural dominance confirms that food processing MSMEs are not peripheral but a core component of Wonosobo Regency's local economy, illustrating that strengthening their performance reflects a broader national imperative for inclusive growth, rural employment, and community welfare. Wonosobo Regency, as an agricultural region, has significant potential for developing food processing MSMEs based on local commodities, such as carica, coffee, processed cassava, and various other household food products. The existence of food processing MSMEs is a crucial sector in increasing the income of rural communities while strengthening the local economy based on regional potential (Aswadi, 2025; Rahma et al., 2025).

Despite this, food processing MSMEs in Wonosobo Regency face various challenges that impact their business performance. These challenges include limited business capital, low production capacity, weak digital marketing, limited product innovation, low quality human resources, and complex business regulations and legalities (Harvie, 2019; Mukherjee, 2018). These conditions mean that most MSMEs still struggle to increase productivity, expand their markets, and maintain business sustainability in increasingly competitive markets. Therefore, empowerment interventions are a strategic step to strengthen the capacity so they can grow sustainably.

Various studies have shown that empowerment interventions such as entrepreneurship training, business mentoring, capital assistance, marketing digitalization, and strengthening business networks can increase the productivity and competitiveness of MSMEs (Hasyim & Bakri, 2025; Kumari, 2025; Mohammed Shebeen et al., 2024). However, some previous studies tend to focus only on one aspect of MSME empowerment interventions, such as entrepreneurship training, access to capital, or marketing digitalization separately. For example, research by Riyanto and Heriyanti analyzed the effect of entrepreneurship training on MSME performance in Cikarang and found that entrepreneurship training had not significantly impacted business performance due to implementation constraints and limited business capital (Riyanto & Heriyanti, 2024). Other research specifically found entrepreneurial knowledge, education level, and family environment to have a positive and significant effect on self-efficacy (Atiningsih & Kristanto, 2020).

Conceptually, empowerment interventions are understood not as a direct determinant of MSME performance but as inputs operating through specific mechanisms. Following the capability approach (Sen, 1999), interventions such as training, mentoring, and access to capital are expected to expand business actors' capabilities—knowledge, skills, and resource access—which in turn enable to improve production, marketing, and management practices; this view is echoed in recent studies showing that internal and external capability-building remains central to MSME empowerment outcomes (Sharuddin

& Roddin, 2025). Development communication and extension mechanisms (Rogers, 2003; Melkote & Steeves, 2001), such as participatory dissemination, mentoring networks, and peer learning, serve as the channels through which these interventions are translated into capability-building at the community level, as demonstrated in a recent participatory communication study on batik and weaving MSMEs in Indonesian tourism villages (Yuliasari et al., 2025). This framework distinguishes the anticipated benefits of empowerment interventions—as intended by program design—from the outcomes actually observed and reported by MSME actors. Given the descriptive qualitative design of this study, the focus is on documenting the latter: how food processing MSME actors in Wonosobo Regency perceive and experience empowerment interventions, rather than measuring the causal effectiveness of these interventions.

Unlike prior studies that test causal relationships between isolated variables, this study contributes a contextualized understanding of how communication processes within empowerment interventions are experienced and interpreted by MSME actors in a rural, agriculture-based regency. The urgency of this research lies in the importance of strengthening MSME empowerment strategies based on local needs to enhance the competitiveness and sustainability of community-based businesses. This study is expected to provide theoretical contributions to the development of studies on community economic empowerment and local food-based MSMEs, as well as practical recommendations for local governments, supporting institutions, academics, and other stakeholders in designing more effective, participatory, and sustainable empowerment intervention models to support local economic strengthening and community welfare in Wonosobo Regency.

RESEARCH METHODS

This study uses a qualitative approach with a descriptive-exploratory research design to understand the impact of empowerment interventions on the performance of food processing Micro, Small, and Medium Enterprises (MSMEs) in Wonosobo Regency. The qualitative approach was chosen because it can explore the experiences, perceptions, and socio-economic dynamics experienced by MSME actors in a contextual and comprehensive manner (Charisma et al., 2025; Creswell & Guetterman, 2019; Romadhani, 2025). Through this approach, researchers can understand how various forms of empowerment interventions, such as training, business mentoring, access to financing, and digital marketing, influence the sustainability and development of MSMEs in food processing.

The research was conducted from April to May 2026 in Kejiwan, Kalibeber, and Blederan Villages in the Mojotengah District of Wonosobo Regency, Central Java. The research locations were selected purposively, considering the high activity of food processing MSMEs and the existence of various community empowerment and MSME development programs implemented in the areas. The three villages also represent the characteristics of developing rural MSMEs based on local food potential and home industry.

