

## Building a Digital Innovation Ecosystem through Knowledge Sharing and a Conducive Business Climate

Rohmat Sarman<sup>1) \*</sup>; Azhar Affandi<sup>2)</sup>; Horas Djulius<sup>3)</sup>; Sidik Priadana<sup>4)</sup>

<sup>1\*)</sup> [rohmatSarman@unpas.ac.id](mailto:rohmatSarman@unpas.ac.id), Universitas Pasundan, Indonesia

<sup>2)</sup> [azhar.affandi.dim@unpas.ac.id](mailto:azhar.affandi.dim@unpas.ac.id), Universitas Pasundan, Indonesia

<sup>3)</sup> [horasdjulius@unpas.ac.id](mailto:horasdjulius@unpas.ac.id), Universitas Pasundan, Indonesia

<sup>4)</sup> [sidik.priadana.dim@unpas.ac.id](mailto:sidik.priadana.dim@unpas.ac.id), Universitas Pasundan, Indonesia

<sup>\*)</sup>Corresponding Author

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### ABSTRACT

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**Objectives:** This research investigates the role of knowledge sharing and a supportive business climate in establishing a digital innovation ecosystem for Muslim entrepreneurs in West Java.

**Methodology:** The study utilized a quantitative approach, combining descriptive and verification methods through an explanatory survey to gather data from 400 entrepreneurs. A proportional cluster random sampling method was employed, using business type as the basis for stratification. The data were analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with SmartPLS version 3.2.9.

**Finding:** The results indicate that: 1) Knowledge sharing has a positive and significant impact on the business climate. 2) Knowledge sharing positively and significantly influences digital innovation. 3) The business climate has a positive and significant effect on digital innovation. 4) Furthermore, the business climate mediates the relationship between knowledge sharing and digital innovation.

**Conclusion:** The research concludes that knowledge sharing is vital in improving both the business climate and digital innovation among Nahdliyin entrepreneurs in West Java. The significant and positive influence of knowledge sharing on the business climate highlights its role in creating a supportive entrepreneurial environment. Additionally, the business climate directly affects digital innovation and mediates the relationship between knowledge sharing and digital innovation. These insights suggest that enhancing digital innovation among entrepreneurs should involve fostering knowledge sharing and developing a conducive business climate. The study emphasizes the need to integrate these elements to build a strong digital innovation ecosystem that can improve entrepreneurial performance.

**Keywords:** knowledge sharing; business climate; digital innovation.

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## INTRODUCTION

While classified as developing, Indonesia stands out with its massive population (4<sup>th</sup> largest) and robust economy (16<sup>th</sup> largest globally). It's also part of the influential G20 group (UNCTAD, 2023). The rise of Industry 4.0 has ushered in a wave of significant changes across every facet of our lives. From how we work to how we interact, the Fourth Industrial Revolution is leaving its mark on a vast array of life's aspects, including the business world (Sarman et al., 2024). This revolution not only creates new opportunities but also challenges existing business paradigms and forces business people, especially entrepreneurs, to adapt quickly and innovatively (Schwab, 2017). Indonesia is no exception, a developing country that is experiencing rapid economic growth and showing significant changes in the business landscape, making the digital sector one of the main driving forces (McKinsey Global Institute, 2018). In 2018, the government introduced a roadmap called "*Making Indonesia 4.0*" as a strategic plan and guideline for the future advancement of the national industry, particularly in preparing for the Industrial Revolution 4.0 (Ministry of Industry of the Republic of Indonesia, 2019). High-growth companies are mainly concentrated within small and medium enterprises, playing a significant role in the national economy (Agustina et al., 2020; Diantoro et al., 2023; Firmansyah et al., 2024; Rindrayani, 2016). These small businesses contribute substantially to the country's economic growth and job creation (Chaniago, 2022; Prabowo & Sriwidadi, 2024; Temouri et al., 2022; Arief H et al., 2024).

Indonesia holds the top position in Southeast Asia (ASEAN) for the number of micro, small, and medium-sized enterprises (MSMEs) (ASEAN, 2022). In 2021, These MSMEs will be economic powerhouses, absorbing a staggering 97% of the workforce, contributing 60.3% to GDP, and driving 14.4% of national exports. Furthermore, Indonesia is home to the world's biggest Muslim population. According to Permana (2022) in the Daily Republika. Co, citing a report by RISSC, over 86.7% of Indonesians identify as Muslim. This translates to a staggering 231.06 million Muslims in Indonesia, constituting nearly 11.92% of the world's Muslim population. This unique combination - a thriving MSME sector and a large Muslim population - presents a significant opportunity for the development of Muslim entrepreneurs in Indonesia (Hamdani et al., 2024). A significant challenge for MSMEs is their limited digital competence in making essential changes. The existence of digital talent is very important to maintain business continuity through market development and competitiveness. This shows that MSMEs are not fully ready to face these conditions (Reniati et al., 2023).

