

ENHANCING CREATIVE MSME PERFORMANCE THROUGH BUSINESS INTELLIGENCE, NETWORK LEARNING, AND INNOVATION: EVIDENCE FROM JAKARTA

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ABSTRACT

This study aims to analyse the effect of Business Intelligence and network learning on innovation and, in turn, on the performance of creative MSMEs in Jakarta. Grounded in the Resource-Based View and Knowledge-Based View, the study positions Business Intelligence and network learning as knowledge-based capabilities that drive innovation and performance. Data were collected through a survey of 400 owners/managers of creative MSMEs and analysed using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results show that both Business Intelligence and network learning have positive and significant effects on innovation, with the effect of Business Intelligence being stronger than that of network learning. Innovation is found to have a positive and very strong effect on MSME performance. Mediation analysis further indicates that the effects of Business Intelligence and network learning on MSME performance are fully mediated by innovation. These findings highlight the importance of systematic business information management and network-based learning in fostering innovation as the main engine of performance improvement in creative MSMEs and offer implications for designing support programmes and simple Business Intelligence applications tailored to MSMEs.

Keywords: *Business Intelligence; Network Learning; Innovation; MSME Performance; Creative Msmes; Knowledge-Based View.*

INTRODUCTION

The creative economy has become one of the key drivers of Indonesia's economic growth. Its contribution to national GDP continues to increase, particularly through fashion, culinary, and craft subsectors that are dominated by Micro, Small, and Medium Enterprises (MSMEs) (Mahrinasari et al., 2024). In Jakarta, as the national hub of economic and creative activities, creative MSMEs not only contribute to job creation but also represent the city's innovative image in national and global markets. However, various studies indicate that creative MSMEs still face persistent challenges, such as limited business scale, low productivity, and weak competitiveness amid changing consumer behaviour and the rapid penetration of digital platforms (Syarkani, 2025).

At the same time, creative MSME actors are highly dependent on business networks such as communities, suppliers, customers, industry associations, and incubation programmes as sources of information and learning that are no less important than internal data. Through these networks, business owners often obtain new insights into market trends, changes in consumer preferences, and more efficient business practices, although their utilisation as a structured learning mechanism has not yet been fully optimised.

In the digital era, business decisions of creative MSMEs should ideally be supported by abundant data generated from sales transactions, customer interactions on social media, and market information from various online platforms. However, many business owners still rely heavily on intuition and personal experience when making strategic decisions, while practices of systematic data recording and analysis are not yet well established (Chatterjee et al., 2022; Kgakatsi et al., 2024).

According to (Hmoud et al., 2023; Ragazou et al., 2023a) this situation makes it difficult for creative MSMEs to identify their most profitable products, prioritise customer segments, or evaluate the effectiveness of promotional programmes, so that business performance whether in terms of sales growth, profitability, or customer loyalty often becomes unstable and fluctuating.

Within this context, Business Intelligence (BI) is regarded as a critical capability for MSMEs. BI refers to a set of processes, technologies, and practices used to collect, integrate, analyse, and present data in order to support more accurate and timely decision-making (Yang et al., 2022). BI generates information for business decision-making by gathering and differentiating data from internal and external sources. This function is identified as the sensing capability of BI, which

enables firms to leverage data and transform it into important and relevant knowledge that supports strategic decisions and operational planning (Chen & Lin, 2021).

A number of studies show that the use of BI can enhance the quality of managerial decisions and ultimately affect organisational performance, although this relationship is not always direct and linear (Huang et al., 2022). BI has been found to positively influence financial performance (Huang et al., 2022; Yang et al., 2022), but not necessarily marketing performance (Huang et al., 2022). At the MSME level, particularly in the creative sector, BI often takes the form of simple practices such as orderly sales recording, monitoring best-selling products, analysing customer purchase patterns, and evaluating digital promotion campaigns, rather than complex and expensive systems (Llave, 2017; Ragazou et al., 2023).

In addition to the ability to manage internal data through BI, creative MSMEs are also highly dependent on learning from networks (network learning). Network learning can be understood as the ability of MSME owners to acquire, absorb, and integrate new knowledge from various actors within their business networks—such as business communities, suppliers, customers, professional associations, incubators, and government agencies. Previous studies in the context of small firms and start-ups show that strong network learning capabilities can enhance adaptive capacity, accelerate market opportunity recognition, and ultimately improve business performance (Caseiro & Coelho, 2019). For creative MSMEs, these networks function not only as channels for information distribution, but also as sources of inspiration for new ideas, references for design trends, and arenas for cross-actor collaboration (Siswanti & Setyaningrum, n.d.).

Nevertheless, both BI and network learning essentially provide “knowledge fuel” for creative MSMEs. Such knowledge will only generate competitive advantage when it is realised in the form of innovations that are relevant to market needs. These capabilities will have a tangible impact on competitiveness only when they are converted into innovation. Innovation in creative MSMEs may take the form of product design updates, new product variants, the adoption of more efficient production methods, or the application of creative digital marketing strategies. Research in various MSME contexts indicates that innovation plays a crucial role as a mechanism that bridges different organisational capabilities—such as market orientation, digital technology utilisation, and entrepreneurial strategy—with improvements in business performance.

Research on creative MSMEs in Indonesia has tended to emphasise public policy constraints, entrepreneurial characteristics, and the impact of digital transformation on competitiveness, rather than examining the integration of BI and network learning simultaneously. Studies that explicitly position BI and network learning as two key capabilities that operate through innovation to enhance the performance of creative MSMEs in Jakarta are still very limited. Yet Jakarta has a distinctive creative economic ecosystem, characterised by high levels of digital technology penetration and intense business networking, which may produce dynamics that differ from findings in other regions.

Jakarta was selected as the research site because it represents Indonesia’s largest urban economic centre and one of the most dynamic ecosystems for creative MSMEs. The city has a high concentration of fashion and culinary MSMEs, extensive access to digital platforms, dense business communities, and stronger exposure to government-supported entrepreneurship programmes and trade centres compared with many other regions. These characteristics make Jakarta a relevant empirical setting for examining how creative MSMEs utilise business information, network-based learning, and innovation to improve performance. Therefore, the selection of Jakarta is not only based on accessibility, but also on its strategic role as a hub of creative economic activity and MSME digital transformation in Indonesia.

