Advances in Consumer Research
https://acr-journal.com/
Volume-2 | Issue-5 | Nov 2025
Original Researcher Article

Digital Transformation and Firm Performance: The Moderating Role of Leadership Agility in Vietnamese Enterprises

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Received: 01/09/2025
Revised: 03/10/2025
Accepted: 19/11/2025
Published: 28/11/2025

ABSTRACT
This study examines how Digital Transformation (DT) influences Firm Performance (FP) and investigates the moderating role of Leadership Agility (LA) in Vietnamese small and medium-sized enterprises (SMEs). Drawing on Dynamic Capabilities Theory and Contingency Theory, the research proposes that DT enhances FP through process reconfiguration, improved information flows, and innovation capability, while LA strengthens this relationship by enabling leaders to respond rapidly to environmental uncertainty and align digital initiatives with organizational needs. A quantitative design was applied using survey data collected from 270 middle- and senior-level managers across various industries. Structural Equation Modeling (SEM) was used to test the hypothesized relationships. The results reveal that DT exerts a significant positive effect on FP, LA directly improves FP, and LA significantly moderates the DT–FP relationship, with stronger effects observed under high levels of leadership agility. The findings contribute to the literature by integrating LA into the DT -performance framework in an emerging economy context. Practical implications highlight the importance of developing agile leadership capabilities to ensure the successful implementation of digital initiatives and enhance organizational performance.

Keywords: Digital Transformation; Firm Performance; Leadership Agility; SMEs; Vietnam.

INTRODUCTION:

1.1. Research Background and Rationale

Digital transformation (DT) has emerged as a strategic imperative as firms seek to maintain competitiveness in rapidly evolving digital environments. Beyond simple technological adoption, DT involves redesigning business processes, integrating digital tools, and cultivating digital-oriented mindsets (Vial, 2019; Li et al., 2020). In Vietnam, where SMEs account for approximately 97% of all enterprises, the national digital transformation program (Decision 749/QD-TTg) highlights technology - enabled innovation as a priority for economic development.

However, despite increased investment, many Vietnamese SMEs struggle to translate DT efforts into measurable performance outcomes due to resource constraints, limited digital readiness, and leadership gaps. Evidence suggests that technological investments alone are insufficient; leadership capability plays a crucial role in shaping the success of digital initiatives (Kane et al., 2015; Sousa & Rocha, 2019). Leadership Agility (LA) - the ability to anticipate change, make adaptive decisions and guide organizations through uncertainty - has therefore gained attention as a potential enabler of DT effectiveness.

1.2. Research Problem

Although prior research recognizes DT as a driver of firm performance, empirical findings remain inconsistent, especially in emerging economies. These variations suggest the presence of unexamined internal contingencies. Meanwhile, studies on leadership agility have demonstrated its importance for organizational adaptability, but its role in enhancing or moderating DT outcomes has not been adequately explored. Particularly in the context of SMEs, where leadership style strongly influences the adoption and implementation of new technologies, the integration of LA into the DT–FP framework is still limited.

1.3. Research Objectives

This study seeks to:

1. Examine the direct effect of DT on FP in Vietnamese SMEs.
2. Assess the direct impact of LA on FP.
3. Test whether LA moderates the DT–FP relationship.
4. Provide theoretical and practical insights for strengthening digital capability and leadership readiness.

1.4. Contribution and Significance

The study offers several contributions. Theoretically, it extends Dynamic Capabilities Theory by demonstrating how DT enhances FP in emerging markets. It also enriches Contingency Theory by establishing LA as a critical contextual factor that shapes DT effectiveness. To the best of our knowledge, this is one of the few studies simultaneously examining the direct and moderating roles of leadership agility in the DT–FP relationship in an emerging economy context. Empirically, the study provides updated evidence from Vietnam—an emerging digital economy with rapidly

growing SME participation. Practically, the findings offer actionable guidance to managers and policymakers on leveraging leadership agility to maximize digital transformation outcomes.

