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The Effects of Innovative Competence, Tax Compliance, and Adaptive Capability on the Sustainability of MSMEs

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Abstract

Background: Business sustainability remains a critical challenge for MSMEs amid increasing competition and rapid digital transformation. Although internal capabilities are recognized as key determinants of sustainability, the role of technology digitalization in strengthening these capabilities remains insufficiently explored, particularly among MSME taxpayers in Indonesia.
Objective: This study aims to examine the effects of innovative competence, tax compliance, and adaptive capability on the business sustainability of MSME taxpayers in Bandung City and to analyze the moderating role of technology digitalization in these relationships.
Methods: This study employed a quantitative approach using a survey method involving 478 MSME taxpayers in Bandung City selected through purposive sampling. Data were collected through a structured Likert-scale questionnaire and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4.
Results: The findings indicate that innovative competence ($\beta = 0.272$; $p < 0.001$), tax compliance ($\beta = 0.143$; $p < 0.001$), adaptive capability ($\beta = 0.258$; $p < 0.001$), and technology digitalization ($\beta = 0.188$; $p < 0.001$) have significant positive effects on business sustainability. However, technology digitalization does not significantly moderate the relationships between innovative competence, tax compliance, adaptive capability, and business sustainability. The model explains 36.4% of the variance in business sustainability ($R^2 = 0.364$).
Conclusion: The sustainability of MSME taxpayers in Bandung City is primarily driven by internal capabilities, including innovative competence, tax compliance, and adaptive capability. Strengthening these factors is essential to enhance MSME resilience and long-term sustainability in an increasingly dynamic business environment.

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in the Indonesian economy by contributing significantly to gross domestic product (GDP) and employment generation. In addition to serving as the backbone of the national economy, MSMEs contribute to reducing economic disparities and improving community welfare (Afdal et al., 2021; Maharani et al., 2024; Muafi & Roostika, 2022). Nevertheless, the sustainability of MSMEs continues to face various challenges, including rapid changes in the business environment, increasing competition, advancements in digital technology, and growing demands for compliance with tax regulations. These conditions require MSME owners to possess adequate capabilities to sustain and develop their businesses in the long term (Aprilia & Sunariya, 2022; Nawangsari & Sutawidjaya, 2021; RAMLI et al., 2022).

Business sustainability refers to an enterprise's ability to maintain its operations, economic performance, and long-term growth amid the dynamics of the business environment (İbrahimcioğlu & Kitapçı, 2025; Islam et al., 2022; Olaleye et al., 2024). In the context of MSMEs, business sustainability is determined not only by the ability to generate profits but also by the capacity to adapt to market changes, create innovations, and implement sound business governance practices (DiBella et al., 2023; Hu & Kee, 2021; Islam & Wahab, 2021). Therefore, identifying the factors that influence MSME business sustainability is essential for enhancing competitiveness and organizational resilience.

One factor believed to contribute to business sustainability is innovative competence. Innovative competence reflects an entrepreneur's ability to generate, adopt, and implement new ideas that create added value for customers and strengthen business competitiveness (Elgarhy & Abou-Shouk, 2022; Ishaq et al., 2024; Mokbel Al Koliby et al., 2022). Adaptive capability is also considered a critical factor, as it enables MSMEs to respond effectively to changes in the business environment, technological developments, and shifting consumer preferences (Erlangga et al., 2024; Mishra & Kiran, 2024; Omowole et al., 2024). Furthermore, tax compliance has gained increasing attention as an indicator of business formality and credibility, which may affect access to financing, relationships with government institutions, and long-term business sustainability (Alexander & Menicacci, 2025; Waskita et al., 2025).

The rapid development of digital technology has transformed the way MSMEs conduct their business activities. Technology digitalization enables business owners to expand market access, improve operational efficiency, enhance information management, and facilitate compliance with tax obligations (Ao et al., 2023; Gambo et al., 2025; Khan et al., 2024). However, the level of digital technology utilization among MSMEs remains suboptimal. Many business owners have adopted digital platforms but have not fully leveraged their potential to support innovation, tax compliance, and adaptive capability (Muttiwijaya et al., 2025; Utomo & Setiyono, 2024; Yani et al., 2025). This condition suggests that technology digitalization may serve as a moderating factor that strengthens or weakens the influence of various internal capabilities on MSME business sustainability.

Previous studies have examined the relationships between innovation and business sustainability, tax compliance and business performance, as well as adaptive capability and business resilience. Saunila (2020) found that innovative competence among small and medium-sized business entities is positively associated with business performance through the ability to create added value, which is manifested in both product innovation and process improvement. Furthermore, incremental innovation can enhance operational efficiency and increase customer satisfaction. Likewise, Purba & Triwibowo (2025) reported that tax-compliant MSME owners tend to demonstrate stronger legal compliance, greater access to financing sources, and lower exposure to tax-related penalties, thereby strengthening business resilience and long-term sustainability. In the context of MSMEs, Saah et al. (2024) emphasized that adaptive capability enables small businesses to adjust their strategies and operations more flexibly, reducing the risk of business failure. Additionally, Hajishirzi et al. (2022) found that digital capabilities contribute significantly to organizational effectiveness and resilience. However, most existing studies have examined these variables separately. Moreover, research investigating technology digitalization as a moderating variable remains limited, particularly within the context of MSME taxpayers in Indonesia.

This study contributes to the existing literature by simultaneously integrating innovative competence, tax compliance, and adaptive capability into a single research model, while positioning technology digitalization as a moderating variable, an approach that has not been previously adopted in the context of MSME taxpayers in Indonesia. By doing so, this research provides a more comprehensive understanding of how internal capabilities interact with digital technology adoption in shaping MSME business sustainability, thereby offering both theoretical and practical insights that extend beyond the fragmented findings of prior studies. In the era of digital transformation, technology serves not only as an operational resource but also as a strategic capability that can strengthen the effectiveness of an organization's internal resources in achieving business sustainability.