West Java's Muslim entrepreneurs hold immense potential to propel Indonesia's digital economy forward (Sarman et al., 2024). In today's digital era, innovation is the key to business survival and growth. This is particularly relevant for Muslim entrepreneurs, who must adapt to the ever-evolving technological landscape and intensifying market competition. Research by Kreiterling (2023) highlights the clear advantages of adopting digital technology across businesses of various sizes and industries, emphasizing its significant role in driving economic growth and societal change. Digital innovation involves using new digital technologies to develop innovative products, processes, or business models (Bornhausen & Wulf, 2024; Hund et al., 2021; Kroh et al., 2024; Nambisan et al., 2017). This ongoing transformation, with its inherent changes and uncertainties, is set to have a significant impact in the coming decades (del Olmo-García et al., 2023). Digital transformation has become the driving force that shapes and reshapes the business world. By embracing digital innovation, Muslim entrepreneurs can unlock the potential to enhance their business efficiency, effectiveness, and competitiveness, ultimately securing their place in the thriving digital economy.

West Java's Muslim entrepreneurs are increasingly recognizing the importance of digital innovation to enhance their businesses' competitiveness. As noted by Kreiterling (2023), digital innovation has been shown to substantially boost GDP growth, improve business performance, and elevate competitiveness. While digital innovation among Muslim entrepreneurs in West Java is still in its early stages, it shows great growth potential. By continuously learning and innovating, Muslim entrepreneurs can play a crucial role in developing Indonesia's digital economy. Various digital innovations have already been implemented, ranging from the use of e-commerce platforms and social media to application and website development. These efforts demonstrate the potential of West Java's Muslim entrepreneurs to become key drivers of Indonesia's digital economy (Coordinating Ministry for Economic Affairs of the Republic of Indonesia, 2022).

By continuing to innovate and leverage digital technology, Muslim entrepreneurs can enhance their business competitiveness and contribute to Indonesia's economic growth (Lembono & Layman, 2023). However, efforts to embrace digital innovation are not without challenges. Muslim entrepreneurs still face obstacles such as limited access to information and technology, and a less-than-conducive business climate. Therefore, building a supportive digital innovation ecosystem is crucial to helping these entrepreneurs grow their businesses (Kreiterling, 2023). This research aims to explore the key factors that contribute to the establishment of such a digital innovation ecosystem and highlights areas for further study. Two critical factors in fostering this ecosystem are knowledge sharing and a conducive business climate. Knowledge sharing enables entrepreneurs to exchange insights about the latest technologies and business strategies, while a supportive business climate encourages them to innovate and take risks.

The business climate can affect entrepreneurs' digital innovation. According to Kearney (2022), business climate is a condition that determines how attractive a country or region is to invest and do business. Previous research has emphasized the critical role of knowledge sharing and the business climate in fostering innovation. For instance, Lee & Choi (2022) found that knowledge sharing directly and positively influences organizational performance by enhancing productivity, efficiency, and innovation. Alamsyah & Sari (2022) explain that a conducive business climate can be in the form of government support, infrastructure availability, and access to resources. Concerning the business climate for Nahdliyin entrepreneurs in West Java, a 2023 survey conducted by the Nahdlatul Ulama Survey and Research Institute (LSPNU) of West Java indicates that, overall, the business climate for these entrepreneurs is generally positive. However, there are still several obstacles faced by Nahdliyin entrepreneurs in West Java. The most common obstacle is tight business competition. Other obstacles are increasing production costs and changes in market trends. In addition, the less-than-conducive business climate for Nahdliyin entrepreneurs in West Java can also be seen from the results of research by the Center for Islamic Economics and Business Studies (PSEBI) of the University of Indonesia in 2022, which showed that Nahdliyin entrepreneurs in West Java were still constrained by a lack of capital, access to information and technology, and support from the government and related institutions.

In addition, digital innovation can also be influenced by knowledge so that it can be used to understand user needs, develop new solutions, and solve problems. The knowledge possessed by an entrepreneur will be able to create new knowledge. In other words, digital innovation can occur if there is knowledge that produces knowledge creation. This knowledge can be obtained through various sources, one of which is the sharing of knowledge between business actors themselves. As explained by Suwarno & Silvianita (2017), knowledge sharing is one of the

factors that determines the increase in innovation. Through knowledge-sharing initiatives, it is expected that innovation will be continuously enhanced, benefiting the company. Numerous studies have explored the impact of knowledge-sharing on digital innovation, including those by Fang & Zhang (2021), Li, W., Chen & Lu (2022), and Setini et al. (2020), all of which demonstrate that knowledge-sharing has a positive and significant influence on digital innovation.

