

Bridging the Innovation Gap: Strategic Digital Transformation in Indonesia's Creative Industries

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ABSTRACT

Indonesia's creative industries, particularly the culinary and fashion sectors, are significant contributors to the national economy. However, many micro, small, and medium enterprises (MSMEs) face a persistent innovation gap that limits their competitiveness in the digital era. This study addresses the critical need to understand digital innovation adoption patterns and their impact on business performance within Indonesia's creative economy. The research objectives are threefold: to identify the types of digital innovation being adopted by MSMEs, analyze the key dimensions influencing innovation performance, and propose evidence-based strategies to enhance their competitiveness. Using a quantitative approach, primary data were collected from 384 MSME respondents across various regions in Indonesia through structured questionnaires. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the relationships between variables. The findings confirm that human capital capacity, resource capacity, and strategic environment significantly drive both innovation and operational[A1] performance, which in turn enhance overall business performance. Notably, innovation performance emerged as the strongest predictor of business success, demonstrating its critical role in MSME sustainability. The study provides practical, actionable strategies for policymakers and MSMEs to foster digital transformation, including targeted improvements in digital skills development, enhanced access to funding mechanisms, and sector-specific innovation support programs. These insights contribute to bridging the innovation gap and strengthening Indonesia's positioning in the global creative economy.

Keywords: Digital Innovation, Creative Industries, MSMEs, Strategic Environment, Resources Capacity, Human Capital Capacity

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INTRODUCTION

Indonesia's creative industries operate within a national context that is rapidly embracing digital transformation. The government's *Making Indonesia 4.0* initiative targets revitalizing national industries, particularly through the adoption of advanced digital technologies such as AI, IoT, robotics, and automation (Deni, 2023; Helmi, 2019; Shaddiq et al., 2021; Xu, 2020; Yoshua Pramana Kawi et al., 2022). While the policy focus is predominantly on five manufacturing sectors (food and beverage, textiles and apparel, automotive, chemicals, and electronics), the principles of innovation, productivity, and digital integration also apply strongly to the creative sector (Bellanova et al., 2022; Fu et al., 2022; Meng et al., 2023; Mishra & Valencia, 2023).

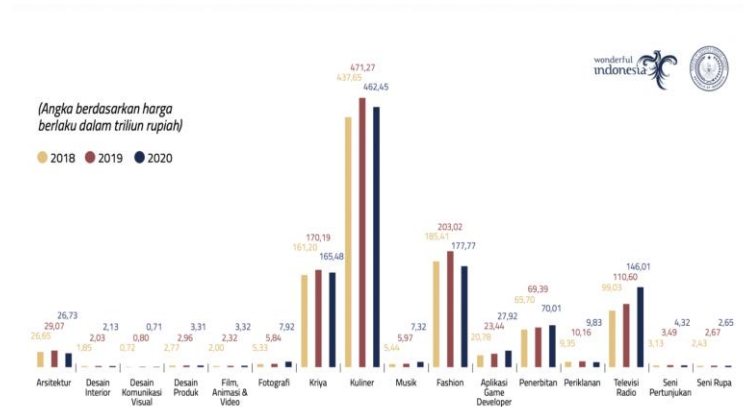


Figure 1. Infographic of Macro Indicator Statistics for Tourism and Creative Economy
Source: (Kemenparekraf, 2025)

The creative industry is a major economic contributor, comprising 17 sub-sectors including music, film, fashion, games, animation, advertising, and digital applications. Many of these sub-sectors are being transformed by digital innovation. For example, application and gaming businesses grew their workforce by over 174% between 2019–2020, and the film and animation sector saw a 58% employment increase.

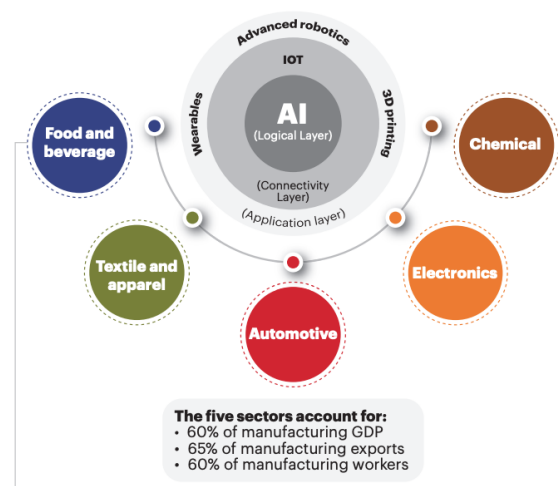


Figure 2. Indonesia will develop five manufacturing sectors with regional competitiveness

Source: (“Making Indonesia 4.0,” n.d.)