Research informants were determined using purposive sampling techniques and developed using snowball sampling. Purposive sampling was used to select informants deemed to have knowledge, experience, and direct involvement in the development of food processing MSMEs, while snowball sampling was used to obtain additional informants based on recommendations from key informants (Bouncken et al., 2026; Lokot, 2021; McKenna & Main, 2013). The informants in this study included food processing MSMEs, village governments, MSME facilitators, community business groups, and related parties involved in MSME empowerment programs.

Inclusion criteria for MSME informants were: (a) actively operating a food processing business for at least 10 years, (b) located in one of the three research villages, (c) having participated in at least one empowerment program/intervention, and (d) willing to be interviewed and observed. A total of 29 informants participated in this study, comprising: (1) food processing MSME (actors: Kejiwan, Kalibeber, Blederan; product types: carica, tempe); (2) village government representatives; (3) MSME facilitators/extension workers (pendamping); (4) members of community business groups; and (5) other stakeholders involved in empowerment programs. Data collection continued until theoretical/data saturation was reached, indicated by the emergence of repetitive themes and no new information from the final three interviews.

Data were collected through participant observation, in-depth interviews, documentation, Focus Group Discussions (FGDs), and field notes. In-depth interviews were conducted in a semi-structured manner using an interview guide covering [production, marketing, financing access, human resources, technology adoption, and business regulation. A total of 15 interviews were conducted, each lasting

approximately (duration: 45–60 minutes). FGDs sessions were held, each involving 20 participants, lasting approximately (duration: 90 minutes). Participatory observation was conducted over 5 visits to directly observe business activities, production processes, social interactions, and the implementation of empowerment programs in the field. Documentation was used to supplement data in the form of archives, activity photos, program reports, and business licensing/product legality documents (e.g., PIRT, halal certification), and other supporting materials.

Data analysis was conducted interactively and continuously from the data collection process until the research was completed using an interactive analysis model, which includes three main stages: data reduction, data presentation, and conclusion drawing (Miles et al., 2018). In the data reduction stage, researchers conducted selection, categorization, and coding of interview transcripts, field notes, and documentation to identify key themes related to empowerment needs, challenges, and strategies among MSME actors. Coding was carried out in two stages—open coding followed by axial coding—conducted independently by five researchers, each assigned to code data according to specific thematic domains (e.g., empowerment needs, business challenges, financing and production issues, marketing and technology, and empowerment strategies). Discrepancies in code assignment or thematic categorization were resolved through group discussion until analytical consensus was reached. This theme-based, multi-coder process was intended to strengthen the reliability and trustworthiness of the emerging themes related to empowerment needs, challenges, and strategies among food processing MSME actors.

To ensure the validity and credibility of the data, this study employed source- and method-triangulation techniques. Source triangulation was conducted by comparing information obtained from various informants, while method triangulation was conducted through comparisons of interview results, observations, and documentation (Hanson-DeFusco, 2023). Furthermore, the researcher conducted member checking with several key informants to ensure that the data interpretation aligned with the experiences and realities conveyed by the informants. This approach was used to increase the validity, consistency, and reliability of the results.

RESULTS AND DISCUSSION

Empowerment Interventions for MSMEs in Production and Operational Aspects

Wonosobo Regency has significant economic potential in the MSME sector, particularly in processed cassava, banana, and sticky rice products. These products have become a characteristic and source of income for communities in several villages, such as Blederan, Kalibeber, and Kejiwan Villages. Cassava opak, sticky rice opak, sticky rice jipan, and chips are famous for their distinctive tastes and textures. The existence of these MSMEs is a clear example of how the success of MSMEs shows that the economic potential in rural areas is still very large and needs to be explored and developed continuously. The following are several descriptions of empowerment interventions for MSME actors in the production and operational aspects as an effort to develop MSMEs in Wonosobo Regency.

Based on the research results above, the first challenge concerns the unstable production quality. This implies that the products produced lack uniformity in terms of shape and quality. This instability in size and quality can result in consumer dissatisfaction, loss of consumer trust, and difficulty in marketing the product. The implementation of an effective quality control system is crucial for addressing this issue. A sound control system will help ensure product uniformity, increase production efficiency, and enhance customer satisfaction (Ngele & Muhammad, 2023). The impact of this empowerment strategy includes increasing consumer satisfaction with the product and increasing the product's value and competitiveness, enabling it to enter broader markets.

