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The Influence of Internal and External Factors on MSMEs' Sustainability Performance: The Limited Mediating Role of Business Networks

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Abstract

This research is motivated by the low sustainability performance of MSMEs (Micro, Small, and Medium Enterprises) under the guidance of Rumah BUMN, particularly in the environmental aspect, as well as the weak integration of Sustainable Development Goals (SDGs) principles in daily business activities. The purpose of this study is to analyze the influence of internal and external factors on the sustainability performance of MSMEs, as well as to explore the synergistic form of both factors in supporting SDG-based MSME empowerment. This study uses a quantitative approach with a survey method. The research sample consists of 144 MSME actors selected using purposive sampling, with the criteria being MSMEs that have received SDG guidance from Rumah BUMN in West Java Province. The data used in this study are primary data collected and analyzed using exploratory analysis with the assistance of SMART-PLS. The results indicate that internal factors do not have a significant effect on the role of business networks in MSMEs under Rumah BUMN's guidance, while external factors show a stronger contribution and are statistically verified to influence network strengthening, particularly through partnerships, community involvement, and support from the business environment. However, despite the strategic function of networks in business growth, this study finds that networks have not significantly influenced MSME sustainability performance, as reflected in the model where network contribution remains relatively small. In contrast, both internal and external factors positively and significantly improve sustainability performance, with the structural model indicating that these variables collectively explain more than four-fifths of the variation in sustainability outcomes. This affirms that strengthening human resources, innovation capacity, and access to supportive external ecosystems is crucial in accelerating SDG-oriented MSME empowerment. The mediating role of business networks was also not supported, suggesting that internal and external factors exert a more direct influence without requiring network intermediation — highlighting that current network structures are not yet optimal in bridging sustainability enhancement pathways.

Keywords: Business Networks, External Factors, Internal Factors, Sustainability Performance

INTRODUCTION

Sustainability performance has become an increasingly important aspect for Micro, Small, and Medium Enterprises (MSMEs) in line with global market demands that require businesses not only to generate economic profits but also to contribute to social and environmental aspects. MSMEs play a strategic role in Indonesia's economy, contributing more than 60% to the Gross Domestic Product (GDP) and absorbing the majority of the workforce (Kemenkop UKM, 2019; Ayyagari et al., 2017). However, maintaining sustainable performance while balancing economic, social, and environmental goals remains a significant challenge. Therefore, it is important to comprehensively understand the factors that influence the sustainability performance of MSMEs.

The main problems faced by MSMEs in the field indicate that internal factors such as limited human resource competencies and low levels of innovation often hinder MSME development (Burlea-Schiopoiu & Mihai, 2019), as well as a lack of understanding regarding sustainable resource management (Ramachandran & Ali AL Yahmadi, 2019). These challenges become barriers to achieving the Sustainable Development Goals (Nygaard et al., 2022). In addition, information asymmetry is also one of the major challenges that impede the effectiveness of MSME empowerment (Nareswari et al., 2023). The imbalance of information between MSMEs and supporting institutions, such as financial institutions and government agencies, often results in moral hazard, adverse selection, and high monitoring costs. Furthermore, the lack of guidance and involvement from related agencies is also considered a factor causing the slow development of MSMEs (Iskandar et al., 2021).

SDG-based empowerment is crucial to driving sustainability performance because it plays a strategic role in supporting the implementation of sustainability principles. Moreover, this approach can enhance business competitiveness, build stakeholder trust, and provide tangible contributions toward achieving the SDGs (Rosdiana & Mulyani, n.d.). The Ministry of Cooperatives and SMEs of the Republic of Indonesia (2019) revealed that most MSMEs face challenges in developing human resource capacity, impacting low productivity and product innovation. This aligns with findings by (Ghobakhloo, 2020)highlighting that limited innovation capability and technological adaptation are among the main obstacles to MSME sustainability in the digital era. Additionally, the (*OECD SME and Entrepreneurship Outlook 2023*, 2023)also states that MSMEs in many developing countries still experience difficulties accessing knowledge and improving human resource competencies, which affect business innovation limitations. A study by (Ayyagari, 2011) reinforces this by asserting that limitations in knowledge resources and expertise are major constraints to MSME growth in various countries. On the other hand, external factors such as government policies, market dynamics, technological advancements, and socio-cultural environments also greatly influence MSMEs' ability to sustain their performance (Barney, 2020; Anwar et al., 2022). Moreover, business networks including associations and business communities play an important role as mediators facilitating access to resources, information, and policy support, which ultimately enhances MSMEs' sustainability capacity(Isensee et al., 2020).