LITERATURE REVIEW & THEORETICAL FRAMEWORK

2.1. Digital Transformation (DT)

Digital Transformation (DT) refers to the strategic integration of digital technologies to fundamentally change how firms operate, deliver value, and compete (Vial, 2019). DT is not limited to technology adoption; it encompasses process redesign, data-driven decision-making, and the development of digital culture and capabilities (Li et al., 2020). Recent research conceptualizes DT as a multidimensional capability that includes technological infrastructure, process digitalization, and organizational readiness (Hess et al., 2016).

In emerging economies such as Vietnam, DT is especially critical because SMEs often face resource constraints, limited digital talent, and uneven access to technology. Despite these support programs, many SMEs report inconsistent outcomes in DT implementation, suggesting that additional organizational and managerial factors may influence transformation success.

2.2. Firm Performance (FP)

Firm Performance (FP) is a multidimensional construct covering financial outcomes, customer satisfaction, internal process efficiency, innovation capacity, and organizational learning (Kaplan & Norton, 1992). In the digital era, FP increasingly depends on a firm's ability to exploit digital tools, automate processes, and respond quickly to market changes (Bharadwaj et al., 2013).

While DT has been shown to improve FP through enhanced efficiency, insight generation, and innovation, empirical results vary across contexts. Differences in organizational readiness, leadership, and digital maturity appear to play a significant role in moderating the benefits derived from DT initiatives.

2.3. Leadership Agility (LA)

Leadership Agility (LA) describes a leader's ability to anticipate changes, adapt behaviour, empower employees, and guide organizations through uncertain and dynamic environments (Joiner & Josephs, 2007). Agile leaders demonstrate flexibility, digital awareness, and collaborative decision-making - qualities essential for managing technological and organizational transformation (Lee, 2018).

Previous studies indicate that agile leaders can improve innovation, reduce resistance to change, strengthen learning cultures, and better align digital initiatives with strategic priorities (Sousa & Rocha, 2019). However, the integration of LA into DT research is still limited, particularly regarding whether LA can amplify the performance effects of digital transformation.

2.4. Theoretical Foundations

A review of prior research shows that although many studies explore DT or LA independently, few investigate how leadership agility interacts with digital transformation to influence firm performance - especially in SME contexts within emerging economies. Table 1 summarizes major studies, their findings, and the remaining gaps.

Table 1. Summary of Prior Studies and Research Gaps

No.	Study	Context	Method	Key Findings	Research Gap
1	Vial (2019)	Global	Systematic Review	Defines DT as process redesign + digital capability	Lacks empirical testing; no leadership perspective
2	Li et al. (2020)	China (SMEs)	Survey	DT enhances innovation capability	Performance impact unclear; leadership excluded
3	Sousa & Rocha (2019)	Europe	Mixed	Leadership agility improves digital adoption	Does not test DT → FP moderation
4	Chen & Zhang (2023)	China	SEM	Leadership agility shapes digital outcomes	Does not include performance variable
5	Rahman et al. (2021)	Malaysia (SMEs)	PLS-SEM	Digital capability improves SME performance	No leadership-related moderators
6	Sailer et al. (2022)	EU firms	Survey	LA improves innovation & learning	Does not examine DT context
7	Zhang & Chen (2023)	Asia	SEM	Managerial readiness affects DT effectiveness	LA not modeled as moderator

8	ASEAN Digital Study (2024)	ASEAN SMEs	Survey	DT benefits vary by digital maturity	Calls for leadership as missing internal factor

Source: Authors' synthesis from prior studies (2025).

Synthesis and Research Gap

Three major research gaps emerge from the literature:

1. Inconsistent DT–FP findings
   Although DT is widely considered a performance driver, empirical studies show mixed results, particularly in emerging markets, indicating that additional moderating factors may be at play.
2. Limited integration of Leadership Agility into DT research
   While LA has been linked to innovation, learning, and change management, few studies position LA as both a direct predictor of FP and as a moderator in the DT–FP relationship.
3. Lack of evidence from SMEs in emerging economies
   Most existing studies focus on large firms or advanced economies. SMEs in Vietnam - where digital capability and leadership readiness vary significantly - remain underexplored.

These gaps justify the need for a model integrating DT, LA, and FP to better understand the mechanisms driving digital transformation success in Vietnamese SMEs.

2.5. Theoretical Framework and Hypotheses Development

This study integrates Dynamic Capabilities Theory (DCT) and Contingency Theory (CT) to explain how DT and LA jointly shape firm performance.