The second challenge is the low productivity. This means that MSMEs cannot produce as many products as required in the available time. This low productivity results in an inability to meet market demand and compete with other MSMEs (Okafor et al., 2022). The application of appropriate technology is an effective solution for increasing production efficiency in aquaculture. The use of appropriate technology not only makes it easier for MSMEs to increase productivity but can also reduce production costs and improve the quality of products. The impact of this empowerment strategy includes increasing the number of products produced simultaneously, thereby minimizing the production costs per unit.

The third challenge is the limited access to raw materials. This means that MSMEs have difficulty obtaining quality raw materials to manufacture their products. This limited access results in high production costs, dependence on a single supplier, and delays in production. Establishing a collaborative

network with trusted raw material suppliers is a viable solution. The growth of a collaborative network will be mutually beneficial for MSMEs and suppliers, thus ensuring business sustainability (Okafor et al., 2022). MSMEs can collaborate with suppliers to obtain raw materials that are easily accessible and cheaper. Informants perceived that this strategy includes ensuring the availability of quality raw materials so that businesses can continue.

Table 1. Empowerment Interventions in Production and Operational Aspects

No	Problem Characteristics	Empowerment Intervention	Perceived Benefits (as reported by informants)	Evidence Source & Triangulation
1	Inconsistent product quality: Consumer dissatisfaction, loss of consumer trust, difficulty in marketing the product.	Implementation of quality control systems, increasing access to more modern technology and equipment, as well as training and mentoring on production standards and quality assurance.	Informants perceived increased consumer satisfaction and trust; perceived increase in product value and competitiveness; perceived increased opportunity to enter wider markets	Interviews (Informants P1, P3); FGD (Blederan Village)
2	Low productivity: inability to meet market demand and inability to compete with other MSMEs	Application of appropriate technology to increase production efficiency	Informants perceived an increase in the number of products produced within the same time period; perceived reduction in production cost per unit	Interviews (Informants P2, P5); Field Observations
3	Limited access to raw materials: high production costs due to difficulty in obtaining quality raw materials and dependence on a single supplier as well as production delays.	Establishing a collaborative network with trusted raw material suppliers and utilizing local resources as alternative raw materials	Informants perceived more reliable access to quality raw materials; perceived reduced risk of raw material shortages; perceived improved business stability	FGD (Kalibeber Village); Local Cooperative Data
4	Weather and natural conditions: decreased income and product damage due to lack of sunlight, such as mold growth	Use of alternative drying machine technology and product diversification	Informants perceived increased resilience to weather variability; perceived reduction in losses from product damage	Interviews (Informants P4, P6); FGD (Kejiwan Village)

Data Sources: Primary data were generated through dialogic in-depth interviews and semi-structured Focus Group Discussions (FGDs) 2026

The final challenge is the weather and environmental conditions. This means that weather and environmental conditions influence the production process, as MSME processed products rely heavily on sunlight for drying. Unpredictable weather and environmental conditions impact MSMEs, resulting in decreased revenue and product damage due to insufficient sunlight, such as mold growth. The use of alternative drying technologies is an effective solution. "Informants indicate that adopting alternative drying technologies, such as ovens, helps mitigate weather-related production disruptions. These adaptations appear to enhance short-term operational resilience, reducing the perceived risk of inventory spoilage during adverse weather conditions."

From a theoretical perspective, these findings extend the empowerment and capability perspectives by demonstrating that MSME empowerment in production and operational aspects is not solely associated with access to productive resources but also with developing adaptive production capabilities. This study identifies four interconnected mechanisms—quality assurance, technological adoption, supply chain strengthening, and environmental adaptation—as critical drivers that enable MSMEs to transform limited resources into sustainable competitive advantages. This finding enriches the Capability Approach proposed by Amartya Sen by highlighting that business capabilities emerge not only from resource ownership but also from the ability to maintain product quality, improve operational efficiency, secure raw material availability, and adapt to environmental uncertainties (Sen, 2014). Furthermore, this study contributes to the empowerment literature by proposing that adaptive production capability serves

as an essential dimension of MSME empowerment, linking resource accessibility with productivity, resilience, and long-term business sustainability.

From a theoretical perspective, these findings enrich the Capability Approach (Sen, 2014) and Dynamic Capabilities framework (Teece, 2007) by demonstrating how MSME empowerment in production and operational aspects shifts from mere resource provision to the development of adaptive production capabilities. This study identifies four interconnected mechanisms—quality assurance, technological adoption, supply chain strengthening, and environmental adaptation—as critical operational drivers that enable MSMEs to transform limited resources into sustainable competitive advantages. These insights contextualize Sen’s framework by highlighting that business capabilities emerge not solely from asset ownership, but from functional capabilities to maintain product quality, enhance operational efficiency, secure raw material streams, and adapt to environmental uncertainties. Furthermore, integrating Teece's perspective demonstrates that adaptive production capability acts as a micro-level manifestation of dynamic capabilities, effectively bridging resource accessibility with productivity, operational resilience, and long-term business sustainability.

