

Building Sustainable Growth in Emerging Economies: Insights from Women-Led SMEs in North Central Vietnam

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ABSTRACT: This study investigates the determinants of sustainable growth among women-led small and medium-sized enterprises (SMEs) in North Central Vietnam, a region characterized by resource scarcity and institutional constraints. Integrating the Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), and Upper Echelons Theory (UET), the research examines how innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership jointly influence sustainable growth performance. Using data from a survey of 535 women-led SMEs and applying partial least squares structural equation modeling (PLS-SEM), the findings indicate that all four factors significantly enhance sustainable growth, with digital transformation emerging as the most influential driver, followed by sustainability-oriented leadership, innovation capability, and knowledge management. Notably, while sustainability-oriented leadership exerts a strong direct effect on growth, its moderating role in the relationship between digital transformation and performance is unexpectedly negative, suggesting that a strong sustainability focus may temper short-term gains from digitalization. Theoretically, the study extends RBV, DCT, and UET by demonstrating how intangible resources and leadership orientations interact to foster sustainable performance in emerging markets. Practically, it highlights the need for women-led SMEs to prioritize digital adoption, innovation, and knowledge sharing while embedding sustainability principles in leadership practices, and it offers policy implications for fostering inclusive, resilient, and sustainable growth among women entrepreneurs in developing economies.

KEYWORDS: Women-led SMEs, Sustainable growth performance, Digital transformation, Innovation capability, Sustainability-oriented leadership

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are widely recognized as the cornerstone of economic development, accounting for the majority of global business activity and employment (Ayyagari et al., 2007). In Vietnam, SMEs represent more than 97% of registered firms, contribute nearly 45% of national GDP, and employ over half of the labor force (General Statistics Office of Vietnam, 2024). Within this dynamic sector, women-led SMEs have gained increasing attention due to their growing economic role and contribution to inclusive growth. Globally, female entrepreneurs account for about one-third of formal enterprises (Kelley et al., 2017), and Vietnam ranks among the most active countries in Southeast Asia in terms of women's entrepreneurial participation. Yet, despite this progress, only around 20% of Vietnamese SMEs are led by women (World Bank, 2024), reflecting enduring barriers such as unequal access to finance, limited networks, and persistent gender norms that constrain women's leadership opportunities (Roomi & Harrison, 2010).

The North Central region of Vietnam provides a particularly relevant setting for examining the sustainable growth of women-led enterprises. Unlike the major economic hubs of Hanoi or Ho Chi Minh City, this region faces structural limitations including underdeveloped infrastructure, low investment inflows, and restricted access to digital and human resources. These constraints disproportionately affect female entrepreneurs, who often rely on personal creativity, social capital, and informal knowledge exchange to sustain their ventures. At the same time, such adversity can stimulate adaptive strategies - especially in areas of innovation, digital adoption, and knowledge management - that become crucial for long-term competitiveness and sustainability (Adams et al., 2016; Vial, 2019). Understanding the drivers that enable women-led SMEs to achieve sustainable growth under these challenging conditions is therefore both academically significant and practically urgent.

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From a theoretical standpoint, prior studies have established that firm growth and sustainability are shaped by internal resources and capabilities (Barney, 1991; Teece, 2007) as well as by leadership orientations and strategic vision (Hambrick & Mason, 1984). The Resource-Based View (RBV) highlights the importance of valuable and inimitable resources - particularly intangible assets such as innovation and knowledge - for achieving sustained advantage. The Dynamic Capabilities Theory (DCT) extends this view by emphasizing firms' ability to sense opportunities, integrate new technologies, and reconfigure resources to adapt to change (Teece et al., 1997). Meanwhile, the Upper Echelons Theory (UET) underscores the influence of leaders' cognitive and value orientations on strategic outcomes (Hambrick, 2007). While these frameworks have been widely applied in developed contexts, their interplay remains underexplored in emerging economies, especially among women-led enterprises operating in resource-constrained environments (Roomi & Harrison, 2011).

Empirical evidence also points to the importance of digital transformation, innovation capability, and knowledge management in enhancing SME performance (Bharadwaj et al., 2013; Lawson & Samson, 2001; Gold et al., 2001). However, studies focusing specifically on women-led SMEs in developing countries remain limited. Furthermore, the growing emphasis on sustainability-oriented leadership (SOL) introduces an additional dimension, as women leaders are often found to exhibit stronger ethical values, stakeholder sensitivity, and long-term orientation (Post et al., 2011; Maak et al., 2016). Yet, the interaction between sustainability-driven leadership and technological or innovative capabilities has not been adequately addressed in the literature, leaving an empirical and theoretical gap in understanding how these elements jointly shape sustainable growth performance.

