# Exploring the Role of Digital Management Capability in Shaping Ethical Leadership and its Impact on ESG: A Dynamic Capabilities Micro-Foundations Perspective[*]

Chung Ka Wai, Liu Kam Pui, William Yeoh[†]

Hong Kong Metropolitan University, H.K.
{skwchung,kpliu,wyeoh}@hkmu.edu.hk

**Abstract**

Building on the dynamic capabilities micro-foundations perspective, this study examines the interplay among ethical leadership, digital management capability, and environmental, social, and governance (ESG) performance in small and medium-sized enterprises (SMEs). Using survey data from 357 Chinese SMEs, the analysis shows that digital management capability is positively associated with ESG performance and ethical leadership, while ethical leadership also positively influences ESG performance. Notably, the findings indicate that ethical leadership substantially mediates the relationship between digital management capability and ESG performance. Furthermore, digital management capability positively moderates the relationship between ethical leadership and ESG performance. These results suggest that ethical leaders equipped with strong digital competencies can strategically drive superior sustainability outcomes. This study extends the micro-foundations perspective and offers practical implications for SMEs seeking to cultivate integrated ethical and digital leadership in today's competitive digital era.

## 1 Introduction

The integration of digital management capability with ethical leadership is increasingly vital in today's competitive digital landscape, particularly for achieving environmental, social, and governance (ESG) objectives in a sustainable manner (Cortellazzo et al., 2019; Kidwell & Sprague, 2009). Ethical leaders are considered central figures in fostering a digital culture and enabling collaborative processes in complex environments while simultaneously addressing ethical concerns to enhance ESG outcomes (Brown et al., 2005; Cortellazzo et al., 2019). Meanwhile, digital transformation has a significant impact on corporate ESG performance, as evidenced by studies such as those by Lyu et al. (2025) and Xu & Yin (2024). It reshapes business models, optimizes resource allocation, reduces energy consumption, and enhances transparency and stakeholder engagement (Fang et al., 2023). The effective implementation and ethical governance of digital technologies are crucial to E-Business Information

---

[†]Corresponding author

Systems, which serve as a foundation for realizing the advantages of digital transformation. Consequently, this paper explores the role of digital management capability in enabling ethical leaders to advance ESG objectives. For ethical leaders, this requires not only strong ethical frameworks but also a robust understanding of digital tools and strategies to manage increasingly digitalized contexts (Tigre et al., 2025).

The dynamic capabilities micro-foundations perspective provides a suitable theoretical lens, focusing on how firms adapt to rapidly changing environments by developing new capabilities. This perspective helps in understanding how organizations build dynamic capabilities for digital transformation by examining the underlying individual-level micro-foundations (e.g., Teece et al., 1997; Warner & Wäger, 2018). Studies have highlighted that successful digital transformation requires organizations to develop a wide range of internal digital capabilities to respond rapidly to market needs. The micro-foundations perspective is specifically used to analyze the effect of individual digital capabilities on organizational growth, especially in SMEs (Scuotto et al., 2021). This framework allows a detailed investigation into the specific individual-level capabilities—such as digital management capabilities—that underpin an organization's ability to navigate digital change effectively (Ellström et al., 2021; Teece, 2007, 2017; Warner & Wäger, 2018). By examining the micro-foundations, a deeper understanding of how capabilities are built, integrated, and reconfigured to achieve strategic objectives in the digital age can be gained (Teece, 2007; Teece et al., 1997).

Although digital transformation is critical for SMEs, research on the individual-level capabilities and qualities driving this process remains limited, most studies have emphasized large enterprises (Cenamor et al., 2019; Garzoni et al., 2020). Evidence on the digital transformation process in SMEs is particularly scarce. Addressing this gap, we focus on individual-level micro-foundations and explore how decision-makers in SMEs deploy their capabilities and qualities to navigate and lead digitalization process effectively and, most importantly, ethically (Cortellazzo et al., 2019).