METHOD

This study employed a quantitative approach with an explanatory research design to examine the relationships among innovative competence, tax compliance, adaptive capability, technology digitalization, and business sustainability among Micro, Small, and Medium Enterprise (MSME) taxpayers in Bandung City. A quantitative approach was selected because it enables the objective testing of relationships among variables through statistical analysis based on a structural model.

The study population consisted of all MSME taxpayers registered and actively operating businesses in Bandung City. A total of 478 respondents were selected using a purposive sampling technique based on the following criteria: (1) business owners who had operated their businesses for at least five years, (2) registered as MSME taxpayers in Bandung City, and (3) generated business revenues that met the official MSME classification criteria. This sampling technique was employed to ensure that respondents possessed relevant experience and characteristics aligned with the objectives of the study.

Primary data were collected through a structured questionnaire using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The research instrument was developed based on measurement indicators that had been adopted and validated in previous studies. The constructs measured in this study included innovative competence, tax compliance, adaptive capability, technology digitalization, and business sustainability.

Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with the assistance of SmartPLS 4 software. SEM-PLS was chosen because it is capable of simultaneously examining relationships among latent variables, including moderating effects, and is well suited for predictive and complex research models. The analysis consisted of two stages: evaluation of the measurement model (outer model) and evaluation of the structural model (inner model). The outer model was assessed through convergent validity, discriminant validity, and construct reliability tests using outer loading values, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's Alpha. The inner model was evaluated using the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and multicollinearity assessment through the Variance Inflation Factor (VIF).

Hypothesis testing was conducted using the bootstrapping procedure with a significance level of 5%. Direct effects among variables were assessed based on path coefficients, t-statistics, and p-values. Furthermore, moderation analysis was performed to determine whether technology digitalization strengthened or weakened the effects of innovative competence, tax compliance, and adaptive capability on the business sustainability of MSME taxpayers in Bandung City. All participants provided informed consent prior to data collection, and their identities were protected under strict confidentiality principles.

RESULTS AND DISCUSSION

Result

Outer Model

The outer model evaluation begins with an overview of respondent characteristics. Table 1 presents the demographic profile of the 478 MSME taxpayers in Bandung City who participated in this study, including their gender, age, education level, business age, annual revenue, and registered Tax Service Office (KPP).

Table 1.
Respondent Characteristics

		Frequency (n)	Percentage (%)
Gender	Male	215	45
	Female	263	55
	Total	**478**	**100%**
Age			
	<20 years	101	21%
	20-29 years	89	19%
	30-39 years	90	19%
	40-49 years	95	20%

		Frequency (n)	Percentage (%)
	>50 years	103	22%
	Total	**478**	**100%**
Education Level			
	≤ Junior High School	175	37%
	Senior High School	134	28%
	Bachelor's Degree	143	30%
	Master's/Doctoral Degree	26	5%
	Total	**478**	**100%**
Business Age			
	≤10 years	338	71%
	11- 20 years	74	15%
	> 20 years	66	14%
	Total	**478**	**100%**
Annual Revenue			
	< 300 million rupiah	145	30%
	300 million - 2,5 billion rupiah	172	36%
	> 2,5 billion	161	34%
	Total	**478**	**100%**
Registered Tax Office (KPP)			
	KPP Pratama Bandung Bojonagara	111	23%
	KPP Pratama Bandung Cibeunying	110	23%
	KPP Pratama Bandung Cicadas	124	26%
	KPP Pratama Bandung Tegalega	133	28%
	Total	**478**	**100%**

Table 1 shows that the study involved 478 MSME taxpayers in Bandung City. Based on gender, the respondents were predominantly female, with 263 individuals (55%), while male respondents accounted for 215 individuals (45%). This finding indicates a relatively high level of female participation in MSME business activities and tax compliance in Bandung City.

In terms of age, the distribution of respondents was relatively balanced across all age groups. The largest proportion belonged to respondents aged over 50 years, comprising 103 individuals (22%), followed by those under 20 years old with 101 individuals (21%), respondents aged 40–49 years with 95 individuals (20%), and those aged 20–29 years and 30–39 years with 89 (19%) and 90 (19%) individuals, respectively. These results suggest that MSME entrepreneurs in Bandung City represent a diverse range of age groups, from younger entrepreneurs to more experienced business owners.

Regarding educational attainment, the majority of respondents had completed junior high school or below, accounting for 175 individuals (37%). This was followed by respondents holding a bachelor's degree with 143 individuals (30%), senior high school graduates with 134 individuals (28%), and those with master's or doctoral degrees with 26 individuals (5%). These findings indicate that MSMEs in Bandung City are largely operated by individuals with lower to middle educational backgrounds, although a substantial proportion of business owners possess higher education qualifications.

Based on business age, most enterprises had been operating for ten years or less, representing 338 businesses (71%). Meanwhile, 74 businesses (15%) had been operating for 11–20 years, and 66 businesses (14%) had been operating for more than 20 years. This finding suggests that the majority of MSMEs are still in the growth and development stage of their business lifecycle.

In terms of annual revenue, the largest group consisted of MSMEs generating between IDR 300 million and IDR 2.5 billion annually, accounting for 172 respondents (36%). This was followed by businesses with annual revenues exceeding IDR 2.5 billion, totaling 161 respondents (34%), and businesses with annual revenues below IDR 300 million, totaling 145 respondents (30%). This distribution indicates that the respondents represent various business scales within the MSME sector.