From a practical perspective, Vietnam's national development agenda emphasizes inclusive and sustainable growth in alignment with the United Nations Sustainable Development Goals (SDGs). Women-led SMEs are vital to achieving these objectives by generating employment, fostering social inclusion, and promoting local innovation. However, without a clear understanding of the key factors that enable their long-term performance - particularly in underdeveloped regions - policy interventions may remain fragmented and ineffective. Identifying how innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership interact to shape sustainable growth thus provides critical insights for both business strategy and public policy.

In response to these gaps, this study aims to explore the determinants of sustainable growth performance among women-led SMEs in North Central Vietnam by integrating RBV, DCT, and UET into a unified analytical framework. Specifically, it examines the direct effects of innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership on sustainable growth, as well as the moderating role of leadership in these relationships. By employing survey data from 535 women-led SMEs and using partial least squares structural equation modeling (PLS-SEM), the study contributes empirical evidence from an emerging market context where female entrepreneurship is expanding yet remains under-supported. The findings are expected to advance theoretical understanding of how intangible resources and leadership orientations combine to drive sustainable competitiveness, while offering actionable insights for entrepreneurs and policymakers seeking to foster resilience and inclusive growth in developing economies.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 Theoretical Foundations

This study draws upon three complementary theoretical perspectives - Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), and Upper Echelons Theory (UET) - to build a comprehensive framework for explaining sustainable growth performance in women-led SMEs.

The Resource-Based View (RBV) emphasizes that firms achieve sustained competitive advantage through valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). In the context of women-led SMEs, intangible assets such as innovation capability and knowledge management are particularly critical because these firms often face financial and institutional constraints that limit access to tangible resources. By highlighting the strategic importance of organizational resources, RBV provides a suitable foundation to explain why innovation and knowledge utilization contribute to long-term growth and sustainability.

The Dynamic Capabilities Theory (DCT) extends RBV by stressing the firm's ability to integrate, reconfigure, and transform resources in response to environmental turbulence (Teece, 2007). Digital transformation represents a salient dynamic capability, enabling SMEs to sense opportunities, adapt business models, and overcome geographic or market disadvantages. For women entrepreneurs operating in resource-constrained environments such as North Central Vietnam, the ability to leverage digital tools is essential for survival and growth. DCT is therefore particularly relevant for explaining how digital transformation drives sustainable performance.

The Upper Echelons Theory (UET) posits that organizational outcomes are a reflection of leaders' cognitive bases, values, and orientations (Hambrick & Mason, 1984). In this study, sustainability-oriented leadership captures how women leaders' values

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shape strategic priorities and influence both direct performance outcomes and the way other capabilities are deployed. This perspective is crucial for understanding the role of leadership in embedding sustainability principles and mediating the effects of technological and organizational resources.

Taken together, the integration of RBV, DCT, and UET provides a robust theoretical foundation for the present research. RBV and DCT jointly illuminate how intangible resources and dynamic capabilities contribute to competitive advantage, while UET incorporates the leadership dimension that guides the deployment of these capabilities toward sustainable outcomes. The combined framework is thus particularly suitable for examining women-led SMEs, where resource scarcity, environmental uncertainty, and leadership orientation simultaneously shape sustainable growth trajectories.

2.2 Hypotheses Development

Innovation Capability and Sustainable Growth Performance

Innovation capability refers to a firm's ability to continuously generate and implement new ideas, products, processes, and business models (Lawson & Samson, 2001). From the perspective of the Resource-Based View (RBV), innovation is considered a valuable, rare, and inimitable resource that enables firms to achieve sustained competitive advantage (Barney, 1991). For SMEs, particularly those constrained by resources, the capacity to innovate can significantly enhance survival and growth (Zhou & Li, 2010).

For women-led SMEs, innovation capability may be even more critical. Studies suggest that female entrepreneurs often compensate for resource limitations through creativity and innovative approaches (Roomi & Harrison, 2010). In emerging economies, innovation not only drives financial performance but also supports social and environmental sustainability goals (Adams et al., 2016). Thus, innovation capability is expected to positively influence sustainable growth performance in women-led SMEs.

