European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.18, No.6, 2026

Transformational Leadership and Sustainable Development of industrial SMEs in Vietnam: The mediating role of Organizational Adaptive Capacity

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ABSTRACT
In emerging economies, transformational leadership is widely recognized as a critical driver of organizational change; however, empirical evidence regarding the mechanisms through which it contributes to ESG-oriented sustainable development remains limited. This study examines the impact of transformational leadership on organizational adaptive capacity toward ESG-oriented sustainable development among industrial small and medium-sized enterprises (SMEs) in Ninh Binh province, Vietnam. Drawing upon Dynamic capabilities Theory, the study proposes a research framework in which organizational adaptive capacity acts as a mediating mechanism linking transformational leadership and sustainable development outcomes measured through environmental, social, and governance (ESG) dimensions. Primary data were collected from middle- and senior-level managers of industrial SMEs using a stratified non-probability sampling approach. A total of 366 questionnaires were distributed, of which 360 valid responses were retained for analysis. The proposed model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 3.0. The findings reveal that transformational leadership has a significant positive influence on organizational adaptive capacity. However, organizational adaptive capacity does not significantly affect environmental, social, and governance outcomes, and its mediating role in the relationship between transformational leadership and ESG-oriented sustainable development is not supported. These findings suggest that adaptive capability alone may be insufficient to transform leadership practices into sustainability outcomes in industrial SMEs. This study contributes to the existing literature by extending Dynamic capabilities theory within the context of SMEs in emerging economies and provides managerial implications for enhancing sustainable competitiveness.
Keywords: *Transformational leadership; Sustainable development; Organizational adaptive capacity; industrial SMEs; Vietnam*
DOI: 10.7176/EJBM/18-6-07
Publication date: June 30th 2026

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) play a significant role in economic growth, industrial development, and employment generation in emerging economies (Ali, Z., Sun, H., & Ali, M.,2017). However, increasing market uncertainty, technological disruption, environmental regulations, and sustainability requirements have created substantial challenges for SMEs in maintaining long-term competitiveness and sustainable growth. Compared with large organizations, industrial SMEs often face greater difficulties in responding to environmental changes because of resource limitations and lower organizational flexibility.

Recently, sustainable development has become an important strategic objective for organizations seeking long-term competitiveness. Beyond traditional economic performance, organizations are increasingly expected to incorporate environmental responsibility, social commitment, and effective governance into their business strategies. Consequently, the Environmental–Social–Governance (ESG) framework has emerged as a comprehensive approach for evaluating organizational sustainability performance. For industrial SMEs, achieving ESG-oriented sustainable development is particularly challenging because these enterprises frequently encounter constraints related to technology, financial resources, and managerial capabilities.

Leadership is widely recognized as one of the key determinants influencing organizational effectiveness and strategic change. Among various leadership styles, transformational leadership has attracted considerable scholarly attention because of its ability to inspire employees, facilitate organizational learning, and encourage innovation. Bass (1995) argued that transformational leadership enables organizations to achieve strategic change by motivating employees toward shared goals and stimulating innovative thinking. Furthermore, from the perspective of Dynamic Capabilities Theory, organizations require the capability to continuously sense environmental changes and reconfigure resources to sustain competitive advantage under uncertain conditions (Teece et al., 1997; Teece, 2007).

Despite the growing interest in transformational leadership and sustainability research, several important research gaps remain. First, previous studies have mainly focused on the direct relationship between

transformational leadership and organizational outcomes such as innovation, employee performance, and firm performance, while limited attention has been paid to understanding the organizational mechanisms through which transformational leadership contributes to sustainability outcomes. Second, prior studies frequently examine sustainable development from a broad perspective and rarely incorporate ESG dimensions comprehensively into organizational research models. Third, empirical evidence regarding transformational leadership, adaptive organizational capability, and ESG-oriented sustainable development remains limited within SMEs in emerging economies, particularly in Vietnam.

Furthermore, although Ninh Binh province has experienced substantial industrial development in recent years, industrial SMEs in this region increasingly face challenges associated with technological adaptation, environmental responsibility, and long-term competitiveness. Understanding how transformational leadership contributes to organizational adaptive capacity and ESG-oriented sustainable development therefore represents both a theoretical and practical necessity.