The success of quality control systems and technology adoption is bounded by enterprise scale. While larger MSMEs in the cluster successfully leveraged technology to enter wider supply networks, micro-scale cottage producers struggled with the upfront capital requirements and rigid production standards, demonstrating that technological empowerment outcomes are unevenly distributed across different tiers of rural enterprises.

Empowerment Intervention for MSMEs in Marketing and Sales Aspects

Marketing and sales are key factors in determining the success of Micro, Small, and Medium Enterprises (MSMEs). Various studies have shown that limited market access, poor promotional capabilities, poor digital technology utilization, and a lack of understanding of modern marketing strategies are key obstacles faced by MSMEs. Therefore, empowerment interventions in marketing and sales are crucial for improving the competitiveness and sustainability of MSMEs in Wonosobo Regency. The following describes several empowerment interventions for MSMEs in marketing and sales that hinder MSME development efforts in Wonosobo Regency.

Table 2. Empowerment Interventions in Marketing and Sales Aspects

No	Problem Characteristics	Empowerment Intervention	Perceived Benefits (as reported by informants)	Evidence Source & Triangulation
1	Difficulty in reaching the market: sales do not meet the set targets, financial instability, and the perception that the product is of poor quality and unattractive.	Developing the right 3 K marketing strategy (quality, quantity, and continuity) to reach the target market; Utilizing social media platforms as a promotional platform; and Participating in expos, exhibitions, and bazaars for MSME products.	Informants perceived an increased market share, brand awareness, sales and profits	Interviews (Informants P1, P3); FGD (Blederan Village); Field Observation at local expos
2	Consumer preferences only target a certain age: the inability to compete with other products and the loss of opportunities and the possibility of failure.	Conduct research to understand the target market more deeply, including the preferences, needs, and behaviors of each age group; and Conduct product innovation	Informants perceived an Increasing consumer satisfaction across all ages, loyalty and build long-term consumer relationships, and Expanding the consumer base with a wider market	Interviews (Informant Mr. Solehan); FGD (Kalibeber Village)
3	Limitations in marketing products through digital platforms: sales have not reached a wider market and MSMEs only depend on offline markets.	Improving digital marketing knowledge and skills by utilizing the most popular social media platforms, namely WhatsApp, and Collaborating with the Rural Technology Development Institute to help market products through digital platforms.	Informants perceived an Increased: effectiveness of marketing strategies, brand awareness and product image in the eyes of online consumers.	Interviews (Informant Ms. Ida); LPTP Digital Records; FGD (Kejiwan Village)

Data Sources: Primary data were generated through dialogic in-depth interviews and semi-structured Focus Group Discussions (FGDs) 2026

The primary challenge faced by MSMEs is the difficulty in reaching the market due to limited access to potential consumers and distribution channels. This situation results in low sales and suboptimal product recognitions. To address this, MSMEs have implemented a 3 K marketing strategy (quality, quantity, and continuity). As stated by Mr. Rohman, "products must be high-quality, continuously available, and production must be continuous" (MSME Informant). This strategy aligns with the importance of consistent product quality and availability in increasing consumer trust and business competitiveness (Kotler, 2017). Furthermore, participation in expos, exhibitions, and bazaars is an effective means of expanding the market, increasing brand awareness, and driving sales growth (Al khaqqoh Istifa, 2026). These findings are also supported by research showing that increasing the capacity of MSMEs through online marketing education and digital mentoring has been proven to expand market access and improve business competitiveness in the digital era (Wulandari et al., 2022).

Second, the challenge of consumer demography—where traditional products primarily attracted older generations—was addressed through product diversification and flavor innovations tailored to younger tastes without sacrificing core culinary identity. Mr. Solehan highlighted this balance: "We must follow the tastes of the younger generation without losing the product's distinctive characteristics" (Interview with Mr. Solehan, April 2026). This strategy supports MSMEs' ability to adapt to market changes, expand consumer segments, and increase customer satisfaction and loyalty (Huda et al., 2025; Mu'ah et al., 2020). The ability of MSMEs to innovate products and adapt to market needs is a strategic factor that determines competitiveness and business sustainability amidst the dynamics of an ever-changing business environment (Burhanuddin, 2021; Erlangga et al., 2024).