Accordingly, it is reasonable to propose the following hypothesis:

H1: *Innovation capability positively influences sustainable growth performance in women-led SMEs.*

Digital Transformation and Sustainable Growth Performance

Digital transformation (DT) refers to the integration of digital technologies into organizational processes, business models, and customer interactions with the aim of improving efficiency, innovation, and competitiveness (Bharadwaj et al., 2013). From the perspective of Dynamic Capabilities Theory (Teece, 2007), DT provides firms with the ability to identify opportunities, leverage digital innovations, and reconfigure resources in response to environmental change.

Although women-led SMEs often encounter significant obstacles in accessing digital technologies, DT can help mitigate geographical and structural disadvantages, especially in underdeveloped regions such as North Central Vietnam. Empirical studies have shown that firms pursuing digital transformation tend to achieve higher performance, stronger competitiveness, and improved sustainability outcomes (Verhoef et al., 2021).

Building on these arguments, the study posits the following hypothesis:

H2: *Digital transformation positively influences sustainable growth performance in women-led SMEs.*

Knowledge Management Capability and Sustainable Growth Performance

Knowledge management capability (KMC) captures a firm's ability to acquire, disseminate, and apply knowledge effectively (Gold et al., 2001). Within the framework of the Resource-Based View (Grant, 1996), knowledge is considered a vital strategic asset that enables firms to adapt, innovate, and build resilience. For SMEs, well-developed KMC fosters organizational learning, supports collaboration, and drives innovation, ultimately contributing to sustainable competitive advantage (Inkinen, 2016).

For women-led SMEs in particular, effective knowledge management is critical in addressing institutional and financial barriers. Previous studies highlight that firms with strong KMC benefit from enhanced decision-making, more innovative practices, and higher levels of sustainability performance (Lee & Choi, 2003).

Accordingly, it is reasonable to propose the following hypothesis:

H3: *Knowledge management capability positively influences sustainable growth performance in women-led SMEs.*

Sustainability-Oriented Leadership and Sustainable Growth Performance

Sustainability-oriented leadership (SOL) emphasizes long-term value creation by incorporating economic, social, and environmental considerations into managerial decisions (Avery & Bergsteiner, 2011). Drawing on Upper Echelons Theory (Hambrick & Mason, 1984), organizational outcomes can be seen as a reflection of leaders' values and orientations. Accordingly, women leaders who adopt a sustainability focus are likely to guide their enterprises toward practices that reinforce profitability while also fostering social responsibility and environmental stewardship.

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Empirical evidence supports the view that leadership commitment to sustainability is a critical determinant of corporate social responsibility and long-term performance (Maak et al., 2016). Moreover, women leaders are frequently associated with stronger ethical orientations and greater stakeholder sensitivity (Post et al., 2011).

Building on these arguments, the study posits the following hypothesis:

H4: *Sustainability-oriented leadership positively influences sustainable growth performance in women-led SMEs.*

The Moderating Role of Sustainability-Oriented Leadership

In addition to its direct effect, SOL may also influence the extent to which other organizational capabilities - such as innovation capability (IC), digital transformation (DT), and knowledge management capability (KMC) - translate into sustainable growth outcomes. Leaders with a sustainability mindset are more inclined to direct resources toward innovation and digital initiatives that support long-term strategic goals (Avery & Bergsteiner, 2011). Prior research has demonstrated that leadership styles often moderate the relationship between organizational resources and performance results (García-Morales et al., 2014).

Building on these arguments, the study posits the following hypothesis:

H5: *Sustainability-oriented leadership positively moderates the relationship between innovation capability and sustainable growth performance.*

H6: *Sustainability-oriented leadership positively moderates the relationship between digital transformation and sustainable growth performance.*

Based on the theoretical foundations and proposed hypotheses, the research model is developed as follows.