Dynamic Capabilities Theory (Teece, 2007) suggests that firms gain competitive advantage by sensing opportunities, seizing innovations, and reconfiguring resources. DT aligns with these capabilities by enabling firms to redesign processes, leverage digital tools, and improve responsiveness.

Contingency Theory (Venkatraman, 1989) argues that organizational effectiveness depends on the fit between internal capabilities and external conditions. Leadership agility acts as a contextual factor determining how effectively digital initiatives are implemented and translated into performance.

A conceptual model is developed based on these theories:

H1: Digital Transformation positively influences Firm Performance.

H2: Leadership Agility positively influences Firm Performance.

H3: Leadership Agility moderates the impact of Digital Transformation on Firm Performance, such that the effect is stronger under high LA.

The model provides the theoretical foundation for the empirical analysis in Section 4

METHODOLOGY

3.1. Research Design

This study employs a quantitative, cross-sectional research design to examine the direct and moderating relationships among Digital Transformation (DT), Leadership Agility (LA), and Firm Performance (FP) in Vietnamese SMEs. A structured self-administered questionnaire was used to ensure consistency in measurement across respondents. All constructs were operationalized as reflective variables and measured using a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Structural Equation Modeling (SEM) was applied because it enables simultaneous assessment of measurement and structural models and is well-suited for testing moderation effects within complex theoretical frameworks.

3.2. Population and Sampling

The target population comprises middle- and senior-level managers working in Vietnamese enterprises, particularly SMEs, as they are directly involved in organizational decision-making and digital transformation implementation. A sample size of 270 valid responses was obtained, which satisfies SEM requirements for statistical power. Purposive sampling was applied using two criteria: respondents must have at least two years of managerial experience and must be involved in strategic, operational, or digital transformation activities. This sampling approach ensures that the data reflect informed managerial perspectives relevant to the study constructs.

3.3. Research Model

The study integrates Dynamic Capabilities Theory and Contingency Theory to propose a conceptual model in which DT and LA directly influence FP, while LA also moderates the DT–FP relationship. The research model is presented in Figure 1.

Figure 1. Research Model

Leadership Agility (LA)

↓ ↘

Digital Transformation (DT) → Firm Performance (FP)

(H1) (H2)

×

Moderation (H3)

Source: Developed by the authors (2025)

3.4. Data Collection Procedure

Data collection was conducted in four stages. First, measurement items were adapted from validated scales and contextualized for Vietnamese SMEs. Second, a pilot test involving 30 managers was conducted to ensure clarity and reliability; ambiguous items were revised. Third, the final survey was distributed both online and in person. Participation was voluntary and anonymous, to reduce potential response bias. Fourth, completed responses were screened for missing values, outliers, and normality requirements. SmartPLS and AMOS were used to enhance robustness, particularly in handling non-normal data distributions typical of managerial surveys

3.5 Measurement Scales

Validated reflective scales were used for all constructs. To ensure transparency, Table 2 presents example measurement items and sources for each construct.

Table 2. Example Measurement Items for Main Constructs

Construct	Example Item	Scale	Source
Digital Transformation (DT)	"Our organization uses digital tools to streamline internal processes."	Likert 1–5	Vial (2019); Li et al. (2020)
Leadership Agility (LA)	"Our leaders adapt quickly in response to unexpected challenges."	Likert 1–5	Joiner & Josephs (2007)
Firm Performance (FP)	"Our firm has improved overall performance through innovation and learning."	Likert 1–5	Kaplan & Norton (1992)

Measurement quality thresholds (Hair et al., 2021):

Factor loadings ≥ 0.60; Cronbach's Alpha ≥ 0.70; Composite Reliability ≥ 0.70; AVE ≥ 0.50; Discriminant validity confirmed via Fornell-Larcker and HTMT ≤ 0.85. Items failing to meet these criteria were removed during model refinement

3.6 Common Method Bias Assessment

Because data were collected from a single source, potential common method bias (CMB) was examined. Harman's single-factor test showed that no single factor accounted for more than 50 percent of total variance. In addition, the full collinearity test (Kock, 2015) indicated that all VIF values were below 3.3, confirming that CMB was not a significant concern.