While many studies have explored the effects of knowledge sharing and the business climate on digital innovation, several areas remain under-researched, particularly in the context of Nahdliyin entrepreneurs in West Java. Firstly, most existing research has generally examined the link between knowledge sharing and digital innovation, but few have delved into how the business climate may mediate this relationship among entrepreneurs with specific cultural and religious backgrounds, such as Nahdliyin. Secondly, although there is substantial evidence that knowledge-sharing enhances organizational performance and innovation, studies specifically focusing on how knowledge-sharing practices are implemented among MSMEs in developing regions like West Java are still scarce. Thirdly, although the relationship between business climate and digital innovation has been widely studied, there is a lack of research specifically analyzing how the business climate either supports or hinders the adoption of digital innovation among Nahdliyin entrepreneurs. For example, the role of government and infrastructure in fostering a conducive business environment for these entrepreneurs to leverage digital innovation has not been thoroughly examined. Lastly, the empirical research gap highlighting the specific challenges faced by Nahdliyin entrepreneurs—such as limited capital, access to technology, and government support—suggests that further studies are needed to understand how these obstacles can be addressed through targeted policies or interventions.

This study aims to thoroughly examine the role of knowledge sharing and the business climate in influencing digital innovation among Nahdliyin entrepreneurs in West Java. It also seeks to explore how these factors can be harnessed to support the growth of Indonesia's digital economy while offering recommendations for future research to develop more effective business policies and practices for Nahdliyin entrepreneurs.

## **LITERATURE REVIEW**

### ***Knowledge sharing and business climate***

Knowledge sharing involves disseminating and exchanging knowledge among individuals, groups, or organizations (Budiyono et al., 2024; Sarman et al., 2024). David A. Wolfe (2023) states it is a crucial factor in enhancing the business climate. In recent years, there has been growing recognition of the significance of knowledge sharing in improving the business environment, influenced by factors such as globalization, technological advancements, and shifts in the business landscape (Chua et al., 2023; Hong et al., 2023). Knowledge sharing and the business climate have a mutually influencing relationship. Knowledge sharing can improve the business climate, and a conducive business climate can support knowledge sharing (Halisah et al., 2021).

Knowledge sharing improves the business climate by helping individuals, groups, or organizations better understand business processes and ways to improve productivity, avoid duplication of work, increase efficiency in resource use, and generate new ideas and innovative solutions to problems (Budiyono et al., 2024; Radosavljević, 2022; Viegas, 2023). In addition,

a conducive business climate can support knowledge sharing by creating an environment of mutual trust and understanding so that individuals, groups, or organizations are more willing to share knowledge. A conducive business climate can also provide support and incentives for individuals, groups, or organizations to share knowledge, such as rewards, training, and development (Abdullah & Alqarni, 2022).

Research by Bjørnendahl & Foss (2016) revealed that knowledge sharing can enhance the business climate by boosting productivity, efficiency, and innovation. Similarly, Xin Chen & Huang (2021) found that knowledge sharing positively influences the business climate, creating a psychologically safer environment that fosters a more favorable business atmosphere. Lee & Choi (2022) demonstrated that knowledge sharing not only directly improves organizational performance but also indirectly contributes by fostering a more positive business climate. A conducive business climate, characterized by high levels of trust and collaboration among business participants, is often strengthened through knowledge-sharing activities. Additionally, a study by Yanyan Wang & Wang (2023) confirmed that knowledge sharing positively affects the business climate, with a medium effect size. Collectively, these studies illustrate the positive and interdependent relationship between knowledge sharing and the business climate. Knowledge sharing can enhance productivity, efficiency, and innovation within a company or organization, leading to a more positive and supportive business environment for growth and development.

### ***Knowledge Sharing as a Catalyst for Digital Innovation***

Knowledge sharing in organizations is an important driver of innovation, especially in a rapidly changing business environment. Sutarman (2023) describes knowledge sharing as "the process of transferring knowledge among individuals, groups, or organizations." This concept involves the exchange and dissemination of information, expertise, and insights among organizational members, in this context, entrepreneurs (Sunarsi, Affandi, Priadana, et al., 2023). Through knowledge sharing, individuals or teams can generate new ideas and develop innovative solutions. From a business and economic standpoint, innovation is seen as the driving force for growth, which is crucial in a rapidly evolving business landscape. With the swift advancement of information and communication technology, the era of the 4.0 revolution is increasingly anticipated, compelling entrepreneurs to innovate and move towards digitalization.

Knowledge sharing is an important element in triggering innovation. When knowledge is shared, new ideas can emerge and be developed into innovations. In the digital context, knowledge of the latest technology, market trends, or operational techniques can trigger digital innovation that can improve entrepreneur performance. Research has demonstrated that knowledge sharing positively impacts digital innovation. Numerous studies, including those by Al-Hajri & Al-Ghamdi (2021); Amin & Zakaria (2022); Fang & Zhang (2021); Li, W., Chen & Lu (2022); Setini et al. (2020); Sharma & Sharma (2021); and Suwarno & Silvianita (2017), have consistently shown that knowledge sharing significantly positively affects digital innovation across various groups, such as start-ups, SMEs, female entrepreneurs, Hindu entrepreneurs, and Muslim entrepreneurs. This suggests that knowledge sharing among entrepreneurs fosters digital innovation by providing new ideas and information that can be leveraged to develop innovative digital solutions.

