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Enhancement of SME feasibility through the integration of BMC, functional organization, and SCM

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ABSTRACT

Various studies indicate that resources pose one of the primary challenges for SMEs in enhancing their performance. Existing theories and concepts are often impractical and too complex to be applied effectively in improving SME performance and feasibility due to resource limitations. This paper aims to design a model for strengthening the performance and feasibility of SMEs, particularly micro-industries, by integrating three crucial approaches: business model canvas, functional organization, and supply chain management. The resulting model, named 'Feasibility Model for SMEs,' can serve as a simple and practical solution by focusing on key variables resulting from the integration of these three approaches. The research methodology involves a literature review and conceptual research to design the SME performance enhancement model. Subsequently, the model is applied to SME cluster X. Quantitative research is conducted using smart PLS tools to confirm the theory and test hypotheses regarding the design model for 50 SMEs. The model testing results indicate that supply chain, production, value proposition, and marketing are significant variables for enhancing SME performance. The model designed in this study is novel and highly practical for enhancing SME feasibility focusing on five variables, namely supply chain, production, value proposition, marketing, and performance.

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1. Introduction

The role of SMEs in enhancing the Indonesian economy is undeniable, even amidst the global economic downturn caused by the Covid-19 pandemic and the Ukraine war, triggering food and energy crises. Indonesia has 64.2 million SMEs, contributing 61.07% to the GDP, equivalent to 8,573.89 trillion Indonesian rupiahs. SMEs contribute to Indonesia's economy by absorbing 97% of the total workforce and gathering 60.4% of total investments (Ministry of Economy, 2021). Literature suggests that SMEs contribute to GDP, act as engines for economic growth, absorb workforce, and facilitate socioeconomic transformation (Hatega, 2007; Kigozi, 2006; Okello, 2008). Besides their national economic contributions, SMEs are considered drivers of the global economy (Ardic et al., 2011). In addition to promoting economic growth, SMEs can enhance business competitiveness and foster innovation in product and service provision (Poole, 2018; Ratten, 2014).

However, SMEs face various global challenges in conducting their businesses, ranging from technology and financial constraints to human resource capabilities, production facilities, and managerial limitations. Common challenges include a lack of capital, leadership, and human resources (Achanga et al., 2004). Resources are generally acknowledged as one of the main challenges for SMEs in improving performance and growth (Amornkitvikai & Harvie, 2018; Taylor, 2013). A SWOT analysis of one SME cluster, focusing on knitwear production, indicated that the micro-industry is positioned in the WT (weakness-threat) quadrant, signifying weaknesses and facing threats (Chumaidiyah et al., 2018).

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Various stakeholders, including the government, associations, academics, and independent institutions, are interested in aiding SMEs in enhancing performance through means such as facilitating capital loans, mentorship, takeovers, and skills training. Research on the government's role in improving performance and inter-firm collaboration yields positive, negative, or non-impactful results (Doh & Kim, 2014; Guan & Yam, 2015; Hong et al., 2016). While good governance has been shown to affect products and services, it has not been proven to enhance SME performance (Dubey & Das, 2022). SMEs with limited resources may require external business mentoring or consultancy (Carey, 2015).

Other hindrances impacting SME performance and competitiveness include limited information about financing, inadequate and expensive raw material supply, and restricted access to business networks (Hatega, 2007; Kigozi, 2006). The supply chain is a critical indicator affecting SME performance, with issues such as delayed deliveries and inadequate supply chains impacting outcomes (Ntayi et al., 2010). The Covid-19 pandemic has exacerbated supply chain challenges, particularly in transportation due to regional restrictions, regulatory instability, strikes, floods, and heavy rain (Ali et al., 2021; Chowdhury et al., 2021; Laorden et al., 2022).

Given these challenges, opportunities, and obstacles, it is essential to reevaluate all business processes and activities comprehensively using a business model. The Business Model Canvas, consisting of nine elements, offers potential for capturing or creating added value (Morris et al., 2005; Osterwalder, 2004; Osterwalder & Pigneur, 2010). Each element in the Canvas has varying degrees of influence on a company's success (T. Ladd, 2017).

Numerous overlapping and complex approaches, concepts, and theories make practical application challenging for SMEs. Researchers often face questions about the most suitable and practical concepts and approaches to improve SME performance considering their constraints and resources. This research designs a simpler yet comprehensive approach for enhancing SME performance.