Making Indonesia 4.0 initiative, which integrates advanced technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), advanced robotics, wearables, and 3D printing to transform key manufacturing sectors. At the core are three technology layers—logical (AI), connectivity (IoT), and application—which enable smart, connected production systems. Five priority sectors—food and beverage, textile and apparel, automotive, electronics, and chemicals—have been selected due to their significant contributions to the economy, collectively accounting for 60% of manufacturing GDP, 65% of manufacturing exports, and 60% of the manufacturing workforce. These sectors are expected to lead

Indonesia's digital transformation, improve global competitiveness, and support the national goal of becoming one of the world's top 10 economies by 2030.

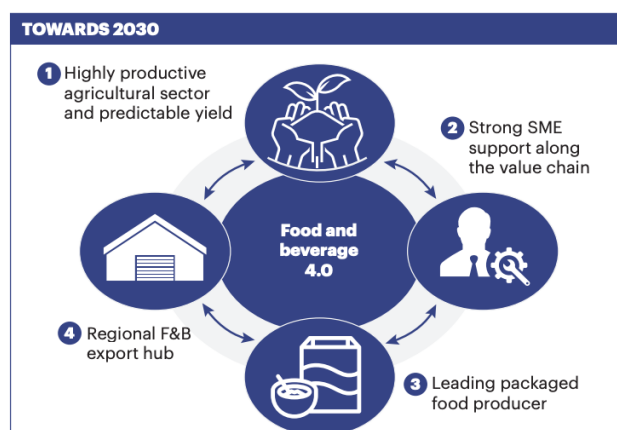


Figure 3. Food and Beverage: Building an F&B Powerhouse Industry in ASEAN

Source: ("Making Indonesia 4.0," n.d.)

The diagram outlines Indonesia's strategic roadmap for transforming its food and beverage (F&B) sector into "Food and Beverage 4.0" by 2030 as part of the *Making Indonesia 4.0* initiative. The vision focuses on four interconnected goals to create a modern, competitive, and inclusive industry. First, it aims to establish a highly productive agricultural sector with predictable yields by adopting advanced technologies such as smart farming and automation. Second, it emphasizes strong support for SMEs along the entire value chain, recognizing that over 80% of the sector's workforce is employed in micro, small, and medium enterprises. Third, Indonesia seeks to become a leading producer of packaged food to meet rising domestic and international demand, driven by changing consumer lifestyles and market needs. Finally, the strategy aims to position Indonesia as a regional F&B export hub, leveraging its agricultural resources and growing industrial base to expand into global markets. These integrated efforts are designed to boost productivity, innovation, and export competitiveness in the F&B sector.

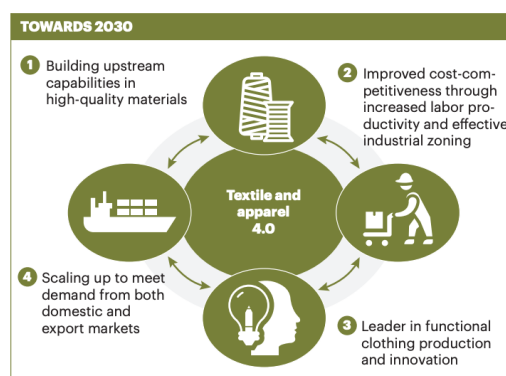


Figure 4. Textiles and Apparel: Toward Becoming a Leading Producer of Functional Clothing

Source: ("Making Indonesia 4.0," n.d.)

Indonesia has developed this strategic vision for transforming its textile and apparel sector into *"Textile and Apparel 4.0"* by 2030, aligning with the broader *Making Indonesia 4.0* agenda. The transformation is built around four key objectives. First, it emphasizes building upstream capabilities by producing high-quality materials such as synthetic fibers and functional fabrics, which are essential for boosting competitiveness. Second, the strategy focuses on improving cost-efficiency through increased labor productivity and optimized industrial zoning, enabling more efficient manufacturing processes. Third, Indonesia aims to become a leader in functional clothing production, particularly in high-demand segments like sportswear and technical apparel, by fostering innovation and advanced design capabilities. Lastly, the sector is expected to scale up to meet growing demand from both domestic and international markets, solidifying Indonesia's role as a global textile and apparel supplier. Together, these strategic steps are designed to modernize the industry, improve its global standing, and support inclusive economic growth through innovation and technology adoption.

Indonesia's creative economy is a rising force in Southeast Asia, contributing IDR 1,300 trillion (approximately USD 86 billion) to the national GDP in 2022, with exports valued at USD 24.8 billion. Among the 17 sub-sectors, culinary (food and beverage) and fashion are the top contributors. The culinary sector alone accounted for 41.47% of the creative economy's GDP, followed by fashion at 17.26%, and crafts at 14.88%. Given their dominant share and economic potential, this study will focus specifically on these two sub-sectors—F&B and fashion—as the primary drivers of innovation and growth within Indonesia's creative industries (Natasha, 2025).