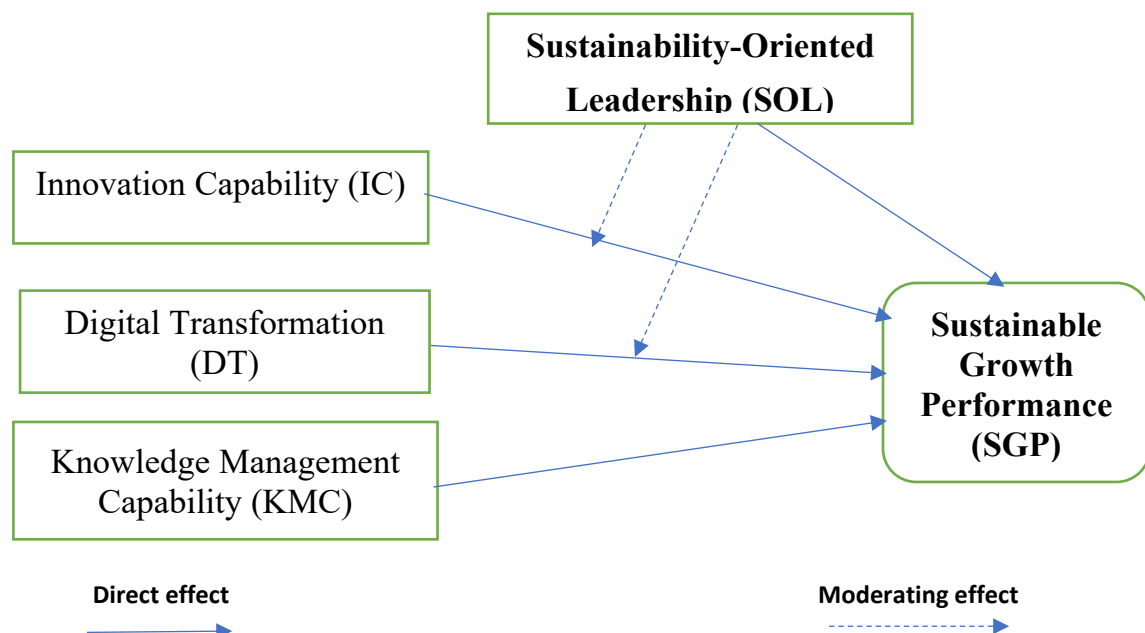


Figure 1: Conceptual framework

3. RESEARCH METHOD

3.1 Research Design

This study employs a quantitative research design to investigate how innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership influence sustainable growth performance in women-led SMEs. A survey method was selected because it allows for the systematic collection of primary data on latent constructs that are not directly observable (Hair et al., 2021). To analyze the data, structural equation modeling with partial least squares (PLS-SEM) was applied. This approach is well suited to exploratory research and complex models, particularly when dealing with small- to medium-sized samples (Hair et al., 2013).

3.2 Sample and Data Collection

The empirical setting for this research is women-led SMEs operating in Vietnam's North Central region, including provinces such as Thanh Hoa, Nghe An, and Ha Tinh. These enterprises represent an important yet relatively understudied segment of the economy, often operating under significant resource limitations and facing intense competitive pressures. The study targeted owners or senior managers of SMEs in which women hold primary leadership responsibility. Data were collected through a structured questionnaire distributed between June–July, 2025. A stratified convenience sampling approach was applied, with the

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support of local business associations and chambers of commerce to facilitate access. Respondents were assured of confidentiality to encourage candid responses. In total, 535 valid questionnaires were obtained, representing a response rate of 76.5% (535/700). This sample size is consistent with the “10-times rule” guideline for PLS-SEM and exceeds the minimum threshold recommended by power analysis (Cohen, 1992).

3.3 Measurement of Constructs

All constructs were operationalized as reflective latent variables and measured using multi-item scales adapted from prior validated studies. A five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”) was used for all items.

Innovation Capability (IC): measured with 5 items adapted from Lawson and Samson (2001) and Calantone et al., (2002). Items capture a firm’s ability to develop new ideas, processes, and products, and to foster a supportive climate for innovation (e.g., “Our firm is effective in introducing new products or services to the market”).

Digital Transformation (DT): assessed with 5 items based on Bharadwaj et al. (2013) and Vial (2019). The scale reflects the extent of digital technologies adoption and integration into core business functions (e.g., “Digital technologies are embedded in our business processes to improve efficiency and decision-making”).

Knowledge Management Capability (KMC): measured with 5 items adapted from Gold et al., (2001). Items capture knowledge acquisition, sharing, and application (e.g., “Our firm effectively shares knowledge across departments to solve business problems”).