SMEs in Indonesia generally share similar characteristics, facing challenges and resource limitations, making a single approach often ineffective in improving SME performance. This study uses a case study as confirmation and testing of the developed model, focusing on SME actors in the knitwear industry cluster X located in a single industrial center. The knitwear industry SME cluster X faces internal constraints such as low product quality, a lack of human resource skills, outdated machinery, narrow access roads, dense locations, and a shortage of knitwear raw materials (Chumaidiyah et al., 2018). Key factors influencing the success of the knitwear industry cluster are machining, creativity, marketing, and government policies (Chumaidiyah et al., 2020). These characteristics represent SMEs in general, making SME cluster X a case study in this research.

This paper aims to design a simple model for strengthening SME performance, particularly micro-industries, using a new integrated approach that aligns with SME capacities and resources. The conceptual framework integrates the BMC, functional organization, and supply chain management to enhance micro-industry SME performance, presenting a novel contribution. The research model design produces important variables from the integration of these three approaches that can be used as an effective framework for enhancing SME performance.

2. Literature review

2.1. Business model to capture value for SME

A series of activities within a company aimed at creating added value are mapped out as a business model, illustrating how the processes and business are executed. The business model portrays the entirety of the business, activities, and how the business operates to create value, revealing the business logic (Asadnezhad et al., 2017; Carter & Carter, 2020). Organizations capable of adapting and changing their business models have the potential to develop and increase its sustainability (Christensen et al., 2016). The significance of SMEs in raising awareness of the business model as a tool for mapping and developing enterprises, considering overall activities, is crucial, with one of the most popular being the Business Model Canvas (BMC) proposed by Osterwalder and Pigneur (2010).

BMC is a simple business model that needs to be understood and considered in running a business to generate value and improve SME performance (Osterwalder & Pigneur, 2010). Research on informal sector women-led SMEs in India shows that the business canvas focuses on key partners, key resources, customer orientation, and sales promotion (S. Mukherjee, 2023). BMC is widely used with some empirical studies; a study on teams competing in an entrepreneur acceleration program indicates that teams using elements such as customer segment, value proposition, key activities, or key partnerships perform better in the competition (T. Ladd, 2017).

Company competition is determined by the value offered and accepted by consumers, making it a competition between the values of products created by each company. Generally, there are four crucial components of the value proposition in a business model: value creation, value capture, value delivery, and value communication (Rayna & Striukova, 2014). The business model is a feedback circle creating values for customers, catching the values, and returning them to the environment (Abdelkafi & Täuscher, 2016). The innovation theory of business models encompasses seven components: value drive, value goal, value proposition, value creation, value transfer, value capture, and value evaluation, all of which have interconnections, logic, and theoretical foundations (Jin et al., 2021).

2.2. Supply chain for SME competitive advantage

Efficient supply chains are crucial in supporting the competitive advantage of SMEs, with at least five indicators influencing SME performance: sales volume, accurate cost determination, coordination among departments, coordination with suppliers, and coordination with customers (Koh et al., 2007). Supply Chain Management (SCM) is an approach that focuses on managing all interconnected activities from primary suppliers to end consumers (Cooper et al., 1997). SCM involves the integration of demand and supply management within and between companies (CSCMP., 2013; Danese et al., 2013).

Research on SCM related to SMEs generally reveals a relationship gap between SMEs and more dominant partners in the supply chain (Arend & Wisner, 2005; Kaminski et al., 2008). This gap arises due to the disproportionate capabilities of SMEs compared to upstream and downstream industries, typically because of their role as suppliers to large companies rather than leading companies themselves (T. Cragg & Y. McNamara, 2018; Bordonaba-Juste & Cambra-Fierro, 2009).

The supply chain of SMEs has also been disrupted by the COVID-19 pandemic, particularly as SMEs often lack sufficient knowledge and access to technology (Antonescu, 2020; Priyono et al., 2020). Supply chain sustainable in SMEs is crucial, influenced by culture and teamwork, competencies, information systems, and costs (Bak et al., 2020; Liu et al., 2021). The resilience of the supply chain in SMEs is an interesting area for study due to its broad application in recent decades (Mishra et al., 2022; Mishra & Singh, 2022).

2.3. Approach for SME performance

There are various approaches and theories serving as the foundation for measuring the performance of SMEs, including the functional approach, which assesses business performance from various functional aspects such as marketing, production, finance, and human resources. The performance of SMEs is also measured across four categories: subjective measures, accounting measures, stability measures, and cumulative abnormal returns (Christoffersen et al., 2014; Prabhudesai & Prasad, 2017). The business model is an approach that contributes to company performance through an attractive value proposition for consumers, generating revenue streams and impacting the competitive advantage of the product and service portfolio (Karimi & Walter, 2016; Teece, 2010).