Despite its growing digital economy and vibrant creative sector, Indonesia still faces significant challenges in global innovation competitiveness. According to the Global Innovation Index 2024, Indonesia ranks 54th out of 132 countries. This position reflects persistent gaps in innovation inputs such as infrastructure, education systems, research and development investment, and institutional support. While the country has made strides in digital adoption and entrepreneurship, these foundational weaknesses hinder its ability to fully capitalize on innovation-driven growth (WIPO, 2024).

However, Indonesia demonstrates notable strengths in the area of creative outputs. The Global Innovation Index highlights that the country performs relatively well in indicators such as cultural and creative goods exports, trademark applications, and mobile app development. These metrics suggest that Indonesia's creative industries—particularly in sectors like fashion, culinary arts, and digital media—are capable of producing globally relevant content and intellectual property. This creative output is a critical asset that can be leveraged to improve Indonesia's overall innovation performance and global competitiveness (WIPO, 2024).

The contrast between Indonesia's strong creative output and its lower overall innovation ranking underscores a strategic opportunity. By addressing systemic barriers—such as limited access to innovation infrastructure, weak collaboration between academia and industry, and uneven digital literacy—Indonesia can better support its creative entrepreneurs and MSMEs. Strengthening these innovation enablers would not only improve Indonesia's position in global rankings but also unlock the full potential of its creative economy as a driver of inclusive and sustainable development (WIPO, 2024).

GII rank	Economy	Score
1	Switzerland	67.5
2	Sweden	64.5
3	United States of America	62.4
4	Singapore	61.2
5	United Kingdom	61.0
6	Republic of Korea	60.9
7	Finland	59.4
8	Netherlands (Kingdom of the)	58.8
9	Germany	58.1
10	Denmark	57.1
11	China	56.3
12	France	55.4
13	Japan	54.1
14	Canada	52.9
15	Israel	52.7
16	Estonia	52.3
17	Austria	50.3
18	Hong Kong, China	50.1
19	Ireland	50.0
20	Luxembourg	49.1
21	Norway	49.1
22	Iceland	48.5
23	Australia	48.1
24	Belgium	47.7
25	New Zealand	45.9
26	Italy	45.3
27	Cyprus	45.1
28	Spain	44.9
29	Malta	44.8
30	Czech Republic	44.0
31	Portugal	43.7
32	United Arab Emirates	42.8
33	Malaysia	40.5
34	Slovenia	40.2
35	Lithuania	40.1
36	Hungary	39.6
37	Türkiye	39.0
38	Bulgaria	38.5
39	India	38.3
40	Poland	37.0
41	Thailand	36.9
42	Latvia	36.4
43	Croatia	36.3
44	Viet Nam	36.2
45	Greece	36.2
46	Slovakia	34.3
47	Saudi Arabia	33.9
48	Romania	33.4
49	Qatar	32.9
50	Brazil	32.7
51	Chile	32.6
52	Serbia	32.3
53	Philippines	31.1
54	Indonesia	30.6
55	Mauritius	30.6
56	Mexico	30.4

Figure 5. Global Innovation Index Ranking of Indonesia

Source : (WIPO, 2024)

In addition, while digital tools and platforms are increasingly available, many businesses lack the strategic, financial, and human capital capacity to leverage them effectively. Innovation efforts are often unstructured, and digital adoption remains low outside major urban centers. This limits the ability of MSMEs to scale, differentiate, and compete globally.

Table 1. Comparison of Indonesia Industry Creative Revenue with Major Countries in Asia

Country	Total Creative Industry Revenue (USD Billion)	Food & Beverage Share (%)	Fashion Share (%)	Creative Industry Export Value (USD Billion)
China	200	30	20	180
Japan	120	25	30	90
South Korea	110	28	32	85
India	95	35	25	70
Indonesia	86	41.47	17.26	24.8

Source : (International Trade in Creative Goods and Services, 2024); (Trade Statistics by Country | WITS, n.d.); (Data Insights | UNCTAD Data Hub, n.d.)

In comparison, countries like South Korea and Japan have successfully integrated innovation into their creative sectors through strong government-industry-academia collaboration, robust IP protection, and export-oriented strategies. South Korea's cultural exports—including food, fashion, and media—surpassed USD 12.4 billion in 2022, driven by digital innovation and global branding. Meanwhile, Indonesia's creative exports, though growing, remain under-leveraged in global markets.

Despite its growing prominence, Indonesia's creative industry—particularly in the culinary and fashion sectors—continues to face a significant digital innovation gap. While the sector contributed approximately IDR 1,300 trillion (around USD 86 billion) to the national GDP in 2022, many micro, small, and medium enterprises (MSMEs) still struggle to adopt and integrate digital technologies effectively. According to the Ministry of Tourism and Creative Economy, digitalization is expected to drive Indonesia's digital economy to USD 146 billion by 2025, nearly a 50% increase from 2021. However, this growth is unevenly distributed, with MSMEs outside major urban centers lacking access to infrastructure, digital literacy, and innovation ecosystems. The government has acknowledged this disparity, emphasizing the need for inclusive policies and support systems to empower creative entrepreneurs across regions (Adji, 2025).