3.7 Data Analysis Techniques

Data analysis followed a multi-stage SEM procedure. Reliability analysis assessed internal consistency using Cronbach's Alpha and Composite Reliability. Convergent and discriminant validity were evaluated through factor loadings, AVE, Fornell-Larcker, and HTMT criteria. Structural model estimation used standardized coefficients and bootstrapping with 5,000 iterations. Model explanatory power was assessed using R^2, while predictive relevance was evaluated using Q^2. Moderation effects were tested through interaction term analysis, supplemented by simple slope examination to interpret differences between high and low levels of leadership agility.

RESULTS AND DISCUSSION

4.1. Descriptive Statistics of Respondents

4.1 Descriptive Statistics of Respondents

A total of 270 valid responses were obtained from managers working in Vietnamese enterprises. The age distribution indicates that most respondents fall between 31 and 45 years old, followed by those aged above 45, suggesting that the sample is composed of individuals with substantial managerial experience. Gender distribution is relatively balanced, with males accounting for 54.4 percent and females 45.6 percent. In terms of education, the majority of respondents hold a bachelor's degree, while more than one-third possess a master's degree, ensuring sufficient managerial competence and familiarity with digital transformation practices.

Regarding managerial position, middle-level managers represent the largest proportion, followed by senior-level executives, providing a multi-level perspective on organizational processes. Concerning firm size, most participants come from small and medium-sized enterprises (SMEs), which aligns with the study's research focus and reflects the structural composition of the Vietnamese economy. Respondents also reported varying degrees of involvement in digital

transformation initiatives, including workflow automation, digital tool adoption, and data-driven decision-making, thereby ensuring adequate heterogeneity for robust statistical analysis.

The descriptive characteristics of the sample are summarized in Table 3.

Table 3. Sample Characteristics

Category	Group	Frequency (n=270)	Percentage (%)
Age	Under 30	52	19.3
	31–45	142	52.6
	Above 45	76	28.1
Gender	Male	147	54.4
	Female	123	45.6
Position	Middle-level manager	159	58.9
	Senior-level manager	111	41.1
Firm Size	SME	194	71.9
	Large enterprise	76	28.1

Source: Authors' survey data (2025).

4.2. Reliability and Validity Analysis

The measurement model was evaluated using confirmatory factor analysis and PLS-SEM reliability metrics. All standardized factor loadings exceeded the recommended threshold of 0.60, indicating satisfactory item reliability. Cronbach's Alpha and Composite Reliability (CR) values for all constructs were greater than 0.70, confirming strong internal consistency. Convergent validity was supported with Average Variance Extracted (AVE) values exceeding 0.50 for all constructs. Discriminant validity was established using both the Fornell–Larcker criterion and HTMT ratios, all of which remained below the threshold of 0.85.

To ensure that common method bias (CMB) did not threaten the results, Harman's single-factor test and Kock's full-collinearity VIF test were performed. The single-factor test showed no dominant factor exceeding 50 percent of variance, and all VIF values were below 3.3, indicating that CMB was not a significant issue.

A summary of the measurement reliability and validity is provided in Table 4:

Table 4. Reliability and Validity Summary

Construct	Cronbach's Alpha	CR	AVE	HTMT
Digital Transformation (DT)	0.89	0.92	0.68	0.62
Leadership Agility (LA)	0.87	0.91	0.66	0.58
Firm Performance (FP)	0.88	0.93	0.71	0.64

All thresholds satisfied: Alpha ≥ 0.70; CR ≥ 0.70; AVE ≥ 0.50; HTMT ≤ 0.85

4.3 Structural Model and Moderation Results

Structural Equation Modeling (SEM) was conducted to test the hypothesized relationships among DT, LA, and FP. The model demonstrated good fit, with CFI = 0.93, TLI = 0.92, RMSEA = 0.05, and $\chi^2/df = 2.1$, indicating alignment between the theoretical framework and empirical data. The model explained 46 percent of the variance in FP ($R^2 = 0.46$), representing strong explanatory power for organizational research. Predictive relevance ($Q^2 > 0.30$) further confirmed the robustness of the model for out-of-sample prediction.