Numerous studies indicate that the business model is crucial for the success of companies seeking growth (Terrenghi et al., 2017), achieving competitive advantage (Afuah & Tucci, 2000), and enhancing long-term company performance (Bock et al., 2012). Therefore, companies aiming to improve long-term performance must be innovative in developing their business models, especially when leveraging the potential of cutting-edge technology by creating new business models (Chesbrough & Rosenbloom, 2002) that can enhance company capabilities. The structured development of business

models by connecting key elements as a method of adapting and innovating to market changes is referred to as Business Model Innovation (BMI) (Foss & Saebi, 2017; Hartmann et al., 2013). The correlation between BMI and company performance has been extensively studied, showing a significant contribution to enhancing corporate strategies (Hartmann et al., 2013; Lambert & Davidson, 2013; Latifi et al., 2021).

Financial performance is a critical component of SME performance, with accounting measures such as return on assets (ROA), return on equity (ROE), and return on sales (ROS) used to gauge financial performance indicating the level of company profitability (Parker, 2000). Although financial performance is crucial, it is not sufficient to measure the overall performance of a company (Murphy et al., 1996). Company performance is also determined by business scope, future company position, and market growth such as diversification, market share, and product development (Gray, 1997).

Performance management systems and processes (PMSP) are a topic that addresses management performance encompassing cross-functional aspects within an organization. PMSP is applied in organizations to determine where, how, and for whom PMSP creates value (Bisbe et al., 2019; De Leeuw & Van Den Berg, 2011). The functional areas of the organization include supply chain management and operations (De Leeuw & Van Den Berg, 2011; Forslund & Jonsson, 2009), marketing and sales (Bartol, 1999), human resources management (Aguinis, 2014; DeNisi & Smith, 2014), management accounting (Otley, 1999), and strategic management (O'Connell & O'Sullivan, 2014).

2.4. Research hypotheses

The research hypotheses proposed in this study consist of seven hypotheses:

H1: Supply chain influences performance.

Characteristics of the supply chain, such as quality, continuity, price, and easy access to resources, are crucial for the continuity of SME production. The research results indicate an improvement in performance through the supply chain (Chen et al., 2023). Company strategies and operational requirements are linked to suppliers and customers, involving suppliers in product design, and reactively meeting consumer needs. The need long-term relationships with customers and suppliers through various resources is essential for improving product quality, delivery, and overall performance (Amoako et al., 2022; Hooshangi et al., 2017). A well-established collaboration framework with suppliers provides benefits to companies, such as reduced supplier lead times or reduced inventory (Bhatia & Jakhar, 2012). A positive relationship with suppliers can have a positive impact on performance. Thus, hypothesis H1 is proposed, where the supply chain influences the performance of SMEs.

H2: Production influences performance.

Production is a core activity in manufacturing companies, covering equipment suitability, production control, and production system integration. Continuous improvement processes and flexible equipment impact efficiency and productivity (Bayraktar et al., 2009). An efficient, productive, and high-quality production system will have a positive impact on SME performance. An efficient production process can reduce costs and improve the financial performance of SMEs (Bahri et al., 2017).

H3: Value proposition influences performance.

The value proposition indicates the characteristics of a company's products and services that are valuable to customers and how they are offered (Clauss, 2017; Osterwalder & Pigneur, 2010). It explains how a particular company differentiates itself from its competitors and why customers choose to buy from that company instead of others. Previous research indicates that the value proposition has a positive impact on financial performance, where a company's research and development capabilities have a positive effect on the value proposition (Ilyas & Osiyevskyy, 2022). Therefore, hypothesis H3 tests whether the value proposition influences SME performance.

H4: Marketing influences performance.

The success of a company is influenced by the success of marketing programs, with various studies showing how marketing contributes to company performance (Cao & Weerawardena, 2023; O'Sullivan & Abela, 2007). Marketing capabilities are initially related to marketing performance, then influences financial performance (Merrilees et al., 2011). Using big data analytics, marketing exploitation has a positive impact on both marketing and financial performance (Saeed et al., 2023). In this study, hypothesis H4 suggests that marketing influences performance.

H5: Supply chain influences production.

The quality of the supply chain, such as raw materials and other components, affects production outcomes, where good supply leads to good production processes, resulting in quality products. Various studies repeatedly discuss the supply chain, production, operations, and manufacturing, highlighting the importance of supply chain in production for SMEs (Johnstone, 2020; Machado et al., 2020). Hypothesis H5 tests whether the supply chain influences production.

H6: Production influences value proposition.