Sustainability-Oriented Leadership (SOL): captured with 4 items adapted from Egri and Herman (2000) and Quinn and Dalton (2009). Items assess leaders’ emphasis on environmental, social, and ethical considerations in decision-making (e.g., “Our leader prioritizes sustainability goals alongside financial objectives”).

Sustainable Growth Performance (SGP): measured with 6 items adapted from Wagner (2010) and Singh et al., (2020). The items reflect both financial outcomes (e.g., sales growth, profitability) and sustainability dimensions (e.g., “Our firm has achieved growth while improving its environmental and social performance”).

Before data collection, the survey instrument was pre-tested with academic experts and several SME leaders to ensure contextual clarity and content validity. Based on their feedback, minor refinements were made to ensure items were concise and easily understandable in the Vietnamese business context.

3.4 Data Analysis Techniques

Data analysis was conducted using SmartPLS 4. The analysis proceeded in two stages. First, the measurement model was evaluated to establish reliability and validity, including assessments of Cronbach’s alpha, composite reliability, convergent validity, and discriminant validity. Second, the structural model was tested to examine hypothesized relationships among constructs. Bootstrapping procedures with 5,000 resamples were employed to assess the statistical significance of path coefficients (Hair et al., 2013). Additionally, model fit indices such as SRMR and predictive relevance (Q^2) were examined to ensure robustness.

4. RESULTS AND DISCUSSION

4.1 Sample Characteristics

A total of 535 valid responses were obtained from women-led SMEs in the North Central region of Vietnam. Table 1 presents the demographic profile of these firms. The majority (68%) operated in the service sector, followed by manufacturing (22%) and agriculture-related activities (10%). Most respondents led small firms with fewer than 50 employees (61%), while 39% managed medium-sized firms. In terms of firm age, 47% were established within the last decade, while 53% had been in business for more than ten years. Notably, nearly three-quarters of respondents were owners or founders, with the remainder being senior managers.

Table 1. Profile of Respondent Firms (n = 535)

Characteristics	Categories	Frequency	Percentage
Sector	Services	364	68.0%
	Manufacturing	118	22.0%
	Agriculture-related	53	10.0%
Firm size	< 50 employees (small)	327	61.1%
	50–200 employees (medium)	208	38.9%
Firm age	≤ 10 years	251	46.9%
	> 10 years	284	53.1%
Respondent position	Owner/Founder	391	73.1%
	Senior Manager	144	26.9%

4.2 Measurement Model Results

After the initial analysis with SmartPLS 4, indicator DT1 was removed because its outer loading was below 0.50. The second round of analysis yielded the following results: the measurement model demonstrated satisfactory reliability and validity. As presented in Table 2, the outer loadings ranged from 0.711 to 0.856. Cronbach's alpha values ranged from 0.800 to 0.877, exceeding the recommended threshold of 0.70, while composite reliability (CR) values also fell within the range of 0.800 to 0.877, confirming strong internal consistency. Convergent validity was established with average variance extracted (AVE) values ranging from 0.55 to 0.691, all surpassing the 0.50 benchmark. In addition, variance inflation factor (VIF) values were well below the critical threshold of 5, indicating no multicollinearity concerns.

Table 2. Reliability and Convergent Validity of Constructs

Construct	Items	Outer loading range	Cronbach's α	CR	AVE	VIF range
IC	6	0.752-0.791	0.850	0.832	0.598	1.530-1.851
DT	4	0.773-0.856	0.832	0.853	0.691	1.591-2.156
KMC	5	0.711-0.766	0.800	0.800	0.555	1.375-1.647
SOL	4	0.767-0.842	0.832	0.854	0.619	1.732-1.908
SGP	6	0.727-0.820	0.877	0.877	0.622	1.896- 2.933

Discriminant validity was confirmed using the Fornell–Larcker criterion (Table 3), where the square roots of AVE exceeded inter-construct correlations. Further, HTMT ratios were consistently below the conservative cut-off value of 0.85, providing additional evidence of construct distinctiveness.