The current condition shows the importance of integrating internal capabilities and external support as the main drivers of sustainable innovation and business adaptation amid rapid market changes, emphasizing inclusive economic growth, social inclusion, and environmental preservation (Amir & Prabawani, 2023; Barney, 1991; Putranto, 2025). The integration of SDG principles into MSME empowerment strategies is essential to ensure business sustainability (Afzal & Lim, 2022; Vanpetch & Sattayathamrongthian, 2024a). Furthermore, aligning MSME sustainability performance with the United Nations' Sustainable Development Goals (SDGs) adds a new dimension requiring MSMEs to focus not only on economic performance alone(Ghobakhloo, 2020). Nevertheless, studies examining the mediating role of business networks in the relationship between internal and external factors and MSME sustainability performance are still limited, creating a research gap that this study aims to fill. Internal factors such as human resource competencies, natural resources, funding, innovation, marketing, infrastructure, location, and profit are key determinants of MSME competitiveness and performance (Ontorael et al., 2017a; Shatilo, 2019a; Vanpetch & Sattayathamrongthian, 2024a)

The theoretical foundation used in this study is the Resource-Based View (RBV) according to (Barney, 1991), which emphasizes the importance of managing valuable and unique internal resources to achieve sustainable competitive advantage (Barney, 2020). Based on the Resource-Based View theory (Barney, 1991), competitive advantage and sustainable performance can be achieved through the utilization of unique, hard-to-imitate internal resources that generate added value (Afzal & Lim, 2022). Research by (Najib & Kiminami, 2011) shows

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that internal collaboration and innovation are important factors in improving MSME performance. Quality human resource support, effective marketing strategies, and adequate production facilities are concrete examples of internal strengths that support sustainability (Afzal & Lim, 2022; Madai et al., 2020). Recent research by (Ghobakhloo, 2020) and (Vanpetch & Sattayathamrongthian, 2024b) further reinforces that digital capability, product innovation, and internal strategic alignment are critical internal drivers of sustainability transition in MSMEs.

Stakeholder Theory explains that organizations must respond to expectations from external actors such as government, customers, suppliers, and the community to maintain legitimacy and support (Freeman & McVea, 2005). External factors include technology, global markets, policies, customers, competitors, suppliers, social conditions, economic conditions, cultural conditions, and institutions. A conducive external environment will strengthen MSMEs' adaptive capacity in facing global pressures and increase opportunities for innovation (Freeman & McVea, 2005)(Jun et al., 2021). Studies by (Al Badi, 2018; Siswanti, 2020) show that pressures from consumers, government policies, and market preferences for environmentally friendly products encourage MSMEs to adopt sustainability practices (Tumiwa & Nagy, 2021). With a supportive external environment, MSMEs can more easily access resources, expand markets, and enhance innovation inovasi(Jun et al., 2021). Therefore, strong external support will positively impact MSMEs' sustainability performance. Research by Isensee et al.,(2020) also shows that social capital and inter-organizational partnerships significantly influence the ability of SMEs to engage in sustainability transformation. Stakeholder Theory (Freeman & McVea, 2005) explains that organizations need to respond to the needs and pressures of various stakeholders. Social Capital Theory highlights the importance of social networks and relationships in facilitating cooperation and resource sharing, making business networks a strategic mediator. The integration of these three theories provides a solid conceptual framework to examine the mediating role of business networks in strengthening the influence of internal and external factors on MSMEs' sustainability performance. The integration of RBV, Stakeholder Theory, and Social Capital Theory therefore provides a robust conceptual foundation for examining how internal and external factors interact to drive MSME sustainability performance, and whether business networks play a mediating role in strengthening this influence