The integration of capabilities, technology, and new processes leads to increased production flexibility in supporting the creation of value as a value proposition (Bock et al., 2012). Production flexibility strengthens SMEs' ability to respond to changes in market demand and new opportunities (Rajala et al., 2012). Changes in market demand are a primary reference in creating a value proposition. Hypothesis H6 suggests that production influences the value proposition.

H7: Value proposition influences marketing.

The reputation of SMEs in offering products to customers is crucial for marketing efforts. The value proposition becomes a driving factor for customers to appreciate the company (Ilyas & Osiyevskyy, 2022), which impacts increased sales. Various studies examine the influence of the value proposition on marketing (Biloshapka & Osiyevskyy, 2018; Bocken et al., 2015; Du et al., 2010; Ma & Osiyevskyy, 2017).

3. Methodology

This study employs the BMC approach integrated with functional organization and SCM to measure the performance of micro-industry SMEs. All BMC components are mapped onto the functional organization based on the similarities among the elements in the business model and the functional organization using the Performance Management Systems and Processes (PMSP) approach. Subsequently, the functional organization is integrated into supply chain management, forming a process from upstream to downstream, where the performance of the supply chain system is measured from the financial performance perspective of micro-industry SMEs.

The mapping is adjusted to the characteristics of micro-industry SMEs, which have limited resources to perform activities in BMC elements. The mapping is detailed as follows:

1. Customer relationship, customer segment, and channel elements are transformed into marketing functions because these three elements are related to marketing activities in the SME organization, supported by various marketing theories (Kotler & Keller, 2021). Marketing is one of the functional areas and a primary activity in the organization (Bartol, 1999; Porter, 1998).
2. Value proposition represents the value offered by micro-industry SMEs for their products, which becomes a distinctive feature that is not easily imitated by competitors. In this case, the value proposition is manifested in product design and product quality offered by SMEs. The value proposition is related to design sensitivity to achieve organizational goals in producing value that influences organizational performance (Abdelkafi & Täuscher, 2016; Asadnezhad et al., 2017; Carter & Carter, 2020; Hansen, 2021; Jin et al., 2021; Rayna & Striukova, 2014; Zimmerman, 2020).
3. Key activities and key resources are resources and activities conducted to produce products; therefore, these two elements are related to activities in the production and operational processes that

carry out production functions in micro-industry SMEs. Production activities are part of the manufacturing function, one of the primary activities in the organization (De Leeuw & Van Den Berg, 2011; Flapper et al., 1996; Forslund & Jonsson, 2009; Porter, 1998).

4. Key partnerships are entities directly related to micro-industry SMEs in supporting production activities, such as suppliers. Suppliers are associated with the supply of raw materials needed in production activities. SCM is part of the functional area in the organization that determines organizational performance (De Leeuw & Van Den Berg, 2011; Forslund & Jonsson, 2009).
5. Cost structure and revenue streams are related to the costs incurred and income generated in carrying out production activities. Both elements are integrated into the financial/financial functional area that manages the costs and income obtained by micro-industry SMEs. Management accounting is one of the functional areas in the organization (Euske et al., 1993; Murphy et al., 1996; Otley, 1999; Parker, 2000).

Thus, the nine elements of the BMC have been mapped into five functional areas in the organization to carry out processes and activities for micro-industry SMEs. In this functional organization of SMEs, there are at least five functions in its organizational structure. When associated with the process sequence in the value chain, the five functional areas in the micro-industry SME organization can be illustrated as follows (Figure 1):

In these five organizational functions, they are then arranged according to the sequence of the value chain and business processes in SCM, starting from suppliers to consumers. SCM aims to maximize the value generated, where SCM is a logistics system that starts from raw materials processed into finished products distributed to end-users. SCM focuses on managing all interrelated activities from the main supplier to the end consumer (Cooper et al., 1997; CSCMP., 2013; Danese et al., 2013). SCM, as a transformation from the functional organization of SMEs, can be illustrated as shown in Figure 2.

In this supply chain system, the financial functional area is transformed into financial performance, indicating the comparison between revenue and cost structure, as well as other financial ratios. Thus, financial performance is integrated into the supply chain system of SMEs, starting from suppliers, production, value proposition, marketing, and up to consumers. The elements in this supply chain system are the key variables influencing the performance of SMEs. Performance measurement is carried out using financial performance as part of the performance management systems and processes (PMSP) approach.

The entire framework of thought in this study can be illustrated in Figure 3, showing how the elements of the nine blocks in the BMC are mapped to the functional organization and subsequently transformed within the SCM.

From the literature study and conceptual research conducted above, a design of a simple performance model for micro-industry SMEs is obtained through the integration process of BMC, functional organization, and SCM, as illustrated in Figure 4. This model generates four variables that influence the enhancement of SME performance: supplier, production, value proposition, and marketing.