Based on these identified research gaps, this study aims to examine the impact of transformational leadership on organizational adaptive capacity toward ESG-oriented sustainable development among industrial SMEs in Ninh Binh province, Vietnam. Specifically, the study investigates the mediating role of organizational adaptive capacity in explaining the relationship between transformational leadership and ESG-oriented sustainable development. The findings are expected to extend Dynamic Capabilities Theory in the SME context and provide practical implications for improving sustainable competitiveness.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Theoretical foundation

This study adopts Dynamic capabilities theory as the primary theoretical foundation for explaining how transformational leadership contributes to organizational adaptive mechanisms and sustainable development outcomes. According to Teece, Pisano, and Shuen (1997), dynamic capabilities refer to an organization's ability to integrate, build, and reconfigure internal and external resources to address rapidly changing environments. Subsequently, Teece (2007) suggested that organizations sustain competitive advantage through three major processes: sensing opportunities and threats, seizing opportunities, and reconfiguring organizational resources.

From this perspective, leadership can be considered an important organizational mechanism influencing the development of adaptive capabilities. Transformational leaders may facilitate organizational learning, innovation, and strategic flexibility, thereby strengthening adaptive capacities and improving long-term sustainability outcomes. Therefore, Dynamic Capabilities Theory provides an appropriate theoretical explanation for understanding the relationships among transformational leadership, organizational adaptive capacity, and ESG-oriented sustainable development.

2.2. Transformational Leadership and Organizational Adaptive Capacity

Transformational leadership has been widely recognized as an important leadership approach for facilitating organizational change and improving organizational capabilities. Bass (1995) argued that transformational leadership consists of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These characteristics encourage employees to adopt shared organizational goals and support organizational transformation.

Recent studies increasingly suggest that transformational leadership plays an important role in developing organizational capabilities in dynamic environments. Transformational leaders promote knowledge sharing, organizational learning, and innovative behavior, thereby strengthening organizations' ability to respond to environmental uncertainty and strategic change. In SMEs, leadership practices have been found to facilitate organizational flexibility and capability development, particularly under conditions of technological and environmental turbulence (Le & Gia, 2025). Furthermore, organizational capability development has been identified as an important mechanism through which leadership contributes to sustainable organizational outcomes and long-term competitiveness.

From the perspective of Dynamic capabilities theory, adaptive capability emerges through continuous learning and resource reconfiguration processes (Teece, 2007). By promoting strategic flexibility and encouraging employees to embrace change, transformational leadership is expected to enhance organizational adaptive capacity. Accordingly, the following hypothesis is proposed:

H1: Transformational leadership positively affects organizational adaptive capacity.

2.3. Organizational Adaptive Capacity and Sustainable Development

Organizational adaptive capacity refers to a firm's ability to recognize environmental changes, respond effectively to uncertainty, and continuously reconfigure organizational resources and processes. According to Teece et al. (1997) and Teece (2007), organizations with stronger dynamic capabilities can better adapt to changing environments and maintain long-term competitiveness.

Recent studies have increasingly emphasized that adaptive organizational capabilities are important determinants of sustainable outcomes. For SMEs, adaptive capability facilitates organizational flexibility,

enhances innovation, and improves responsiveness to environmental and stakeholder pressures (Ali et al., 2017). Furthermore, recent empirical evidence indicates that internal organizational capabilities significantly contribute to sustainability performance and ESG-related outcomes through improving organizational responsiveness and strategic flexibility (Zhu & Huang, 2023). From an ESG perspective, organizations with stronger adaptive capacity are more capable of responding to environmental regulations, strengthening stakeholder relationships, and improving governance practices. Therefore, adaptive capability is expected to enhance ESG-oriented sustainable development among industrial SMEs. Accordingly, the following hypothesis is proposed:

H2: Organizational adaptive capacity positively affects ESG-oriented sustainable development.