Third, low digital literacy was tackled through hands-on social media training and institutional partnerships, notably with the Rural Technology Development Institute (LPTP) via its promotional platform @lapakjajanwonosobo.lptp. Ms. Ida noted: "Now we are starting to learn promotions via WhatsApp and Instagram to expand the market" (Interview with Ms. Ida, May 2026). Furthermore, collaboration with LPTP through the Instagram account @lapakjajanwonosobo.lptp. helps expand product promotion. This intervention has been proven to increase marketing effectiveness, consumer reach and product image in the digital market. These findings align with research showing that increasing digital literacy and technology-based marketing assistance can strengthen the adaptive capacity and performance of MSMEs (Setyadi et al., 2025).

These empirical patterns reinforce Kotler's (2017) sustainable marketing principles regarding product consistency as a prerequisite for brand loyalty. Furthermore, collaborative digital onboarding aligns with empirical insights from Wulandari et al. (2022) and Setyadi et al. (2025), who emphasize community-based digital mentoring as a driver of MSME competitiveness. However, these field insights offer a critical nuance to standard empowerment frameworks (Rachmad, 2022; Wilkinson, 1998; Zimmerman, 2000). Contrary to the theoretical assumption that digitalization straightforwardly replaces physical marketing channels, the empirical reality reveals that messaging platforms like WhatsApp Business function primarily as tools for customer retention (relationship management) rather than broad market acquisition, largely due to ongoing constraints in creative content creation.

Empowerment interventions for MSMEs in Financial and Financing Aspects

The following are some descriptions of empowerment interventions for MSME actors in the financial and financing aspects that hinder MSME development efforts in Wonosobo Regency.

Based on the research findings, the primary challenge faced by MSMEs is their limited access to capital. Most entrepreneurs rely on personal capital, making it difficult for them to expand their production capacity, purchase new equipment, or expand their markets. An informant, Mrs. Maimunah, stated, "Most of the business capital comes from my own money, so if I want to add equipment or expand my business, I have to wait until I have accumulated profits." Interview, May 2026. This limited access to capital hinders MSMEs' ability to compete with other businesses with more adequate financing sources. This finding aligns with research showing that access to financial resources is a critical factor in increasing business capacity and sustainability for MSMEs (Rajamani et al., 2022; Wajebo, 2022). Participating MSMEs reported that securing alternative financing through cooperatives and joint business groups (KUB) facilitated temporary liquidity relief, which enterprise owners associated with improved operational stability. This finding supports Zimmerman's empowerment theory which emphasizes that access to strategic resources is an important part of the process of increasing the capacity and independence of individuals and business groups (Zimmerman, 2000).

Table 3. Empowerment Interventions in Financial and Financing Aspects

No	Problem Characteristics	Empowerment Intervention	Perceived Benefits (as reported by informants)	Evidence Source & Triangulation
1	Limited access to capital: inability to compete with other businesses that have easier access to capital; stagnant sales and hampered business growth; and inability to invest in business development such as purchasing new equipment and hiring employees.	Looking for alternative financing such as <u>cooperatives or LPTP</u> Seeking funding opportunities from <u>government programs or private institutions</u> Join a joint business group (KUB) to help each other access capital	Informants perceived increased gaining easy access to capital to develop MSMEs, profitability and improving MSME cash flow	Interviews (Informant Mrs. Maimunah); Cooperative Membership Records; FGD 1(Blederan Village)
2	Limited ability to manage finances: Inappropriate financial decision-making such as wasting capital, inappropriate pricing; Difficulty in achieving business profits; Increasing risk of bankruptcy; and Difficulty in obtaining funding.	Calculate income and <u>expenses periodically</u> Create a realistic and <u>measurable financial budget</u> Utilize applications to help record business finances such as price changes.	Informants perceived increased ease in making more precise and measurable decisions and opportunities to obtain funding from financial institutions	Interviews (Informant Ms. Nur Rohmah); Mentoring Logbooks; FGD (Kalibeber Village)
3	Difficulty in determining selling prices: Loss of profits or even losses and Difficulty in attracting and retaining customers	Set competitive and <u>profitable selling prices</u> Set selling prices according to raw material <u>prices to remain profitable</u> Calculating production costs and overhead costs	Informants perceived increased business profitability and competitiveness and also Increase business profitability and competitiveness	Interviews (Informant Ms. Rosidah); Cost-Sheet Documentation; FGD (Kejiwan Village)