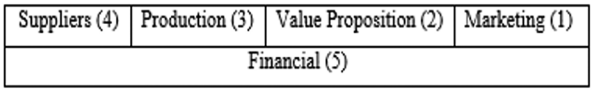


Figure 1. Functional organization of micro industry SME.
Source: Author.

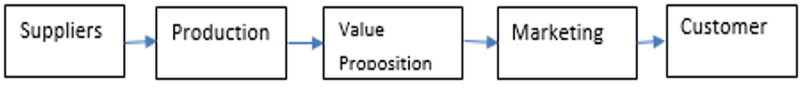


Figure 2. Supply chain system in SME.
Sources: Author.

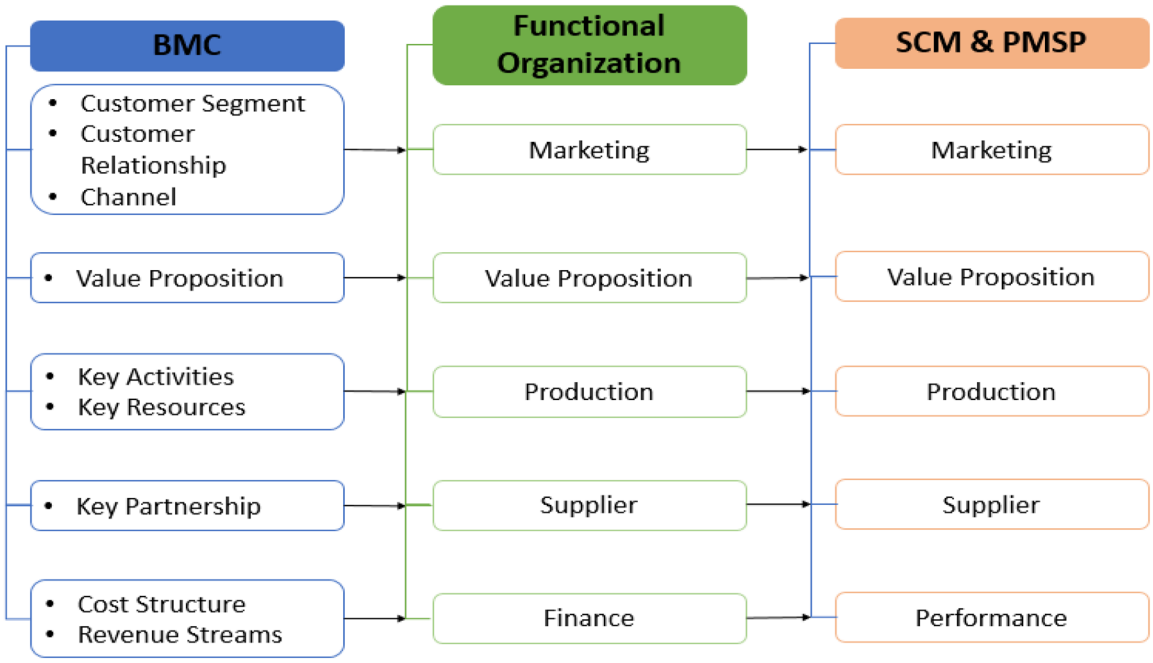


Figure 3. BMC vs. functional organization vs. SCM.
Source: Author.

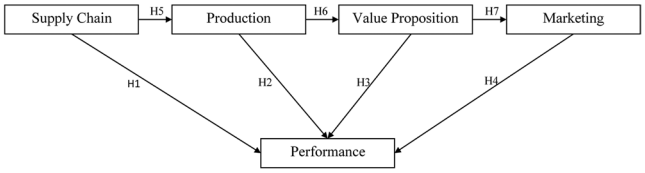


Figure 4. Feasibility model for SMEs.

The design of the model resulting from the integration in this study is called the 'Feasibility Model for SMEs.' Subsequently, the model was tested for the first time with SME participants in the knitwear production center X. Data from the year 2023 indicate that there are total of 100 SMEs in that industrial center. Using the formula with a margin of error of 10%, the sample size is calculated with the formula $n = N/(1 + Ne^2)$. The calculation yields $n = 100/(1 + 100*10\%^2) = 100/2 = 50$. Based on this calculation, the number of samples used in this study to confirm the designed theory is 50 SMEs.

The design of the feasibility model for strengthening SMEs' performance is tested with a sample of 50 active knitwear-producing SMEs to determine the influence of supplier, production, value proposition, and marketing on SME performance using Smart PLS. Smart PLS is utilized to predict relationships between constructs, confirm theories, and elucidate whether there is a relationship between latent variables.