Table 3. Discriminant Validity (Fornell–Larcker Criterion)

	DT	IC	KMC	SGP	SOL
DT	0.831				
IC	0.298	0.773			
KMC	0.094	0.214	0.745		
SGP	0.556	0.419	0.402	0.787	
SOL	-0.268	-0.134	0.170	0.266	0.814

4.3 Structural Model Results

The hypothesized structural relationships were tested using bootstrapping with 5,000 resamples. Table 4 reports the path coefficients, t-values, and significance levels. All four primary hypotheses were supported: innovation capability ($\beta = 0.272$, $t = 10.429$, $p < 0.001$), digital transformation ($\beta = 0.559$, $t = 17.850$, $p < 0.001$), knowledge management capability ($\beta = 0.213$, $t = 6.856$, $p < 0.001$), and sustainability-oriented leadership ($\beta = 0.417$, $t = 10.152$, $p < 0.001$) each exerted significant positive effects on sustainable growth performance.

Regarding moderating effects, sustainability-oriented leadership did not significantly strengthen the link between innovation capability and sustainable growth ($\beta = -0.014$, $t = 0.413$, $p = 0.679$), leading to the rejection of H5. In contrast, it significantly moderated the relationship between digital transformation and sustainable growth ($\beta = -0.073$, $t = 2.279$, $p = 0.023$), thereby supporting H6. Interestingly, the negative coefficient suggests that a strong sustainability orientation may dampen the incremental benefits of digital transformation for growth, a finding that warrants further exploration.

Table 4. Structural Model Results

Hypothesis	Path	β	t-value	p-value	Result
H1	IC -> SGP	0.272	10.429	0.000	Accepted
H2	DT -> SGP	0.559	17.850	0.000	Accepted
H3	KMC -> SGP	0.213	6.856	0.000	Accepted
H4	SOL -> SGP	0.417	10.152	0.000	Accepted
H5	SOL x IC -> SGP	-0.014	0.413	0.679	Not Accepted
H6	SOL x DT -> SGP	-0.073	2.279	0.023	Accepted

The model accounted for a substantial proportion of variance in sustainable growth performance, with an R^2 value of 0.631 (Table 5). The Q^2 value of 0.615 was also well above zero, confirming strong predictive relevance. Collectively, these results demonstrate that the proposed model provides both explanatory and predictive validity in the context of women-led SMEs.