Based on this review, at least three research gaps can be identified. First, there is still a paucity of studies that examine the simultaneous effects of Business Intelligence and network learning on the performance of creative MSMEs while positioning innovation as the main mediating mechanism. Some studies consider BI or learning separately, or include too many mediators, making it difficult to isolate the role of innovation as the primary bridge. Second, the context of creative MSMEs in Jakarta as one of the national epicentres of the creative economy has not been widely explored within a model that integrates BI, network learning, innovation, and performance, even though urban characteristics and proximity to policy centres may influence how business actors utilise data and networks. Third, inconsistencies in empirical findings regarding the role of network learning in driving innovation and performance indicate the need for re-examination within a different model configuration, particularly one that conceptualises network learning as a capability that improves performance indirectly through

innovation rather than solely through a direct path to performance.

In response to these gaps, this study positions Business Intelligence and network learning as two core capabilities that are expected to improve the performance of creative MSMEs in Jakarta indirectly, namely through the strengthening of innovation. Accordingly, innovation is proposed as a mediator linking BI and network learning to the performance of creative MSMEs. More specifically, the objectives of this study are: (1) to analyse the effect of BI on innovation among creative MSMEs in Jakarta; (2) to analyse the effect of network learning on innovation; (3) to examine the effect of innovation on the performance of creative MSMEs; and (4) to test the mediating role of innovation in the relationships between BI and network learning and the performance of creative MSMEs.

LITERATURE REVIEW

Resource-Based View (RBV) dan Knowledge-Based View (KBV)

The Resource-Based View (RBV) posits that firms achieve sustained competitive advantage when they possess and manage resources that are valuable, rare, inimitable, and non-substitutable (VRIN). From this perspective, strategic focus shifts from “what the firm sells” to “what the firm owns and is capable of doing” (Zhang et al., 2021). As economies increasingly transition towards a knowledge-based paradigm, the Knowledge-Based View (KBV) further positions knowledge as the most critical strategic resource: firms are conceptualised as institutions for processing knowledge that must be able to create, integrate, and apply specific knowledge in order to produce superior decisions and actions (Grant, 1996).

Within the RBV–KBV framework, the main variables in this study are positioned as knowledge-based capabilities and their application. Business Intelligence (BI) is understood not merely as a technology, but as an organisational capability to collect, process, and analyse business data so that it becomes relevant insights for decision-making (Barney, 2000). Network learning represents the ability of creative MSMEs to acquire and absorb new knowledge from external networks such as business communities, customers, suppliers, associations, and support institutions that enrich their internal knowledge base. These two capabilities constitute knowledge-based capabilities which, according to the KBV, are critical in determining a firm’s ability to adapt and compete in dynamic environments (Huang et al., 2022; Spender & Grant, 1996).

Innovation, in turn, is positioned as a form of knowledge application that converts insights derived from BI and knowledge obtained through network learning into new products, processes, and marketing strategies that are valuable to the market (Grant, 1996). Accordingly, the performance of creative MSMEs in this study is understood as the outcome of a particular configuration of knowledge-based resources and capabilities: BI and network learning provide the “knowledge fuel”, innovation functions as the “engine” that processes this knowledge, and performance improvement emerges as the final result of this process. The RBV–KBV lens thus offers a coherent theoretical foundation for explaining the relationships among BI, network learning, innovation, and the performance of creative MSMEs in Jakarta, and aligns with recent developments in capability-based research on small and medium-sized enterprises.

Business Intelligence and Innovation

Conceptually, Business Intelligence (BI) refers to systems and capabilities that enable organisations to integrate diverse internal and external data, process them using analytical tools, and present the results as information that supports decision-making (Caseiro & Coelho, 2019). In the context of start-ups and SMEs, (Caseiro & Coelho, 2019) show that BI capacity has a positive effect on network learning, innovativeness, and start-up performance; BI helps organisations understand markets and customers more thoroughly, thereby stimulating new ideas and innovation opportunities. This reinforces the view that BI operates primarily through mechanisms of knowledge enhancement and innovation, rather than solely through a direct effect on performance.

In the context of creative MSMEs in Jakarta, BI may take the form of simple yet systematic practices such as recording and analysing sales, monitoring best-selling products, processing customer feedback from digital channels, and evaluating the performance of promotional campaigns on social media. These capabilities allow business owners to identify demand trends, customer preferences, and market gaps that can serve as a basis for developing new ideas and innovation projects. From a KBV perspective, when organisations are able to integrate and translate such information into actionable knowledge, BI becomes an important trigger for innovation activities. Accordingly, the first hypothesis is proposed as follows:

H1: Business Intelligence has a positive effect on innovation among creative MSMEs in Jakarta
Network Learning and Innovation

Network learning refers to the process through which firms acquire, interpret, and integrate new knowledge via interactions with various actors in their business networks, such as customers, suppliers, competitors, government agencies, and professional communities. (Deiters & Schiefer, 2012) show that network learning within formal networks enables firms to share experiences, develop shared understandings, and foster collaborative innovation. (Çemberci et al., 2021) find that network learning capability mediates the relationship between open-mindedness and innovation performance, implying that the ability to learn from networks becomes a key mechanism linking openness to new ideas with superior innovation outcomes. In line with this perspective, (Yakin, 2023) demonstrates that network competence mediates the effect of market knowledge capability on the performance of export-oriented SMEs in the furniture sector, indicating that the ability to build and manage business networks is a critical factor in improving SME performance.

Similarly, other research has found that network capacity and relational capability have significant effects on the marketing performance of woodcraft MSMEs, reinforcing the notion that the strength of business networks constitutes a strategic resource for marketing performance (Nuryakin, 2020). For creative MSMEs, network learning may materialise through active participation in creative communities, government training programmes, industry associations, and online platforms that bring together different business actors. Through these networks, business owners gain insights into design trends, consumer tastes, new production techniques, digital marketing strategies, and opportunities for cross-actor collaboration. When effectively absorbed and internalised, the knowledge obtained from such networks enriches the organisational knowledge base and stimulates the emergence of innovative ideas that are relevant to the market. In a broader context, studies on competitive intelligence networks show that network dimensions—such as network extensiveness and ties with third parties—are positively correlated with SME business performance, suggesting that the quality and reach of information networks are important determinants of firm performance (Ali & Anwar, n.d.).

Within start-up ecosystems, (Huang et al., 2022) provide evidence that network learning, together with innovativeness, mediates the effect of Business Intelligence on financial performance, indicating that learning from networks constitutes

an important mechanism for converting data into financial outcomes.