Data Sources: Primary data were generated through dialogic in-depth interviews and semi-structured Focus Group Discussions (FGDs) 2026

The second challenge is the low capacity to manage business finances. Research shows that most MSMEs do not maintain separate financial records for their business and household finances. One informant stated, "We rarely record income and expenses in detail, so it's sometimes difficult to determine actual profits" (Interview with Ms. Nur Rohmah, May 2026) (MSME Informant). This situation makes it difficult for entrepreneurs to make business decisions, determine investment needs, and access formal financing, which requires financial reports. To overcome this challenge, MSMEs have begun implementing simple financial record-keeping and utilizing digital financial applications to monitor business cash flow. Research findings indicate that mentoring and improving financial literacy contribute to strengthening the managerial capacity. Through the learning and mentoring process, entrepreneurs become more capable of maintaining financial records, controlling cash flow, and making more rational economic decisions (Samosir et al., 2026). These results align with the extension perspective, which places capacity building at the core of the community empowerment process (Zimmerman, 2000).

The third challenge is the difficulty in determining product selling prices, especially when raw material prices increase significantly. One informant explained, "If raw material prices rise, we often hesitate to raise prices because we're worried customers will switch to other products" (Interview with Ms. Rosidah, May 2026) (MSME Informant). The inability to determine the right price has the potential to reduce profits and even cause losses. To address this problem, MSMEs should conduct more detailed production cost calculations, considering raw material, labor, and other operational costs before setting selling prices. This strategy allows businesses to set competitive and profitable prices for their products. This finding aligns with research showing that improving managerial skills and business decision-making are important factors in strengthening the competitiveness of micro and small businesses (Indriyani & Nugraha, 2025). The resulting impacts include increased profitability, business sustainability, and the ability to retain customers amid increasingly fierce market competition.

While financial literacy mentoring encouraged bookkeeping to facilitate formal credit access, critical literature highlights that formal banking institutions maintain rigid collateral and documentation requirements that systematically exclude micro-scale cottage industries. As a result, MSMEs remain heavily reliant on informal, social-capital-based financing (such as KUBs), which offer lower capital volumes and cannot support capital-intensive enterprise scaling.

Overall, the research findings indicate that financial empowerment interventions not only increase MSMEs' access to financial resources but also strengthen their managerial capacity, financial literacy, and economic decision-making abilities. These findings support Julian Rappaport's empowerment theory, which places access to resources and the ability to control decisions at the core of the empowerment process (Rappaport, 1987). Furthermore, these findings reinforce the psychological empowerment framework proposed by Zimmerman, which posits that empowerment is achieved when individuals develop the competence, self-efficacy, and perceived control necessary to influence decisions and conditions affecting their lives and economic activities. The results indicate that empowerment interventions not only enhance MSME actors' access to resources and opportunities but also strengthen their capacity to make strategic decisions, adapt to environmental changes, and manage business challenges effectively. Consequently, empowerment functions as a transformative process through which individuals gain greater control over productive assets, expand their capabilities, and improve their prospects for sustainable business development and socio-economic well-being. (Zimmerman, 2000).

Empowerment Interventions for MSMEs in Human Resources and Technology Aspects

Human resources and technology are strategic factors that determine the productivity, innovation, and competitiveness of MSMEs. However, various limitations related to workforce management, human resource competency, technology adoption, and innovation capabilities remain obstacles to business development in this sector. Therefore, various empowerment interventions are needed that are oriented towards strengthening human resource capacity and utilizing technology to improve operational efficiency, product quality, and MSMEs' ability to adapt to changes in the business environment. Based on the research results, the types of challenges, empowerment intervention strategies, and resulting impacts on human resources and technology are presented in Table 4.

Based on the research findings, the key human resource challenges include difficulty in retaining workers, low technology adoption capacity, and limited innovation capabilities. Most MSMEs still rely on family labor, thus limiting their production capacity to optimally meet market demand. An informant, Mr. Zulkarnaen, stated, "It's difficult to find employees who are willing to stay long-term, so when orders increase, we are often overwhelmed by production targets" (Interview April 2026). This situation affects low business productivity and efficiency. To address this, MSMEs should implement more selective recruitment, provide competitive compensation, and improve competency through training and mentoring. Interviewees noted that integrating accessible production technologies eased labor requirements during peak processing periods, potentially allowing micro-enterprises to fulfill larger orders more reliably. These findings confirm that human resource competency and technology adoption are key determinants of MSME productivity, operational efficiency and competitiveness. MSME digitalization initiatives can accelerate the digital transformation process in Indonesia's digital economy ecosystem, making MSMEs more competitive in the global market (Cahyani et al., 2023).