In comparison to regional peers, Indonesia lags behind in innovation input indicators such as infrastructure, education, and R&D investment. For instance, South Korea and Japan have successfully integrated digital innovation into their creative sectors through robust government-industry-academia collaboration and export-oriented strategies. South Korea's cultural exports, including fashion and media, surpassed USD 12.4 billion in 2022, driven by digital platforms and global branding. Meanwhile, Indonesia's creative exports, although growing, reached only USD 24.8 billion in the same year, with limited global penetration. This contrast underscores the urgency for Indonesia to bridge its innovation gap by strengthening internal capabilities—such as human capital and resource capacity—and aligning them with strategic digital transformation frameworks to remain competitive in the global creative economy.

Research Problem and Urgency

The core research problem lies in understanding how Indonesian MSMEs in the creative industries can effectively adopt and leverage digital innovations to enhance their competitiveness. The urgency of this research is amplified by Indonesia's declining global innovation ranking and the widening gap between its creative potential and actual market performance compared to regional competitors. Without immediate intervention, Indonesia risks losing its competitive advantage in the rapidly evolving global creative economy.

Previous Research and Research Gaps

While previous studies have examined digital transformation in various Indonesian industries, limited research has specifically focused on the innovation performance drivers within the creative economy's culinary and fashion sub-sectors. Existing literature often treats digital innovation as a monolithic concept, failing to capture the nuanced adoption patterns and performance outcomes specific to creative MSMEs. Furthermore, there is insufficient empirical evidence on how human capital capacity, resource capacity, and strategic environment collectively influence innovation and business performance in Indonesia's creative industries.

Research Novelty and Objectives

This study introduces a novel approach by employing PLS-SEM methodology to examine the multidimensional relationships between innovation drivers and performance outcomes specifically within Indonesia's creative economy. The research objectives are: (1) to identify and categorize the types of digital innovation being adopted by MSMEs in the culinary and fashion sectors; (2) to analyze the key dimensions influencing innovation performance through empirical modeling; and (3) to propose evidence-based strategies for enhancing digital innovation competitiveness.

Research Benefits

The findings will benefit policymakers by providing empirical evidence for targeted innovation policies, assist MSMEs in developing effective digital transformation strategies, and contribute to academic literature by offering sector-specific insights into innovation performance in emerging economies. Ultimately, this research aims to support Indonesia's positioning as a competitive player in the global creative economy.

The government's *Making Indonesia 4.0* initiative and programs like *Ekraf Hunt* are steps in the right direction, but implementation in the creative sector—especially for MSMEs—remains limited. Without targeted strategies to bridge the innovation gap, Indonesia risks losing momentum in a region where creative and digital economies are becoming key engines of growth. This project addresses this issue by identifying innovation challenges in Indonesia's creative industries and proposing strategic solutions to enhance digital innovation performance, particularly in high-impact sub-sectors like food and fashion.

METHOD

This study employed a quantitative research approach utilizing explanatory research to test hypotheses derived from a conceptual framework linking strategic environment, resource capacity, and human capital capacity to innovation and operational performance, and ultimately to business performance. The research instrument was a structured questionnaire designed to measure these six latent constructs. The items were developed based on a comprehensive literature review and used a Likert scale to capture respondents' perceptions, ensuring the instrument's validity and reliability were confirmed through rigorous statistical testing.

Target Population and Sample Selection

The target population encompassed practitioners within Indonesia's creative industries, with a specific focus on the culinary and fashion sub-sectors due to their dominant economic contribution. This population included business owners, managers, and key decision-makers in MSMEs operating within these sectors across various regions in Indonesia. A non-probability sampling technique, specifically purposive sampling, was employed to target individuals in roles relevant to digital innovation and business strategy. The sampling criteria ensured that respondents had direct involvement in innovation-related decisions within their organizations. The final sample consisted of 384 respondents, a sample size deemed adequate for the PLS-SEM analysis technique and sufficient to ensure the statistical power of the study.

The primary data analysis technique used was Partial Least Squares Structural Equation Modeling (PLS-SEM), chosen for its ability to model complex relationships between

latent variables and its robustness with non-normally distributed data. The analysis was conducted in two stages: first, the outer model was assessed for reliability (using Cronbach's Alpha and Composite Reliability) and validity (convergent and discriminant validity via Average Variance Extracted and the Fornell-Larcker Criterion); second, the inner model was evaluated through path coefficient analysis, hypothesis testing (using bootstrapping to generate t-statistics and p-values), and assessment of the model's predictive power (R^2 and f^2 values).