### ***The Role of Business Climate in Driving Digital Innovation***

The business climate is a macroeconomic condition that affects business activities. Antonio (2022), defines business climate as "a condition that allows business actors to run their

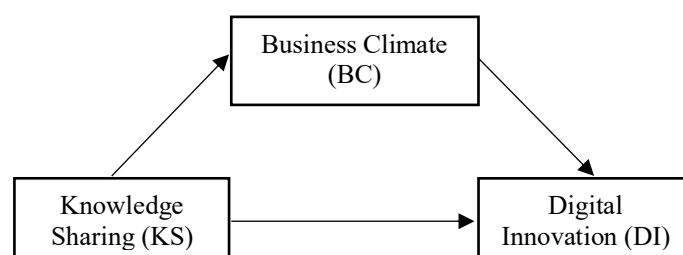
businesses smoothly and profitably." A conducive business climate will encourage business growth and development, including technology-based innovation. Digital innovation is an innovation that utilizes digital technology to increase business efficiency, effectiveness, and competitiveness (Shabbir et al., 2016). A conducive business climate can encourage digital innovation in several ways, first by creating a safe and comfortable space for business actors to innovate. Second, providing support and incentives for business actors to innovate, and third, creating an ecosystem that supports digital innovation (Wulandari, 2022). In addition, a conducive business climate can encourage the government and society to increase awareness of the importance of innovation, including digital innovation. Awareness of the importance of innovation can encourage entrepreneurs to innovate.

The influence of the business climate on digital innovation can be very significant in shaping an organization's ability to adapt and develop digital solutions. Several studies have explored this impact. For example, a 2022 OECD study involving 50 member countries revealed that a favorable business climate positively and significantly influences digital innovation among entrepreneurs. Similarly, research by the World Bank in 2021 found that a conducive business climate could boost digital innovation among entrepreneurs by 20%. Additional studies by Al-Harbi & Al-Anazi (2020), Amit Singh, Rakhi Sharma, dan Ravi Sharma (2020), Arief & Nuryanti (2021), and Fathurrohman & Astuti (2021), also indicate that the business climate positively affects digital innovation among Hindu and Muslim entrepreneurs in India, Indonesia, and Saudi Arabia. Based on this basis, it can be concluded that a conducive business climate can encourage digital innovation because entrepreneurs will feel safer and more comfortable investing in digital innovation. A conducive business climate can also provide easier access for entrepreneurs to obtain the resources and support needed to innovate digitally.

### *Interplay Between Knowledge Sharing, Business Climate, and Digital Innovation*

The relationship between knowledge sharing, business climate, and digital innovation has been extensively studied. Research indicates that while knowledge sharing directly promotes innovation, its impact is greatly amplified by a favorable business climate. For instance, Johari, and Mohd Khairudin (2016), demonstrated that the business environment serves as a mediator between knowledge sharing and innovation, suggesting that a supportive business climate can strengthen the positive effects of knowledge sharing on innovation outcomes. Specifically, for Nahdliyin entrepreneurs in West Java, the combination of active knowledge sharing and a conducive business climate is crucial for advancing digital innovation. The literature points out that fostering a culture of knowledge exchange and maintaining a stable, supportive business environment enables entrepreneurs to more effectively utilize digital technologies, enhancing their business performance and competitiveness.

This overview helps establish the following conceptual framework:



**Figure 1.** Depicts the research's conceptual framework

### Research Hypothesis

Drawing from the literature review, the following hypotheses are proposed:

- H1: *Knowledge sharing positively influences the business climate among Nahdliyin entrepreneurs in West Java.*
- H2: *Knowledge sharing directly and positively impacts digital innovation.*
- H3: *A conducive business climate positively affects digital innovation.*
- H4: *The business climate mediates the relationship between knowledge sharing and digital innovation.*

### METHOD

This research employs quantitative methods to investigate the causal relationships between knowledge sharing, business climate, and digital innovation among Nahdliyin entrepreneurs in West Java. We utilize a descriptive research method, as defined by Sekaran & Bougie (2016), descriptive research methods are research methods used to describe a phenomenon in depth, breadth, and detail. The descriptive method is objective and does not manipulate the object or phenomenon being studied (Djulius, 2015). To further investigate causality, we incorporate an explanatory survey into the research design. This study follows an explanatory research approach, as defined by Sekaran & Bougie (2016), This type of research aims to systematically gather factual and accurate information to describe the characteristics and relationships between the variables we're investigating. Through field data collection, we will test the hypothesis that knowledge sharing influences the business climate, which in turn impacts digital innovation among West Java Nahdliyin entrepreneurs.

We specifically examine medium-sized to large businesses run by Nahdliyin entrepreneurs in West Java, spanning various sectors like trade, industry, and services. The data will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS 3.2.9 software. To ensure robust analysis, especially for complex models, we employ a sample size exceeding 200, as recommended by Siregar, et al. (2021) for SEM analysis. Utilizing the Slovin formula, we calculated a sample size of 398, which was rounded up to 400 West Java Nahdliyin entrepreneurs. Proportional cluster random sampling was chosen. This stratified sampling technique, as defined by Lohr (2019), involves grouping the population based on strata (business type in this case) and then selecting a proportional sample size from each stratum. This ensures our sample reflects the diversity of business types among Nahdliyin entrepreneurs in West Java.