Furthermore, (Karami & Tang, 2019) find that networking capability mediates the relationship between entrepreneurial orientation and the international performance of SMEs, which further supports the argument that the ability to learn and interact within networks—including international networks—can enhance firm performance across different market contexts. Grounded in the KBV and the aforementioned empirical findings, this study formulates the following hypothesis:

H2: Network learning has a positive effect on innovation among creative MSMEs in Jakarta
Innovation and Creative MSME Performance

Innovation is widely regarded as one of the main determinants of MSME performance, particularly in the creative economy sector, which is highly sensitive to changes in consumer tastes and preferences. (Rahman et al., 2021) find that innovation practices mediate the relationship between market orientation and market performance among MSMEs in Indonesia's creative economy; more innovative MSMEs tend to experience better sales growth and market expansion. Similarly, (Shi & Xiao, 2024) emphasise that product, process, and marketing innovation contribute positively to both financial and non-financial performance outcomes, including profitability, customer satisfaction, and loyalty.

From an RBV–KBV perspective, innovation represents the concrete application of a firm's unique resources and knowledge. Creative MSMEs that are able to continuously update designs, develop new product variants, adopt more efficient production technologies, and leverage digital marketing channels in creative ways are more likely to survive and grow in competitive markets. In other words, innovation serves as a primary channel through which knowledge-based capabilities are transformed into superior business performance. Based on these theoretical arguments and empirical findings, the third hypothesis is proposed:

H3: Innovation has a positive effect on the performance of creative MSMEs in Jakarta.
Mediating Role of Innovation

A number of prior studies indicate that various knowledge-based capabilities—such as market orientation, learning capability, and technological capability—often influence performance through innovation as a mediating variable. (Rahman et al., 2021) demonstrate that innovation practices mediate the effect of market orientation on the marketing performance of

creative-economy MSMEs in Indonesia. (Caseiro & Coelho, 2019) show that BI capacity enhances network learning and innovativeness, which in turn affect start-up performance, thereby reinforcing the view that innovation and network learning constitute important pathways linking BI to performance.

From a KBV perspective, BI and network learning provide rich knowledge, but such knowledge needs to be materialised in the form of relevant innovations in order to generate performance improvements. Without innovation processes, insights derived from BI and information obtained from networks tend to remain as passive knowledge that has not yet been

“capitalised” into economic value. Accordingly, in the present research model, innovation is positioned as the mechanism that converts the outputs of BI and network learning into improved performance of creative MSMEs in Jakarta. On the basis of these theoretical and empirical considerations, the following mediating hypotheses are proposed:

H4a: Innovation mediates the effect of Business Intelligence on the performance of creative MSMEs in Jakarta.

H4b: Innovation mediates the effect of network learning on the performance of creative MSMEs in Jakarta.

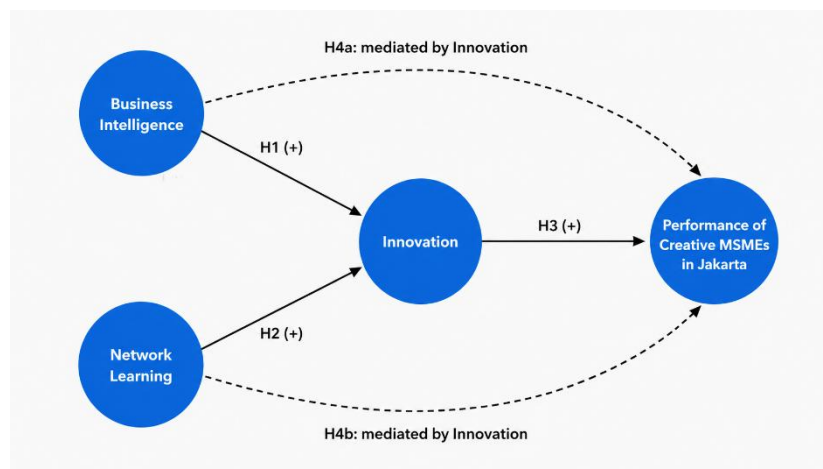


Figure 1. Research Conceptual Framework

METHODS

This study employs a quantitative approach with an explanatory survey design to examine the causal relationships among Business Intelligence, network learning, innovation, and the performance of creative MSMEs in Jakarta. The target population comprises creative MSME operators in the Special Capital Region of Jakarta (DKI Jakarta) engaged in the fashion and culinary subsectors. The unit of analysis is the firm (MSME), while the main respondents are owners, co-owners, or managers who are directly involved in day-to-day business decision-making.

A non-probability purposive sampling technique was used because the study required respondents who met specific criteria. The inclusion criteria were as follows: (1) the business falls under the micro, small, or medium category according to the criteria of the Ministry of Cooperatives and SMEs; (2) it operates within the creative economy subsector; (3) it has been in operation for at least one year; and (4) the

owner/manager is willing to complete the questionnaire in full. Respondents were identified through creative MSME communities, associations of creative economy actors, and the researchers' personal networks.

A total of 413 questionnaires were collected. After data screening to remove incomplete responses and outliers, 400 usable questionnaires remained for further analysis. This sample size meets the minimum recommendations for Partial Least Squares Structural Equation Modeling (PLS-SEM), namely at least ten times the largest number of structural paths directed at a particular construct in the model, and is also consistent with sample size guidelines based on the inverse square root and gamma-exponential approaches to ensure adequate statistical power (J. Hair & Alamer, 2022). The demographic and business profiles of the respondents (age, gender, firm age, subsector, and turnover) are presented in Table 1.

Table 1 Respondent Demographics

Variable	Category	Frequency (n)	Percentage (%)
Type of business	Fashion	120	30,0
	Culinary	280	70,0
Business location (Jakarta)	West Jakarta	70	17,5
	Central Jakarta	75	18,8
	South Jakarta	81	20,2
	East Jakarta	123	30,8
	North Jakarta	51	12,8
Business age	≤ 2 years	86	21,5
	3–5 years	134	33,5
	6–10 years	155	38,8
	> 10 years	25	6,2
Average monthly turnover	< Rp10 million	82	20,5
	Rp10–50 million	160	40,0
	Rp50–100 million	94	23,5
	> Rp100 million	64	16,0
Number of employees	1–3 employees	165	41,2
	4–5 employees	121	30,2
	6–10 employees	86	21,5
	> 10 employees	28	7,0
Change in turnover over the last 12 months	Increased	191	47,8
	Stable	119	29,8
	Decreased	90	22,5

Source: Research data, processed (2025)

Data were collected using a structured questionnaire administered through a combination of online and offline channels. For the online survey, the questionnaire was created using Google Forms and distributed via WhatsApp groups of creative MSME communities such as Jackpreneur and Bangkit Maju Bersama UMKM, social media channels (e.g. Facebook groups “UMKM Jabodetabek” and “UMKM Online Indonesia”), as well as the researchers’ personal networks. For the offline survey, questionnaires were disseminated through institutional partners that have long-standing collaboration with the researchers, particularly managers of trade centres where creative MSMEs operate. These partners included market managers under PD Pasar Jaya, managers of modern shopping centres such as ITC, and managers of MSME centres across the Jakarta area. The researchers coordinated with these managers to contact eligible traders/tenants classified as creative MSMEs and then distributed the questionnaires directly to owners or business representatives who agreed to participate.