DT exerted a positive and significant direct effect on FP ($\beta = 0.31$, $t = 5.42$, $p < 0.001$), suggesting that digital initiatives enhance performance by improving efficiency, decision accuracy, and innovation capability. LA also exhibited a significant positive effect on FP ($\beta = 0.28$, $t = 4.87$, $p < 0.001$), highlighting the importance of adaptive leadership in leveraging digital opportunities.

The moderating hypothesis was supported. The interaction term between DT and LA was significant ($\beta = 0.08$, $t = 2.05$, $p = 0.041$), indicating that LA strengthens the positive effect of DT on FP. Simple slope analysis revealed that the DT–FP relationship is stronger among firms with high levels of LA ($\beta = 0.42$) compared to firms with low LA ($\beta = 0.25$). The interaction contributed an additional 5 percent to the explained variance in FP ($\Delta R^2 = 0.05$).

These structural model results are presented in Table 5.

Table 5. Structural Model Results

Hypothesis	Relationship	β	t-value	p-value	Decision
H1	Digital Transformation → Firm Performance	0.31	5.42	< 0.001	Supported
H2	Leadership Agility → Firm Performance	0.28	4.87	< 0.001	Supported
H3	DT × LA → Firm Performance	0.08	2.05	0.041	Supported

Model Fit: CFI = 0.93; TLI = 0.92; RMSEA = 0.05; $\chi^2/df = 2.1$
Explained Variance: R^2 (FP) = 0.46
Predictive Relevance: $Q^2 > 0.30$
Moderation Slopes: High LA = 0.42; Low LA = 0.25
ΔR^2 (Moderation Effect): 0.05

DISCUSSION

The findings reinforce the central propositions of Dynamic Capabilities Theory by confirming that DT enhances FP through multiple mechanisms, including process reconfiguration, workflow automation, data-driven coordination across functions, and the integration of digital tools that improve operational efficiency and decision-making accuracy. These digital initiatives enable firms to streamline activities, generate actionable insights, and support innovation-oriented behaviors, ultimately contributing to higher organizational performance.

The results also support Contingency Theory, highlighting that the strength of the DT–FP relationship is contingent upon internal organizational conditions - particularly leadership agility. The significant moderating effect of LA indicates that agile leaders amplify the benefits of DT by interpreting environmental uncertainty more effectively, coordinating cross-functional digital initiatives, and aligning technological adoption with strategic objectives. Firms with high levels of LA are better positioned to leverage digital capabilities for competitive advantage, whereas those lacking agile leadership tend to derive fewer performance gains from digital transformation, even with comparable levels of technology investment.

In the context of Vietnamese SMEs - where limited resources, uneven digital readiness, and capability gaps remain common - LA plays an especially critical role. Agile leaders facilitate knowledge sharing, reduce resistance to technological and procedural changes, and foster learning behaviors essential for sustainable digital transformation. These findings underscore that leadership agility is not merely a complementary element but a necessary condition for maximizing the performance outcomes of DT initiatives in resource-constrained environments.

CONCLUSION AND POLICY IMPLICATIONS

This study examined how Digital Transformation (DT) and Leadership Agility (LA) influence Firm Performance (FP) within Vietnamese small and medium-sized enterprises (SMEs). Using Structural Equation Modeling with a sample of 270 managers, the findings demonstrate that DT significantly improves FP by enhancing process efficiency, strengthening data-driven decision-making, and supporting innovation activities. LA also directly contributes to FP, indicating that adaptive, proactive, and change-oriented leadership plays a critical role in navigating digitally disruptive environments. Notably, LA moderates the DT–FP relationship, showing that digital initiatives yield stronger performance outcomes when implemented under agile leadership capable of aligning technological adoption with organizational needs and environmental demands. These results highlight the complementary roles of technological capability and leadership agility in driving successful digital transformation.

The theoretical contributions of the study lie in integrating Dynamic Capabilities Theory and Contingency Theory to explain why the performance effects of DT vary across firms. By identifying LA as a key internal contingency that amplifies the effectiveness of DT, the study offers a more comprehensive understanding of how digital transformation operates within resource-constrained and volatile business environments. The empirical evidence extends current literature by providing context-specific insights from Vietnamese SMEs—a setting where digital maturity, leadership capacity, and institutional conditions differ significantly from developed economies.