Based on this background, this study aims to analyze the influence of internal and external factors on MSMEs' sustainability performance with the mediating role of business networks. The results are expected to provide empirical contributions to the literature on MSME sustainability as well as offer practical recommendations for business actors and policymakers to improve competitiveness and sustainable growth of MSMEs.

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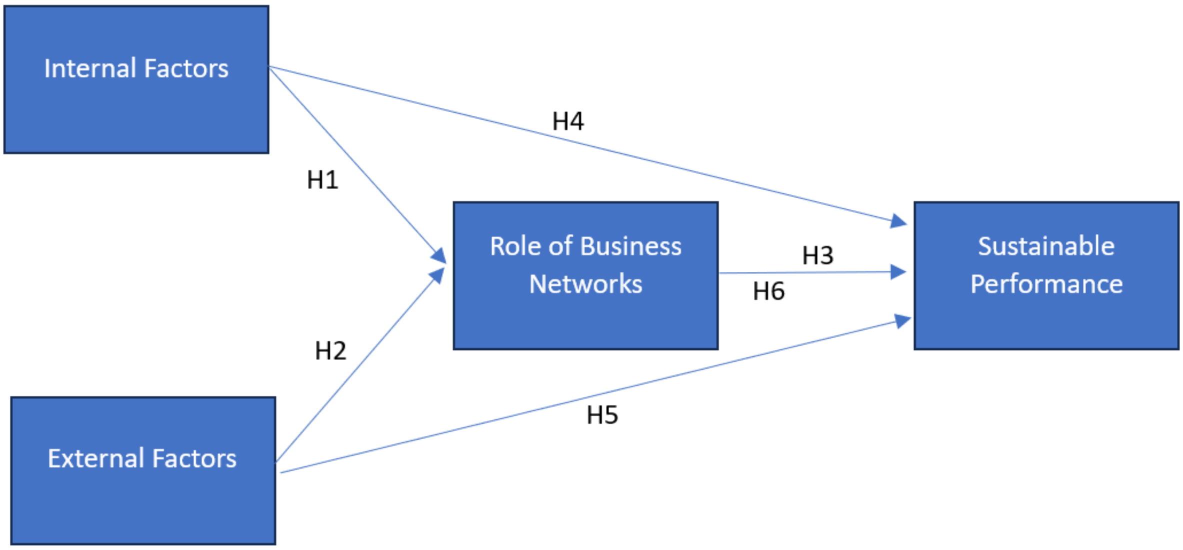

Figure 1
PLS Path Diagram

RESEARCH METHODS

This study uses a quantitative approach with a survey method to analyze the influence of internal and external factors on the sustainability performance of MSMEs under the guidance of Rumah BUMN in West Java Province, including the mediating role of Business Networks. A quantitative approach is appropriate for examining causal relationships between variables, allowing the researcher to measure patterns, strength of influence, and statistical significance across respondents (Creswell, 2014; Saunders et al., 2019). The survey method is chosen because it is efficient for collecting primary data from a large sample, enabling generalization of findings and providing insight into behavioral and perceptual tendencies of MSME actors (And & Bougie, 2014). The population consists of all MSMEs guided by Rumah BUMN in West Java Province, totaling 11,254 business entities in 2024. The sample was selected using purposive sampling with criteria of MSMEs that had received SDG-related empowerment programs. A structured questionnaire was used as the primary instrument, which aligns with quantitative design principles emphasizing standardized measurement indicators, objectivity, and reliability of data collection (Hair et al., 2014). This approach ensures that the variables representing internal factors, external factors, business networks, and sustainability performance can be quantitatively analyzed using Structural Equation Modeling (SEM-PLS).