The questionnaire consisted of two main sections. The first section contained questions about respondent profiles and business

characteristics (business age, subsector, number of employees, turnover, and main marketing platforms). The second section comprised items measuring the latent constructs of Business Intelligence, network learning, innovation, and MSME performance. All items were measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

The data summarised in Table 1 were obtained from the biographical information provided by respondents in the first section of the questionnaire. In total, 14 reflective items were used to measure the research variables. Business Intelligence was measured using four items adapted and modified from (Huang et al., 2022) to fit the context of creative MSMEs in Jakarta. These items assess the extent to which the business understands its customers and competitive environment and is able to utilise business information. Example statements include: “Our business knows what our customers want,” “Our business understands the strategies used by competitors,” and “Our business can prepare reports that present business information in a clear and easy-to-understand way.”

Network learning was measured using three items adapted from network learning and network competence scales for SMEs (Çemberci et al., 2021; Huang et al., 2022; Yakin, 2023) and adjusted to the networking context of creative MSMEs. These statements capture the extent to which the business learns from its networks. Example items include: “Our business often gets new ideas or solutions from other business owners, customers, or business communities,” “Our business uses advice or experiences from external parties (such as suppliers, customers, or government agencies) to improve the business,” and “Our business maintains good relationships with existing business networks and turns them into collaborations that benefit the business.”

Innovation was measured using three items that reflect the firm’s innovative orientation and behaviour, adapted from innovation scales for knowledge-based MSMEs and start-ups (Huang et al., 2022; Rahman et al., 2021). These items capture the extent to which the business proactively develops and implements new ideas. Example statements include: “Our business sets clear goals for future business development,” “Our business believes that there is a balance between risk and opportunity in doing business,” and “Our business frequently thinks about new ways or creative ideas to develop the business.”

MSME performance was measured using four perceptual items referring to subjective performance indicators for MSMEs (Anjaningrum et al., 2024; Nuryakin, 2020; Rahman et al., 2021). Respondents were asked to evaluate the development of their business over the past few years. Example statements include: “Our business profits have increased over time,” “Our overall business performance is better than in the previous year,” “Our business capital has continued to

grow,” and “Our customers are increasingly satisfied with our products or services.”

All constructs in this study were modelled as reflective constructs. Reliability was assessed using Cronbach’s alpha and composite reliability, while convergent validity was evaluated based on the average variance extracted (AVE). Discriminant validity was examined using the Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio, in line with recent methodological recommendations (J. F. Hair et al., 2019). Once the measurement model met the required reliability and validity criteria, the structural model was evaluated by examining the R^2 values, path coefficients, effect sizes (f^2), and predictive relevance (Q^2), as well as the statistical significance of the hypothesised relationships. Significance levels were assessed using a bootstrapping procedure with 5,000 resamples to test hypotheses H1–H4b (J. Hair & Alamer, 2022).

RESULTS

The detailed profile of respondents is presented in Table 1, which shows the distribution of business type, geographic area, firm age, monthly turnover, number of employees, and changes in turnover over the past 12 months. In general, the sample is dominated by creative MSME owners in the culinary and fashion sectors operating across various areas of Jakarta, with considerable variation in business age and turnover levels.

Descriptive statistics for each latent construct were calculated based on the mean scores of the corresponding Likert-scale items (1–5) for each variable. A summary of these descriptive statistics is presented in Table 2.

Table 2. Descriptive Statistics of Research Constructs (n = 400)

Construct	Mean	Interpretation
Business Intelligence	3,56	Moderate–High
Network Learning	3,62	Moderate–High
Innovation	3,60	Moderate–High
MSME Performance	3,61	Moderate–High

Source: Research data, processed (2025)

Table 2 presents the descriptive statistics for each latent construct. Overall, the mean scores of Business Intelligence (mean = 3.56), network learning (mean = 3.62), innovation (mean = 3.60), and MSME performance (mean = 3.61) fall within the medium–high range. This indicates that creative MSME actors in Jakarta are reasonably active in utilising business information, learning from their networks, and engaging in innovation,

and that they generally perceive their business performance to be relatively good, although there is still room for further improvement.

After providing this initial overview of the levels of Business Intelligence, network learning, innovation, and MSME performance, the next step is to evaluate the quality of the instruments used to measure these four constructs. The measurement model is assessed to ensure that each latent

construct is reliably and validly reflected by its indicators before proceeding to the testing of the structural model.

Table 3. Construct Reliability: Cronbach's Alpha and Composite Reliability

	Composite Reliability	Cronbach's Alpha
Business Intelligence	0.830	0.727
Network Learning	0.801	0.627
Innovation	0.797	0.619
MSME Performance	0.841	0.748

Source: Research data, processed (2025)

Based on the results of the construct reliability and validity analysis, all constructs exhibit an adequate level of internal consistency. The composite reliability (CR) values for Business Intelligence, network learning, innovation, and MSME performance range from approximately 0.80 to 0.84, exceeding the commonly recommended minimum threshold of 0.70 in quantitative research. This indicates that the indicators for each construct demonstrate good internal consistency. Cronbach's alpha values range from 0.62 to 0.75; although the alphas for innovation and network learning are relatively lower than those of the other constructs, they are still acceptable in applied social research,

particularly for constructs measured with a limited number of items.

As shown in Table 3, the composite reliability and Cronbach's alpha values fall within acceptable ranges, suggesting that the indicators used are capable of reliably measuring the intended variables. Furthermore, convergent validity relates to the principle that indicators of a construct should be highly correlated. In PLS-SEM, convergent validity for reflective indicators is assessed based on the outer loadings of each indicator on its respective construct. A commonly used rule of thumb is that outer loadings should be at least 0.60, with higher values being preferable (Garson, 2016).