Table 5. Model Explanatory and Predictive Power

Endogenous Construct	R ²	Q ²
SGP	0.631	0.615

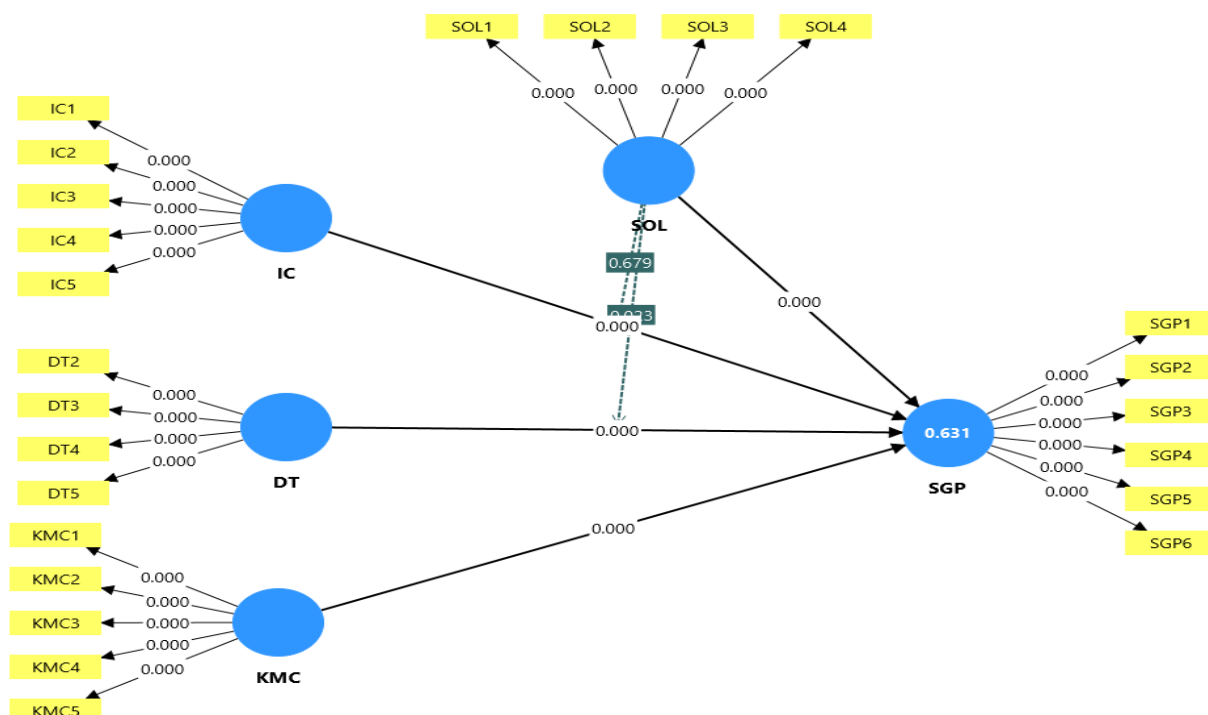


Figure 2: Structural model

4.4. Discussion

The findings of this study shed light on the determinants of sustainable growth among women-led SMEs in North Central Vietnam. Overall, the results confirm the central role of innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership, while also revealing more complex moderating dynamics related to leadership.

Innovation Capability and Sustainable Growth Performance

As predicted in Hypothesis 1, innovation capability exerts a significant positive influence on sustainable growth performance ($\beta = 0.272$, $p < 0.001$). This result is consistent with the Resource-Based View (Barney, 1991), which frames innovation as a rare and inimitable resource that enhances firm competitiveness. For women-led SMEs operating under resource constraints, innovation acts as a compensatory mechanism that helps mitigate financial and institutional barriers through creativity and adaptive solutions. Prior studies echo this finding, showing that SMEs that consistently develop new products, processes, or business models tend to achieve higher growth and sustainability outcomes (Zhou & Li, 2010; Adams et al., 2016). Evidence from this study reinforces the argument that innovation capability not only fuels competitiveness but also enables firms in transitional economies to balance financial, social, and environmental objectives.

Digital Transformation and Sustainable Growth Performance

The strongest predictor of sustainable growth performance was digital transformation ($\beta = 0.559$, $p < 0.001$), supporting Hypothesis 2. This aligns with the Dynamic Capabilities Theory (Teece, 2007), which emphasizes firms' ability to sense opportunities, seize innovations, and reconfigure resources. By embedding digital technologies into operations and customer engagement, women-led SMEs can transcend geographical barriers and limited market access - challenges that are particularly acute in North Central Vietnam. This result is consistent with earlier findings showing that digital transformation improves efficiency, fosters innovation, and enhances long-term competitiveness (Verhoef et al., 2021; Vial, 2019). The strong effect size observed here suggests that digital transformation is a cornerstone capability for women-led SMEs pursuing sustainable growth in contexts where infrastructure and market connectivity remain underdeveloped.

Knowledge Management Capability and Sustainable Growth Performance

Hypothesis 3 is also supported, as knowledge management capability demonstrates a positive and significant effect on sustainable growth ($\beta = 0.213$, $p < 0.001$). This finding resonates with RBV's view of knowledge as a strategic asset critical for adaptation and innovation (Grant, 1996). For women-led SMEs, effective knowledge acquisition, sharing, and utilization serve as tools to compensate for limited resources and institutional barriers by leveraging collective expertise and external partnerships. Empirical evidence supports this perspective, showing that strong knowledge management systems enhance innovation outcomes

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and sustainability performance (Inkinen, 2016; Lee & Choi, 2003). These results underscore the importance of building organizational routines that facilitate knowledge flow - an especially valuable strategy for SMEs with limited formal structures.

Sustainability-Oriented Leadership and Sustainable Growth Performance

Sustainability-oriented leadership also emerged as a significant predictor of sustainable growth ($\beta = 0.417$, $p < 0.001$), confirming Hypothesis 4. Drawing on Upper Echelons Theory (Hambrick & Mason, 1984), this outcome illustrates how leaders' values and orientations shape organizational results. Women leaders who embrace sustainability goals appear to integrate these values into practices that promote profitability alongside social responsibility and environmental stewardship. This result is consistent with studies emphasizing that leadership commitment to sustainability fosters CSR initiatives and long-term value creation (Maak & Pless, 2006; Avery & Bergsteiner, 2011). In line with Post et al. (2011), the evidence further suggests that women leaders often demonstrate stronger stakeholder orientation, which contributes directly to sustainable performance.