The sample size was determined using Slovin's formula with a margin of error of 10%, resulting in a sample size of 100 MSMEs. However, during data collection, 144 MSME actors were involved as the sample. The sample was selected using purposive sampling based on the criterion that the MSMEs had received guidance related to the Sustainable Development Goals (SDGs) at Rumah BUMN. Respondents consist of micro, small, and medium business actors spread across several regions with diverse business sectors, including food and beverages, handicrafts, textiles, and services. Primary data were collected through a questionnaire

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instrument arranged in the form of a Google Form (G-Form) using a Likert scale of 1–6. The questionnaire measured the following variables:

1. Internal Factors: Human Resources (HR), Natural Resources (NR), Capital, Innovation, Marketing, Facilities and Infrastructure, Location, and Profit.
2. External Factors: Technology, Global Market, Policies, Customers, Competitors, Suppliers, Social Conditions, Economic Conditions, and Cultural Conditions.
3. Sustainability Performance: Economic Performance, Social Performance, and Environmental Performance.
4. Role of Business Networks: Advocacy and Representation, Access to Resources and Markets, Knowledge and Experience Sharing, Business Collaboration, and Trust and Solidarity.

The collected data were analyzed using exploratory analysis with the assistance of SMART-PLS software to test the relationships between internal and external factors and MSMEs' sustainability performance mediated by the Role of Business Networks. Prior to the main analysis, the validity and reliability of the instrument were tested through measurement model evaluation (outer model), including checks for individual convergent validity (based on outer loadings), average variance extracted (AVE), discriminant validity, and composite reliability. The research hypothesis implicitly states that internal and external factors have a positive and significant effect on MSMEs' sustainability performance, with the mediating role of the Role of Business Networks.

RESULTS AND DISCUSSION

This study involved 144 MSME actors under the guidance of Rumah BUMN spread across several regions with varied business sector characteristics. Respondents included micro, small, and medium business actors from various sectors such as food and beverages, handicrafts, textiles, and services. Data were collected through a questionnaire instrument using a six-point Likert scale, structured based on the dimensions of internal factors, external factors, the Role of Business Networks, and sustainability performance in accordance with the SDGs approach. Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis was used in this study to address the research questions and hypotheses concerning which factors influence sustainability performance in SDG-based MSME empowerment. A series of quantitative analyses relevant to the research objectives were conducted and processed using structural equation modeling with the alternative partial least squares method.

The outer model defines constructs or latent variables. This model describes the relationship between indicators and their latent variables (Hair et al., 2019). The validity evaluation of the outer model, which uses reflective indicators, was assessed using convergent validity, discriminant validity, and composite reliability (Cronbach's alpha) to test the validity and reliability of the instrument. The measurement model evaluation (outer model) includes checking individual convergent validity, observed through the outer loadings values, which can be seen in Figure 4.1 below.