2.4. Mediating role of Organizational adaptive capacity

Dynamic Capabilities Theory suggests that leadership influences organizational outcomes through internal capability development processes rather than solely through direct managerial actions (Teece et al., 1997; Teece, 2007). Transformational leadership facilitates organizational learning, flexibility, and resource reconfiguration, thereby strengthening organizational adaptive capacity. Organizations with stronger adaptive capacities are more capable of responding effectively to environmental uncertainty and meeting environmental, social, and governance requirements.

Recent studies increasingly indicate that leadership contributes to sustainable outcomes indirectly through capability development mechanisms. For instance, transformational leadership has been found to improve sustainability performance through organizational resilience, innovation capability, and digital capability in SMEs (Martín-Rojas et al., 2026; Karami, 2026; Al Maalouf, 2025). These findings imply that leadership alone may not directly generate sustainability outcomes but rather enhances internal capabilities that subsequently translate into organizational performance and sustainability outcomes. In the context of industrial SMEs, organizational adaptive capacity may function as an important mechanism connecting transformational leadership with ESG-oriented sustainable development because adaptive organizations are better able to respond to environmental requirements, stakeholder expectations, and governance challenges. Accordingly, the following hypothesis is proposed:

H3: Organizational adaptive capacity mediates the relationship between transformational leadership and ESG-oriented sustainable development.

3. RESEARCH METHODOLOGY

3.1. Research design

This study employed a quantitative research design to examine the relationships among transformational leadership, organizational adaptive capacity, and ESG-oriented sustainable development in industrial SMEs in Ninh Binh province, Vietnam. A survey approach was adopted to collect primary data from enterprise managers because they possess a comprehensive understanding of organizational strategies, leadership practices, adaptive capabilities, and sustainability-related activities.

The proposed research model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was selected because of its suitability for predictive research, complex models involving mediating relationships, and higher-order constructs. Furthermore, the dependent variable of this study, ESG-oriented sustainable development, was conceptualized as a second-order construct consisting of environmental, social, and governance dimensions. According to Hair et al. (2019), PLS-SEM is particularly appropriate for analyzing hierarchical component models and prediction-oriented studies.

3.2. Sample and data collection

The target respondents of this study were middle- and senior-level managers working in industrial SMEs located in Ninh Binh province, Vietnam. These respondents were selected because they are directly involved in strategic decision-making and possess adequate knowledge regarding organizational leadership practices, adaptive capability, and sustainability-related activities.

The study employed a stratified non-probability sampling approach based on enterprise size and industrial zone locations to improve sample representativeness. Data collection was conducted over a two-month period from February 10, 2026, to April 15, 2026, using a combination of face-to-face and online survey methods. The mixed survey approach was adopted to increase accessibility and response rates while ensuring broader participation from enterprises across different industrial zones in Ninh Binh province. A total of 366 questionnaires were distributed to respondents during the data collection period. Among them, 364 questionnaires were returned, representing a response rate of 99.45%. After excluding incomplete and inconsistent responses, 360 valid questionnaires were retained for data analysis, resulting in an effective response rate of 98.36%.

3.3. Data analysis

The collected data were analyzed using SmartPLS version 3.0 following the Partial Least Squares Structural Equation Modeling (PLS-SEM) procedure. According to Hair et al. (2019), PLS-SEM analysis is commonly conducted in two sequential stages, including measurement model assessment and structural model

assessment**.** The first stage involved assessing the measurement model to examine the reliability and validity of the constructs used in the study. Internal consistency reliability was evaluated using Cronbach's Alpha (CA) and Composite Reliability (CR), where values exceeding 0.70 indicate acceptable reliability. Convergent validity was assessed through outer loading and Average Variance Extracted (AVE) values. Following the recommendations of Hair et al. (2019), indicator loadings should exceed 0.70 and AVE values should be greater than 0.50 to confirm adequate convergent validity. Discriminant validity was examined using both the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT). According to Fornell and Larcker (1981), the square root of AVE for each construct should be greater than its correlations with other constructs. Additionally, HTMT values below the recommended threshold of 0.85 indicate satisfactory discriminant validity (Henseler et al., 2015).

The second stage involved evaluating the structural model to examine the proposed relationships among constructs and test the research hypotheses. Prior to hypothesis testing, multicollinearity among predictor variables was assessed using the Variance Inflation Factor (VIF). According to Hair et al. (2019), VIF values below 5 indicate that multicollinearity is not a serious concern.