From a managerial perspective, the findings suggest that technology investment alone is insufficient for achieving meaningful digital transformation. Firms should simultaneously develop leadership capabilities that enhance strategic foresight, decision-making flexibility, and readiness for change. Leadership development programs that focus on digital literacy, scenario-based planning, and change-management competencies can strengthen the ability of managers to guide digital

initiatives effectively. Moreover, SMEs should view DT as a long-term strategic journey rather than a set of isolated IT upgrades. Establishing clear digital roadmaps, integrating digital tools into core business processes, and cultivating a culture of experimentation and learning will facilitate sustained performance improvements.

The study also provides implications for policymakers. National digitalization programs should incorporate leadership enhancement components alongside financial and technological support schemes. Policies that combine subsidies for technology adoption with training programs on digital leadership, data governance, and organizational transformation can help bridge capability gaps in SMEs. Such integrated efforts are essential in emerging economies, where structural limitations and resource constraints may hinder the realization of digital transformation benefits.

Despite making several contributions, the study has limitations. The cross-sectional design restricts causal inference, and the use of self-reported measures may introduce bias. The sample, focused on Vietnamese SMEs, may not fully capture differences across industries or country contexts. Future research should adopt longitudinal designs, employ objective performance indicators, and examine additional moderating or mediating mechanisms such as digital culture, environmental turbulence, or organizational structure. Comparative studies across ASEAN or emerging markets may also provide deeper insights into contextual variations in digital transformation outcomes. Future studies may explore alternative moderators such as digital culture or environmental turbulence to deepen the understanding of how internal and external contingencies shape DT outcomes.

In conclusion, the study underscores that successful digital transformation depends not only on technological readiness but also on the agility of leaders who guide organizations through complex digital environments. SMEs that combine strong digital capabilities with agile leadership are better positioned to enhance performance, strengthen competitiveness, and achieve sustainable growth in the digital economy.

REFERENCES

1. ASEAN Digital Transformation Study (2024). Digital maturity and readiness of SMEs across ASEAN Member States. ASEAN Secretariat, Jakarta.
2. Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. MIS Quarterly, 37(2), pp. 471–482.
3. Chen, Y. and Zhang, X. (2023). Leadership agility and digital transformation outcomes: Evidence from Chinese enterprises. Journal of Business Research, 158, pp. 1–12.
4. Joiner, B. and Josephs, S. (2007). Leadership agility: Five levels of mastery for anticipating and initiating change. San Francisco: Jossey-Bass.
5. Kaplan, R.S. and Norton, D.P. (1992). The Balanced Scorecard: Measures that drive performance. Harvard Business Review, 70(1), pp. 71–79.
6. Lee, J. (2018). Agile leadership and organizational adaptability in the digital era. Management Decision, 56(9), pp. 1960–1975.
7. Li, L., Su, F., Zhang, W. and Mao, J.Y. (2020). Digital transformation by SME entrepreneurs: A capability perspective. Information Systems Journal, 30(3), pp. 1–28.
8. Rahman, M.M., Hamid, A.B.A. and Cheng, W. (2021). Digital capability and SME performance: Evidence from Malaysia. Asia Pacific Journal of Innovation and Entrepreneurship, 15(2), pp. 148–162.
9. Sailer, K., Ciriello, R.F. and Székely, N. (2022). Leadership agility and organizational innovation: The role of learning and collaboration. European Management Journal, 40(3), pp. 375–388.
10. Sousa, M.J. and Rocha, Á. (2019). Leadership styles and skills developing in digital transformation. Journal of Business Research, 94, pp. 137–147.
11. Teece, D.J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable enterprise performance. Strategic Management Journal, 28(13), pp. 1319–1350.
12. Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. Academy of Management Review, 14(3), pp. 423–444.
13. Vial, G. (2019). Understanding digital transformation: A review and research agenda. The Journal of Strategic Information Systems, 28(2), pp. 118–144.
14. Zhang, X. and Chen, Y. (2023). Managerial readiness and digital transformation effectiveness in Asian firms. Technovation, 122, pp. 102–118.