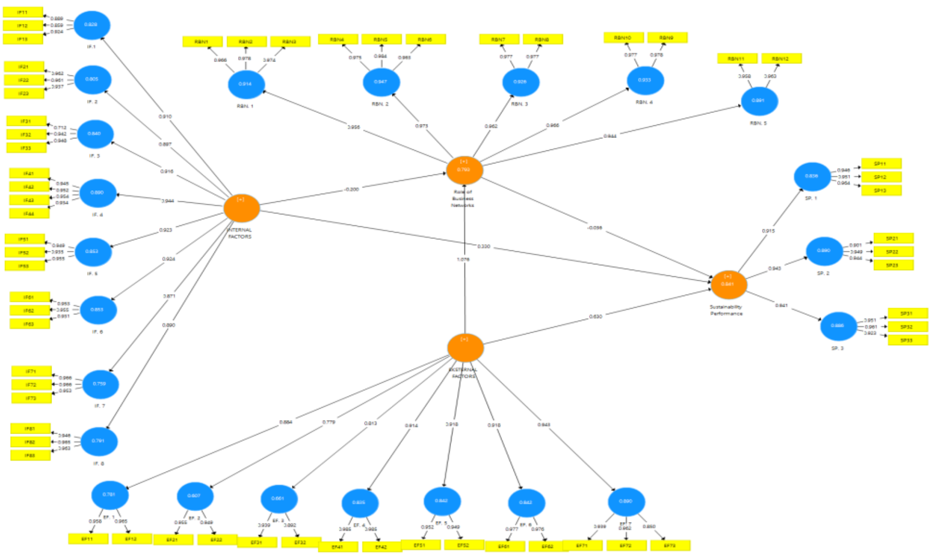

Figure 2
Full Model Struktural (PLS Algorithm)

Meanwhile, the values of average variance extracted (AVE), discriminant validity, and composite reliability (Cronbach's alpha) are presented in the following Table 4.1:

Table 1
Convergent Validity Test

	onbach's alpha	Composite eliability	Average Variance Extracted (AVE)
Internal Factors	**0,984**	**0,985**	**0,725**
External Factors	**0,970**	**0,973**	**0,709**
Role of Business Networks	**0,987**	**0,988**	**0,874**
Sustainable Performance	**0,963**	**0,969**	**0,775**

Source: Data processed in 2025

The R-square value can be used to determine the extent of variability in the endogenous variable that can be explained by the exogenous variables. Below are the results of the R-square values obtained for the endogenous variables.

Table 2
R-Square Test Results

Variabel Endogen	R Square	R Square Adjusted
Role of Business Networks	0,793	0,790
Sustainable Performance	0,841	0,837

Source: Data processed in 2025

Based on the table above, the R-square value for the variable Role of Business Networks is 0.793, which falls into the category of very strong. This indicates that the Role of Business Networks construct for MSMEs can be significantly explained by two independent variables, namely internal and external factors, with an R^2 value of 0.793. This means that 79.3% of the variation in the Role of Business Networks can be explained by the model, indicating a very strong predictive power. The remaining 20.7% is influenced by other variables not examined in this study. Meanwhile, the R-square value for the variable Sustainable Performance is 0.841,

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which also falls into the very strong category. This shows that the Sustainable Performance construct for MSMEs can be significantly explained by three independent variables: internal factors, external factors, and the Role of Business Networks, with an R^2 value of 0.841. This means that 84.1% of the variation in Sustainable Performance can be explained by the model, indicating a very strong predictive power. The remaining 15.9% is influenced by other variables not examined in this study.

After conducting the measurement model test and the structural model test, the analysis can proceed to hypothesis testing to answer the research questions. Below is the summary of the statistical tests for hypothesis testing.

Table 3
Statistical Test Results

Hypothesis	**Explanation**	**Path**	**t Statistics**	**p Values**	Conclusion
Direct Effect					
H1	Internal Factors → Role of Business Networks	-0,200	1,266	**0,206**	H_1 Not Supported
H2	External Factors → Role of Business Networks	1,076	8,338	**0,000**	H_2 Supported
H3	Role of Business Networks → Sustainable Performance	-0,036	0,382	**0,703**	H_3 Not Supported
H4	Internal Factors → Sustainable Performance	0,330	2,034	**0,042**	H_4 Supported
H5	External Factors → Sustainable Performance	0,630	3,526	**0,000**	H_5 Supported
Indirect Effect					
H6A	Internal Factors → Role Of Business Networks → Sustainability Performance	0,007	0,304	**0,761**	Role of Business Networks Does Not Mediate
H6B	Eksternal Factors → Role Of Business Networks → Sustainability Performance	-0,039	0,386	**0,700**	Role of Business Networks Does Not Mediate