Subsequently, the significance of the hypothesized relationships was evaluated using the bootstrapping procedure with repeated subsampling. Bootstrapping was used to estimate path coefficients, t-values, p-values, and confidence intervals for hypothesis testing. In addition, the mediating effect of organizational adaptive capacity was assessed through indirect effect analysis using bootstrapping procedures.

4. RESULTS

4.1. Measurement model assessment

The measurement model was evaluated using SmartPLS 3.0 through several criteria, including indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Following the recommendations of Hair et al. (2016), the measurement model was assessed based on the following thresholds: outer loadings greater than 0.70, Cronbach's Alpha (CA) and Composite Reliability (CR) values above 0.70, Average Variance Extracted (AVE) exceeding 0.50, and HTMT values below 0.85.

Indicator reliability was initially examined through outer loading values. The results showed that all observed variables achieved factor loadings above the recommended threshold of 0.70, indicating that the indicators exhibited strong associations with their corresponding latent constructs and adequately represented the theoretical concepts being measured.

As tab 1 shown that, the Cronbach's alpha values ranged from 0.844 to 0.914, exceeding the recommended threshold of 0.70 and indicating satisfactory internal consistency among the measurement items. Similarly, Composite reliability values ranged from 0.853 to 0.936, demonstrating strong construct reliability across all variables. Regarding convergent validity, the AVE values for all constructs ranged from 0.587 to 0.713, which were above the recommended value of 0.50. The highest AVE value was observed for Transformational leadership 0.746. Therefore, these findings confirm adequate convergent validity for all constructs included in the measurement model. Overall, the reliability and convergent validity results suggest that the measurement model satisfies the required criteria and is appropriate for subsequent structural model analysis.

Table 1. Composite Reliability and Reliability

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Environment (MT)	0.866	1.029	0.853	0.546
Governance (QT)	0.871	0.979	0.883	0.604
Organizational Adaptive (OA)	0.901	0.959	0.898	0.641
Social (XH)	0.844	0.933	0.875	0.585
Transformational leadership (TL)	0.914	0.980	0.936	0.746

(Source: Results processed by SMART PLS 3.0)

To assess convergent validity on SMART PLS, the Average Variance Extracted (AVE) is used as an important criterion. According to Hock & Ringle (2010), a measurement is considered to achieve convergent validity when AVE reaches 0.5 or higher. This threshold of 0.5 indicates that the parent latent variable can explain at least 50% of the variance of the observed sub-variables.

Discriminant validity was assessed using the Fornell–larcker criterion together with the Heterotrait–monotrait ratio (HTMT) approach. Following the Fornell–larcker criterion, the square root of the AVE value for each construct should be greater than its correlation coefficients with other constructs in the model. The results indicated that the square root of AVE values, ranging from 0.783 to 0.812, exceeded the corresponding inter-

construct correlations, suggesting satisfactory discriminant validity among the constructs. Furthermore, discriminant validity was further verified through HTMT analysis. As suggested by Hair et al. (2021), HTMT values should remain below 0.85 under stricter criteria or 0.90 under more flexible standards. The HTMT values obtained in this study varied between 0.162 and 0.765, remaining below the recommended threshold values. Therefore, these results indicate that the constructs are sufficiently distinct from one another and demonstrate acceptable discriminant validity.