### Variable Measurement

This research utilizes theoretically derived measures for each variable. Refer to Table 1 for a comprehensive explanation of these measures.

Table 1. Definition and Operational Dimensions

Variables and Sources	Definition	Dimensions/Indicators
<b>Knowledge Sharing (KS)</b>  Sutarman (2023)	" the process of sharing knowledge between individuals, groups, or organizations".	1. Knowledge creation 2. Willingness to share knowledge 3. Ease of sharing knowledge 4. Quality of knowledge shared 5. Benefits of Knowledge Sharing 6. Intention 7. Ethics

Variables and Sources	Definition	Dimensions/Indicators
<b>Business Climate (BC)</b>  <b>Muhammad Syafii Antonio (2022)</b>	Business climate is defined as conditions that enable business actors to run their businesses smoothly and profitably.	1. Quality of Human Resources 2. Availability of capital 3. Use of Technology 4. Management Quality 5. Government policy. 6. Economic conditions 7. Competition 8. Infrastructure
<b>Digital Innovation (DI)</b>  <b>Arif Budiman (2023)</b>	"the use of digital technology to create new, better, and more efficient products, services, processes, or business models".	1. Degree of automation 2. Level of Intelligence 3. Level of integration 4. Level of product innovation 5. Level of customer satisfaction 6. Sales level 7. Technology adoption rate 8. Level of innovation culture 9. Level of digital leadership 10. Level of environmental impact 11. Level of social impact

## RESULTS AND DISCUSSION

### Descriptive Analysis

The results of this study revealed that the majority of respondents were male (58.75%), with a significant portion being in the productive age range of 36 to 50 years (44.75%) and holding a bachelor's degree (31.25%). The majority of businesses operated by these entrepreneurs were in the trade sector (49.5%), with most having been in operation for 5 years or less (35.50%). Additionally, the majority of Nahdliyin entrepreneurs reported having business assets valued between IDR 5 million and IDR 10 million (43.25%). More detailed demographic characteristics are shown in Table 2.

**Table 2. Demographic Characteristics (N=400)**

Characteristics	Frequency	Percentage
<b>Gender</b>		
Men	235	58.75%
Woman	165	41.25%
<b>Age Distribution</b>		
≤ 25 Years	11	2.75%
26 - 35 Years	105	26.25%
36 – 50 Years	179	44.75%
≥ 51 Years	105	26.25%
<b>Level of education</b>		
Middle School and Equivalent	37	9.25%
High School and Equivalent	111	27.75%
Diploma I/II/III/IV	97	24.25%
Bachelor (S1)	125	31.25%
Master (S2)	19	4.75%
Doctoral (S3)	11	2.75%
<b>Type of business</b>		
Trading	198	49.50%
Industry	121	30.25%
Services	81	20.25%
<b>Length of Business</b>		
≤ 5 Years	142	35.50%
6 - 10 Years	108	27.00%
10 – 20 Years	97	24.25%
≥ 20 Years	53	13.25%
<b>Business Assets</b>		
IDR 1 Million – IDR 5 Million	172	43.00%
IDR 5 Million – IDR 10 Million	173	43.25%
≥ IDR 10 Million	55	13.75%