The operational variables of the simple SME performance model in this study consist of one dependent variable and four independent variables. The dependent variable is financial performance, while the independent variables are supply chain, production, value proposition, and marketing.

4. Result and analysis

The confirmatory process on the model regarding the relationship between supplier (X1), production (X2), value proposition (X3), and marketing (X4) on financial performance (Y) is conducted through quantitative analysis using structural equation modeling with the alternative method of partial least squares, using Smart PLS 3.3 software. The data used are from a case study on SMEs in knitwear production

center X, with a sample size of 50 SMEs. From the data processing of the outer model, the final path diagram results are obtained, as shown in Figure 5.

In the discriminant validity analysis to test the measurement instrument externally, comparisons are made with indicators of other latent variables. The results of the discriminant validity analysis, tested through cross-loading and the Fornell-Larcker criterion, are presented below.

According to Hair et al. (2014, p. 105) a cross loading which is bigger than the outer loading shows that there is a discriminant validity issue. Table 1 shows that loading value of each construct factor (latent variable) has a higher indicator compared to the indicators in other latent variables. The data shows that the indicators have a stronger relation with their own construct compared to that with the other ones.

Hair et al. (2014, p. 105) also conveys that if the square root of average variance extracted is smaller than the correlation value of among latent variables, it shows that there is a discriminant validity issue. In Table 2, it can be seen that the square root of average variance extracted (diagonal line) of each latent variables are still bigger than their correlation with other latent variables. The data shows that latent variables have a stronger relation with their indicators than that with other latent variables. The discriminant validity test shows that there is not any discriminant validity issue among the five latent variables.

Structural model is a model relating exogenous latent variables with endogenous latent variables. The data analysis leads to a structural model as can be seen in the following table (Table 3).

Based on the structural test results at the SME center X, it was found that the supply chain does not significantly influence performance, with a path coefficient value (β) of ($\beta = 0.081$; $p = 0.230$, $p > 0.05$). The test results indicate that hypothesis 1 is not supported. Therefore, it can be concluded that the supply

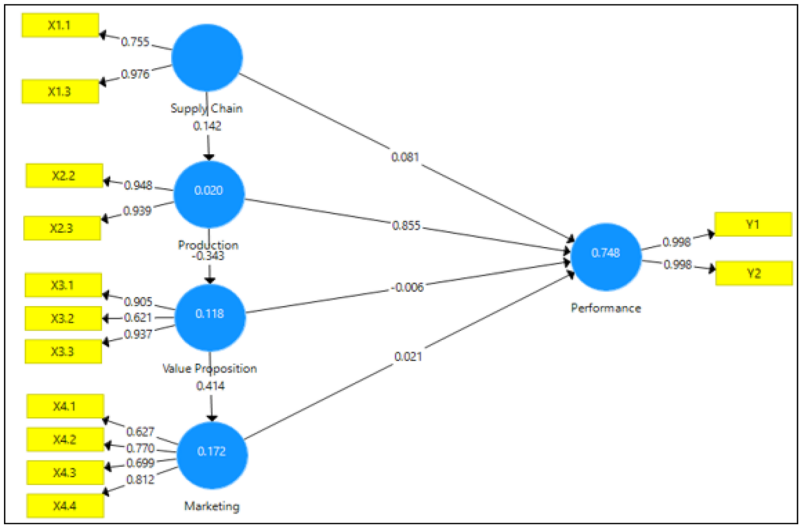


Figure 5. Final model full path diagram.

Table 1. Cross-loading between constructs.

	Laten variables				
Indicators	X_1	X_2	X_3	X_4	Y
$X_{1.1}$	0.755	0.073	0.223	−0.079	0.057
$X_{1.3}$	0.976	0.150	0.145	−0.357	0.220
$X_{2.2}$	0.133	0.948	−0.381	−0.310	0.828
$X_{2.3}$	0.135	0.939	−0.263	0.318	0.798
$X_{3.1}$	0.077	−0.329	0.905	0.463	−0.282
$X_{3.2}$	0.265	−0.216	0.621	0.157	−0.139
$X_{3.3}$	0.183	−0.298	0.937	0.336	−0.238
$X_{4.1}$	−0.363	−0.321	0.190	0.627	−0.234
$X_{4.2}$	−0.377	−0.293	0.296	0.770	−0.324
$X_{4.3}$	−0.100	−0.184	0.329	0.699	−0.128
$X_{4.4}$	−0.086	−0.188	0.377	0.812	−0.155
Y_1	0.188	0.866	−0.277	−0.274	0.998
Y_2	0.201	0.854	−0.275	−0.306	0.998

Table 2. Fornell-Larcker criterion.