4.2. Structural model assessment

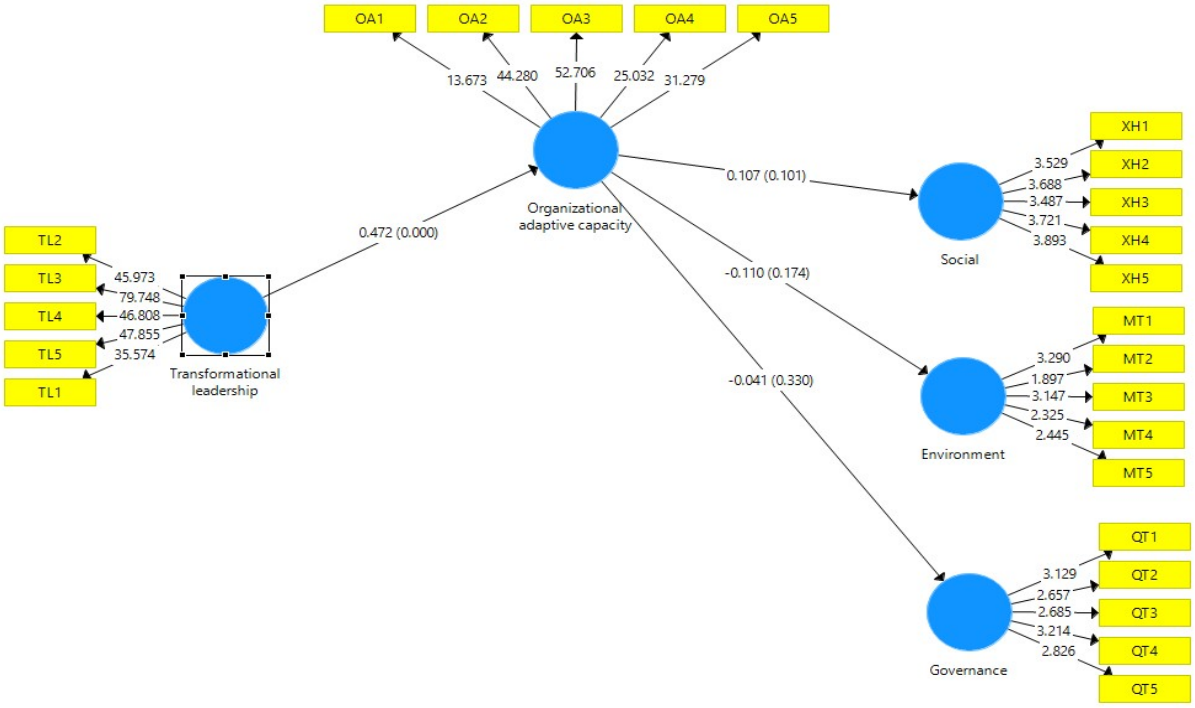

Figure 1. Results of Structural Model Testing

(Source: Results processed by SMART PLS 3.0)

The structural model was evaluated using the bootstrapping procedure in SmartPLS 3.0 to examine the significance of the proposed relationships among constructs. The assessment was based on path coefficients (β), t-statistics, and p-values. According to Hair et al. (2019), a relationship is considered statistically significant when the p-value is below 0.05 and the t-statistic exceeds the recommended threshold of 1.96.

The results reveal that transformational leadership has a significant positive effect on organizational adaptive capacity (β = 0.472; t = 9.530; p < 0.001). This finding supports H1, indicating that transformational leadership practices substantially enhance an organization's ability to recognize environmental changes and respond effectively to emerging challenges. The relatively high path coefficient suggests that transformational leaders play a critical role in improving organizational adaptability through promoting learning, innovation, and strategic flexibility.

However, the relationships between organizational adaptive capacity and the three ESG dimensions do not reach statistical significance. Specifically, organizational adaptive capacity demonstrates a negative but statistically insignificant relationship with the environmental dimension (β = –0.110; t = 0.937; p = 0.174) and governance dimension (β = –0.041; t = 0.440; p = 0.330). Similarly, although organizational adaptive capacity shows a positive relationship with the social dimension (β = 0.107; t = 1.278; p = 0.101), the result remains statistically insignificant because the p-value exceeds the recommended threshold**.** These findings indicate that organizational adaptive capacity alone does not significantly contribute to improvements in ESG-oriented sustainable development among industrial SMEs in Ninh Binh province. Therefore, H2 is not supported.

Table 2. Mediating effect of Organizational adaptive capacity

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Transformational leadership -> Organizational adaptive capacity -> Environment	-0.052	-0.046	0.056	0.920	0.179
Transformational leadership -> Organizational adaptive capacity -> Governance	-0.019	-0.016	0.045	0.435	0.332
Transformational leadership -> Organizational adaptive capacity -> Social	0.050	0.058	0.041	1.241	0.107

(Source: Results processed by SMART PLS 3.0)

The mediating role of organizational adaptive capacity was examined using the bootstrapping procedure by assessing the specific indirect effects between transformational leadership and the three dimensions of ESG-oriented sustainable development, including environmental, governance, and social performance.