Source: Data processed in 2025

The SEM-PLS analysis results show that external factors have a positive and significant direct effect on the role of business networks with a path coefficient of 1.076, a t-statistic value of 8.338, and a p-value of 0.000 ($p < 0.05$). Conversely, internal factors do not have a significant effect on the role of business networks (path coefficient = -0.200; t-statistic = 1.266; p = 0.206). Furthermore, both internal and external factors have a positive and significant effect on MSMEs' sustainability performance. Internal factors have a path coefficient of 0.330 with a t-statistic of 2.034 and a p-value of 0.042, while external factors show a stronger effect with a path coefficient of 0.630, t-statistic of 3.526, and p-value of 0.000. However, the role of business networks does

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not have a significant direct effect on MSMEs' sustainability performance (path coefficient = -0.036; t-statistic = 0.382; p = 0.703). Additionally, mediation analysis indicates that business networks do not mediate the relationship between internal or external factors and sustainability performance. This is evident from p-values greater than 0.05 for both mediation paths: p = 0.761 for internal factor mediation and p = 0.700 for external factor mediation. Thus, business networks do not act as a significant mediator between internal and external factors and MSMEs' sustainability performance.

The findings indicate that internal factors do not significantly influence the role of business networks in the context of MSMEs guided by Rumah BUMN. This suggests that strengthening internal resources such as human resource capacity, organizational culture, structure, and internal capabilities is not yet sufficient to enhance MSMEs' ability to build and utilize business networks. Internal focus, which tends more towards process management and efficiency within the organization, does not directly bridge the need for external interaction and collaboration. Therefore, without active initiatives to build relationships beyond the organization, strong internal factors may not necessarily improve the role of business networks. This finding aligns with theories emphasizing the importance of external relationships in forming effective social and business networks, where social capital from external networks plays a far greater role than internal capital alone. In the MSME context, factors such as product quality, innovation, human resource capacity, funding sources, and operational infrastructure are strategic internal assets supporting the achievement of sustainable performance. This is supported by research from (Indris & Primiana, 2015) (Shatilo, 2019b) (Lelimawarti et al., n.d.) (Demmalinno & Nurani Sirajuddin, n.d.) (Ontorael et al., 2017b).

Conversely, external factors are proven to have a positive and significant effect on the role of business networks. Relationships with business partners, communities, suppliers, customers, as well as social and market environment support, provide MSMEs with opportunities to build communication, collaboration, and synergy that strengthen business networks. These external networks increase organizational flexibility in facing market changes and business competition, as well as expand access to resources and innovation opportunities. These findings(Vanpetch & Sattayathamrongthian, 2024c)(Vanpetch & Sattayathamrongthian, 2024c) (Indris & Primiana, 2015) (Shatilo, 2019b) (Lelimawarti et al., n.d.) (Demmalinno & Nurani Sirajuddin, n.d.) (Ontorael et al., 2017b). The better the condition of external factors supporting MSMEs—such as policy support, access to market information, partnerships with external institutions, and involvement in business networks and communities—the higher the potential for achieving MSMEs' sustainability performance in economic, social, and environmental aspects. This is supported by research from penelitian (Siswanti, 2020) (Riyanto, 2018) (Stone et al., 2004) (Demmalinno & Nurani Sirajuddin, n.d.) that states the external ecosystem plays a crucial role in strengthening the economic, social, and environmental aspects of MSME sustainability. This reinforces the position of business networks as a strategic means to accelerate MSME growth and competitiveness, in line with literature highlighting the importance of strategic partnerships and business alliances in developing effective networks. Although business networks play an important role in business development, this study finds that business networks have not yet had a significant impact on MSME sustainability in achieving the SDGs. This indicates that existing networks may still focus on short-term transactional aspects and have not fully supported the integration of sustainability principles into MSME business strategies. Internal capacity constraints and limited quality of relationships within networks are factors

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limiting the contribution of networks to sustainability practices. Therefore, MSME sustainability requires deeper commitment and innovation that cannot be achieved solely through external networks.