RESULTS AND DISCUSSION

Descriptive Analysis

The Descriptive Analysis section serves as a foundational step in interpreting the data collected from respondents in this study. It aims to provide a clear and structured overview of the dataset by summarizing key characteristics and identifying patterns that inform the research objectives. This analysis helps validate the quality of the data and ensures that the constructs measured—such as strategic environment, resource capacity, and human capital—are both reliable and valid. Through statistical techniques, this section offers insights into how well the survey items represent the intended variables and how consistently they perform across the sample.

Specifically, this part of the study is divided into two main components: the Outer Model and the Inner Model. The outer model focuses on reliability and validity testing, using tools like Cronbach's Alpha and Composite Reliability to assess internal consistency, and AVE and HTMT for construct validity. Meanwhile, the inner model involves cluster and correlation analysis, which explores the relationships between variables and identifies patterns or groupings within the data. Together, these analyses provide a robust framework for understanding the dynamics of digital innovation performance among MSMEs in Indonesia's creative industries.

Outer Model - Reliability & Validity Test

The Outer Model – Reliability & Validity Test serves as a crucial step in ensuring the robustness and credibility of the research instruments used in this study. This part of the descriptive analysis evaluates whether the survey items consistently and accurately measure the constructs defined in the conceptual framework, such as strategic environment, resource capacity, and human capital. Reliability is assessed using Cronbach's Alpha and Composite Reliability, which determine the internal consistency of the indicators. Validity is examined through Average Variance Extracted (AVE) for convergent validity and HTMT ratio for discriminant validity. Together, these tests confirm that the data collected is both dependable and suitable for further structural analysis, laying a solid foundation for interpreting the relationships between variables in Indonesia's creative MSMEs.

Tabel 2. Outer Loading

	Human Capital Capacity	Innovation Performance	Operation Performance	Performa nce	Resources Capacity	Strategic Environment
HCC1	0.836					
HCC2	0.798					
HCC3	0.844					

	Human Capital Capacity	Innovation Performance	Operation Performance	Performance	Resources Capacity	Strategic Environment
HCC4	0.783					
HCC5	0.778					
PER1		0.918				
PER2		0.921				
PER3			0.832			
PER4			0.847			
PER5			0.856			
PER6				0.896		
PER7				0.909		
REC1					0.867	
REC2					0.874	
REC3					0.805	
REC4					0.806	
SEN1						0.850
SEN2						0.760
SEN3						0.794
SEN4						0.808
SEN5						0.780

Note: based on table III. 1 Questionnaire per Variable

The outer loading analysis, conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method, evaluates the strength of the relationship between each indicator and its corresponding latent construct. These values are essential for assessing convergent validity, as they reflect how well each indicator represents the underlying concept it is intended to measure. High outer loading values indicate that the indicators are reliable and contribute meaningfully to their constructs.

Tabel 3. Overview Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Human Capital Capacity	0.867	0.868	0.904	0.653
Innovation Performance	0.818	0.818	0.916	0.846
Operation Performance	0.800	0.805	0.882	0.714
Performance	0.772	0.774	0.898	0.814
Resources Capacity	0.858	0.861	0.904	0.703
Strategic Environment	0.858	0.863	0.898	0.638

In PLS-SEM, an outer loading value of 0.70 or higher is generally considered acceptable for validity. Indicators with values below this threshold may be considered for removal, particularly if their exclusion improves the construct's Average Variance Extracted (AVE). However, in exploratory research or under certain conditions, values between 0.60 and 0.70 may still be retained if the overall construct reliability and AVE remain strong.

The analysis results show that all constructs—Human Capital Capacity, Innovation Performance, Operation Performance, Business Performance, Resources Capacity, and Strategic Environment—have indicators with outer loading values above 0.70. For instance, Human Capital Capacity indicators range from 0.778 to 0.844, while Innovation Performance

indicators exceed 0.91, indicating excellent validity. Similarly, all other constructs meet the required threshold, confirming that the indicators are statistically valid and contribute effectively to their respective constructs.

No indicators need to be removed from the model, as all meet the minimum validity criteria. However, a technical note highlights a naming inconsistency among indicators PER3 to PER7, which appear to be split across two constructs. Clarification is needed to determine whether these indicators belong to the same or different constructs. Overall, the results confirm strong convergent validity across all constructs, allowing the research to proceed confidently to the next stages of model evaluation.