As shown Table 2, the indirect effect of transformational leadership on the environmental dimension through organizational adaptive capacity was negative and statistically insignificant ($\beta = -0.052$; $t = 0.920$; $p = 0.179$). Similarly, the indirect relationship between transformational leadership and governance through organizational adaptive capacity was also found to be negative and insignificant ($\beta = -0.019$; $t = 0.435$; $p = 0.332$). Regarding the social dimension, although the indirect effect coefficient was positive ($\beta = 0.050$), the relationship did not reach statistical significance ($t = 1.241$; $p = 0.107$). Since all p-values exceed the recommended threshold of 0.05, the mediating effects of organizational adaptive capacity on the relationships between transformational leadership and the three ESG dimensions are not statistically supported. Therefore, H3 is rejected, indicating that organizational adaptive capacity does not function as a significant mediating mechanism within the proposed research model.

These findings suggest that while transformational leadership may contribute to strengthening organizational adaptive capability, such capability does not effectively translate into environmental, social, and governance outcomes in industrial SMEs in Ninh Binh province. The results imply that adaptive capability alone may be insufficient to convert leadership practices into ESG-oriented performance. The relationship between leadership and sustainability outcomes may require additional supporting mechanisms, such as technological capability, innovation capability, organizational culture, or digital transformation readiness. Overall, the findings indicate that organizational adaptive capacity does not play a substantial mediating role in explaining how transformational leadership contributes to ESG-oriented sustainable development in the context of industrial SMEs.

5. DISCUSSION

The findings of this study provide several important implications regarding the relationship among transformational leadership, organizational adaptive capacity, and ESG-oriented sustainable development in industrial SMEs in Ninh Binh province, Vietnam.

Firstly, the findings demonstrate that transformational leadership exerts a significant positive influence on organizational adaptive capacity ($\beta = 0.472$; $p < 0.001$), indicating that transformational leadership practices contribute substantially to strengthening an organization's ability to recognize environmental changes and respond to emerging challenges. This finding is consistent with the arguments of Bass (1995), who suggested that transformational leaders stimulate organizational learning and motivate employees toward organizational change. The finding also aligns with Dynamic Capabilities Theory proposed by Teece et al. (1997) and Teece (2007), which emphasizes the importance of organizational capabilities in responding to changing environments. Furthermore, the present result supports recent empirical findings reported by Chen and Chang (2013) and Le and Gia (2025), who argued that transformational leadership facilitates innovation and enhances organizational capability development through encouraging knowledge sharing and strategic flexibility. Similar to these studies, the current research confirms that transformational leaders play an important role in creating internal conditions that improve adaptive organizational capabilities.

However, unlike previous studies that identified stronger downstream impacts of organizational capability on sustainability-related outcomes, the findings reveal that organizational adaptive capacity does not significantly influence ESG-oriented sustainable development across environmental, social, and governance dimensions. These findings differ from Ali et al. (2017) and Eikelenboom and de Jong (2019), who suggested that organizational capabilities positively contribute to sustainability performance and long-term organizational

competitiveness. Several explanations may account for these differences. First, contextual differences may influence the effectiveness of adaptive capabilities. Previous studies mainly focused on larger firms or organizations operating in developed economies with stronger technological infrastructures and greater resource availability. In contrast, industrial SMEs in Ninh Binh province frequently face resource constraints, technological limitations, and managerial challenges that may reduce the effectiveness of adaptive organizational mechanisms in generating measurable ESG outcomes.

Secondly, ESG-oriented sustainable development requires organizations to simultaneously achieve environmental, social, and governance objectives. Such outcomes often depend not only on organizational adaptability but also on additional strategic resources and supporting capabilities such as technological capability, innovation capability, digital transformation readiness, and organizational culture. Therefore, adaptive capability alone may not be sufficient to translate leadership practices into sustainability outcomes. The results further reveal that organizational adaptive capacity does not significantly mediate the relationship between transformational leadership and ESG-oriented sustainable development. This finding contrasts with studies suggesting that organizational capabilities frequently act as intermediary mechanisms through which leadership contributes to organizational outcomes. For instance, recent studies have emphasized the mediating role of innovation capability, resilience, and digital capability in explaining leadership-performance relationships.