Based on the registered Tax Service Office (KPP), respondents were fairly evenly distributed across the main tax administration regions in Bandung City. The largest proportion was registered with KPP Pratama Bandung Tegalega, comprising 133 respondents (28%), followed by KPP Pratama Bandung Cicadas with 124 respondents (26%), KPP Pratama Bandung Bojonagara with 111 respondents (23%), and KPP Pratama Bandung Cibeunying with 110 respondents (23%). This distribution demonstrates that the study sample adequately represents the principal tax administration areas within Bandung City.

Table 2.
Outer Loadings Test Results

Variable	Technology Digitalization	Business Sustainability	Innovative Competence	Tax Compliance	Adaptive Capability
DT 1	0,781				
DT 2	0,760				
DT 3	0,753				
DT 4	0,785				
DT 5	0,757				
DT 6	0,794				
DT 7	0,804				
DT 8	0,751				
DT 9	0,781				
KB 1		0,782			
KB 2		0,783			
KB 3		0,767			
KB 4		0,787			
KB 5		0,762			
KB 6		0,777			
KB 7		0,794			
KB 8		0,784			
KI 1			0,771		
KI 2			0,792		
KI 3			0,776		
KI 4			0,790		
KI 5			0,795		
KI 6			0,764		
KI 7			0,788		
KI 8			0,813		
KP 1				0,797	
KP 2				0,795	
KP 3				0,765	
KP 4				0,790	
KP 5				0,775	
KP 6				0,788	
KP 7				0,800	
KP 9				0,809	
KA 1					0,770
KA 2					0,761
KA 3					0,810
KA 4					0,785

Variable	Technology Digitalization	Business Sustainability	Innovative Competence	Tax Compliance	Adaptive Capability
KA 5					0,780
KA 6					0,774
KA 7					0,800
KA 8					0,792

As presented in Table 2, the results of the instrument validity assessment indicate that all indicators have outer loading values exceeding the recommended threshold of 0.70. These findings demonstrate that each indicator exhibits a strong association with its respective latent construct. Therefore, all indicators included in this study satisfy the requirements for convergent validity and are considered valid measures of their corresponding constructs.

Table 3.
AVE Value

Construct	AVE
DT	0,598
KB	0,608
KI	0,618
KP	0,624
KA	0,615

Table 3 indicates that the AVE values for all constructs exceed the recommended threshold of 0.50, meaning that more than 50% of the variance in the indicators is explained by their respective latent constructs. These results demonstrate that each construct possesses adequate convergent validity. Therefore, all variables included in this study meet the established criteria for convergent validity and are considered to have satisfactory measurement quality.

Table 4.
Fornell-Larcker Criterion Results

	DT	KA	KB	KI	KP
DT	0,773				
KA	0,394	0,784			
KB	0,403	0,473	0,780		
KI	0,385	0,455	0,488	0,786	
KP	0,056	0,124	0,234	0,182	0,790

The results presented in Table 4 demonstrate that the square root of the Average Variance Extracted (AVE) for each construct exceeds its correlations with all other constructs. According to the Fornell–Larcker criterion, these findings confirm that each construct is empirically distinct from the others. Therefore, all constructs employed in this study satisfy the requirements of discriminant validity and can be considered to possess adequate construct distinctiveness.

Table 5.
Construct Reliability Test Results

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
DT	0,904	0,905	0,922
KB	0,908	0,909	0,925
KI	0,912	0,913	0,928
KP	0,914	0,916	0,930
KA	0,911	0,912	0,927

Table 5 shows that the Cronbach's Alpha values for all constructs exceed the recommended threshold of 0.70, indicating a satisfactory level of internal consistency among the measurement items. Similarly, the Composite Reliability values are all above 0.70, with several constructs approaching or exceeding 0.90, demonstrating a high degree of construct reliability. These findings confirm that the measurement instruments used in this study possess strong reliability and are capable of consistently measuring their respective latent constructs.

Inner Model

Table 6.

R-Square

Y	R-Square	R-Square adjusted
Business Sustainability	0,364	0,359

Table 6 shows that the Business Sustainability (BS) construct has an R-square value of 0.364 and an adjusted R-square value of 0.359. These results indicate that innovative competence, tax compliance, adaptive capability, and technology digitalization collectively explain 36.4% of the variance in the business sustainability of MSMEs in Bandung City. The remaining 63.6% of the variance is attributable to other factors outside the scope of the present research model.

Table 7.

F-square Test

Relationship	f-square	Interpretation
DT-KB	0,044	Small
KA-KB	0,077	Small
KI-KB	0,085	Small
KP-KB	0,031	Small

Table 7 indicates that all research variables have f-square values greater than 0.02. These results suggest that each variable exerts a meaningful effect on business sustainability. However, based on the established f-square criteria, all effects fall within the small effect size category, indicating that while the variables contribute significantly to the model, their individual contributions are relatively modest.

Hypothesis

Table 8.

Path coefficients

Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (│O/STDEV│)	P Values
DT -> KB	0,188	0,190	0,039	4,868	0,000
KA -> KB	0,258	0,258	0,040	6,405	0,000
KI -> KB	0,272	0,273	0,039	6,979	0,000
KP -> KB	0,143	0,145	0,034	4,161	0,000

Table 8 presents the results of the direct effect testing among the variables included in the research model. Based on the SEM-PLS analysis, all independent variables were found to have positive and significant effects on Business Sustainability (BS), as evidenced by T-statistics values greater than 1.96 and p-values below 0.05.

The Innovative Competence (IC) variable exhibits a path coefficient of 0.272, a t-statistic of 6.979, and a p-value of 0.000. These results indicate that innovative competence has a positive and significant effect on business sustainability. The greater the ability of MSME owners to create, develop, and implement new ideas within their businesses, the greater their capacity to sustain business operations over time. With the highest path coefficient among all variables, innovative competence emerges as the most influential factor in enhancing the business sustainability of MSME taxpayers in Bandung City.