Tabel 4. Discriminant Validity Assessment (Fornell-Larcker Criterion)

	Human Capital Capacity	Innovation Performance	Operation Performance	Performance	Resources Capacity	Strategic Environment
Human Capital Capacity	0.808					
Innovation Performance	0.687	0.920				
Operation Performance	0.696	0.670	0.845			
Performance	0.685	0.695	0.657	0.902		
Resources Capacity	0.787	0.728	0.724	0.711	0.838	
Strategic Environment	0.658	0.637	0.622	0.672	0.716	0.799

The discriminant validity assessment using the Fornell-Larcker Criterion confirms that each construct in the model is empirically distinct from the others. This method compares the square root of the Average Variance Extracted (AVE) for each construct (shown on the diagonal of the correlation matrix) with the correlations between constructs (off-diagonal values). In all cases, the diagonal values—such as 0.920 for Innovation Performance and 0.845 for Operation Performance—are higher than their respective inter-construct correlations, indicating that each construct shares more variance with its own indicators than with other constructs. This result validates that the constructs are not only conceptually but also statistically distinct, ensuring the model's structural integrity and confirming its readiness for further hypothesis testing and structural analysis.

Tabel 5. R-Square

	R Square	R Square Adjusted
Innovation Performance	0.581	0.578
Operation Performance	0.577	0.574
Performance	0.550	0.547

The R Square (R^2) and Adjusted R Square values in the PLS-SEM model demonstrate the model's strong explanatory power across the three dependent constructs: Innovation Performance, Operation Performance, and Organizational Performance. Innovation Performance has an R^2 of 0.581, meaning 58.1% of its variance is explained by predictors like

Human Capital and Resources Capacity, with an Adjusted R^2 of 0.578, indicating model stability. Similarly, Operation Performance shows an R^2 of 0.577 and an Adjusted R^2 of 0.574, confirming that over half of its variance is accounted for by the model's independent variables.

Organizational Performance, the final dependent construct, has an R^2 of 0.550 and an Adjusted R^2 of 0.547, suggesting that 55% of its variance is explained by Innovation and Operation Performance. The minimal differences between R^2 and Adjusted R^2 across all constructs indicate that the model is not overfitted and maintains structural validity. Overall, these results confirm that the model has moderate to strong predictive power and is well-suited for hypothesis testing and further structural analysis.

The f-square analysis table (Tabel IV.5) evaluates the effect size of each construct on others within the structural model. Notably, Innovation Performance has the strongest impact on Organizational Performance, with an f-square value of 0.261, indicating a large effect size. Operation Performance also significantly influences Organizational Performance with a moderate effect size of 0.148. Meanwhile, Resources Capacity shows moderate effects on both Innovation Performance (0.115) and Operation Performance (0.107), highlighting its dual role in driving innovation and operational efficiency. Human Capital Capacity contributes modestly to Innovation (0.056) and Operation Performance (0.074), while Strategic Environment has a smaller effect on Innovation (0.039). These values confirm that Innovation and Operation Performance are key mediators in the model, with Resources and Human Capital as critical enablers.

Tabel 6. f-Square

	Human Capital Capacity	Innovation Performance	Operation Performance	Perform ance	Resources Capacity	Strategic Environme nt
Human Capital Capacity		0.056	0.074			
Innovation Performance				0.261		
Operation Performance				0.148		
Resources Capacity		0.115	0.107			
Strategic Environment		0.039	0.027			

Inner Model - Cluster & Correlation Analysis

The Inner Model – Cluster & Correlation Analysis section plays a pivotal role in examining the structural relationships between the latent variables defined in the conceptual framework. This part of the analysis focuses on how constructs such as strategic environment, resource capacity, and human capital capacity influence innovation and operational performance, and ultimately, business performance. By applying statistical techniques like cluster analysis and correlation testing, the study aims to uncover patterns and groupings within the data that reveal how different factors interact and contribute to innovation outcomes in Indonesia's creative MSMEs.

Cluster analysis helps identify distinct respondent segments based on shared characteristics or behaviors, offering insights into how different groups within the creative

industry approach digital innovation. Meanwhile, correlation analysis measures the strength and direction of relationships between variables, validating the hypothesized connections in the research model. Together, these methods provide a deeper understanding of the dynamics at play and support the development of targeted strategies to enhance innovation performance across diverse business contexts.

Tabel 7. P-Value and T-Statistic Result

				Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Human Capital Capacity	->	Innovation Performance		0.253	0.259	0.071	3.588	0.000
Human Capital Capacity	->	Operation Performance		0.294	0.292	0.073	4.011	0.000
Innovation Performance	->	Operation Performance		0.462	0.458	0.070	6.639	0.000
Operation Performance	->	Resources Capacity		0.347	0.351	0.075	4.602	0.000
Resources Capacity	->	Innovation Performance		0.394	0.382	0.081	4.884	0.000
Resources Capacity	->	Operation Performance		0.380	0.383	0.062	6.169	0.000
Strategic Environment	->	Innovation Performance		0.188	0.193	0.054	3.504	0.000
Strategic Environment	->	Operation Performance		0.156	0.155	0.059	2.660	0.008

The hypothesis testing results using PLS-SEM confirm that all proposed relationships between constructs are statistically significant, as each hypothesis meets the criteria of a T-statistic greater than 1.96 and a p-value below 0.05. Human Capital Capacity significantly influences both Innovation and Operational Performance, indicating that skilled and knowledgeable human resources are essential for driving innovation and ensuring efficient operations. Similarly, Resources Capacity also shows a strong positive effect on both Innovation and Operational Performance, emphasizing the importance of adequate financial, technological, and physical resources in supporting organizational capabilities.