Table 4 Convergent Validity (Outer Loading)

Variable	Indicator	Outer Loading	AVE	Rule of Tumbs	Results
Business Intelligence	BI01	0.747	0.550	0,5	Valid
	BI02	0.729			
	BI03	0.758			
	BI04	0.732			
Network Learning	NL01	0.751	0.572	0,5	Valid
	NL02	0.776			
	NL03	0.743			
Innovation	IN01	0.745	0.567	0,5	Valid
	IN02	0.750			
	IN03	0.764			
Performance MSME	PF01	0.760	0.570	0,5	Valid
	PF02	0.783			
	PF03	0.739			
	PF04	0.737			

Based on Table 4, all indicators of each variable have outer loading values above 0.70 (ranging from 0.729 to 0.783). These values indicate that each indicator reflects its latent construct well, as the proportion of indicator variance explained by the construct is at a strong level. In addition, the Average Variance Extracted (AVE) values for all constructs exceed the minimum recommended threshold of 0.50, namely 0.550 for Business Intelligence, 0.572 for network learning, 0.567 for innovation, and 0.570 for MSME performance. This means that more than 50% of the variance in each indicator is explained by its underlying latent construct, thus confirming

that the criterion of convergent validity is satisfied for all variables in the model.

Substantively, these findings suggest that the sets of indicators used indeed "cluster" around their intended constructs. Indicators BI01–BI04 consistently capture the dimension of Business Intelligence in creative MSMEs; NL01–NL03 reflect practices of learning through business networks; IN01–IN03 represent innovative behaviour; and PF01–PF04 capture various aspects of MSME performance. Given that the requirements for outer loadings and AVE are fulfilled, it can be concluded that the measurement instrument has adequate capability to capture the

four latent constructs consistently, and is therefore appropriate for use in the subsequent structural model analysis.

After confirming convergent validity through outer loading and AVE values, discriminant validity was assessed using the Fornell–Larcker criterion. This test compares the

square root of AVE for each construct with the correlations between that construct and other constructs in the model. Discriminant validity is considered acceptable when the square root of AVE is higher than the correlations with other constructs.

Tabel 5. Fornell–Larcker Criterion

	Business Intelligence	Innovation	MSME Performance	Network Learning
Business Intelligence	0.742			
Innovation	0.712	0.753		
MSME Performance	0.736	0.691	0.755	
Network Learning	0.698	0.641	0.695	0.757

Source: Research data, processed (2025)

As shown in Table 5, the square root of AVE for each construct, presented on the diagonal, is higher than its correlations with the other constructs. The diagonal values are 0.742 for Business Intelligence, 0.753 for Innovation, 0.755 for MSME Performance, and 0.757 for Network Learning. These values indicate that each construct shares more variance with its own indicators than with other constructs in the model. Therefore,

based on the Fornell–Larcker criterion, the discriminant validity of the measurement model can be considered acceptable.

In addition to the Fornell–Larcker criterion, the heterotrait–monotrait ratio (HTMT) was also examined as an additional diagnostic tool for assessing discriminant validity. The HTMT results are presented in Table 6.

Tabel 6. Heterotrait–Monotrait Ratio (HTMT)

	Business Intelligence	Innovation	MSME Performance	Network Learning
Business Intelligence				
Innovation	1.055			
MSME Performance	0.998	1.013		
Network Learning	1.035	1.025	1.016	

Source: Research data, processed (2025)

As shown in Table 6, the HTMT values indicate strong associations among several constructs. This result may be related to the close conceptual relationship among Business Intelligence, Network Learning, Innovation, and MSME Performance within the RBV–KBV framework. In this study, Business Intelligence and Network Learning are positioned as knowledge-based capabilities, Innovation as a mechanism for applying knowledge, and MSME Performance as the outcome of these capabilities. Therefore, the

HTMT results are interpreted with caution. Considering the acceptable outer loadings, AVE, composite reliability, Cronbach’s alpha, and Fornell–Larcker results, the measurement model was retained for further structural model analysis.

After validating the outer (measurement) model, the next step is to evaluate the inner (structural) model by examining the R-square values, path coefficients, and bootstrapped t-statistics. The R-square values are reported in Table 7.

Table 7. R-Square Values

Variable	R-Square
Innovation	0.547
MSME Performance	0.477

Source: Research data, processed (2025)

Table 7 shows that the R-square value for innovation is 0.547. This means that approximately 54.7% of the variance in innovation among creative MSMEs in Jakarta can be explained by the combined effects of Business Intelligence and network learning in the model. Referring to

common benchmarks for R-square in PLS-SEM, values around 0.50 are typically classified as moderate, indicating that these two variables have a reasonably strong explanatory power for MSME innovation behaviour.

Meanwhile, the R-square value for MSME performance is 0.477, indicating that 47.7% of the variance in performance is explained by the variables in the model, particularly innovation as the mediating construct. This value also approaches the moderate level of explanatory power, suggesting that the proposed model is sufficiently adequate to capture the main factors influencing the performance of creative MSMEs, although a proportion of the variance is still

attributable to factors outside the scope of this study.

In addition to the R-square values, the inner model also estimates the path coefficients to assess the significance and strength of the relationships between variables and to test the hypotheses within a range of -1 to $+1$. The results of the path coefficient estimation are presented in the following table.

Table 8 Path coefficient

	Business Intelligence	Network Learning	Innovation	MSME Performance
Business Intelligence			0.515	
Network Learning			0.282	
Innovation				0.691

Source: Research data, processed (2025).

Based on Table 8, all path coefficients are positive and fall between 0 and 1, indicating that the hypothesised relationships in this study are positively directed. To further assess the statistical

significance of these relationships, t-statistics were obtained using the bootstrapping procedure. The results of this significance testing are reported in Table 9.

Table 9. Bootstrapping Results

	Original Sampel (O)	Sampel Mean (M)	Standard Deviation (STDEV)	T statistic (O/STDEV)	P Values
Business Intelligence -> Innovation	0.515	0.516	0.047	11.068	0.000
Network Learning -> Innovation	0.282	0.282	0.050	5.682	0.000
Inovasi -> MSME Performance	0.691	0.693	0.025	28.202	0.000

Source: Research data, processed (2025).

The bootstrapping results in Table 9 show that all relationships between variables in the model are positive and statistically significant. The path Business Intelligence $\rightarrow$ Innovation has an original sample coefficient of 0.515, with a t-statistic of 11.068 and a p-value of 0.000 ($p < 0.001$). Because the t-statistic far exceeds the critical value of 1.96 and the p-value is below 0.05, it can be concluded that H1 is supported: Business Intelligence has a positive and significant effect on the innovation of creative MSMEs.