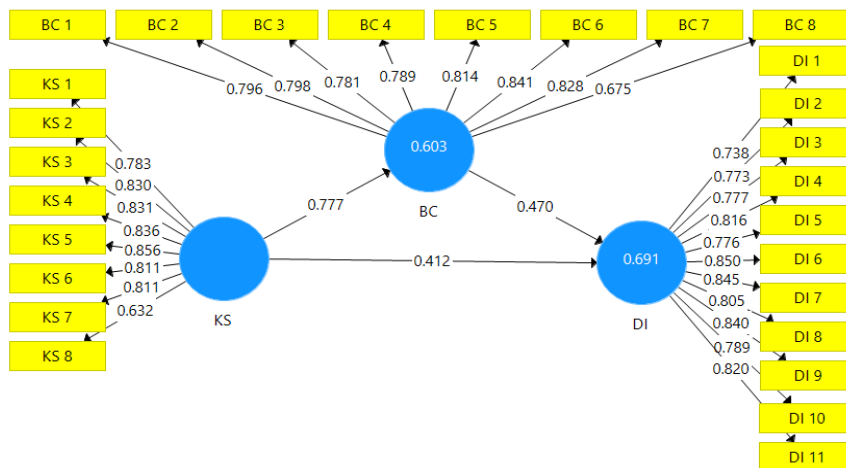


**Verification Analysis**

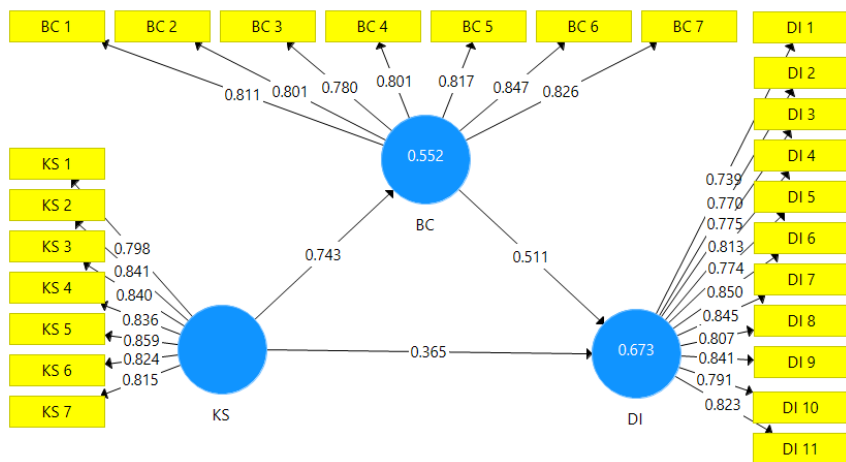
This research utilizes SmartPLS 3.2.9 software to conduct data analysis through Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM is a powerful approach that allows for the examination of relationships between variables within a structural model. It does this by simultaneously analyzing two key components: the measurement model, which evaluates how accurately the indicators represent the underlying constructs, and the structural model, which examines the hypothesized relationships among the constructs.

**Assessing Measurement Quality (The Outer Model)**

This research employs a reflective measurement model, where variables representing Knowledge Sharing (KS), Business Climate (BC), and Digital Innovation (DI) are measured indirectly through their reflective indicators. To ensure the quality of these measures, we utilize established criteria from Hair et al. (2019, 2021), consisting of each indicator's loading on its corresponding variable being 0.7 or higher, the composite reliability (CR) for each variable should also be 0.7 or above, and the AVE value should be 0.50 or higher for each variable. Additionally, we assess discriminant validity using the Fornell-Larcker criterion and the HTMT ratio, both of which should be below 0.90. The results of these evaluations for validity and reliability, along with the path coefficients for the structural model, are illustrated in Figures 2 and 3 for further analysis.



**Figure 2. Outer Model Evaluation Results**



**Figure 3. Outer Model Test Results**

### Convergent Validity

As shown in Figure 2, certain indicators, specifically KS8 (Knowledge Sharing) and BC8 (Business Climate), were excluded from the analysis due to their loadings falling below the recommended threshold of 0.7. These indicators, with loadings of 0.632 and 0.675, did not adequately represent their respective variables. After removing these indicators, Figure 3 reveals that the remaining indicators all have loadings of 0.7 or higher, indicating good convergent validity. This suggests that the indicators effectively capture the intended variables.

### Ensuring Reliable Measures: Assessing Composite Reliability and AVE

The text discusses three widely used metrics for evaluating the reliability of the constructs (variables) in our study: Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). A construct is deemed reliable if the AVE value exceeds 0.50, composite reliability is greater than 0.70, and Cronbach's alpha is also above 0.70. The composite reliability results from SmartPLS are shown in Table 3 below.

Table 3. Reliability and Validity of Constructs

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Knowledge Sharing (KS)	0,925	0,940	0,690
Business Climate (BC)	0,914	0,931	0,659
Digital Innovation (DI)	0,945	0,952	0,645

Source: Data processed, 2024

The SmartPLS output presented in Table 3 reveals that all constructs have an AVE value greater than 0.50, with Composite Reliability (CR) and Cronbach's Alpha values exceeding 0.70. These findings suggest that our measures consistently reflect the intended variables, providing a solid basis for further analysis.

### Diskriminant Validity

Discriminant validity is crucial to ensure our measures capture distinct concepts.

This research follows two established criteria from Hair et al. (2021) to evaluate discriminant validity: First, the square root of each construct's AVE value should exceed its correlations with all other constructs in the model. Alternatively, all AVE values should be 0.50 or higher. Additionally, the HTMT (Heterotrait-Monotrait Ratio) value for all construct pairs should be below 0.90, as a low HTMT value indicates that the constructs are well-differentiated (Hair et al., 2019). Table 4 below presents the results of this discriminant validity assessment.

Table 4. Discriminant Validity

Matriks Fornell dan Larcker			
Construct	BC	DI	KS
Business Climate (BC)	<b>0,812</b>		
Digital Innovation (DI)	0,783	<b>0,803</b>	
Knowledge Sharing (KS)	0,743	0,745	<b>0,831</b>
Matriks HTMT			
Construct	BC	DI	KS
Business Climate (BC)			
Digital Innovation (DI)	0,836		
Knowledge Sharing (KS)	0,806	0,793	

Source: Data processed, 2024

Reviewing Table 4, it is evident that the square root of each construct's AVE in the Fornell-Larcker matrix is 0.812, 0.803, and 0.831, which is higher than the correlation values of each construct or exceeds the AVE square root threshold of 0.5. This analysis confirms that the measurement model has good discriminant validity, as the square roots of the AVE values are greater than all correlations (Fornell-Larcker), and the HTMT values for all variable pairs are below 0.90.