Innovation Performance and Operational Performance both have a direct and significant impact on Organizational Performance. Innovation, with the highest path coefficient (0.462), emerges as a key driver of performance, highlighting the strategic value of fostering creativity and technological advancement. Operational Performance also plays a crucial role, reinforcing the need for streamlined, efficient processes to support business outcomes. Additionally, the Strategic Environment positively influences both innovation and operations, suggesting that external factors such as regulations, market trends, and competition can enhance internal performance when properly leveraged.

• **H1: Human Capital Capacity → Innovation Performance**

There is a positive and significant correlation between Human Capital Capacity and Innovation Performance, with a path coefficient of 0.253, a T-statistic of 3.588, and a p-value of 0.000. This indicates that improvements in employee skills, knowledge, and digital leadership directly enhance the organization's ability to innovate.

- **H2: Human Capital Capacity → Operation Performance**

This hypothesis is also strongly supported, with a coefficient of 0.294, T-statistic of 4.011, and p-value of 0.000. It confirms that human capital not only drives innovation but also contributes significantly to operational efficiency and effectiveness.

- **H3: Innovation Performance → Business Performance**

The correlation here is very strong, with a coefficient of 0.462, T-statistic of 6.639, and p-value of 0.000. This highlights that innovation is a key enabler of business success, influencing outcomes such as revenue growth, customer satisfaction, and market competitiveness.

- **H4: Operation Performance → Business Performance**

This relationship is also statistically significant, with a coefficient of 0.347, T-statistic of 4.602, and p-value of 0.000. It shows that efficient operations—enabled by strong systems and processes—are crucial for achieving high business performance.

- **H5: Resources Capacity → Innovation Performance**

The correlation between Resources Capacity and Innovation Performance is strong and significant, with a coefficient of 0.394, T-statistic of 4.884, and p-value of 0.000. This suggests that access to financial, technological, and physical resources is essential for fostering innovation.

- **H6: Resources Capacity → Operation Performance**

This hypothesis is well-supported, with a coefficient of 0.380, T-statistic of 6.169, and p-value of 0.000. It confirms that resource availability also plays a critical role in enhancing operational performance.

- **H7: Strategic Environment → Innovation Performance**

The correlation is positive and significant, with a coefficient of 0.188, T-statistic of 3.504, and p-value of 0.000. This indicates that a supportive external environment—such as favorable policies, market trends, and competition—can stimulate innovation.

- **H8: Strategic Environment → Operation Performance**

This final hypothesis is also statistically significant, with a coefficient of 0.156, T-statistic of 2.660, and p-value of 0.008. It shows that the strategic environment contributes to operational improvements, likely by influencing how organizations adapt and respond to external changes.

From a managerial standpoint, these findings underscore the importance of a balanced strategy that strengthens internal capabilities while remaining responsive to external dynamics. Organizations are encouraged to invest in human capital development, foster a culture of innovation, and optimize operational systems. Moreover, aligning resource allocation with innovation goals and maintaining agility in response to environmental changes are critical for sustaining competitive advantage. These insights provide both theoretical validation and practical guidance for building high-performing, innovation-driven organizations.

Tabel 8. Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Human Capital Capacity -> Innovation Performance -> Performance	0.117	0.118	0.034	3.415	0.001
Resources Capacity -> Innovation Performance -> Performance	0.182	0.175	0.046	3.999	0.000
Strategic Environment -> Innovation Performance -> Performance	0.087	0.090	0.032	2.746	0.006
Human Capital Capacity -> Operation Performance -> Performance	0.102	0.102	0.033	3.073	0.002
Resources Capacity -> Operation Performance -> Performance	0.132	0.135	0.038	3.485	0.001
Strategic Environment -> Operation Performance -> Performance	0.054	0.055	0.026	2.128	0.034

The analysis of indirect effects reveals that all mediating relationships in the model are statistically significant, with p-values below 0.05. Innovation Performance serves as a strong mediator between internal capabilities—such as Human Capital Capacity and Resources Capacity—and Organizational Performance. Notably, the indirect effect from Resources Capacity through Innovation Performance is the strongest, emphasizing the critical role of resource optimization in driving innovation and, consequently, performance. Similarly, Strategic Environment also contributes positively through innovation, reinforcing the importance of external support in fostering creative growth.

Operational Performance also plays a vital mediating role. Human Capital and Resources Capacity both show significant indirect effects on Organizational Performance through operational pathways, indicating that efficient and adaptive operations are essential for translating capabilities into results. The Strategic Environment, too, influences performance via operations, suggesting that external factors like policy and market dynamics can enhance business outcomes when operational systems are well-managed. These findings highlight the dual importance of innovation and operations as channels for performance improvement.