Similarly, the path Network Learning $\rightarrow$ Innovation has a coefficient of 0.282, with a t-statistic of 5.682 and a p-value of 0.000. This result indicates that H2 is also supported, meaning that the more intensively MSMEs learn from their networks, the higher their level of innovation. Meanwhile, the relationship Innovation $\rightarrow$ MSME

Performance shows the largest coefficient, namely 0.691, with a t-statistic of 28.202 and a p-value of 0.000. This very high t-statistic confirms that H3 is strongly supported: innovation has a positive and highly significant effect on MSME performance. Overall, these findings confirm that Business Intelligence and network learning enhance the performance of creative MSMEs primarily through the strengthening of innovation.

The next step in assessing the inner model is to examine the f^2 effect sizes. The f^2 statistic is used to evaluate the contribution of each exogenous construct to the R^2 value of an endogenous latent variable. According to (J. Hair & Alamer, 2022), f^2 values of 0.02, 0.15, and 0.35 are typically interpreted as indicating small, medium, and large effects, respectively

Table 10. Effect Size (f^2)

	Business Intelligence	Innovation	MSME Performance	Network Learning
Business Intelligence		0,300		
Innovation			0,914	
MSME Performance				
Network Learning		0,090		

Source: Research data, processed (2025).

Table 10 shows that Business Intelligence has an f^2 value of 0.300 on innovation, which, according to Hair et al. (2014), corresponds to a medium effect size approaching large. This indicates that Business Intelligence makes a fairly strong contribution to explaining the variance in innovation among creative MSMEs. The f^2 value for the Network Learning $\rightarrow$ Innovation path is 0.090, which reflects a small but still meaningful effect, suggesting that learning through networks acts as an additional supporting factor for innovation.

Meanwhile, the Innovation $\rightarrow$ MSME Performance path exhibits the largest f^2 value, namely 0.914, which is categorised as a very large effect. This finding underscores that innovation is not merely an intervening variable but functions as a major driver of performance improvement in creative MSMEs. Consequently, efforts to

strengthen Business Intelligence and network learning become crucial to the extent that these capabilities can be effectively converted into concrete innovations at the firm level.

The next step in evaluating the inner model is to assess predictive relevance (Q^2), which indicates how well the observed values are reconstructed by the model using the blindfolding procedure. If the Q^2 value is greater than 0, the model can be considered to have acceptable predictive relevance; conversely, a Q^2 value below 0 suggests a lack of predictive capability. According to (J. F. Hair et al., 2019) blindfolding is a resampling technique that systematically omits and predicts data points for indicators in the reflective measurement model of endogenous constructs. The results of the SmartPLS blindfolding procedure are presented in the following table.

Table 11. Q-Square Values (Blindfolding)

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Business Intelligence	1600,000	1600,000	
Innovation	1200,000	835,883	0,303
MSME Performance	1600,000	1174,000	0,266
Network Learning	1200,000	1200,000	

Source: Research data, processed (2025).

Based on Table 11, the Q-square (Q^2) values for the endogenous constructs Innovation and MSME Performance are 0.303 and 0.266, respectively. The Q^2 value is calculated from the ratio between the Sum of Squares of Observations (SSO) and the Sum of Squares of Prediction Errors (SSE) using the formula $Q^2 = 1 - (SSE/SSO)$

Because both Q^2 values are greater than zero, the model is considered to have adequate predictive relevance for Innovation and MSME Performance. In general, Q^2 values in the range of 0.25–0.35 can be interpreted as indicating moderate predictive capability, suggesting that the model not only explains the variance of the constructs (through R-square) but also performs reasonably well in predicting observation values that were not used in the estimation process. Because both Q^2 values are greater than zero, the model is considered to have adequate predictive relevance for Innovation and MSME Performance. In general, Q^2 values in the range of 0.25–0.35 can be interpreted as indicating moderate predictive capability, suggesting that the model not only explains the variance of the constructs (through R-square) but also performs reasonably well in predicting observation values that were not used in the estimation process.

Meanwhile, the constructs Business Intelligence and Network Learning show Q^2 values of 0.000 because they are treated as exogenous

variables in the model and are therefore not assessed for predictive relevance through the blindfolding procedure. Overall, these Q^2 results reinforce the earlier findings that the research model linking Business Intelligence and network learning to MSME performance through innovation possesses not only moderate explanatory power but also satisfactory predictive capability for the innovation behaviour and performance of creative MSMEs in Jakarta.

DISCUSSION

This study aimed to explain how Business Intelligence (BI) and network learning affect innovation, and how innovation, in turn, drives the performance of creative MSMEs in Jakarta. Conceptually, the proposed model is grounded in the Resource-Based View (RBV) and the Knowledge-Based View (KBV), which position knowledge-based resources—such as data-analytic capabilities and learning from networks—as key drivers of competitive advantage and business performance.

Business Intelligence $\rightarrow$ Innovation

The finding that BI has a positive and significant effect on innovation supports the KBV framework, in which the ability to collect, process, and interpret market information is viewed as a form of strategic knowledge capacity. (Caseiro & Coelho, 2019) show that BI capacity enhances

innovativeness and start-up performance, both directly and through network learning. Other studies likewise find that BI and analytics strengthen innovative decision-making processes and improve firm performance

In the context of creative MSMEs in Jakarta, BI—measured through the monitoring of best-selling products, recording of transactions, analysis of customer preferences, and evaluation of digital campaigns—proves to be a crucial “knowledge input” for generating new ideas. The path coefficient for BI → innovation ($\beta = 0.515$; $f^2 = 0.300$) indicates a reasonably strong effect, suggesting that MSMEs’ investments in relatively simple BI practices (for example, using digital point-of-sale applications, marketplace dashboards, and automated sales reports) can substantially increase their level of innovation.

These results are consistent with prior evidence that analytical capabilities and Business Intelligence can enhance absorptive capacity and, in turn, lead to higher innovation and economic performance. From an RBV–KBV perspective, BI in creative MSMEs can therefore be regarded as a strategic, knowledge-based capability that is relatively difficult for competitors to imitate once it has been embedded in internal routines and processes.

Network Learning → Innovation

The results also show that network learning has a positive and significant effect on innovation, although with a smaller coefficient ($\beta = 0.282$; $f^2 = 0.090$). This is consistent with the literature that emphasises the role of external networks and inter-firm learning in accelerating the innovation process in MSMEs. Network learning capability is viewed as a mechanism that enables organisations to absorb new ideas, practices, and technologies from partners, suppliers, customers, and business communities.