### Examining Relationships (The Inner Model)

This section assesses the structural model to examine the proposed relationships among research variables. Adhering to the guidelines outlined by Hair et al. (2019), the evaluation involves verifying the absence of multicollinearity among variables through a VIF (Variance Inflation Factor) value below 5, conducting hypothesis tests, and determining 95% confidence intervals for estimated path coefficients. Furthermore, the direct impact of variables at the structural level is measured using f-square values, categorized as low (0.02), moderate (0.15), or high (0.35). The potential mediating influence of a variable is quantified using the upsilon  $\nu$  statistic, derived from the squared mediation coefficient. In line with Lachowicz et al. (2018) and Ogbeibu & Gaskin (2022), this mediation effect is classified as low (less than 0.02), medium (0.075 to 0.175), or high (greater than 0.175). Model performance is evaluated using R-square, as suggested by Chin (1998), with thresholds of 0.19 (low), 0.33 (moderate), and 0.66 (high), as well as Q-square exceeding zero (Hair et al., 2019). A detailed presentation of these findings is provided in Table 5 for in-depth analysis.

**Table 5. Hypothesis Testing/Structural Model Testing**

Hypothesis	Path Coefficient	P Values	95% Path Coef. Confidence Interval		Test Results/ Sig?	VIF	F Square/ Upsilon V	R Square	Q Square
			Lower limit	Upper limit					
<i>Direct Influence</i>									
H1. KS → BC	0,743	0,000	0,417	0,707	accepted	1.000	1,230	0,552	0,546
H2. KS → DI	0,364	0,000	0,161	0,414	accepted	2.230	0,183	0,673	0,552
H3. BC → DI	0,513	0,000	0,461	0,726	accepted	2.230	0,358		
<i>Indirect Influence</i>									
H4. KS → BC → DI	0,380	0,000	0,225	0,482	accepted	-	0,113	-	-

Source: Data processed, 2024

The structural model analysis yielded favorable results. No multicollinearity issues were detected, as indicated by VIF values below the critical threshold of 5, ensuring the reliability of the findings. The parameter estimates demonstrated robustness. All four hypotheses were supported, with p-values less than 0.05. Furthermore, KS exerted a moderate to high influence on BC, accounting for 55.2% of its variation. The combined impact of KS and BC on DI was substantial, explaining 67.3% of DI's variance. The Q-square metric, a measure of predictive relevance in PLS models, exceeded zero, confirming the model's ability to generate accurate predictions and supporting its overall validity (Hair et al., 2019).

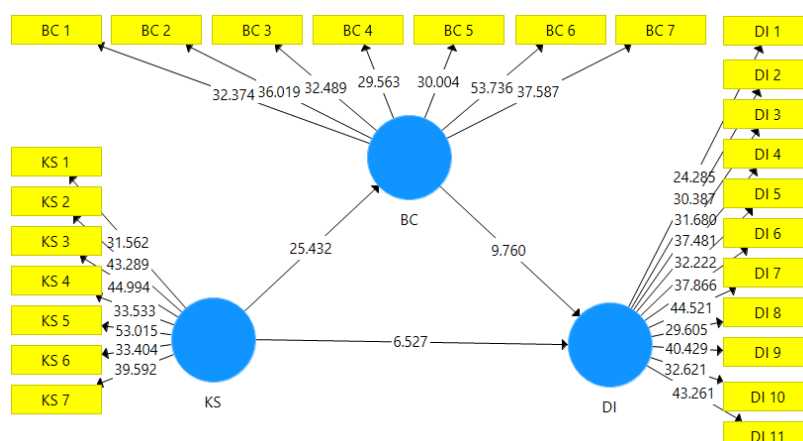


Figure 4. Preliminary Results of Inner Model Evaluation

## DISCUSSION

### Knowledge sharing and business climate

The analysis supports the first hypothesis, showing that knowledge sharing has a positive and statistically significant impact on the business climate among Nahdliyin entrepreneurs in West Java. This strong and stable relationship suggests that increased knowledge-sharing fosters a more favorable business environment for these entrepreneurs. This means that the more active West Java Nahdliyin entrepreneurs are in knowledge sharing, the more conducive the business climate they feel. Knowledge sharing allows entrepreneurs to learn from each other's experiences and best practices, thereby increasing their insight and abilities in running a business. This result aligns with the research conducted by Bjørnendahl & Foss (2016), which found that knowledge sharing can improve the business climate by increasing productivity, efficiency, and innovation. They found that individuals, groups, or organizations that do knowledge-sharing are more productive, efficient, and innovative than those that do not knowledge-sharing. A study by Xin Chen & Huang (2021), also demonstrates that knowledge sharing positively influences the business climate. This suggests that knowledge sharing can foster a psychologically safer environment, contributing to a more positive business climate. However, Yanyan Wang & Wang (2023), found that while knowledge sharing positively impacts the business climate, the effect size is moderate. The positive relationship between knowledge sharing and the business climate tends to be more pronounced in studies that emphasize the mediating role of trust and psychological safety.