The present findings therefore suggest that the relationship between transformational leadership and ESG-oriented sustainable development may involve more complex mechanisms than originally proposed. This study contributes to the literature by indicating that organizational adaptive capacity alone may not sufficiently explain how leadership practices influence sustainability outcomes within industrial SMEs operating under resource-constrained environments.

6. CONCLUSION

This study investigated the impact of transformational leadership on organizational adaptive capacity toward sustainable development among industrial SMEs in Ninh Binh province, Vietnam. Drawing upon Dynamic Capabilities Theory, the study proposed and examined a research framework in which organizational adaptive capacity functions as a mediating mechanism linking transformational leadership and sustainable development outcomes measured through environmental, social, and governance dimensions.

The findings indicate that transformational leadership significantly enhances organizational adaptive capacity, suggesting that transformational leaders play an important role in strengthening organizational flexibility and improving responsiveness to environmental changes. This result confirms the important role of leadership in developing internal organizational capabilities. However, the study also reveals that organizational adaptive capacity does not significantly influence environmental, social, and governance outcomes. In addition, the mediating role of organizational adaptive capacity is not statistically supported. These findings imply that adaptive organizational capability alone may not be sufficient to convert leadership practices into measurable ESG-oriented performance outcomes. From a theoretical perspective, this study extends Dynamic Capabilities Theory by providing empirical evidence from industrial SMEs in an emerging economy context. Unlike many previous studies that reported positive indirect effects of organizational capabilities on sustainability performance, the present findings indicate that such relationships may vary depending on contextual factors and organizational characteristics.

From a practical perspective, managers of industrial SMEs should recognize that strengthening adaptive capability alone may not guarantee improvements in ESG performance. Organizations may need to simultaneously invest in technological capability, innovation capability, and sustainability-oriented organizational culture to achieve long-term sustainable development objectives.

Finally, this study is subject to several limitations. The research focused exclusively on industrial SMEs in Ninh Binh province, which may limit the generalizability of findings. Future studies are encouraged to extend the research context to different regions and industries and incorporate additional organizational mechanisms, such as innovation capability, digital capability, or organizational culture, to further explain the relationship between leadership and ESG-oriented sustainable development.

Reference

Ali, Z., Sun, H., & Ali, M. (2017). The impact of managerial and adaptive capabilities to stimulate organizational innovation in SMEs: A complementary PLS–SEM approach. *Sustainability, 9*(12), https://doi.org/10.3390/su9122157

Al Maalouf, N. J. (2025). Transformational leadership, innovation, and performance of SMEs in Europe. *Cogent Business & Management*, 12(1), https://doi.org/10.1080/23311975.2025.2473683

Bass, B. M. (1995). Theory of transformational leadership redux. *The Leadership Quarterly, 6*(4), 463–478. https://doi.org/10.1016/1048-9843(95)90021-7

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides

(Ed.), *Modern methods for business research* (pp. 295–336). Lawrence Erlbaum Associates.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics, 28*(2), 565–580.

Karami, M. (2026). Transformational leadership and supply chain sustainability in emerging economies: The serial mediating roles of digital capability and green innovation. *SEISENSE Journal of Management, 9*(1), 1–17. https://doi.org/10.33215/5npwz022

Le, T. T., & Gia, L. L. C. (2025). How green innovation and green corporate social responsibility transform green transformational leadership into sustainable performance? Evidence from an emerging economy. *Corporate Social Responsibility and Environmental Management, 32*(2), 2527–2541. https://doi.org/10.1002/csr.3077

Martín-Rojas, R., Garrido-Moreno, A., & García-Morales, V. J. (2026). Building organizational resilience in SMEs: The key role of digital technologies, transformational leadership, and innovation. *Review of Managerial Science*. https://doi.org/10.1007/s11846-025-00965-z

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7.