	X_1	X_2	X_3	X_4	Y
X_1	0.872				
X_2	0.142	0.944			
X_3	0.178	−0.343	0.833		
X_4	−0.313	−0.332	0.414	0.730	
Y	0.195	0.862	−0.277	−0.291	0.804

Table 3. Structural model of exogenous latent variable relationship with endogenous latent variables.

Structure	Path	Coefficient	*p*-Value	R^2	Q^2
I	$X_1 => X_2$	0.142	0.192	0.020	0.011
II	$X_2 => X_3$	−0.343	0.001	0.118	0.076
III	$X_3 => X_4$	0.414	0.003	0.172	0.073
IV	$X_1 => Y$	0.081	0.230	0.748	0.721
	$X_2 => Y$	0.855	0.000		
	$X_3 => Y$	−0.006	0.469		
	$X_4 => Y$	0.021	0.405		
Indirect	$X_1 => X_2 => Y$	0.121	0.201		
Effect	$X_1 => X_2 => X_3$	−0.049	0.217		
	$X_1 => X_2 => X_3 => Y$	0.000	0.483		
	$X_1 => X_2 => X_3 => X_4$	−0.020	0.265		
	$X_1 => X_2 => X_3 => X_4 => Y$	−0.000	0.450		
	$X_2 => X_3 => X_4$	−0.142	0.030		
	$X_2 => X_3 => Y$	0.002	0.474		
	$X_2 => X_3 => X_4 => Y$	−0.003	0.427		
	$X_3 => X_4 => Y$	0.009	0.418		

chain does not significantly affect performance at the SME center X. This is due to the fact that currently, the participants in SME center X only have one supplier from the knitting yarn factory.

The testing of hypothesis 2 proved to be true with a path coefficient value (β) of 0.855 ($p = 0.000$, $p < 0.005$). This indicates that the production factor significantly affects performance at the SME center X and provides empirical evidence that increasing production will enhance performance. Production has an influence of (0.855)2 = 73.1% on performance at the SME center X.

In the testing of hypothesis 3, the path coefficient value (β) was -0.006 (p = 0.469; p > 0.05). This means that hypothesis 3 is not supported at the SME center X. Therefore, with a 5% error rate, the value proposition does not significantly affect performance at the SME center X. This is because the value proposition has not received much attention in SME center X, where craftsmen tend to imitate existing designs favored by consumers at the time.

The testing of hypothesis 4 resulted in a path coefficient value (β) of 0.021 (p = 0.405; p > 0.05). This indicates that hypothesis 4 is not supported. Thus, it is concluded that marketing does not significantly affect performance at SME center X. This is due to the current passive and suboptimal marketing practices by the SME participants.

In the testing of hypothesis 5, the path coefficient value (β) obtained was 0.142 ($p = 0.192$; $p > 0.05$). This means that hypothesis 5 is not supported and, therefore, rejected. It can be concluded that the supply chain does not significantly influence production at SME center X. The relationship with suppliers is not yet optimal, resulting in no significant impact.

The testing of hypothesis 6 resulted in a path coefficient value (β) of −0.343 ($p = 0.001$; $p < 0.05$). This indicates that hypothesis 6 is supported. Therefore, it can be concluded that production significantly influences the value proposition at the SME center X. The production factor has an influence of 11.8% on the value proposition at SME center X.

In the testing of hypothesis 7, the path coefficient value (β) was 0.414 ($p = 0.003$; $p < 0.05$). This means that hypothesis 7 is supported. It can be concluded that the value proposition significantly influences marketing at SME center X. The higher the value proposition, the greater the impact on marketing. The value proposition has an influence of 17.2% on marketing at SME center X.

Through the R-square values, it can be observed that the supply chain only contributes 2% to production, production contributes 11.8% to the value proposition, and the value proposition contributes 17.2% to marketing. Simultaneously, the supply chain, production, value proposition, and marketing

collectively contribute 74.8% to performance at SME center X. The Q2 value represents predictive relevance, and since Q2 > 0, it indicates that the four obtained structural models have predictive relevance.

5. Discussion

The role of SMEs in improving the economy has been proven in various countries; however, numerous research findings reveal various constraints and obstacles faced by SMEs. Therefore, a comprehensive solution is needed to enhance SME competitiveness. Performance in SMEs has connotations of feasibility due to limited resources and constraint. This study develops a model to improve SME feasibility in a simple and comprehensive way, making it easy to implement in SME organizations by integrating BMC, functional organizations, and SCM.