### Knowledge Sharing as a Catalyst for Digital Innovation

The second hypothesis was supported, indicating that structured knowledge sharing has a positive and substantial impact on digital innovation with a high level of structure.

The high level of structure in the relationship between KS and ID indicates that the influence of KS on ID is relatively stable and not easily influenced by other factors. This strengthens the conclusion that knowledge sharing is an important factor that contributes to increasing digital innovation among West Java Nahdliyin entrepreneurs. This is shown by the more active West Java Nahdliyin entrepreneurs are in knowledge sharing, the higher the level of digital innovation they carry out in their businesses. Knowledge sharing allows entrepreneurs to get new ideas and learn best practices from other entrepreneurs, thereby encouraging them to innovate and develop their businesses in creative and innovative ways. These findings align with research conducted by Al-Hajri & Al-Ghamdi (2021); Amin &

Zakaria (2022); Sharma & Sharma (2021); and Suwarno & Silvianita (2017). Their studies, encompassing countries like Indonesia, China, Malaysia, Saudi Arabia, and India, demonstrate a positive and significant impact of knowledge sharing on digital innovation across various cultures and religious backgrounds, including both Muslim and Hindu entrepreneurs.

### ***The Role of Business Climate in Driving Digital Innovation***

Then Hypothesis 3 was successfully tested, which proved that BC had a positive and significant influence on DI with a high level of structure. This indicates that the more conducive the business climate felt by West Java Nahdliyin entrepreneurs, the higher the level of digital innovation they carry out in their businesses. A conducive business climate provides certainty and stability for entrepreneurs to invest and develop their businesses, thus encouraging them to innovate and take risks. These results support research conducted by Al-Harbi & Al-Anazi (2020); Arief & Nuryanti (2021); Fathurrohman & Astuti (2021); and Singh et al. (2020), which proves that a conducive business climate can increase digital innovation in entrepreneurs. However, these results contradict research conducted by Chen, Ming-Hsien (2015); and Nguyen, Van Son (2018), who did not find a significant influence of business climate on digital innovation in manufacturing companies specifically in Vietnam and China.

### ***Interplay Between Knowledge Sharing, Business Climate, and Digital Innovation***

The analysis supported the fourth hypothesis, as evidenced by PLS analysis and upsilon V testing, demonstrating that the hypothesis was successfully validated. This confirms that knowledge sharing positively and significantly impacts digital innovation through the business climate, with a mediation value approaching high. It is thus established that the business climate can act as a mediating variable in the relationship between knowledge sharing and digital innovation among West Java Nahdliyin entrepreneurs. This finding aligns with research by Mohd Khairudin Johari (2016), which also identified the business climate as a mediator between knowledge sharing and innovation in Malaysia's retail sector. This suggests that by facilitating the transfer of knowledge and new ideas, encouraging collaboration and cooperation, and enhancing trust and confidence, a supportive business climate can improve opportunities for West Java Nahdliyin entrepreneurs to engage in digital innovation.

## **CONCLUSION**

This study draws several key conclusions about the impact of knowledge sharing on digital innovation, with the business climate acting as a mediator. Firstly, knowledge sharing directly and positively influences the business climate among Nahdliyin entrepreneurs in West Java. Secondly, it has a positive impact on digital innovation in this community. Thirdly, a favorable business climate significantly boosts digital innovation efforts. Moreover, the study reveals that the business climate mediates the relationship between knowledge sharing and digital innovation, meaning that a better business environment, driven by knowledge sharing, further enhances digital innovation. Overall, the research concludes that knowledge sharing is vital to improving both the business climate and digital innovation among West Java's Nahdliyin entrepreneurs. The study emphasizes that knowledge sharing significantly contributes to a supportive business climate, which, in turn, directly impacts digital innovation and mediates the relationship between knowledge sharing and digital innovation. These results indicate that to enhance digital innovation among entrepreneurs, efforts should focus on fostering knowledge sharing and cultivating a favorable business environment. The findings underscore the

importance of integrating these elements to develop a strong digital innovation ecosystem that can improve entrepreneurial performance.

### LIMITATION

Despite its valuable insights, this study has several limitations. Firstly, the research is geographically limited to Nahdliyin entrepreneurs in West Java, which may affect the generalizability of the findings to other regions or entrepreneurial communities in Indonesia. Secondly, the study focuses primarily on knowledge sharing and the business climate as key factors influencing digital innovation, potentially overlooking other critical variables such as technological infrastructure, access to capital, or government policies that may also significantly impact digital innovation. Thirdly, the study relies on self-reported data, which could introduce bias due to respondents' subjective perceptions of their knowledge-sharing practices and business climate. Additionally, the cross-sectional design of the research limits its ability to capture the dynamic, evolving nature of knowledge sharing, business climate, and digital innovation over time. Future studies could address these limitations by expanding the sample to other regions, incorporating longitudinal data, and considering a broader range of factors that influence digital innovation.

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