From a managerial perspective, the results underscore the need for organizations to invest in both innovation systems and operational excellence. Managers should empower human resources to innovate and adapt, while also building agile and structured operational frameworks. Strategically leveraging external environmental factors—such as regulations, competition, and technology—can further amplify performance. The study contributes practically by offering actionable strategies and theoretically by reinforcing mediation mechanisms within Resource-Based View and Contingency Theory, showing that sustainable

performance arises from the alignment of internal strengths and external opportunities through innovation and operations.

Industry Solution

The Industry Solution section (IV.3) serves as a bridge between the analytical findings and practical application, translating data-driven insights into strategic recommendations for Indonesia's creative industries. Building on the strong correlations identified between human capital, resources, innovation, and performance, this section focuses on crafting actionable solutions tailored to the unique challenges and opportunities within the culinary and fashion sectors.

The data analysis reveals strong and statistically significant relationships among the key constructs in the study—namely Human Capital Capacity, Resources Capacity, Strategic Environment, Innovation Performance, Operation Performance, and Organizational Performance. Path coefficient analysis using PLS-SEM confirms that all eight hypotheses are supported, with T-statistics above 1.96 and p-values below 0.05. Notably, Innovation Performance has the strongest direct effect on Organizational Performance, followed by Operation Performance, highlighting their central roles as mediators in the model.

The R Square and Adjusted R Square values further validate the model's predictive power. Innovation Performance ($R^2 = 0.581$), Operation Performance ($R^2 = 0.577$), and Organizational Performance ($R^2 = 0.550$) all exceed the 0.50 threshold, indicating moderate to strong explanatory strength. The minimal differences between R^2 and Adjusted R^2 values confirm that the model is not overfitted and maintains structural validity, making it suitable for hypothesis testing and strategic application.

Discriminant validity, assessed using the Fornell-Larcker Criterion, confirms that each construct is empirically distinct. The square roots of the AVEs for each construct are higher than their inter-construct correlations, ensuring that the model does not suffer from conceptual overlap. This reinforces the reliability of the constructs and supports the integrity of the structural model.

The f-square analysis provides additional insight into the effect sizes of each relationship. Innovation Performance has a large effect on Organizational Performance ($f^2 = 0.261$), while Operation Performance also contributes significantly ($f^2 = 0.148$). Resources Capacity shows moderate effects on both Innovation and Operation Performance, while Human Capital Capacity has smaller but still meaningful effects. These findings emphasize the importance of both internal capabilities and innovation pathways in driving business outcomes. Together, these results paint a clear picture: to enhance performance in Indonesia's creative industries—particularly in the culinary and fashion sectors—organizations must invest in human capital, strengthen resource capacity, and foster innovation and operational excellence.

CONCLUSION

The study identified a range of innovation types being implemented across Indonesia's creative industries, with a strong emphasis on digital innovation. Among the most prevalent were product innovation, process innovation, and marketing innovation—each playing a distinct role in enhancing competitiveness. In the culinary sector, innovations often centered around digital ordering systems, cloud kitchens, and packaging design, while in the fashion sector, digital design tools, virtual fitting rooms, and e-commerce platforms were dominant.

Survey results showed that MSMEs are increasingly adopting digital tools to streamline operations and reach broader markets. However, the level of innovation varied significantly depending on the size of the business, access to resources, and digital literacy. Culinary MSMEs, for instance, were more likely to innovate in service delivery and customer experience, while fashion MSMEs leaned toward design and branding innovations. The correlation analysis confirmed that innovation performance is significantly influenced by internal capabilities such as human capital and resource availability. Businesses with structured innovation strategies and leadership support were more likely to implement diverse innovation types. This finding underscores the importance of building internal readiness to support innovation adoption. Furthermore, the study revealed that innovation is not a one-size-fits-all approach. The types of innovation adopted are often shaped by the specific needs and market dynamics of each sub-sector. For example, culinary businesses prioritize speed and convenience, while fashion businesses focus on aesthetics and personalization. This highlights the need for tailored innovation strategies that align with sector-specific goals. Based on these findings, several suggestions emerge for enhancing innovation performance: first, policymakers should develop sector-specific digital innovation programs that address the unique needs of culinary and fashion MSMEs; second, establishing regional innovation hubs with shared digital infrastructure could help smaller businesses access advanced technologies; third, implementing targeted digital literacy training programs would enable more effective adoption of innovative tools; and fourth, creating collaborative networks between successful innovators and emerging MSMEs could facilitate knowledge transfer and best practice sharing. In conclusion, mapping innovation types provides a foundational understanding of how MSMEs in the creative industries are evolving. It also highlights the critical role of digital innovation in enabling growth and resilience, especially in the face of shifting consumer behaviors and technological disruption.

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