From a KBV perspective, network learning helps MSMEs access knowledge “beyond organisational boundaries” and integrate it into their internal processes. For example, (Çemberci et al., 2021) find that network learning capability mediates the relationship between open-mindedness and innovation performance, underlining the importance of networks as channels for learning. Other studies on Indonesian MSMEs likewise indicate that networking capability and knowledge management play an important role in shaping innovation strategies.

In the case of creative MSMEs in Jakarta, network learning may take the form of participation in entrepreneurship communities, collaboration with local suppliers, engagement in government or incubator training programmes, or

learning from other business owners in trade centres such as Tanah Abang and creative markets. The relatively smaller effect size compared with BI may indicate that the current quality of networks is still largely informal—centred on exchanging stories—rather than being structured as systematic learning networks. This opens up room for policies and support programmes that more explicitly transform social networks into purposeful learning networks.

Innovation → MSME Performance

The path coefficient for innovation → MSME performance ($\beta = 0.691$; $f^2 = 0.914$) is the largest in the model, reinforcing the view that innovation capability is a key driver of MSME performance, as highlighted by numerous prior studies. A wide range of empirical research and meta-analyses has shown that innovation—at the levels of product, process, and business model—is positively associated with sales growth, profitability, and long-term competitive advantage.

Studies on the creative industries in Indonesia likewise emphasise that innovation is a crucial factor in enhancing the performance and competitiveness of MSMEs operating in tourism and creative economy sectors. In the context of this study, innovation is reflected in the efforts of MSMEs to develop new product ideas, exploit new market opportunities, and align their offerings with emerging trends and consumer preferences. The finding that innovation has a very strong effect on performance strengthens the claim that data (through BI) and networks (through network learning) only generate economic value when they are translated into concrete innovations in the marketplace.

Mediating Role of Innovation

The finding that BI and network learning are not directly linked to performance, but instead influence it through innovation, is consistent with Anjaningrum (2024), who shows that BI contributes to MSME performance primarily through the sequential mediation of organisational learning and innovation. Similarly, Caseiro and Coelho (2019) report that the effect of BI on start-up performance is strengthened when network learning and innovativeness are taken into account as mediating mechanisms.

Theoretically, these results reinforce the RBV–KBV perspective that knowledge-based resources (such as BI and networks) do not automatically translate into superior performance; rather, they must be processed through organisational mechanisms—here, innovation—before they can become measurable competitive advantages. In other words, innovation functions as a conversion mechanism that transforms

knowledge into economic value for creative MSMEs.

Conceptually, the evidence confirms that data and networks, by themselves, are insufficient to improve business performance. Both must first be transformed into concrete innovations at the levels of products, processes, and marketing strategies in order to generate performance gains. This aligns with the RBV–KBV view of BI and network learning as input resources that require organisational processing (innovation) before they can be converted into competitive advantage and superior performance. Based on these findings, H4a, which states that innovation mediates the relationship between Business Intelligence and the performance of creative MSMEs in Jakarta, and H4b, which states that innovation mediates the relationship between network learning and the performance of creative MSMEs in Jakarta, are both supported.

CONCLUSION

This study aimed to analyse how Business Intelligence (BI) and network learning influence innovation, and how innovation, in turn, contributes to the performance of creative MSMEs in Jakarta. Based on the PLS-SEM analysis, the findings indicate that both BI and network learning have positive and significant effects on innovation, with the effect of BI being relatively stronger than that of network learning. Furthermore, innovation is found to have a very strong positive effect on the performance of creative MSMEs. The mediation analysis also demonstrates that the effects of BI and network learning on MSME performance do not occur directly but are fully mediated by innovation. In other words, data and networks generate economic value only when they are effectively articulated into innovations at the levels of products, processes, and marketing strategies.

Theoretically, these findings reinforce the Resource-Based View and Knowledge-Based View, which posit that knowledge-based capabilities—here, BI capabilities and learning through networks—constitute strategic resources that must be converted through innovation processes before they can be transformed into competitive advantage and superior performance. From a practical standpoint, the results suggest that creative MSME owners should not perceive BI as a complex and expensive technology, but rather as a set of systematic and continuous information management practices which, when combined with active learning networks, can strengthen the firm's innovation capacity. For local governments, market centre managers, supporting institutions, and universities, the findings provide a basis for

designing intervention programmes that simultaneously integrate simple BI training, the strengthening of network learning, and innovation mentoring.

Nevertheless, this study has several limitations. First, the cross-sectional research design limits the ability to draw conclusions about long-term causality; the identified relationships reflect patterns of association at a single point in time rather than dynamic changes over time. Second, the sample is restricted to creative MSMEs in Jakarta, which constrains the generalisability of the findings to other regions or to non-creative MSME sectors operating in different business environments. Third, the research model includes only four main constructs, whereas MSME performance is likely to be influenced by additional variables such as market orientation, digital capabilities, access to finance, and the intensity of competition. These limitations are mainly related to the scope and design of the study rather than to analytical errors, as the measurement instruments have been shown to be reliable and valid, and the structural model meets the required criteria of model adequacy.

In light of these limitations, future research is recommended to employ longitudinal designs in order to capture the dynamics of BI, network learning, innovation, and MSME performance over time. Subsequent studies may also extend the context to other cities or regions and include additional variables—such as market orientation, digital capability, or competitive intensity—as moderators or additional predictors. Furthermore, future work could examine BI-based interventions, for example, by developing and testing a proof-of-concept decision-support application for creative MSMEs, to assess the extent to which the systematic implementation of BI can strengthen innovation and business performance, while enriching our understanding of how knowledge is converted into performance advantages in the creative MSME sector.