The Adaptive Capability (AC) variable shows a path coefficient of 0.258, a t-statistic of 6.405, and a p-value of 0.000. This finding suggests that adaptive capability has a positive and significant effect on business sustainability. MSME owners who are able to adjust effectively to changes in the business environment, technological developments, and market demands are more likely to sustain and expand their businesses in the long term.

The Technology Digitalization (TD) variable demonstrates a path coefficient of 0.188, a t-statistic of 4.868, and a p-value of 0.000. These results confirm that technology digitalization has a positive and significant effect on business sustainability. The use of digital technologies in business operations, marketing activities, transactions, and information management contributes to enhanced competitiveness and organizational resilience among MSMEs.

Furthermore, the Tax Compliance (TC) variable has a path coefficient of 0.143, a t-statistic of 4.161, and a p-value of 0.000. These findings indicate that tax compliance positively and significantly influences business sustainability. The higher the level of compliance with tax obligations among MSME owners, the stronger the sustainability of their businesses. Tax compliance may reflect sound business governance, enhance business credibility, and provide greater opportunities to access government support programs and other forms of institutional assistance.

Overall, the findings demonstrate that innovative competence, adaptive capability, technology digitalization, and tax compliance are significant factors supporting the business sustainability of MSME taxpayers in Bandung City. Based on the magnitude of the path coefficients, the order of influence on business sustainability is as follows: innovative competence (β = 0.272), adaptive capability (β = 0.258), technology digitalization (β = 0.188), and tax compliance (β = 0.143). These results suggest that internal capabilities related to innovation and adaptability play a stronger role in promoting MSME business sustainability than administrative compliance factors.

Table 9.
Moderation Model Path Coefficients Results

Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (│O/STDEV│)	P values
DT_KA -> KB	-0,017	-0,017	0,040	0,435	0,663
DT_KI -> KB	0,005	0,005	0,043	0,110	0,913
DT_KP -> KB	-0,005	-0,007	0,035	0,155	0,877
KA -> KB	0,309	0,308	0,039	7,837	0,000
KB -> DT	0,403	0,402	0,037	10,813	0,000
KI -> KB	0,322	0,322	0,040	8,008	0,000
KP -> KB	0,138	0,137	0,035	3,895	0,000

Table 9 shows that the interaction between Technology Digitalization and Adaptive Capability (TD × AC → BS) has a path coefficient of -0.017, a t-statistic of 0.435, and a p-value of 0.663. Since the p-value exceeds 0.05, the moderating effect of technology digitalization on the relationship between adaptive capability and business sustainability is not statistically significant. Therefore, the level of technology digitalization among MSMEs neither strengthens nor weakens the effect of adaptive capability on business sustainability.

It should be noted that the path coefficients in the moderation model (Table 9) differ from those in the direct effects model (Table 8). Specifically, innovative competence increased from β = 0.272 to β = 0.322, and adaptive capability increased from β = 0.258 to β = 0.309, while tax compliance decreased slightly from β = 0.143 to β = 0.138. These differences arise because the moderation model includes interaction terms (DT×IC, DT×TC, DT×AC) as additional predictors, which redistribute the explained variance among the predictors in the structural model. The coefficients reported in Table 9 represent the total effects estimated from the structural (inner) model that incorporates both direct and interaction paths simultaneously.

Furthermore, the interaction between Technology Digitalization and Innovative Competence (TD × IC → BS) yields a path coefficient of 0.005, a t-statistic of 0.110, and a p-value of 0.913. These results indicate that technology digitalization does not act as a moderating variable in the relationship between innovative competence and business sustainability. In other words, the effect of innovative competence on business sustainability remains relatively consistent regardless of whether the level of technology digitalization is low or high.

A similar result is observed for the interaction between Technology Digitalization and Tax

Compliance (TD × TC → BS), which has a path coefficient of -0.005, a t-statistic of 0.155, and a p-value of 0.877. This finding suggests that technology digitalization is unable to moderate the relationship between tax compliance and business sustainability. Thus, tax compliance continues to influence business sustainability independently of the level of technology digitalization adopted by MSME owners.

Although technology digitalization does not function as a moderating variable, several direct relationships remain statistically significant. Adaptive Capability (AC → BS) has a path coefficient of 0.309 (t = 7.837, p = 0.000), Innovative Competence (IC → BS) has a coefficient of 0.322 (t = 8.008, p = 0.000), and Tax Compliance (TC → BS) has a coefficient of 0.138 (t = 3.895, p = 0.000). These findings indicate that all three variables exert positive and significant direct effects on MSME business sustainability.

In addition, the relationship between Business Sustainability and Technology Digitalization (BS → TD) is positive and significant, with a path coefficient of 0.403 (t = 10.813, p = 0.000). This result suggests that MSMEs with higher levels of business sustainability tend to demonstrate greater adoption and utilization of digital technologies.

Overall, the moderation analysis reveals that technology digitalization does not serve as a moderator in the relationships between innovative competence, tax compliance, adaptive capability, and the business sustainability of MSME taxpayers in Bandung City. These findings suggest that business sustainability is influenced more strongly by MSMEs' internal capabilities—namely innovative competence, adaptive capability, and tax compliance—than by the ability of technology digitalization to strengthen these relationships. Consequently, all moderation hypotheses proposed in this study are not supported by the empirical data.

Discussion

The Effect of Innovative Competence on Business Sustainability

The results of this study indicate that innovative competence has a positive effect on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that the ability of business owners to generate, develop, and implement new ideas contributes significantly to sustaining business operations in an increasingly dynamic business environment. Through product innovation, process improvement, and marketing innovation, MSMEs can create added value, strengthen their competitive position, and maintain their long-term market presence.