Asymmetric institutional collaboration. While benchmarking trips and university collaborations are presented as effective drivers of innovation, critical studies on university-community partnerships show that such interventions are frequently short-term and project-driven. When academic or institutional support ends, micro-enterprises often lack the internal research and development budget to sustain product innovation independently, leaving their long-term dynamic capabilities fragile and highly dependent on external facilitation.

The next challenge is low innovation capacity due to limited access to information and an understanding of market dynamics. As one informant expressed, "We often have difficulty creating new products because we don't understand current consumer trends" (MSME Informant). To address this, MSMEs conduct comparative studies, participate in training, and collaborate with universities and research institutions to produce more innovative and value-added products.

Table 4. Empowerment Interventions in Human Resources and Technology Aspects

No	Problem Characteristics	Empowerment Intervention	Perceived Benefits (as reported by informants)	Evidence Source & Triangulation
1	Difficulties in managing and retaining employees: Only relying on experienced family workers so that productivity depends on family workers who help; Production does not meet targets due to a shortage of workers; and High employee turnover rates that can affect production and operational processes.	Recruiting skilled workers who have experience in the production process, Providing training to workers to become more skilled, and Offering competitive compensation and benefits	Informants perceived increased productivity and efficiency of production processes and employee motivation and loyalty	Interviews (Informant Mr. Zulkarnaen); Production Logbooks; FGD 1 (Blederan Village)
2	Limited human resources (HR) in managing technology: Inability to keep up with technological developments, Difficulty in using existing technology, and Inability to meet consumer demand.	Utilizing technology that is easy to understand and use, participating in discussion forums organized by local government or private institutions	Informants perceived increased Improving HR capabilities in utilizing technology, improve the efficiency and effectiveness of business op Expanding opportunities to reach a wider market erations, and expanding opportunities to reach a wider market	Interviews (Informants P2, P4); Technology Adoption Assessments; FGD (Kalibeber Village)
3	Lack of skills in creating innovation: the inability of products to compete in the market due to the lack of innovation, Products that are less attractive and retain consumers, and Inability to adapt to market changes.	Conducting comparative studies on other MSMEs, collaborating with universities or research institutions to support innovation, and Participating in MSME expos to broaden our knowledge.	Informants perceived empowerment as strengthening MSMEs' innovation capabilities, market competitiveness, and capacity to penetrate new market segments, both locally and through digital channels.	Interviews (Informants P3, P5); Collaborative Project Reports; FGD (Kejiwan Village)

Data Sources: Primary data were generated through dialogic in-depth interviews and semi-structured Focus Group Discussions (FGDs) 2026

Research findings indicate that empowering MSMEs not only increases access to economic resources (Narayan-Parker, 2005), but also strengthens the capabilities of business actors in managing resources, adopting technology, and generating innovation as stated in the Capability Furthermore, this study shows that empowerment plays a role in forming dynamic capabilities (Teece, 2007) that enable MSMEs to adapt to market changes, increase competitiveness, and maintain business sustainability. Thus, this study proposes that MSME empowerment is a capability transformation process that links resource access with sustainable competitive advantage.

Empowerment Intervention for MSME Actors in the Aspects of Regulatory Resources and Bureaucracy

The following are several descriptions of empowerment interventions for MSME actors in the aspects of regulatory and bureaucratic sources that hinder MSME development efforts in Wonosobo Regency. Based on the research findings, the main challenges in the regulatory and institutional aspects include low legal literacy, licensing complexity, and limited capacity to access broader markets. Most MSMEs do not adequately understand their business rights and obligations, resulting in the underutilization of access to financing, legal protection, certification, and empowerment programs. An informant, Ms. Salamah, stated, "We focused more on running our businesses, so information related to permits, government assistance, and administrative obligations is often not fully understood." Interview, May 2026. This condition results in low administrative compliance and limited access to strategic resources. These findings align with research showing that information capacity, extension communication, and

institutional support are important determinants of increasing the independence and capacity of business actors.