Internal factors have been proven to have a positive and significant effect on MSME sustainability. Competent human resource capacity, an organizational culture that supports sustainability values, and strong managerial capabilities provide a solid foundation for MSMEs to implement social, economic, and environmental practices sustainably. This finding emphasizes the importance of strengthening internal factors as a primary prerequisite for successful implementation of sustainability strategies and achieving SDG targets. Therefore, efforts to enhance MSME internal capacity and awareness are crucial to promoting long-term sustainability.

External factors also have a positive and significant effect on MSME sustainability. Government policy support, regulations, market access, and stakeholder pressures provide strong incentives for MSMEs to adopt sustainability practices aligned with the SDGs. External networks and strategic partnerships expand the resources and technologies accessible to MSMEs, strengthening innovation and adaptation to market demands increasingly oriented toward sustainability. These findings indicate that a conducive external environment is essential as a catalyst for MSMEs to accelerate the integration of sustainable development principles. The role of business networks does not function as a significant mediator in the relationship between internal factors and MSME sustainability. This indicates that the influence of internal factors on sustainability is more direct and does not depend on business networks as an intermediary. Existing business networks have not been able to effectively bridge or strengthen the relationship between internal factors and sustainability practices, possibly due to limitations in network quality or lack of integration of sustainability strategies within the networks. Therefore, strengthening MSME internal capacity and commitment remains the main focus in improving sustainability performance.

The findings indicate that the role of business networks does not act as a mediator in the relationship between external factors and MSME sustainability in the context of achieving the Sustainable Development Goals (SDGs). In other words, the influence of external factors on MSME sustainability does not pass through the mechanism of business networks as a connector or enhancer of that relationship. Although external factors such as government support, regulations, market pressures, and business networks are generally considered key drivers of sustainability practices, these results show that existing business networks are not yet effective enough to bridge or optimize this influence in improving MSME sustainability. This may be due to limitations in the quality of network relationships, lack of integration of sustainability goals into network activities, or the more transactional and less strategic nature of the networks. Previous research has also shown that without strong relationship quality and clear commitment to sustainability, business networks struggle to be effective mediators connecting external factors with sustainability outcomes (Cantele & Hartmann, 2020). Additionally, MSMEs' limited capacity to utilize networks and comprehensively integrate external factors may be major barriers in this mediation process. Therefore, to enhance the contribution of business networks in supporting MSME sustainability, strategic efforts are needed to strengthen network quality, clarify sustainability objectives within network activities, and improve MSME capacity in managing and leveraging external relationships more effectively.

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CONCLUSION

The conclusion of this study shows that internal factors do not have a significant effect on the role of business networks in MSMEs guided by Rumah BUMN, as reflected by statistical results with *non-significant coefficient values with p > 0.05*. This indicates that strengthening internal resources such as human resource capacity and managerial capabilities is not yet sufficient to enhance MSMEs' ability to build business networks.

Conversely, external factors are proven to have a positive and significant effect on the role of business networks, supported by empirical results showing *significant path coefficient with p < 0.05*, demonstrating that partnerships, communities, and market environment support contribute more strongly to network development. However, although business networks play an important role in business development, this study finds that these networks have not yet had a significant impact on MSMEs' sustainability performance, as indicated by *non-significant test results* and suggesting that current networks may still be transactional and not yet integrated with sustainability orientation.

Both internal and external factors have a positive and significant effect on MSMEs' sustainability performance, confirmed by *significant coefficient values at p < 0.05*. This emphasizes the importance of strengthening internal capacity and fostering a conducive external environment to accelerate the achievement of SDGs. The mediating role of business networks is not proven significant (p > 0.05), indicating that the influence of internal and external factors occurs more directly without the intermediary effect of networks. This suggests that existing business networks are not yet effective enough in bridging these relationships. Therefore, the main strategy to improve MSME sustainability is to enhance internal capacity, optimize external support, and develop collaborative, long-term, sustainability-oriented business networks.

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