This finding is consistent with the Resource-Based View (RBV), which posits that sustainable competitive advantage is derived from the effective utilization of valuable, rare, inimitable, and non-substitutable resources and capabilities (Agrawal et al., 2024). Innovative competence represents an important intangible resource that enables MSMEs to differentiate themselves from competitors and respond more effectively to market changes. Furthermore, Dynamic Capability Theory emphasizes that an organization's ability to identify opportunities and reconfigure its resources in response to environmental changes is essential for achieving long-term business sustainability (Hajiheydari et al., 2022).

The findings are consistent with the study conducted by Saunila (2020), which reported that innovative competence contributes to the performance and sustainability of small and medium-sized enterprises through continuous learning, creativity, and innovation development. The results also support the findings of Nair & Bhattacharyya (2022), who concluded that innovative competence is a critical factor enabling MSMEs to maintain business sustainability, particularly in the face of environmental uncertainty and increasingly intense market competition. Therefore, innovative competence can be regarded as a strategic capability that plays a crucial role in determining the success and long-term sustainability of MSMEs.

The Effect of Tax Compliance on Business Sustainability

The results of this study indicate that tax compliance has a positive effect on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that MSME owners who consistently fulfill their tax obligations tend to achieve higher levels of business sustainability. Tax compliance not only reflects the fulfillment of legal obligations to the government but also demonstrates more orderly, transparent, and professional business management practices. MSMEs with sound tax administration are generally better equipped to manage financial records, monitor business activities, and enhance their credibility in the eyes of financial institutions and government agencies.

These findings can be explained through the lens of Institutional Theory, which posits that compliance with rules and regulations serves as a form of organizational legitimacy within the business environment. Business owners who comply with tax regulations are more likely to gain the trust of key stakeholders, including government authorities, investors, financial institutions, and customers. Moreover, tax compliance reflects an MSME's ability to manage regulatory risks, thereby reducing the likelihood of administrative sanctions and legal obstacles that could negatively affect business continuity (Tohari et al., 2026).

The findings are consistent with the study by Rimadhani et al. (2024), which highlighted the important role of tax compliance in promoting the formalization and sustainability of MSMEs. The results are also supported by the research of Purba & Triwibowo (2025), which found that tax compliance contributes to the stability and sustainability of small businesses by improving business governance practices and fostering stronger relationships with government authorities. Therefore, tax compliance should be viewed not merely as an administrative obligation but also as a strategic factor that can strengthen the long-term sustainability of MSMEs.

The Effect of Adaptive Capability on Business Sustainability

The results of this study indicate that adaptive capability has a positive effect on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that the greater the ability of MSME owners to adjust to changes in the business environment, technological developments, market dynamics, and evolving customer needs, the greater the likelihood that their businesses will survive and grow over the long term. Adaptive capability enables MSMEs to respond more effectively to challenges and uncertainties, thereby maintaining operational stability and strengthening their competitive position.

These findings are consistent with Dynamic Capability Theory, which emphasizes the importance of an organization's ability to sense environmental changes, seize emerging opportunities, and transform resources and business processes accordingly. In the context of MSMEs, adaptive capability represents a critical dynamic capability that enables entrepreneurs to respond to shifts in consumer preferences, advances in digital technology, regulatory changes, and increasingly complex competitive pressures. MSMEs with strong adaptive capabilities tend to be more flexible in decision-making and quicker to implement the changes necessary to sustain their business operations (Bag et al., 2023).

The findings support the study by Quansah et al. (2022), which identified adaptive capability as a key factor in building business resilience and sustainability amid rapid environmental changes. The results are also consistent with the work of Saah et al. (2024), who emphasized that adaptive capabilities are essential for maintaining competitive advantage and organizational sustainability in dynamic environments. MSMEs with strong adaptive capabilities are better positioned to cope with market uncertainty and sustain business performance over time. Therefore, adaptive capability can be regarded as a strategic factor that enhances MSME business sustainability by improving flexibility, resilience, and responsiveness to changing business conditions.

The Moderating Role of Technology Digitalization in the Relationship Between Innovative Competence and Business Sustainability

The results of this study indicate that technology digitalization does not moderate the effect of innovative competence on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that the positive influence of innovative competence on business sustainability remains consistent across MSMEs with both low and high levels of technology digitalization. In other words, the ability of business owners to create and implement innovations continues to be a critical factor supporting business sustainability regardless of the extent to which digital technologies are utilized. This condition implies that innovation within MSMEs is driven primarily by entrepreneurs' creativity, experience, knowledge, and entrepreneurial capabilities rather than by digital technology alone.

These findings further suggest that technology digitalization has not yet been fully integrated into the innovation activities of MSMEs and therefore has not strengthened the impact of innovative competence on business sustainability. Although digital technologies can support marketing, communication, and operational processes, many MSMEs still utilize such technologies at a basic level and have not adopted them strategically to develop product innovations, process improvements, or new business models. Consequently, the benefits of digitalization are perceived mainly as operational support tools rather than as mechanisms that enhance the relationship between innovative competence and business sustainability.

The findings differ from those reported by Yani et al. (2025), who found that digital transformation capabilities can promote business model innovation among MSMEs. However, the results are consistent with studies suggesting that innovation success in MSMEs is influenced more strongly by internal factors, such as creativity, entrepreneurial experience, and resource management capabilities, than by the level of digital technology adoption. These findings indicate that although technology digitalization exerts a direct positive effect on business sustainability, its role is not sufficiently strong to strengthen the relationship between innovative competence and the business sustainability of MSME taxpayers in Bandung City. Therefore, a more strategic approach to the utilization of digital technologies is required so that digitalization functions not only as an operational tool but also as a catalyst for innovation and sustainable business growth.