The Moderating Role of Sustainability-Oriented Leadership

The moderating hypotheses produced mixed outcomes. Contrary to expectations, sustainability-oriented leadership did not significantly moderate the relationship between innovation capability and sustainable growth (H5 not supported). This diverges from prior research suggesting that leadership styles amplify the performance effects of innovation (Jansen et al., 2009). A plausible explanation is that innovation in SMEs is often embedded in routines and employee-driven initiatives, which may operate independently of leadership orientation.

By contrast, Hypothesis 6 was supported: sustainability-oriented leadership significantly moderated the link between digital transformation and sustainable growth, but in a negative direction ($\beta = -0.073$, $p < 0.05$). This unexpected result suggests that a strong focus on sustainability may temper the performance benefits of digital transformation. One possible explanation is that sustainability-oriented leaders adopt a cautious stance toward digital investment, prioritizing long-term social and environmental goals over short-term technological expansion. While digitalization can enhance efficiency and growth, its implementation often requires resource-intensive investments that may conflict with sustainability principles in the short run. This finding highlights a potential tension between advancing digital transformation and adhering strictly to sustainability values, echoing debates on trade-offs between economic and environmental priorities (Boons & Lüdeke-Freund, 2013).

5. THEORETICAL AND PRACTICAL IMPLICATIONS

From a theoretical perspective, this study extends the Resource-Based View, Dynamic Capabilities Theory, and Upper Echelons Theory by illustrating their relevance in the context of women-led SMEs in an emerging economy. The strong effects of digital transformation and innovation capability emphasize the centrality of intangible resources and dynamic capabilities in achieving sustainable growth. At the same time, the influence of sustainability-oriented leadership underscores the role of leaders' values in shaping organizational trajectories, while also revealing unexpected boundary conditions - particularly in relation to digital adoption.

In terms of practice, the findings suggest that women-led SMEs should prioritize investments in digital technologies while cultivating organizational cultures that support innovation and knowledge sharing. Leadership development initiatives should further encourage leaders to balance sustainability commitments with pragmatic approaches to digital transformation. For policymakers and support agencies, the results highlight the need to provide digital infrastructure, training, and financing programs tailored to the specific challenges faced by women entrepreneurs operating under resource constraints.

6. CONCLUSION

This research examined how innovation capability, digital transformation, knowledge management capability, and sustainability-oriented leadership affect the sustainable growth performance of women-led SMEs in North Central Vietnam. The findings show that digital transformation has the strongest impact, positioning it as a critical capability for overcoming structural barriers and enhancing competitiveness. Innovation capability and knowledge management also play significant roles, reflecting the importance of creativity and knowledge utilization in resource-limited environments. In addition, sustainability-oriented leadership contributes directly to sustainable growth by embedding ethical, social, and environmental considerations into business practices.

The moderating analysis produced mixed results. While leadership did not strengthen the link between innovation capability and growth, it significantly moderated the relationship between digital transformation and sustainable performance, though in a negative direction. This counterintuitive outcome suggests that sustainability-oriented leaders may adopt a more cautious approach to digital adoption, placing long-term values above immediate technological gains.

Theoretically, the study enriches RBV, DCT, and UET by extending their application to women-led SMEs in emerging economies. Practically, it implies that women entrepreneurs should invest in digital tools, foster innovation and knowledge-

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sharing routines, and align leadership practices with sustainability goals. Policymakers and development agencies can support this process by improving digital infrastructure, offering targeted training, and expanding access to finance.

Overall, the study provides timely evidence on how women-led SMEs can strengthen resilience and competitiveness while advancing broader social and environmental objectives. It also opens avenues for future research on the interplay between sustainability orientation and digital transformation, particularly in developing economies where resource trade-offs are pronounced.

7. LIMITATIONS AND FUTURE DIRECTIONS

This study has several limitations that suggest directions for future research. The data were collected from women-led SMEs in North Central Vietnam, which restricts the generalizability of the findings to other regions or countries. The cross-sectional design also prevents causal inferences, as the dynamics of innovation, digital transformation, knowledge management, and leadership may evolve over time. Moreover, the reliance on self-reported data raises the possibility of response bias.

Future studies could adopt longitudinal or comparative designs across regions and contexts to enhance external validity. Incorporating objective performance indicators or multiple respondents would also strengthen measurement robustness. Finally, the unexpected negative moderating effect of sustainability-oriented leadership on digital transformation points to a complex tension that warrants deeper qualitative or mixed-methods investigation, as well as exploration of additional moderators such as firm size, industry type, or policy support.

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