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REFERENCES

- Ali, B. J., & Anwar, G. (n.d.). Measuring competitive intelligence Network and its role on Business Performance. *International Journal of English Literature and Social Sciences*, 6(2). <https://doi.org/10.22161/ijels>
- Anjaningrum, W. D., Azizah, N., & Suryadi, N. (2024). Spurring SMEs' performance

- through business intelligence, organizational and network learning, customer value anticipation, and innovation - Empirical evidence of the creative economy sector in East Java, Indonesia. *Heliyon*, 10(7). <https://doi.org/10.1016/j.heliyon.2024.e27998>
- Barney, J. B. (2000). Firm resources and sustained competitive advantage. *Advances in Strategic Management*, 17, 203–227. [https://doi.org/10.1016/S0742-3322\(00\)17018-4](https://doi.org/10.1016/S0742-3322(00)17018-4)
- Caseiro, N., & Coelho, A. (2019a). The influence of Business Intelligence capacity, network learning and innovativeness on startups performance. *Journal of Innovation and Knowledge*, 4(3), 139–145. <https://doi.org/10.1016/j.jik.2018.03.009>
- Caseiro, N., & Coelho, A. (2019b). The influence of Business Intelligence capacity, network learning and innovativeness on startups performance. *Journal of Innovation and Knowledge*, 4(3), 139–145. <https://doi.org/10.1016/j.jik.2018.03.009>
- Çemberci, M., Civelek, M. E., Gürol, Y., & Cömert, P. N. (2021). The Role of Network Learning Capability in the Relationship between Open Mindedness and Innovation Performance. *Postmodern Openings*, 12(4), 18–41. <https://doi.org/10.18662/po/12.4/359>
- Chatterjee, S., Chaudhuri, R., Shah, M., & Maheshwari, P. (2022). Big data driven innovation for sustaining SME supply chain operation in post COVID-19 scenario: Moderating role of SME technology leadership. *Computers and Industrial Engineering*, 168. <https://doi.org/10.1016/j.cie.2022.108058>
- Chen, Y., & Lin, Z. (2021). Business Intelligence Capabilities and Firm Performance: A Study in China. *International Journal of Information Management*, 57. <https://doi.org/10.1016/j.ijinfomgt.2020.102232>
- Deiters, J., & Schiefer, G. (2012). Available online at www.fooddynamics.org. In *Int. J. Food System Dynamics* (Vol. 3, Issue 3). www.fooddynamics.org
- Garson, G. D. (2016). *Partial Least Squares: Regression & Structural Equation Models*.
- Grant, R. M. (1996). TOWARD A KNOWLEDGE-BASED THEORY OF THE FIRM. In *Strategic Management Journal* (Vol. 17).
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3). <https://doi.org/10.1016/j.rmal.2022.100027>
- Hair, J. F., Risher, J. J., Starstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*.
- Hmoud, H., Al-Adwan, A. S., Horani, O., Yaseen, H., & Zoubi, J. Z. Al. (2023). Factors influencing business intelligence adoption by higher education institutions. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(3). <https://doi.org/10.1016/j.joitmc.2023.100111>
- Huang, Z. xiong, Savita, K. S., & Zhong-jie, J. (2022a). The Business Intelligence impact on the financial performance of start-ups. *Information Processing and Management*, 59(1). <https://doi.org/10.1016/j.ipm.2021.102761>
- Huang, Z. xiong, Savita, K. S., & Zhong-jie, J. (2022b). The Business Intelligence impact on the financial performance of start-ups. *Information Processing and Management*, 59(1). <https://doi.org/10.1016/j.ipm.2021.102761>
- Karami, M., & Tang, J. (2019). Entrepreneurial orientation and SME international performance: The mediating role of networking capability and experiential learning. *International Small Business Journal: Researching Entrepreneurship*, 37(2), 105–124. <https://doi.org/10.1177/0266242618807275>
- Kgakatsi, M., Galeboe, O. P., Molelekwa, K. K., & Thango, B. A. (2024). The Impact of Big Data on SME Performance: A Systematic Review. *Businesses*, 4(4), 632–695. <https://doi.org/10.3390/businesses4040038>
- Llave, M. R. (2017). Business Intelligence and Analytics in Small and Medium-sized Enterprises: A Systematic Literature Review. *Procedia Computer Science*, 121, 194–205. <https://doi.org/10.1016/j.procs.2017.11.027>
- Mahrinasari, M. S., Bangsawan, S., & Sabri, M. F. (2024). Local wisdom and Government's role in strengthening the sustainable competitive advantage of creative industries. *Heliyon*, 10(10). <https://doi.org/10.1016/j.heliyon.2024.e31133>
- Nuryakin, N. (2020). Exploring SMEs Marketing Performance Through Networking Capacity and Relational Capability. *Asia Pacific Management and Business Application*,

- 009(02), 137–150.
<https://doi.org/10.21776/ub.apmba.2020.009.02.5>
- Ragazou, K., Passas, I., Garefalakis, A., & Zopounidis, C. (2023a). Business intelligence model empowering SMEs to make better decisions and enhance their competitive advantage. *Discover Analytics*, 1(1). <https://doi.org/10.1007/s44257-022-00002-3>
- Ragazou, K., Passas, I., Garefalakis, A., & Zopounidis, C. (2023b). Business intelligence model empowering SMEs to make better decisions and enhance their competitive advantage. *Discover Analytics*, 1(1). <https://doi.org/10.1007/s44257-022-00002-3>
- Rahman, S., Budiyo, & Suwitho. (2021). Market performance of SMEs in the creative economy and the mediating role of innovation practices. *Economic Annals-XXI*, 193(9–10), 78–84.
<https://doi.org/10.21003/ea.V193-09>
- Shi, J., & Xiao, Z. (2024). Research on the Impact of Inter-Industry Innovation Networks on Collaborative Innovation Performance: A Case Study of Strategic Emerging Industries. *Systems*, 12(6).
<https://doi.org/10.3390/systems12060211>
- Siswanti, Y., & Setyaningrum, R. P. (n.d.). *Driving Successful SMEs Business Performance in Indonesia: The Role of Network Competency, Responsiveness to Suppliers and Market Turbulence*.
- Spender, J.-C., & Grant, R. M. (1996). KNOWLEDGE AND THE FIRM: OVERVIEW. In *Strategic Management Journal* (Vol. 17).
- Syarkani, Y. (2025). Digital Business Model Innovation For Msmes In Indonesia's Creative Economy Era: A Strategic Management Approach. *LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT*, 23(10), 1305–1324.
- Yakin, N. (2023). The Mediating Role of Networking Competence in The Relationship Between Market Knowledge Capability on SMES Performance. *Journal of Entrepreneurship & Business*, 4(3), 182–191. <https://doi.org/10.24123/jeb.v4i3.5929>
- Yang, M., Sulaiman, R., Yin, Y., Mallamaci, V., & Alrabaiah, H. (2022). The effect of business intelligence, organizational learning and innovation on the financial performance of innovative companies located in Science Park. *Information Processing & Management*, 59(22).
- Zhang, Y., Hou, Z., Yang, F., Yang, M. M., & Wang, Z. (2021). Discovering the evolution of resource-based theory: Science mapping based on bibliometric analysis. *Journal of Business Research*, 137, 500–516.
<https://doi.org/10.1016/j.jbusres.2021.08.055>