The next challenge is the difficulty in obtaining business legality and meeting market standards because of limited certification, quality standards, and understanding of business procedures. As informant Mr. Mukahar expressed, "We want to expand our market, but are still hampered by licensing, certification, and export procedures" (Interview, April 2026). To overcome this, MSMEs are strengthening their partnership networks, improving quality standards, and accessing legal assistance and product certification. Obtaining formal licensing and quality certifications appears to lower administrative entry barriers, which informants perceive as a vital step toward establishing market legitimacy and accessing broader retail distribution channels. Recent research shows that business legality, institutional capacity, and collaborative networks are important factors in increasing the competitiveness and sustainability. Theoretically, these findings expand the perspectives of Amartya Sen and Deepa Narayan by demonstrating that MSME empowerment is determined not only by access to economic resources but also by institutional capability, namely the ability to understand regulations, obtain business legitimacy, and utilize strategic networks to convert resources into sustainable competitive advantages (Narayan-Parker, 2005; Sen, 2014). These findings propose institutional capability as a new dimension of empowerment that bridges the relationship between resource access, competitiveness, and sustainability of MSMEs in an increasingly complex business environment.

Table 5. Empowerment Interventions in Regulatory and Bureaucratic Aspects

No	Problem Characteristics	Empowerment Intervention	Perceived Benefits (as reported by informants)	Evidence Source & Triangulation
1	Limited knowledge about the rights and obligations of MSMEs: MSME actors do not understand rights such as the right to access capital, legal protection, and the right to business development training. MSME actors do not understand the obligation to pay taxes, make financial reports, and the obligation to preserve the environment.	Increasing education and outreach regarding the rights and obligations of MSMEs through various programs and media; Facilitating easy access to legal information and services for MSMEs; and Participating in MSME communities to share information.	Informants perceived improved regulatory compliance, legal awareness, and business accountability among MSMEs, contributing to a more conducive business environment and sustainable MSME growth.	Interviews (Informant Ms. Salamah); Regulatory Outreach Logs; FGD (Blederan Village)
2	Difficulties in managing business permits: Lack of consumer trust if the product being marketed is not yet licensed and limitations in reaching a wider market.	Manage permits together with similar MSME businesses to make it easier; and follow the established procedures and requirements correctly and carefully.	Increase consumer confidence with certification Running a more conducive business and encouraging the growth of legal and registered MSMEs	Interviews (Informant Mr. Mukahar); Local Licensing Service Data; FGD (Kalibeber Village)
3	Difficulty in penetrating export markets: The inability of MSMEs to penetrate strict procedures for entering export markets and MSME products are only able to compete in the local market.	Building networks and partnerships with the government, relevant organizations, and the private sector; Encouraging innovation and improving product quality in accordance with international standards; and Encouraging the implementation of quality standards and product certification to increase competitiveness in export markets.	Informants perceived enhanced MSME capacity to meet international standards and export requirements, thereby expanding their access to and competitiveness in global markets.	Interviews (Informants P2, P6); Trade Partnership Documents; FGD (Kejiwan Village)

Data Sources: Primary data were generated through dialogic in-depth interviews and semi-structured Focus Group Discussions (FGDs) 2026

CONCLUSION

This study confirms that empowerment interventions play a strategic role in improving the performance and sustainability of food processing MSMEs in the Wonosobo Regency. Various forms of intervention, such as entrepreneurship training, business mentoring, production capacity building, access to financing, and the use of digital technology, have been proven to strengthen the adaptive capacity of MSMEs in facing multidimensional challenges encompassing production and operations, marketing, finance, human resources, technology, regulations, and bureaucracy. The research findings indicate that the success of MSME development is determined not only by the internal capabilities of business actors but also by the effectiveness of participatory, collaborative, and sustainable empowerment interventions. These interventions contribute to increased productivity, business innovation, expanded market access, strengthened competitiveness, and improved community welfare by strengthening the local economy based on regional potential.

Theoretically, this study strengthens the perspective of empowerment and participatory development theory, which places community capacity building as a key element in creating economic independence and sustainable businesses. This study also enriches the literature on local, rural-based MSME development by emphasizing the importance of multi-stakeholder synergy in creating an inclusive and sustainable business ecosystem. Practically, the results of this study emphasize the need to strengthen MSME empowerment policies by increasing access to financing, strengthening digital literacy, simplifying regulations, developing human resource capacity, and providing business assistance oriented to local needs. Therefore, collaboration among the government, financial institutions, universities, the private sector, and the community is a key factor in driving the transformation of MSMEs so that they can make a more significant contribution to regional economic growth, job creation, and sustainable community development.

Despite these insights, several study limitations must be acknowledged. The cross-sectional qualitative design across three villages restricts findings to observed and reported operational adaptations rather than statistically measured financial outcomes. Additionally, certain digital and market access gains remain reliant on external facilitation (e.g., NGO support). Future research should employ longitudinal approaches to assess the long-term sustainability of these operational routines once external support wanes, alongside quantitative impact evaluations to measure the precise economic returns of adaptive capabilities.

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