The BMC is a business model that needs to be understood and considered in running a business to generate value and improve SME performance through its nine-block elements. Activities in each BMC element need to be transformed into the relatively simple functional areas of SME organizations with efficient functions due to the resource limitations of SMEs. The transformation results in the main functional areas of micro-industrial SMEs, namely the supply chain, production, value proposition, marketing, and finance.

An efficient supply chain is crucial in supporting the improvement of SME performance from upstream to downstream. Some of the obstacles faced by SMEs in their activities originate from an ineffective supply chain system. Through the integration of functional organizations and supply chain systems, a model for strengthening the performance of micro-industrial SMEs is obtained, with four independent variables: supply chain, production, value proposition, and marketing, and one dependent variable: financial performance.

From the results of the model design for strengthening SME performance, an initial testing process of the model was conducted by measuring the relationship between the dependent and independent variables. In a case study at the SME center X, it was found that simultaneously, the supply chain, production, value proposition, and marketing collectively contributed 74.8% to financial performance at SME center X. However, in the model test, only the production variable significantly affected SME performance. This is because the SME center X currently prioritizes production and has not yet focused on other factors such as value proposition, making other variables not significant.

The limitations of this study include the limited indicators used for the research variables, necessitating the addition of other indicators that better represent the research variables. Additionally, the results of the test of the 'feasibility model for SMEs' on 50 SMEs in this study did not show maximal results because only 3 out of 7 proposed hypotheses were proven.

Ultimately, the 'feasibility model for SMEs' generated in this study needs further examination and testing on a larger and broader sample, replicating it in other micro-industrial SMEs. This is necessary to generalize the feasibility model for SMEs designed in this study. The feasibility model for SMEs developed in this study is specifically for micro-industrial SMEs. In future research, the test results on other micro-industrial SMEs can be used as an evaluation of the designed model.

6. Conclusion

The design model resulting from this research is named the 'feasibility model for SMEs' and is an integration of the BMC, functional organization, and SCM approaches. The model consists of one dependent variable, which is financial performance, with four independent variables: supply chain, production, value proposition, and marketing. This model is highly practical for enhancing SME performance, focusing solely on these four variables.

The testing of this research model was conducted at SME center X, and the test results of the seven hypotheses revealed that only three hypotheses were proven. The three proven and significant hypotheses are that production affects financial performance (H2), production influences value proposition (H6), and value proposition impacts marketing (H7).

Based on the R-square values from the test results at SME center X, it was found that the supply chain only contributes 2% to production. Furthermore, production influences value proposition by 11.8%, and value proposition affects marketing by 17.2%. Simultaneously, supply chain, production, value

proposition, and marketing collectively contribute 74.8% to financial performance. The dominant variable influencing financial performance is production, accounting for 73.1%.

The limitations of this study include the accuracy of the indicators used for all research variables, the new model test conducted only at SME center X, and the research methodology employed. In future research, it is essential to add and examine indicators that more accurately represent the research variables. Additionally, the model design should be replicated on samples from other SME centers more extensively to generalize and validate the model for strengthening SME performance.

6.1. Theoretical contribution

Generally, various approaches are employed in enhancing SME performance, including (1) the BMC approach that maps all activities into 9 blocks of business activity elements, (2) the functional approach that emphasizes each function within the organization to carry out tasks maximally, (3) the supply chain approach that focuses on the flow from upstream to downstream. While each of these approaches has its merits, there is an intersection of activities among them. The theoretical contribution of this paper is the integration of these three approaches into a new but simpler concept that can be easily applied to SMEs. Functionally, there are five core functions in this model, namely supply chain, production, value proposition, marketing, and finance. In this model, finance is utilized as a performance metric, specifically financial performance. The design of the model in this study is termed the 'Feasibility model for SMEs'.

6.2. Managerial implications

The limitations of resources owned by SMEs pose a unique challenge in empowering SME businesses. The new approach generated in this paper emphasizes strengthening four areas: supply chain, production, value proposition, and marketing, as variables influencing the empowerment of SME performance. With this approach, the managerial implication for SMEs is that it becomes easier and simpler to implement efforts to strengthen SME performance by focusing on improving these four research variables. Researchers and SME facilitators can utilize the 'Feasibility Model for SMEs' developed in this study, to enhance the performance for feasibility of SMEs.

Notes on contributors

Endang Chumaidiyah contributed on original idea, research design, and analysis.

Putri Maulani Fauzi contributed with data collecting and research secretary.

Anton Abdulbasah Kamil contributed on data analytic and data processing.

Disclosure statement

The authors declare there is no conflict of interest at this study.

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