The Moderating Role of Technology Digitalization in the Relationship Between Tax Compliance and Business Sustainability

The results of this study indicate that technology digitalization does not moderate the effect of tax compliance on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that the positive influence of tax compliance on business sustainability exists regardless of whether MSMEs possess low or high levels of technology digitalization. In other words, tax compliance functions as an independent factor supporting business sustainability because it reflects discipline, legal compliance, and sound business governance practices. MSME owners who fulfill their tax obligations tend to maintain more organized business administration, which contributes to the long-term continuity of business operations.

The insignificant moderating role of technology digitalization suggests that the use of digital technologies has not been able to strengthen the relationship between tax compliance and business sustainability. Although the government has introduced various digital tax administration services, such as e-Filing, e-Billing, and Coretax, the utilization of these technologies among many MSMEs remains limited to fulfilling administrative requirements. As a result, digitalization primarily serves as a tool for tax reporting and payment rather than as a strategic mechanism capable of enhancing the benefits of tax compliance for business sustainability. Furthermore, varying levels of digital literacy and limited understanding of digital taxation systems may reduce the effectiveness of technology in supporting MSME tax-related activities.

The findings are consistent with the study by Kristiana et al. (2025), which found that efforts to digitalize tax administration do not automatically improve the quality of tax compliance among MSME owners without adequate tax awareness and understanding. Internal factors such as tax awareness, regulatory understanding, and entrepreneurial commitment play a more dominant role in encouraging compliance than technological factors. Therefore, although technology digitalization offers benefits in improving the efficiency of tax administration, the findings suggest that MSME business sustainability is influenced more strongly by the level of tax compliance itself than by the ability of digital technology to strengthen this relationship. These results highlight the importance of simultaneously enhancing tax literacy and digital literacy so that technology utilization can generate greater benefits for the long-term sustainability of MSMEs.

The Moderating Role of Technology Digitalization in the Relationship Between Adaptive Capability and Business Sustainability

The results of this study indicate that technology digitalization does not moderate the effect of adaptive capability on the business sustainability of MSME taxpayers in Bandung City. This finding suggests that adaptive capability continues to contribute to business sustainability regardless of the level of digital technology utilization among MSME owners. In other words, MSMEs that are capable of adapting to changes in the business environment, customer needs, market conditions, and regulatory requirements are more likely to sustain their operations over the long term, whether their level of digitalization is low or high. These results demonstrate that adaptive capability is an internal organizational capability that can independently support business sustainability.

The insignificant moderating effect of technology digitalization indicates that the use of digital technologies has not yet become an instrument that strengthens the adaptive capability of MSMEs. Most MSME owners still utilize digital technologies primarily for basic functions such as communication, marketing, and sales transactions, limiting their ability to significantly enhance the effectiveness of adaptation processes. Furthermore, adaptive capability is influenced more strongly by factors such as business experience, market knowledge, decision-making flexibility, and the ability to interpret changes in the business environment than by the extent of technology adoption. This condition helps explain why technology digitalization has not strengthened the relationship between adaptive capability and business sustainability.

These findings are consistent with the perspective of Bag et al. (2023) in Dynamic Capability Theory, which emphasizes that an organization's ability to sense environmental changes, seize emerging opportunities, and transform its resources is fundamental to maintaining business sustainability. The results also support the findings of Quansah et al. (2022), who identified adaptive capability as a critical determinant of MSME resilience and sustainability in the face of environmental uncertainty. However, the findings differ from those reported by Saah et al. (2024), who found that digital transformation can strengthen an organization's ability to respond to market changes. This discrepancy suggests that the level of digital maturity among MSMEs in Bandung City may not yet be sufficiently advanced for digitalization to function as a reinforcing factor for adaptive capability. Therefore, in addition to increasing the adoption of digital technologies, efforts should be directed toward improving the quality and strategic use of these technologies so that they can better support organizational learning, decision-making processes, and strategic responses to changes in the business environment.

CONCLUSION

This study demonstrates that innovative competence, tax compliance, adaptive capability, and technology digitalization have positive and significant effects on the business sustainability of MSME taxpayers in Bandung City. Among these factors, innovative competence and adaptive capability emerge as the strongest internal capabilities supporting long-term business sustainability. However, technology digitalization does not significantly moderate the relationships between innovative competence, tax compliance, adaptive capability, and business sustainability. These findings indicate that digitalization currently functions more as a direct supporting resource than as a mechanism that strengthens the contribution of MSMEs' internal capabilities to sustainability. Therefore, sustainable MSME performance depends primarily on entrepreneurs' capacity to innovate, adapt to changes in the business environment, maintain tax compliance, and strategically utilize digital technologies.

The findings provide theoretical and practical implications by reinforcing the relevance of the Resource-Based View and Dynamic Capability Theory in explaining MSME sustainability while emphasizing the importance of strengthening innovation, adaptability, tax literacy, and strategic digital capabilities. Policymakers and MSME support institutions should therefore integrate entrepreneurship development, tax education, and digital literacy into capacity-building programs rather than focusing solely on technology adoption. Nevertheless, this study is limited by its cross-sectional design, self-reported data, geographical focus on MSME taxpayers in Bandung City, and the model's explanatory power of 36.4%, indicating that other determinants of business sustainability remain unexplored. Future research should employ longitudinal or mixed-method designs, extend the study to different geographical and economic contexts, and incorporate additional factors such as financial literacy, government support, market orientation, social capital, entrepreneurial orientation, access to financing, and institutional support to develop a more comprehensive explanation of MSME business sustainability.

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REFERENCES

Afdal, Z., Siwi, M. K., & Kurniawati, T. (2021). MSMEs Business Sustainability: A Literature Review. *Seventh Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2021)*, 317–322. https://doi.org/10.2991/aebmr.k.211117.075

Agrawal, R., Samadhiya, A., Banaitis, A., & Kumar, A. (2024). Entrepreneurial barriers in achieving sustainable business and cultivation of innovation: a resource-based view theory perspective. *Management Decision*, *63*(4), 1207–1228. https://doi.org/10.1108/MD-11-2023-2032

Alexander, A., & Menicacci, L. (2025). Tax governance as a social responsibility of the firm: evidence from the Italian cooperative compliance program. *Social Responsibility Journal*, *21*(8), 1549–1565. https://doi.org/10.1108/SRJ-01-2025-0094

Ao, X.-Y., Ong, T. S., Aprile, R., & Di Vaio, A. (2023). Environmental uncertainty and digital technologies corporate in shaping corporate green behavior and tax avoidance. *Scientific Reports*, *13*(1), 22170. https://doi.org/10.1038/s41598-023-49687-w

Aprilia, M., & Sunariya, M. I. T. (2022). Analysis of MSME Business Sustainability in Mojolaban District, Sukoharjo Regency. *International Journal for Disaster and Development Interface*, *2*(2), 132–145.

Bag, S., Srivastava, G., Gupta, S., Zhang, J. Z., & Kamble, S. (2023). Climate change adaptation capability, business-to-business marketing capability and firm performance: Integrating institutional theory and dynamic capability view. *Industrial Marketing Management*, *115*, 470–483. https://doi.org/https://doi.org/10.1016/j.indmarman.2023.11.003

DiBella, J., Forrest, N., Burch, S., Rao-Williams, J., Ninomiya, S. M., Hermelingmeier, V., & Chisholm, K. (2023). Exploring the potential of SMEs to build individual, organizational, and community resilience through sustainability-oriented business practices. *Business Strategy and the Environment*, *32*(1), 721–735. https://doi.org/https://doi.org/10.1002/bse.3171

Elgarhy, S. D., & Abou-Shouk, M. (2022). Effects of entrepreneurial orientation, marketing, and innovation capabilities, on market performance: the mediating effect of sustainable competitive advantage. *International Journal of Contemporary Hospitality Management*, *35*(6), 1986–2004. https://doi.org/10.1108/IJCHM-04-2022-0508

Erlangga, H., Setiawati, T., Riadi, F., Hindarsah, I., & Riani, D. (2024). Adaptive strategies in entrepreneurial ventures: Navigating uncertainty and market dynamics at MSME. *Jurnal Ekonomi Utama*, *3*(1), 1–9.

Gambo, I. Y., Ruzive, B., Kunjumuhammed, S. K., & Madi, H. K. (2025). *Enhancing Business Sustainability Through Digital Legal Compliance and Regulatory Frameworks BT - AI and IoT: Driving Business Success and Sustainability in the Digital Age: Volume 2* (B. Awwad (ed.); pp. 731–739). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-88874-8_65

Hajiheydari, N., Kargar Shouraki, M., Vares, H., & Mohammadian, A. (2022). Digital sustainable business model innovation: applying dynamic capabilities approach (DSBMI-DC). *Foresight*, *25*(3), 420–447. https://doi.org/10.1108/FS-02-2022-0012

Hajishirzi, R., Costa, C. J., & Aparicio, M. (2022). Boosting Sustainability through Digital Transformation's Domains and Resilience. In *Sustainability* (Vol. 14, Issue 3, p. 1822). https://doi.org/10.3390/su14031822

Hu, M. K., & Kee, D. M. H. (2021). Fostering sustainability: reinventing SME strategy in the new normal. *Foresight*, *24*(3–4), 301–318. https://doi.org/10.1108/FS-03-2021-0080

İbrahimcioğlu, A. S., & Kitapçı, H. (2025). How Environmental Turbulence Shapes the Path from Resilience to Sustainability: Useful Insights Gathered from Small and Medium Enterprises (SMEs). In *Sustainability* (Vol. 17, Issue 15, p. 6938). https://doi.org/10.3390/su17156938

Ishaq, M. I., Sarwar, H., Aftab, J., Franzoni, S., & Raza, A. (2024). Accomplishing sustainable performance through leaders' competencies, green entrepreneurial orientation, and innovation in an emerging economy: Moderating role of institutional support. *Business Strategy and the Environment*, *33*(2), 1515–1532. https://doi.org/https://doi.org/10.1002/bse.3557

Islam, A., & Wahab, S. A. (2021). The intervention of strategic innovation practices in between regulations and sustainable business growth: a holistic perspective for Malaysian SMEs. *World Journal of Entrepreneurship, Management and Sustainable Development*, *17*(3), 396–421. https://doi.org/10.1108/WJEMSD-04-2020-0035

Islam, A., Wahab, S. A., & Latiff, A. S. A. (2022). Annexing a smart sustainable business growth model for small and medium enterprises (SMEs). *World Journal of Entrepreneurship, Management and Sustainable Development*, *18*(2), 1–24.

Khan, S. A. R., Sheikh, A. A., & Tahir, M. S. (2024). Corporate social responsibility—an antidote for sustainable business performance: interconnecting role of digital technologies, employee eco-behavior, and tax avoidance. *Environmental Science and Pollution Research*, *31*(3), 4365–4383. https://doi.org/10.1007/s11356-023-31377-9

Kristiana, D. R., Kristianti, I. P., & Setyaningsih, P. R. A. (2025). The Role Of Digital Transactions, Tax Policy, And Ctas In Shaping Taxpayer Compliance: A Case Study Of Indonesian Smes. *International Journal of Business and Society*, *26*(3), 825–841. https://publisher.unimas.my/ojs/index.php/IJBS/article/view/7925/2702

Maharani, S., Noerlina, & Nadira. (2024). A Study of MSMEs Business Sustainability Strategies: Transforming Towards Industry 4.0. *2024 International Conference on Informatics, Multimedia, Cyber and Information System (ICIMCIS)*, 449–453. https://doi.org/10.1109/ICIMCIS63449.2024.10957198

Mishra, R., & Kiran, K. B. (2024). Unveiling the dynamic capabilities' influence on sustainable performance in MSMEs: a systematic literature review utilizing ADO-TCM analysis. *Asia-Pacific Journal of Business Administration*, *17*(2), 561–592. https://doi.org/10.1108/APJBA-05-2024-0295

Mokbel Al Koliby, I. S., Abdullah, H. H., & Mohd Suki, N. (2022). Linking entrepreneurial competencies, innovation and sustainable performance of manufacturing SMEs. *Asia-Pacific Journal of Business Administration*, *16*(1), 21–40. https://doi.org/10.1108/APJBA-09-2021-0480

Muafi, M., & Roostika, R. (2022). MSMEs Business Sustainability Models in Indonesia. *International Journal of Sustainable Development & Planning*, *17*(1). https://doi.org/10.18280/ijsdp.170120

Muttiwijaya, G. T. P., Padang, R. R., Yasa, I. N. P., & Adiputra, I. M. P. (2025). Digital Transformation in Tax Administration : The Role of Coretax , Service Quality , and Morality in Enhancing MSME Compliance in Indonesia. *The Indonesian Journal of Accounting*, *28*(2), 359–410. https://doi.org/10.33312/ijar.947

Nair, A. K. S., & Bhattacharyya, S. S. (2022). Sustainability competencies and its link to innovation capabilities. *European Business Review*, *34*(6), 819–836. https://doi.org/10.1108/EBR-08-2021-0172

Nawangsari, L. C., & Sutawidjaya, A. H. (2021). How Can MSMES Achieve Sustainability Business? *Business and Entrepreneurial Review*, *21*(1), 153–170. https://scholar.archive.org/work/7yomajpfwnf7zkel7e6pmicvfy/access/wayback/https://trijurnal.lemlit.trisakti.ac.id/ber/article/download/9271/pdf

Olaleye, B. R., Lekunze, J. N., Sekhampu, T. J., Khumalo, N., & Ayeni, A. A. (2024). Leveraging Innovation Capability and Organizational Resilience for Business Sustainability Among Small and Medium Enterprises: A PLS-SEM Approach. In *Sustainability* (Vol. 16, Issue 21, p. 9201). https://doi.org/10.3390/su16219201

Omowole, B. M., Olufemi-Philips, A. Q., Ofadile, O. C., Eyo-Udo, N. L., & Ewim, S. E. (2024). Conceptualizing agile business practices for enhancing SME resilience to economic shocks. *International Journal of Scholarly Research and Reviews*, *5*(2), 70–88. https://doi.org/10.56781/ijsrr.2024.5.2.0049

Purba, J., & Triwibowo, E. (2025). From Transparency and Governance to Compliance: How Tax Digitalization Shapes Business Sustainability. *Journal of Applied Accounting and Taxation*, *10*(2), 206–218. https://doi.org/10.30871/jaat.v10i2.11082

Quansah, E., Hartz, D. E., & Salipante, P. (2022). Adaptive practices in SMEs: leveraging dynamic capabilities for strategic adaptation. *Journal of Small Business and Enterprise Development*, *29*(7), 1130–1148. https://doi.org/10.1108/JSBED-07-2021-0269

Ramli, Y., Permana, D., Soelton, M., & Koe, W.-L. (2022). Implementing Strategic Sustainability Business On The Micro, Small And Medium Enterprises. *ICCD*, *4*(1), 232–236. https://doi.org/10.33068/iccd.v4i1.470

Rimadhani, P. N., Mardikaningsih, R., Issalillah, F., & Gautama, E. C. (2024). The Impact Of Tax Regulation On Taxpayer Compliance In The Micro , Small , And Medium Enterprises Sector : A Legal Literature Review. *International Journal of Service Science, Management, Engineering, and Technology, 6*(3), 17–26. http://ejournalisse.com/index.php/isse/article/view/161

Saah, P., Mbohwa, C., & Madonsela, N. S. (2024). The Role of Adaptive Management in the Resilience and Growth of Small and Medium Size Enterprises. *International Review of Management and Marketing*, *14*(1), 1–10.

Saunila, M. (2020). Innovation capability in SMEs: A systematic review of the literature. *Journal of Innovation & Knowledge*, *5*(4), 260–265. https://doi.org/https://doi.org/10.1016/j.jik.2019.11.002

Tohari, A., Ramadhani, R. A., Muslih, B., & Kurniawan, A. (2026). Integrating business sustainability into fiscal behavior: evidence from MSMEs tax compliance in Kediri City. *Frontiers in Sustainability*, *Volume 7-2026*.

Utomo, B., & Setiyono, Y. Y. (2024). Leveraging Digital Technology in Micro SMEs to Enhance Indonesia ' s Economic Prosperity. *Jurnal Lemhannas RI*, *12*(3), 391–402. https://doi.org/10.55960/jlri.v12i3.985

Waskita, G. S., Rakhmad, D., & Ashari, W. (2025). Taxation and SMEs in Emerging Markets : A Case Study Approach to Compliance , Growth , and Sustainable Development. *Journal of Economics and Banking ESPAS*, *2*(1), 1–17. https://doi.org/10.28926/espas.v2i1.1817

Yani, A., Welhelmina, M., Manafe, N., & Santosa, S. (2025). Analysis of the Role of Digital Technology in Driving Business Model Innovation in MSMEs : Implications for Enhancing Opera- tional Efficiency and Sustainable Economic Growth. *Technology and Society Perspectives (TACIT)*, *3*(1), 306–313. https://doi.org/10.61100/tacit.v3i1.253