Building on the importance of ethical leadership in the digital era, this paper seeks to answer the research question: "What specific digital management capability enables ethical leaders to effectively achieve ESG objectives in the digital era?" This question aims to explore the essential skills, knowledge, and strategic approaches that ethical leaders must employ to leverage digital technologies for sustainable and responsible performance (Tigre et al., 2025).

## 2  Literature Review and Hypothesis Development

Dynamic capabilities— the capacity to integrate, build, and reconfigure competences in response to environmental change— are central to sustaining competitive advantage in dynamic contexts (Teece et al., 1997; Teece 2017). The micro-foundations approach posits that macro-level organizational phenomena, such as dynamic capabilities, are best understood by examining the underlying individual-level actions and interactions (Abell et al., 2008; Helfat & Peteraf, 2015). Scholars have increasingly adopted this approach to understand how individual-level (e.g., managerial-level) and other micro factors influence dynamic capabilities (Akter et al., 2021). It provides a means to explain at an individual level, focusing on the quality and capabilities of individual decision-makers and top management within organizations (Mahringer & Renzl, 2018). Focusing on micro-foundations— particularly digital management capability and leadership styles—yields insights into strategic change and sustainability performance in SMEs (Teece, 2007, 2017).

A growing body of evidence suggests that digital transformation is linked to improved ESG performance (Shin et al., 2015). Digital transformation plays a crucial role in reshaping business models and management mechanisms, driving gains in green technological innovation, resource allocation efficiency, and pollution reduction (Witschel et al., 2019). Furthermore, digital management capability contributes to enhanced transparency, better information processing, and stronger stakeholder

relationships, which are crucial for leaders to improve social performance and cultivate a transparent governance environment (Lu et al., 2024; Wei & Zheng, 2024). Therefore, we posit that:

*H1: Digital management capability is positively related to ESG performance.*

Digital management capability, in this context, refers to the systematic use of processes and technologies to acquire, organize, store, retrieve, and disseminate digital information and expertise relevant to a leader's role (Jafari-Sadeghi et al., 2023). Such capability equips ethical leaders with timely access to ethical frameworks, regulatory guidelines, best practices, and real-time risk data, enabling informed and transparent decisions in digital dilemmas, e.g., data privacy, algorithmic bias, and AI (Cortellazzo et al., 2019; Kidwell & Sprague, 2009). Digital tools also support the dissemination of ethical policies and organizational values, promoting transparency, consistent ethical conduct, and accountability—thus strengthening ethical culture. Collaborative platforms and internal knowledge bases further facilitate leaders' sharing of ethical insights and compliance requirements (Huang & Paterson, 2017). Therefore, we posit that:

*H2: Digital management capability is positively related to ethical leadership.*

Ethical leaders are pivotal in guiding organization's responses to ESG challenges (Brown et al., 2005; Cortellazzo et al., 2019). Ethical leadership is consistently associated with stronger corporate social responsibility (CSR) (Nguyen et al., 2019; Ullah et al., 2019), which underpins ESG performance. Leaders who prioritize ethical conduct naturally steer their organizations towards greater social responsibility. They serve as role models and communicators of values, creating an environment where adherence to ESG principles, particularly the social dimension (e.g., employee welfare, community engagement), is encouraged (Nguyen et al., 2019). This leadership style also enhances employee engagement in CSR activities and fosters a positive, ethical work climate (Kalshoven et al., 2011), leading to improved performance across environmental, social, and governance dimensions. Therefore, we posit that:

*H3: Ethical leadership is positively related to ESG performance.*

Ethical leaders in SMEs act as a critical conduit, translating digital management capability into tangible ESG outcomes by ensuring that technological advancements are deployed responsibly and aligned with organizational moral values (Su & Hahn, 2022). Specifically, ethical leaders with strong digital management capability can leverage digital tools to embed ethical considerations into ESG strategy design and execution, using data-driven insights for equitable and sustainable decision-making rather than solely for-profit maximization. They foster an environment where digital management tools are utilized to enhance transparency, stakeholder engagement, and accountability in ESG reporting, thereby building trust and legitimacy (Shin et al., 2015). Furthermore, they proactively guide the application of digital management capabilities to not only monitor and report ESG performance but also to identify and mitigate ethical risks associated with digital transformation, such as data privacy concerns or algorithmic bias (Cortellazzo et al., 2019; Kidwell & Sprague, 2009). This mediating role is particularly salient in SMEs, where leaders are the principal decision-makers in designing strategies to reinforce operational efficiency and ethical commitments, resulting in more impactful ESG performance (Nguyen et al., 2019; Ullah et al., 2019). Therefore, we posit that:

*H4: Ethical leadership mediates the relationship between digital management capability and ESG performance*

Digital management capability amplifies the positive effect of ethical leadership on ESG by providing tools and infrastructure to systematize ethical principles across all organizational functions (Jafari-Sadeghi et al., 2023). This capability enables ethical leaders to meticulously track, analyze, and report ESG metrics, fostering data-driven decisions aligned with ethical standards and greater accountability (Robinson et al., 2011). This enables leaders to monitor compliance with ethical

guidelines in real-time, identify potential risks, and foster a culture where ethical considerations are integral to digital transformation initiatives (Vial, 2021). Moreover, the digital management capability of ethical leaders facilitates the efficient dissemination of ethical policies and training, ensuring that all employees are aware of and adhere to the organization's ethical framework. They also support the integration of ESG criteria into supply chain management, product development, and customer relations, extending the ethical leader's impact beyond internal operations (Scuotto et al., 2024). This digital enablement enables a more comprehensive and data-driven approach to achieving ESG objectives, transforming ethical intentions into measurable outcomes. This enhanced capability for data-driven decision-making and transparency further strengthens stakeholder trust and regulatory compliance, directly contributing to improved ESG performance (Ferdig, 2007; Lourenco et al., 2012). Therefore, we posit that:

***H5: Digital management capability positively moderates the relationship between ethical leadership and ESG performance***
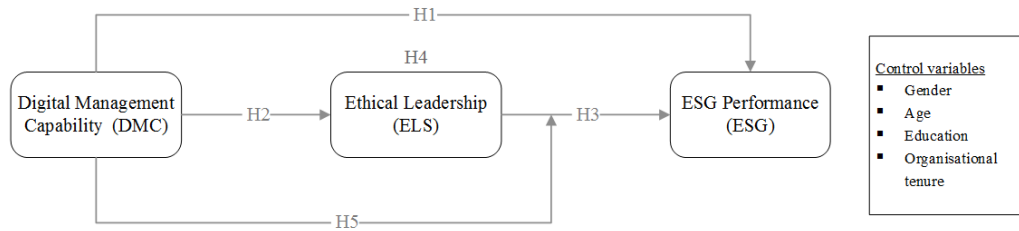


**Figure 1:** The conceptual framework

# 3   Empirical Analysis

The study collected data from 357 Chinese SMEs, thus ensuring well-informed responses aligned with our research objectives. All variables were carefully adapted and refined from prior literature to fit the specific SME context. The subsequent sections outline the methodology employed and present the key findings, addressing the proposed hypotheses through statistical analysis.

## 3.1   Measurement Model Assessment

Following Hair et al. (2021) guidelines, all indicator factor loadings, composite reliability (CR), and average variance extracted (AVE) values of key constructs—ethical leadership, digital management capability, and ESG performance—exceeded conventional thresholds, confirming convergent validity and reliability. Discriminant validity was assessed based on the criteria of Heterotrait-Monotrait (HTMT) ratios and Fornell and Larcker criterion.

| Construct/Item | VIF | Outer loading |
|---|---|---|
| ***Digital management capability (DMC)*** α = 0.928; CR = 0.944; AVE = 0.737 | | |
| 1.   Being sensitive to information about technological changes in the marketplace | 2.280 | 0.818 |
| 2.   Working in partnership with international stakeholders towards technical knowledge acquisition. | 2.426 | 0.816 |
| 3.   Obtaining information from specialized market surveys | 3.066 | 0.864 |
| 4.   Using of specific techniques or technology to disseminate knowledge. | 3.040 | 0.872 |

| | | |
|---|---|---|
| 5. Commitment towards disseminating the latest (digital) knowledge at the workplace | 3.547 | 0.893 |

**Ethical leadership  (ELS)**

**People orientation (PO)** α = 0.881; CR = 0.914; AVE = 0.680

| | | |
|---|---|---|
| 6. is interested in how I feel and how I am doing | 1.668 | 0.728 |
| 7. takes time for personal contact | 2.391 | 0.844 |
| 8. pays attention to my personal needs | 2.637 | 0.866 |
| 9. takes time to talk about work-related emotions | 2.554 | 0.859 |
| 10. is genuinely concerned about my personal development | 2.116 | 0.819 |

**Fairness (FN)** α = 791; CR = 0.867; AVE = .687

| | | |
|---|---|---|
| 11. holds me accountable for problems over which I have no control (-ve) | 1.682 | 0.721 |
| 12. pursues his/her own success at the expense of others (-ve) | 1.856 | 0.902 |
| 13. manipulates subordinates (-ve) | 1.562 | 0.852 |

**Power sharing (PS) )** α = 0.723; CR = .845; AVE = .646

| | | |
|---|---|---|
| 14. seeks advice from subordinates concerning organizational strategy | 1.638 | 0.843 |
| 15. will reconsider decisions on the basis of recommendations by those who report to him/her | 1.717 | 0.859 |
| 16. delegates challenging responsibilities to subordinates. | 1.240 | 0.701 |

**Concern on sustainability (CS)** α = 0.900; CR = .938; AVE = .834

| | | |
|---|---|---|
| 17. would like to work in an environmentally friendly manner | 2.465 | 0.891 |
| 18. shows concern for sustainability issues | 3.583 | 0.936 |
| 19. stimulates recycling of items and materials in our department. | 2.938 | 0.912 |

**Ethical guidance (EG)** α = 0.917; CR = .942; AVE = .801

| | | |
|---|---|---|
| 20. clearly explains integrity related codes of conduct | 2.797 | 0.889 |
| 21. ensures that employees follow codes of integrity | 3.136 | 0.906 |
| 22. clarifies the likely consequences of possible unethical behavior by myself and my colleagues | 3.087 | 0.897 |
| 23. compliments employees who behave according to the integrity guidelines | 2.821 | 0.889 |

**Role clarification (RC)** α = 0.899; CR = .930; AVE = .768

| | | |
|---|---|---|
| 24. indicates what the performance expectations of each group member are | 2.262 | 0.856 |
| 25. explains what is expected of me and my colleagues | 2.500 | 0.870 |
| 26. clarifies priorities | 3.165 | 0.899 |
| 27. clarifies who is responsible for what | 2.774 | 0.881 |

**Integrity (IT)** α = 0.884; CR = .928; AVE = .812

| | | |
|---|---|---|
| 28. keeps his / her promises | 2.485 | 0.893 |
| 29. can be relied on to honour his/her commitments | 3.130 | 0.928 |
| 30. always keeps his/her words | 2.293 | 0.881 |

**ESG performance (ESG)**

**Environment responsibility (ER)** α = 0.895; CR = 0.935; AVE = 0.827

| | | |
|---|---|---|
| 31. implements corporate initiatives aimed at green innovation related to products or processes | 2.460 | 0.891 |
| 32. implements initiatives to reduce energy consumption | 3.261 | 0.924 |
| 33. overall emphasize environmental responsibility and support related initiatives | 2.710 | 0.912 |

**Social responsibility (SR)** α = 0.926; CR = 0.953; AVE = 0.871

| | | |
|---|---|---|
| 34. implements corporate initiatives aimed at green innovation related to products or processes | 3.336 | 0.927 |
| 35. implements initiatives to reduce energy consumption | 3.708 | 0.935 |
| 36. overall emphasize environmental responsibility and support related initiatives | 3.721 | 0.937 |

**Governance responsibility (GR)** α = 0.908; CR = 0.956; AVE = 0.916

| | | |
|---|---|---|
| 37. implements initiatives to improve the quality of its products, services, and processes, enhancing the company's image | 3.252 | 0.954 |
| 38. overall emphasize corporate governance responsibility and support related initiatives | 3.252 | 0.960 |

**Table 1:** Measurement items and validity assessments

## 3.2 Structural Model Assessment

To assess the overall fit of a structural model in PLS, several key statistical indicators are typically evaluated, including $R^2$, $Q^2$, and the Standardized Root Mean Square Residual (SRMR), all derived from PLS-SEM after 5000 bootstrap samples. Firstly, $R^2$ values quantify the in-sample predictive power by explaining the variance in the endogenous variables. Our $R^2$ values for ethical leadership and ESG performance, at 0.593 and 0.650, respectively, meet the acceptable threshold suggested by Falk and Miller (1992), which requires values equal to or exceeding 0.10. Secondly, the Stone-Geisser $Q^2$ value assesses the out-of-sample predictive relevance of each endogenous variable after PLS-SEM execution (Hair et al., 2017; Manley et al., 2021). With $Q^2$ values of 0.595 for ethical leadership and 0.558 for ESG performance, our model demonstrates moderate predictive power, as both values are positive. An SRMR of 0.05, which is below the 0.08 threshold, shows the model fits well for theory testing. This robust model fit confirms the predictability and validity of the structural model.

To address potential common method bias, Harman's one-factor test was conducted to examine the issue of common method variance (CMV) (Harman, 1967). After loading all latent variables, the factor with the largest value explained 14.04% of the variance, which is less than 50% threshold, confirming the absence of substantial common method bias.

## 3.3 Hypothesis Testing

We ran PLS-SEM 4.0 bootstrapping with 5000 samples to test the hypotheses posited. PLS path coefficients of the structural model are reported in Table 2.

H1 proposes that digital management capability is positively related to ESG performance. Our analysis confirms this hypothesis, revealing a significant positive association between digital management capabilities and ESG performance ($\beta = 0.469$, t = 7.530, $p < 0.001$). H2 states that digital management capability is positively related to ethical leadership. Our result revealed this positive relationship ($\beta = 0.774$, t=27.403, p = 0.000), supporting H2. H3 is supported, as the results show that ethical leadership is positively related to ESG performance ($\beta = 0.421$, t = 7.130, p = 0.000).

Turning to the mediating and moderating hypotheses, H4 proposes that ethical leadership mediates the relationship between digital management capabilities and ESG performance. The bootstrapping analysis with 5,000 samples confirmed that this indirect effect is statistically significant, substantiating the mediating role of ethical leadership ($\beta = 0.326$, t = 6.565, p = 0.000). Finally, our results for H5 examining the moderating effect of digital management capability on the relationship between ethical leadership and ESG performance yield a statistically significant outcome, indicating that this relationship is significantly strengthened by the level of digital management capability within the surveyed SMEs ($\beta = 0.106$, t = 3.454, p = 0.001).

| Hypothesis/Path | Standardized estimate | Standard deviation | *t*-value | Result Supported |
|---|---|---|---|---|
| *Direct effect* | | | | |
| H1: DMC → ESG | 0.469 | 0.062 | 7.530 *** | Supported |
| H2: DMC → ELS | 0.774 | 0.028 | 27.403 *** | Supported |
| H3: ELS → ESG | 0.421 | 0.059 | 7.130 *** | Supported |
| *Mediation effect* | | | | |
| H4: DMC → ELS → ESG | 0.326 | 0.050 | 6.565 *** | Supported |
| *Moderation effect* | | | | |
| H5: DMC x ELS → IP | 0.106 | 0.031 | 3.454 *** | Supported |
| *Effect of control variables* | | | | |
| Age → ESG | 0.039 | 0.035 | 1.130 | |
| Gender → ESG | 0.049 | 0.031 | 1.566 | |
| Education → ESG | -0.023 | 0.031 | 0.749 | |
| Organisational tenure → ESG | 0.026 | 0.034 | 0.758 | |

***p < .001, **p < 0.01, *p < .05

**Table 2:** PLS-SEM analysis results

# 4   Discussions

## 4.1   Theoretical Implications

This study highlights the crucial role of ethical leadership, combined with digital management capabilities, in enhancing ESG performance within SMEs (Tigre et al., 2025). While digital management capability directly influences ESG performance, ethical leadership serves as a key mediator aligning with technological advancements with sustainable practices to achieve comprehensive ESG goals (Shin et al., 2015). Furthermore, the research reveals a significant moderating role of digital management capability, indicating that increased digital prowess amplifies the positive impact of ethical leadership on ESG outcomes (Canhoto et al., 2021; Ferdig, 2007). This is because leaders equipped with strong digital knowledge can more effectively leverage digital tools and strategies—such as those for environmental knowledge sharing, transparent ESG data collection and reporting, and technological innovation—to embed ethical considerations into ESG strategy development and implementation, thereby fostering sustainable performance (Ferdig, 2007; Lourenco et al., 2011). This suggests that an integrated approach, where ethical considerations guide the implementation and utilization of digital tools, is most effective for SMEs aiming to improve their sustainability practices. This nuanced investigation into how ethical leadership and digital management capability interact within the context of ESG performance enriches the dynamic capabilities micro-foundations approach by demonstrating leadership's impact on organizational behavior and its response to ESG challenges (Cortellazzo et al., 2019; Henisz et al., 2019; Teece 2007).

This study contributes to the theory by employing the dynamic capabilities micro-foundations approach to illuminate how ethical leadership equips itself to achieve ESG performance in the digital era (Teece, 2007, 2017). By examining the individual-level capability of ethical leaders, we extend the micro-foundations perspective to encompass the human-specific aspects crucial for navigating digital transformation. Specifically, our findings highlight how ethical leaders, serving as role models and

communicators of values, create an environment that fosters ESG adherence, thereby bridging the gap between technological capacity and ethical and sustainable practices within organizations (Cortellazzo et al., 2019). Moreover, ethical leadership demonstrably reduces integrity violations and fosters a culture where ESG principles are prioritized, thereby reinforcing the positive impact of digitalization on sustainability (Kidwell & Sprague, 2009). Specifically, our findings suggest that ethical leaders can leverage their digital management capability to embed ethical considerations into every stage of ESG strategy development and implementation, ensuring equitable and sustainable decision-making. This paper thus underscores the suitability of the dynamic capabilities micro-foundations framework for comprehensively understanding how individual ethical leaders, equipped with digital competencies, strategically drive superior ESG performance within organizations, particularly in the context of SMEs.

## 4.2   Practical Implications

 For managers seeking to embed responsible and sustainable practices, these findings provide concrete guidance. SMEs are encouraged to invest in leadership development programs that simultaneously strengthen ethical leadership and digital management competencies. Training initiatives should focus on advancing digital literacy and equipping leaders to utilize digital tools, while also integrating specific ethical decision-making frameworks into their digital strategies to ensure all technology adoption aligns with core moral principles.

Leaders play a crucial role in setting and upholding ethical guidelines for the implementation and use of technology across the organization. Embracing an ethics-by-design approach to digital transformation is shown to be particularly effective for supporting sustainability and governance, which in turn can facilitate lasting competitive advantage.

## 4.3   Limitation and Future Research

This study has several limitations that should be acknowledged. First, the research sample is restricted to Chinese SMEs which may limit the generalizability of the findings to other cultural or organizational contexts. Specifically, the collectivist nature of Chinese culture emphasizes group well-being, which can lead to stronger pro-environmental attitudes and lower tolerance for unethical practices among both consumers and managers (Chan et al., 2024). As a result, the ethical leadership behaviors and ESG strategies seen in Chinese SMEs may be shaped by these cultural values. This makes it difficult to directly generalize these findings to Western or other cultural contexts, where different ethical frameworks and individualistic values may dominate (Yuan et al., 2023). Second, cross-sectional design restricts the ability to infer causality between digital management capability, ethical leadership, and ESG performance. Longitudinal studies would provide greater insight into how these relationships evolve over time. Third, all measures are based on self-reported data, raising potential concerns about common method bias, despite efforts to adapt and refine survey items from established literature.

Future research could address these limitations by expanding the sample to include diverse regions and organization types beyond Chinese SMEs, thereby enhancing external validity. Longitudinal and experimental research designs are suggested to better capture dynamic changes and causal linkages among digital management capability, ethical leadership, and ESG outcomes. Furthermore, incorporating multi-source data—such as objective ESG performance metrics, employee perspectives, and third-party assessments—could mitigate common method bias and provide a more holistic view of organizational practices. Additional studies could also explore the micro-foundations framework in different digital transformation contexts and examine potential moderating factors (such as firm size, industry, or regulatory environment) to extend the theoretical scope.

# 5  Conclusion

This study investigated the relationships among ethical leadership, digital management capability, and ESG performance within SMEs, providing notable theoretical and practical insights. The findings emphasize the imperative for organizations, particularly their leaders, to incorporate ethical frameworks into digital transformation strategies. Such integration is vital for effectively navigating contemporary business complexities and achieving sustainable growth. Adopting this comprehensive approach enables SMEs to enhance sustainability, competitive advantage, and overall performance in an increasingly digitized environment.

# References

Abell, P., Felin, T., & Foss, N. J. (2008). Building micro-foundations for the routines, capabilities, and performance links. *Managerial and Decision Economics*, *29*(6), 489-502.

Akter, S., Wamba, S. F., Mariani, M., & Hani, U. (2021). How to build an AI climate-driven service analytics capability for innovation and performance in industrial markets?. *Industrial Marketing Management*, *97*, 258-273.

Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes*, *97*(2), 117-134.

Canhoto, A. I., Quinton, S., Pera, R., Molinillo, S., & Simkin, L. (2021). Digital strategy aligning in SMEs: A dynamic capabilities perspective. *The Journal of Strategic Information Systems*, *30*(3), 101682.

Cenamor, J., Parida, V., & Wincent, J. (2019). How entrepreneurial SMEs compete through digital platforms: The roles of digital platform capability, network capability and ambidexterity. *Journal of Business Research*, *100*, 196-206.

Chan, R. Y., Sharma, P., Alqahtani, A., Leung, T. Y., & Malik, A. (2024). Mediating role of cultural values in the impact of ethical ideologies on Chinese consumers' ethical judgments. *Journal of Business Ethics*, *191*, 865-884.

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology, 10*, 1938.

Ellström, D., Holtström, J., Berg, E., & Josefsson, C. (2021). Dynamic capabilities for digital transformation. *Journal of Strategy and Management*, *15*(2), 272-286

Falk, R. Frank, and Nancy B. Miller. *A primer for soft modeling*. University of Akron Press, 1992.

Fang, M., Nie, H., & Shen, X. (2023). Can enterprise digitization improve ESG performance?. *Economic Modelling*, *118*, 106101.

Ferdig, M. A. (2007). Sustainability leadership: Co-creating a sustainable future. *Journal of Change Management*, *7*(1), 25-35.

Garzoni, A., De Turi, I., Secundo, G., & Del Vecchio, P. (2020). Fostering digital transformation of SMEs: a four levels approach. *Management Decision*, *58*(8), 1543-1562.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Evaluation of reflective measurement models. In *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (pp. 75-90). Cham: Springer International Publishing.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107-123.

Harman, H. H. (1967). *Modern factor analysis (2nd ed.)*. Chicago: University of Chicago Press.

Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the microfoundations of dynamic capabilities. *Strategic Management Journal*, *36*(6), 831-850.

Henisz, W., Koller, T., & Nuttall, R. (2019). Five ways that ESG creates value. *McKinsey Quarterly*, *4*, 1-12.

Huang, L., & Paterson, T. A. (2017). Group ethical voice: Influence of ethical leadership and impact on ethical performance. *Journal of Management*, *43*(4), 1157-1184.

Jafari-Sadeghi, V., Mahdiraji, H. A., Alam, G. M., & Mazzoleni, A. (2023). Entrepreneurs as strategic transformation managers: Exploring micro-foundations of digital transformation in small and medium internationalisers. *Journal of Business Research*, *154*, 113287.

Kalshoven, K., Den Hartog, D. N., & De Hoogh, A. H. (2011). Ethical leadership at work questionnaire (ELW): