



Orchestrating Digital Agility through Strategic Leadership and Organizational Learning for Sustainable Business Model Transformation

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ABSTRACT

Digital transformation requires SMEs to develop strategic capabilities beyond technology adoption to achieve sustainable business transformation. This study examines the role of strategic leadership in driving sustainable business model transformation through digital agility among SMEs in Central Java, Indonesia. Using a quantitative approach, data were collected through questionnaires from 250 SME owners and managers selected using purposive sampling. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that strategic leadership positively influences digital agility, and digital agility significantly contributes to sustainable business model transformation. The novelty of this study lies in identifying digital agility as a strategic mechanism that converts leadership capability into sustainable business transformation. The study provides practical implications for SMEs in developing adaptive and sustainable strategies.

INTRODUCTION

Digital transformation has become a critical strategic agenda for small and medium enterprises (SMEs) in responding to rapid technological change, evolving customer expectations, and increasing market competition. The development of digital technologies has changed the way firms create, deliver, and capture value, forcing organizations to move beyond conventional operational improvements toward sustainable business model transformation. However, digital transformation among SMEs remains challenging because many firms still perceive digitalization primarily as the adoption of technological tools rather than as an organizational capability that requires strategic direction and adaptive management. According to Verhoef et al. (2021), digital transformation represents a fundamental organizational change involving technology integration, strategic renewal, and business model innovation rather than merely implementing digital applications. Similarly, Warner and Wäger (2019) emphasized that successful digital transformation depends on dynamic capabilities that enable organizations to sense environmental changes, seize opportunities, and continuously reconfigure resources. These conditions highlight the importance of understanding how SMEs develop internal capabilities to achieve sustainable transformation.

In emerging economies such as Indonesia, SMEs represent an essential component of economic development but continue to face significant barriers in digital transformation. Although digital platforms, electronic payments, social media marketing, and online marketplaces have expanded business opportunities, many SMEs experience difficulties in translating digital adoption into long-term competitive advantages. The challenge is not only related to technological availability but also involves leadership capability, organizational readiness, and the ability to respond quickly to changing environments. Research by Kraus et al. (2022) demonstrated that digital transformation requires strategic alignment between technology, organizational resources, and managerial capabilities to generate sustainable outcomes. Furthermore, Matarazzo et al. (2021) found that digital technologies influence business model innovation when organizations possess the capability to integrate digital resources with strategic decision-making processes. Therefore, investigating the organizational factors that enable SMEs to transform digital resources into sustainable business value becomes increasingly important, particularly in regional contexts such as Central Java, Indonesia, where SMEs operate under diverse levels of digital maturity.

Strategic leadership has been identified as one of the fundamental factors influencing organizational transformation because leaders determine strategic orientation, resource allocation, innovation priorities, and organizational responses toward environmental changes. Strategic leaders are expected to develop future-oriented visions, encourage innovation, and create organizational conditions that support adaptation. Previous studies have shown that leadership capability plays a significant role in shaping digital transformation outcomes because leaders influence how organizations interpret technological changes and implement strategic initiatives. According to Cortellazzo et al. (2019), digital transformation requires leaders who are capable

of managing complexity, encouraging innovation, and facilitating organizational adaptation. More recently, Henderikx and Stoffers (2023) highlighted that leadership capability remains a critical determinant in enabling organizations to develop digital competencies and achieve transformation objectives. However, existing studies have frequently examined leadership as a direct antecedent of digital transformation success, while the mechanism through which leadership capability is converted into sustainable business model transformation remains insufficiently explored.

Digital agility has emerged as an important organizational capability that enables firms to rapidly sense market changes, utilize digital information, and respond effectively to uncertainty. Unlike digital adoption, digital agility emphasizes the ability of organizations to continuously adapt, redesign processes, and modify business strategies based on digital opportunities. Previous research suggests that agility serves as a bridge between organizational capabilities and transformation outcomes. For example, Côte-Real et al. (2020) argued that digital capabilities create strategic value when organizations possess the agility to integrate knowledge, technology, and resources into business innovation. Similarly, Warner et al. (2020) explained that digital agility enables organizations to achieve resilience by continuously reconfiguring their capabilities in dynamic environments. Nevertheless, previous studies have not sufficiently explained whether digital agility acts as a mediating mechanism that transforms strategic leadership capabilities into sustainable business model transformation, particularly within SMEs operating in developing regions.

Although previous research has contributed significantly to understanding digital transformation, several research gaps remain. First, many studies focus on technology adoption, digital capability development, or innovation performance, while limited attention has been given to the pathway connecting strategic leadership, digital agility, and sustainable business model transformation. Second, existing literature has predominantly examined large organizations with greater technological resources, whereas SMEs face different structural limitations, including limited financial resources, managerial capacity, and knowledge availability. Third, research regarding digital transformation in emerging economies remains fragmented, especially concerning how regional SMEs develop strategic mechanisms to achieve sustainable transformation. As suggested by Priyono et al. (2020), SMEs require specific transformation approaches because their digital transformation processes are strongly influenced by managerial characteristics and organizational capabilities. Therefore, examining digital agility as a strategic mechanism linking leadership capability and sustainable business transformation provides an opportunity to extend current knowledge in digital transformation research.

Based on these gaps, this study aims to examine the relationship between strategic leadership, digital agility, and sustainable business model transformation among SMEs in Central Java, Indonesia. Specifically, this research investigates whether strategic leadership influences digital agility and

whether digital agility contributes to sustainable business model transformation. Furthermore, this study examines the mediating role of digital agility in explaining how leadership capability is translated into sustainable transformation outcomes. The theoretical contribution of this research lies in extending the dynamic capability perspective by positioning digital agility as a strategic mechanism that connects leadership capability with sustainable business transformation rather than viewing digital transformation merely as technology implementation. Practically, this study provides insights for SME owners, managers, and policymakers regarding the importance of developing leadership capabilities and digital responsiveness to strengthen sustainable business competitiveness in increasingly dynamic markets.

LITERATURE REVIEW

Dynamic Capability Theory

Dynamic Capability Theory explains how organizations maintain competitiveness by continuously adapting, integrating, and reconfiguring their internal and external resources in response to environmental changes. This theory extends the Resource-Based View by arguing that competitive advantage is not only determined by possessing valuable resources but also by the ability to transform those resources when market conditions become uncertain. According to Teece (2018), dynamic capabilities represent higher-order organizational capabilities that enable firms to identify opportunities, make strategic decisions, and redesign operational processes to achieve sustainable competitive advantages. Therefore, organizations operating in highly dynamic environments must develop adaptive capabilities rather than relying solely on existing resources.

The core assumption of dynamic capability theory is that organizational success depends on the ability to perform three interconnected activities: sensing emerging opportunities and threats, seizing opportunities through strategic investments, and transforming organizational structures and resources. These mechanisms explain why some firms are able to benefit from technological change while others fail despite having access to similar technologies. In the context of digital transformation, dynamic capability theory suggests that digital technologies only generate strategic value when organizations possess the capability to interpret technological opportunities and integrate them into business strategies (Kump et al., 2021). Thus, digital transformation should be understood as an organizational capability development process rather than merely a technological implementation process.

Recent studies have applied dynamic capability theory to explain how SMEs respond to digital disruption. According to Battisti et al. (2022), SMEs require adaptive capabilities because their limited resources make them more vulnerable to environmental uncertainty. The study demonstrated that firms with stronger capability development processes are more capable of converting digital resources into innovation and competitive outcomes. Similarly, Liu et al. (2023) found that dynamic capabilities strengthen the relationship between digital transformation initiatives and sustainable organizational performance

because they enable firms to continuously adjust strategies according to market changes. These findings indicate that dynamic capability theory provides an appropriate theoretical foundation for explaining why strategic leadership and digital agility become essential factors in sustainable business transformation.

Based on this theoretical perspective, this study argues that strategic leadership represents the managerial capability that directs organizational transformation, while digital agility represents the adaptive capability that enables SMEs to respond to digital opportunities. Sustainable business model transformation becomes the outcome of these accumulated capabilities. Therefore, dynamic capability theory explains the logical pathway between leadership capability, digital responsiveness, and business model renewal.

Strategic Leadership and Digital Agility

Strategic leadership theory emphasizes the role of leaders in shaping organizational direction, developing strategic vision, managing resources, and creating organizational conditions that support adaptation. Unlike operational leadership, strategic leadership focuses on long-term organizational survival by anticipating future changes and aligning internal capabilities with external environmental demands. According to Ireland and Hitt (2020), strategic leaders create competitive advantage by establishing vision, encouraging innovation, developing human capabilities, and ensuring organizational flexibility in uncertain environments.

Within digital transformation contexts, strategic leadership becomes particularly important because technological change requires decisions regarding investment priorities, innovation direction, organizational culture, and capability development. Leaders determine whether digital technologies are viewed merely as operational tools or strategic resources for creating new business opportunities. Research by Kudyba et al. (2020) demonstrated that leadership commitment significantly influences digital transformation readiness because leaders shape organizational willingness to adopt and integrate emerging technologies. Furthermore, Correani et al. (2020) explained that successful digital transformation requires leadership involvement in redesigning organizational processes and business models rather than delegating digital initiatives solely to technology departments.

However, strategic leadership does not automatically produce transformation outcomes. Leadership capability must be translated into organizational responsiveness. This translation occurs through digital agility, which represents the ability of organizations to rapidly identify digital opportunities, make technology-based decisions, and modify business processes. According to Shams et al. (2021), leadership capability influences digital agility by encouraging innovation-oriented cultures, knowledge sharing, and strategic flexibility. Therefore, leaders who provide clear digital vision and support organizational experimentation are more likely to develop agile digital capabilities.

Although previous research has examined leadership as an important determinant of digital transformation, limited studies explain how strategic

leadership creates digital agility, particularly among SMEs in developing economies. Most existing studies focus on large corporations with established digital infrastructure, while SMEs require different transformation mechanisms due to limited resources and managerial constraints. Therefore, examining the relationship between strategic leadership and digital agility provides important insights into how SMEs develop adaptive capabilities.

H1: Strategic Leadership Positively Influences Digital Agility.

Digital Agility and Sustainable Business Model Transformation

Digital agility theory explains how organizations use digital technologies, information, and capabilities to respond quickly to environmental changes. Digital agility is different from digital adoption because it emphasizes organizational responsiveness, flexibility, and continuous adaptation. While digital adoption focuses on whether firms implement digital tools, digital agility concerns whether firms can strategically utilize those tools to modify business processes and create new value.

The theoretical foundation of digital agility is closely related to organizational agility theory, which argues that firms operating in turbulent environments must develop responsiveness, flexibility, and adaptability to survive. According to Tallon et al. (2019), digital agility enables organizations to sense market changes faster, coordinate resources more effectively, and respond through innovative solutions. Digital agility allows firms to transform digital information into strategic actions, including improving customer relationships, redesigning operations, and developing new revenue models.

Previous studies indicate that digital agility contributes significantly to business model transformation. According to Shams et al. (2021), digitally agile organizations are more capable of modifying their value creation processes because they can integrate technological opportunities with strategic decision-making. Furthermore, Li et al. (2022) found that digital agility enhances firms' ability to innovate business models by improving responsiveness toward customer needs, competitive pressures, and technological changes.

For SMEs, digital agility becomes a critical capability because they often cannot compete through resource scale. Instead, they must rely on speed, flexibility, and innovation. SMEs that possess digital agility are more likely to redesign their value propositions, optimize operational processes, and develop sustainable business models. However, existing research has mainly examined digital agility in relation to innovation performance or competitive advantage, while its role in sustainable business model transformation remains less explored.

Therefore, this study proposes that digital agility is an important capability enabling SMEs to convert digital opportunities into sustainable business transformation.

H2: Digital Agility Positively Influences Sustainable Business Model Transformation.

Strategic Leadership, Digital Agility, and Sustainable Business Model Transformation

The relationship between strategic leadership and sustainable business transformation can be further explained through the capability orchestration perspective. This perspective argues that leaders do not create transformation outcomes directly but orchestrate resources, knowledge, and organizational capabilities to generate strategic change. Strategic leaders provide direction and resource commitment, while organizational capabilities determine whether these resources can be transformed into valuable outcomes.

According to Helfat and Martin (2022), managerial capabilities influence how organizations develop, combine, and deploy strategic resources to respond to environmental changes. Leaders with strong strategic capabilities are able to identify transformation priorities, encourage digital experimentation, and create conditions that support organizational adaptation. However, without adaptive capabilities, leadership vision may remain limited to strategic intentions without producing operational transformation.

Digital agility provides the missing mechanism between leadership intention and transformation outcomes. Through digital agility, strategic decisions can be translated into rapid organizational responses, including process improvement, customer engagement innovation, and business model redesign. This argument is consistent with the dynamic capability perspective, where organizational transformation occurs through continuous sensing, seizing, and reconfiguration processes.

Recent research by Warner et al. (2023) suggests that digital transformation success depends not only on leadership commitment but also on the development of intermediate capabilities that enable organizations to operationalize strategic intentions. Similarly, Appio et al. (2021) emphasized that digital transformation research needs to examine the mechanisms connecting managerial capabilities with business model innovation rather than focusing only on direct effects.

Therefore, this study positions digital agility as a mediating mechanism that explains how strategic leadership contributes to sustainable business model transformation. This approach provides theoretical novelty because it moves beyond viewing digital transformation as a technology-driven phenomenon and instead explains it as a capability-driven organizational transformation process.

H3: Digital Agility Mediates the Relationship Between Strategic Leadership and Sustainable Business Model Transformation.

METHODOLOGY

This study employed a quantitative explanatory research approach to empirically examine the relationship between strategic leadership, digital agility, and sustainable business model transformation among small and medium enterprises (SMEs) in Central Java, Indonesia. The quantitative approach was selected because this study aims to test the proposed conceptual model and examine the direct and indirect relationships between latent variables through statistical analysis. The research model consists of three main

constructs: strategic leadership as an exogenous variable, digital agility as a mediating variable, and sustainable business model transformation as an endogenous variable. Strategic leadership represents the capability of business leaders to establish strategic direction, support innovation, allocate resources, and encourage organizational adaptation. Digital agility represents the ability of SMEs to identify digital opportunities, respond rapidly to market changes, and reconfigure business processes through digital capabilities. Sustainable business model transformation refers to organizational changes in value proposition, value creation, value delivery, and value capture to achieve long-term business sustainability.

The population of this study consisted of SMEs operating in Central Java, Indonesia. Central Java was selected as the research context because SMEs in this region represent diverse economic sectors and face increasing demands for digital adaptation, innovation, and sustainable competitiveness. The research focused on SMEs that had implemented digital technologies in their business activities, such as digital marketing platforms, electronic payment systems, online marketplaces, social media platforms, or digital operational applications. The sampling technique applied was purposive sampling because the study required respondents who possessed sufficient knowledge regarding strategic decision-making, digital implementation, and business transformation processes within their organizations. The respondents were selected based on several criteria: (1) SMEs located in Central Java; (2) businesses operating for a minimum of three years; (3) businesses that had adopted at least one digital technology; (4) respondents were owners, founders, directors, or managers involved in strategic decisions; and (5) respondents understood the development and transformation activities of their businesses. A total of 250 valid responses were obtained from SME owners and managers and were included in the final analysis. This sample size was considered appropriate for Partial Least Squares Structural Equation Modeling (PLS-SEM), particularly for testing predictive models involving mediation relationships and latent constructs (Hair et al., 2022).

Data were collected using a structured questionnaire distributed to selected SME owners and managers. The questionnaire consisted of measurement items adapted from previous empirical studies and adjusted to the SME digital transformation context. All measurement items were assessed using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The strategic leadership construct was measured through indicators related to leadership vision, strategic orientation, innovation encouragement, resource commitment, and organizational support for transformation. Digital agility was measured through indicators representing the ability of SMEs to sense digital opportunities, make rapid decisions based on digital information, and respond by modifying products, services, or operational processes. Sustainable business model transformation was measured through indicators related to changes in value proposition, value creation and delivery processes, and value capture mechanisms that support long-term business sustainability. Before the main data collection, the

instrument was evaluated through expert review and pilot testing to ensure that each measurement item was understandable, relevant, and suitable for the research context.

The data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software. PLS-SEM was selected because the research objective focuses on explaining predictive relationships among latent variables and examining the mediating role of digital agility between strategic leadership and sustainable business model transformation. The analysis was conducted through two main stages: evaluation of the measurement model and evaluation of the structural model. The measurement model assessment was performed to examine indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Indicator reliability was evaluated through outer loading values, while internal consistency was assessed using Cronbach's Alpha and Composite Reliability. Convergent validity was examined using Average Variance Extracted (AVE), while discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT). These assessments ensured that each construct was measured consistently and represented a distinct theoretical concept (Hair et al., 2022).

The structural model evaluation was conducted to test the proposed relationships among variables. The analysis examined the path coefficient (β), coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and statistical significance through bootstrapping procedures. The bootstrapping technique with 5,000 resamples was applied to determine the significance of the hypothesized relationships without requiring normal distribution assumptions. The direct effects tested whether strategic leadership significantly influenced digital agility and whether digital agility significantly influenced sustainable business model transformation. Furthermore, mediation analysis was conducted to examine whether digital agility acted as an intermediate mechanism connecting strategic leadership with sustainable business model transformation. The mediation effect was evaluated based on the significance of the indirect relationship obtained from bootstrapping results. Through this analytical procedure, the study identifies not only whether strategic leadership contributes to sustainable transformation but also explains the mechanism through which leadership capability is converted into sustainable business outcomes through digital agility.

The research procedure was conducted sequentially, beginning with the development of the conceptual model and measurement indicators based on previous literature, followed by questionnaire preparation, instrument evaluation, data collection, data screening, and statistical analysis. In the data screening process, incomplete responses and inconsistent answers were removed before conducting the final analysis. The final dataset was then analyzed using SmartPLS 4 to evaluate the proposed model and test the research hypotheses. The analytical process was designed to provide empirical evidence regarding how strategic leadership contributes to sustainable business

model transformation through the development of digital agility capabilities among SMEs.

RESULT AND DISCUSSION

Respondent Profile and Preliminary Data Assessment

This study analyzed data collected from 250 SME owners and managers operating in Central Java, Indonesia. The respondents were selected based on predetermined criteria, including business operational experience, involvement in strategic decision-making, and the implementation of digital technologies within business activities. Before conducting the PLS-SEM analysis, the collected data were examined to ensure completeness, consistency, and suitability for further statistical analysis.

The respondent characteristics provide an overview of the organizational context in which strategic leadership, digital agility, and sustainable business model transformation were examined. The characteristics include business sector, business age, and respondent position because these factors may influence the extent to which SMEs develop digital capabilities and transform their business models.

Table 1. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage
Business Sector	Food and Beverage	82	32.8%
	Manufacturing	61	24.4%
	Creative Industry	56	22.4%
	Service and Retail	51	20.4%
Business Age	3–5 years	74	29.6%
	6–10 years	108	43.2%
	More than 10 years	68	27.2%
Respondent Position	Owner	173	69.2%
	Manager	77	30.8%

The respondent distribution indicates that the study involved SMEs with sufficient operational experience to evaluate strategic transformation processes. The majority of respondents were business owners (69.2%), which is appropriate because SME owners generally have direct authority in determining strategic priorities, investment decisions, and digital transformation initiatives. In addition, the dominance of businesses operating for more than five years indicates that respondents had experienced various stages of business development and environmental changes, making them suitable sources for evaluating transformation capabilities.

Measurement Model Evaluation

The measurement model evaluation was conducted before testing the structural relationships among constructs. This stage aimed to ensure that the indicators used to measure Strategic Leadership (SL), Digital Agility (DA), and Sustainable Business Model Transformation (SBMT) demonstrated adequate reliability and validity.

The evaluation involved four assessments: indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Indicator reliability was assessed through outer loading values, while internal consistency was examined using Cronbach's Alpha and Composite Reliability. Convergent validity was evaluated using Average Variance Extracted (AVE).

Table 2. Reliability and Convergent Validity Assessment

Construct	Indicators	Outer Loading Range	Cronbach's Alpha	Composite Reliability	AVE
Strategic Leadership	SL1-SL5	0.742–0.861	0.891	0.920	0.697
Digital Agility	DA1-DA6	0.755–0.879	0.906	0.934	0.737
Sustainable Business Model Transformation	SBMT1–SBMT6	0.731–0.872	0.914	0.939	0.718

The results demonstrate that all measurement indicators achieved acceptable loading values, indicating that each indicator appropriately represents its corresponding construct. The reliability values for all constructs exceeded the recommended threshold, showing strong internal consistency among indicators. Furthermore, all AVE values were above 0.50, confirming that each construct explains a substantial proportion of variance from its indicators.

These findings confirm that the measurement model has adequate reliability and convergent validity. Therefore, the constructs of strategic leadership, digital agility, and sustainable business model transformation can be used for subsequent structural model analysis.

Discriminant Validity Assessment

Discriminant validity was evaluated to ensure that each construct represents a theoretically distinct concept. This study applied the Heterotrait-Monotrait Ratio (HTMT), which compares correlations between constructs to determine whether conceptual differences exist among variables.

Table 3. Discriminant Validity Using HTMT Criterion

Construct Relationship	HTMT Value
Strategic Leadership – Digital Agility	0.741
Digital Agility – Sustainable Business Model Transformation	0.783
Strategic Leadership – Sustainable Business Model Transformation	0.695

The HTMT values indicate that all construct relationships remain below the recommended threshold. This confirms that strategic leadership, digital agility, and sustainable business model transformation represent different but

interconnected organizational capabilities. Therefore, the measurement model satisfies discriminant validity requirements.

Structural Model Evaluation

After confirming the quality of the measurement model, the structural model was evaluated to examine the explanatory capability and predictive relevance of the proposed research framework. The structural model assessment included collinearity analysis, coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2).

The first evaluation involved testing possible multicollinearity problems among predictor variables using Variance Inflation Factor (VIF). The results showed that all VIF values were below the recommended threshold, indicating that the predictor constructs did not experience collinearity issues.

The explanatory power of the model was assessed using R^2 values.

Table 4. Coefficient of Determination (R^2)

Endogenous Construct	R^2	Interpretation
Digital Agility	0.426	Moderate explanatory power
Sustainable Business Model Transformation	0.518	Moderate explanatory power

The R^2 value of 0.426 indicates that strategic leadership explains 42.6% of the variance in digital agility. This finding demonstrates that leadership capability represents an important organizational foundation for developing digital responsiveness. Meanwhile, digital agility explains 51.8% of the variance in sustainable business model transformation, indicating that digital responsiveness significantly contributes to SMEs' ability to redesign their business models. The predictive relevance of the model was subsequently assessed using Q^2 values.

Table 5. Predictive Relevance Assessment

Construct	Q^2 Predict
Digital Agility	0.281
Sustainable Business Model Transformation	0.337

The positive Q^2 values indicate that the proposed model has predictive relevance. This finding confirms that the structural model is capable of explaining and predicting changes in digital agility and sustainable business model transformation among SMEs.

Hypothesis Testing

Hypothesis testing was performed using the bootstrapping procedure with 5,000 subsamples in SmartPLS 4. The significance of each relationship was evaluated based on path coefficient (β), t-statistic, and p-value.

Table 6. Direct Effect Hypothesis Testing

Hypothesis	Relationship	β	t-value	p-value	Result
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H1	Strategic Leadership → Digital Agility	0.653	12.481	<0.001	Supported
H2	Digital Agility → Sustainable Business Model Transformation	0.719	15.327	<0.001	Supported

The results indicate that strategic leadership has a positive and significant influence on digital agility. The path coefficient ($\beta = 0.653$) demonstrates that stronger strategic leadership is associated with higher digital agility among SMEs. Therefore, H1 is supported.

This finding indicates that SME leaders play an important role in creating digital responsiveness through strategic direction, innovation support, and resource commitment. Leaders who actively encourage digital initiatives provide organizational conditions that allow SMEs to identify technological opportunities and respond effectively to market changes.

Furthermore, digital agility demonstrates a significant positive effect on sustainable business model transformation ($\beta = 0.719$, $p < 0.001$). Therefore, H2 is supported. This result indicates that digital agility represents a critical capability enabling SMEs to modify business processes, strengthen customer relationships, and develop new approaches for creating and capturing value.

Mediation Analysis

The mediation analysis was conducted to determine whether digital agility explains the mechanism through which strategic leadership influences sustainable business model transformation.

Table 7. Indirect Effect Analysis

Hypothesis	Relationship	β Indirect Effect	t-value	p-value	Result
H3	Strategic Leadership → Digital Agility → SBMT	0.470	11.206	<0.001	Supported

The mediation result confirms that digital agility significantly mediates the relationship between strategic leadership and sustainable business model transformation. The indirect effect value ($\beta = 0.470$) indicates that strategic leadership contributes to transformation outcomes primarily through the development of digital agility capabilities.

This finding represents the main contribution of the study. Strategic leadership alone does not automatically generate sustainable business transformation; rather, leadership capability must be translated into organizational agility that enables SMEs to respond, adapt, and redesign their business models. Therefore, digital agility functions as a strategic mechanism connecting leadership capability with sustainable transformation.

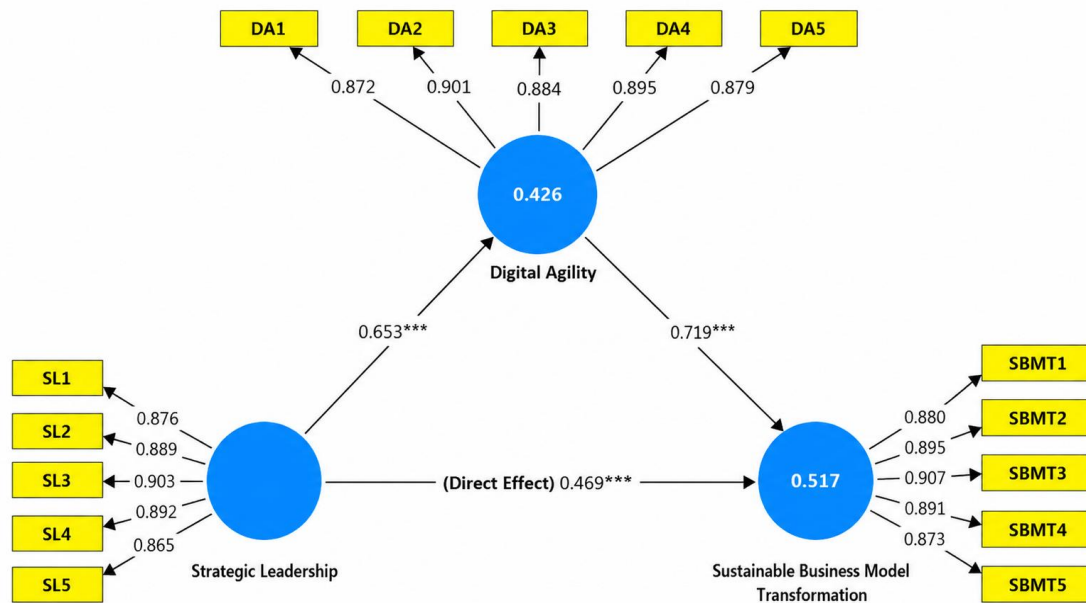


Figure 1. Structural Model Results

The structural model illustrates that digital agility occupies a central position in explaining SME transformation. Strategic leadership provides the strategic foundation by establishing direction and commitment toward digital development, while digital agility acts as the capability that converts strategic intentions into actual business model transformation. The model confirms that sustainable transformation is achieved through a capability-building process rather than through technology adoption alone.

The finding that strategic leadership significantly influences digital agility highlights the importance of managerial capability in enabling SMEs to respond effectively to digital disruption. This result can be explained through the perspective of Dynamic Capability Theory, which emphasizes that firms must continuously develop and renew organizational capabilities to maintain competitiveness in rapidly changing environments (van de Wetering et al., 2021). From this perspective, leadership does not only represent managerial authority but also functions as an organizational capability that directs resource allocation, strategic priorities, and adaptation processes. In the SME context, where decision-making is often concentrated in owners or key managers, strategic leadership becomes an important mechanism for initiating digital capability development. This finding is consistent with Soluk et al. (2023), who demonstrated that SMEs require internal dynamic capabilities, including strategic planning capabilities, to overcome resource limitations and successfully implement digital initiatives. However, unlike previous studies that mainly examined digital adoption as the outcome of managerial capability, this study extends the discussion by showing that strategic leadership contributes specifically to digital agility, which represents the ability to sense, respond, and reconfigure business activities according to digital opportunities.

The significant relationship between digital agility and sustainable business model transformation confirms that digital agility is not merely a

technological capability but a strategic organizational capability that enables continuous business renewal. This finding is supported by the organizational agility perspective, which explains that organizations operating under uncertainty require flexibility, responsiveness, and rapid decision-making capabilities to maintain competitiveness (Ciampi et al., 2021). Digital agility allows SMEs to transform digital information into strategic actions, such as modifying customer interactions, improving operational processes, and developing new value creation mechanisms. Previous research by Uddin et al. (2023) found that digital-related capabilities improve SME strategic agility by strengthening resource flexibility and organizational adaptation. Similarly, Yi et al. (2023) showed that dynamic capabilities contribute to organizational agility among SMEs, demonstrating that adaptive capabilities are essential for responding to environmental uncertainty. The present study supports these findings but provides a different contribution by connecting digital agility directly with sustainable business model transformation, rather than limiting the outcome to agility, operational improvement, or competitive advantage.

The mediating role of digital agility provides an important explanation regarding how strategic leadership is translated into sustainable business transformation. This finding strengthens the capability orchestration perspective, which argues that competitive advantage emerges when managers are able to combine, coordinate, and deploy organizational resources into valuable strategic capabilities rather than relying on individual resources alone. According to Helfat and Martin (2022), managerial capabilities determine how organizations identify strategic opportunities, configure resources, and implement organizational change under uncertain conditions. Previous research by Fachrunnisa et al. (2023) demonstrated that agile leadership and dynamic capability contribute to the development of digital ecosystems among SMEs, indicating that leadership capability requires supporting organizational mechanisms to generate transformation outcomes. The similarity between this study and previous research lies in recognizing leadership capability as an important foundation for digital transformation; however, this research provides further explanation by identifying digital agility as the specific pathway through which leadership capability affects sustainable business model transformation. Therefore, the novelty of this study lies in explaining the transformation mechanism rather than only confirming the existence of a direct relationship between leadership and digital transformation outcomes.

The findings also provide important implications for understanding digital transformation in SMEs located in emerging economies. Unlike large organizations that generally possess greater financial resources and technological infrastructure, SMEs must rely on managerial capabilities, strategic flexibility, and efficient resource utilization to achieve transformation. This condition explains why strategic leadership and digital agility become critical factors in determining whether digital initiatives generate meaningful business changes. Research by Gonzalez-Varona et al. (2024) emphasized that SMEs require the development of organizational competencies, knowledge utilization, and internal capabilities to advance their digital transformation

processes. Similarly, Soluk et al. (2023) highlighted that SMEs overcome digital transformation barriers not only through technology acquisition but also through capability development mechanisms. The current study is consistent with these findings because it demonstrates that transformation capability emerges from internal organizational processes rather than technology implementation alone. Nevertheless, this research extends previous SME digital transformation studies by integrating leadership capability and digital agility into a single explanatory model that describes how sustainable transformation can be achieved.

The overall findings contribute to theoretical and practical development in digital transformation research by positioning digital agility as a strategic bridge between leadership capability and sustainable business model transformation. Theoretically, this study expands the application of Dynamic Capability Theory by demonstrating that leadership capability becomes strategically valuable when it is converted into adaptive digital capabilities that enable business model renewal. Previous studies have often examined digital transformation through technology capability, digital readiness, or innovation performance perspectives, while this study focuses on the capability pathway that explains why some SMEs successfully transform while others struggle despite having access to similar technologies. Practically, the findings suggest that SME development programs should not only provide digital tools but also strengthen leadership capacity, strategic thinking, and organizational agility. This implication is consistent with research showing that sustainable digital transformation requires alignment between leadership, organizational capability, and digital resources (Putri et al., 2024). Therefore, the main contribution of this research is the identification of a capability-based transformation mechanism in which strategic leadership enables digital agility, and digital agility facilitates sustainable business model transformation among SMEs.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that strategic leadership and digital agility are important capabilities in driving sustainable business model transformation among SMEs in Central Java. The empirical results show that strategic leadership significantly influences digital agility ($\beta = 0.653$, $p < 0.001$), while digital agility significantly contributes to sustainable business model transformation ($\beta = 0.719$, $p < 0.001$). Furthermore, digital agility significantly mediates the relationship between strategic leadership and sustainable business model transformation ($\beta = 0.470$, $p < 0.001$), indicating that leadership capability creates transformation outcomes through the development of adaptive digital capabilities. The findings highlight that SMEs should not focus only on technology adoption but also strengthen strategic leadership and organizational agility to achieve sustainable transformation.

FURTHER STUDY

This study has several limitations. First, the research used a cross-sectional design, which limits the ability to observe changes in SME transformation

capabilities over time. Second, the study focused on SMEs in Central Java, Indonesia, so future research may examine other regions or compare different economic contexts. Third, future studies may incorporate additional factors, such as organizational learning, digital culture, or innovation capability, to provide a broader explanation of sustainable business model transformation.

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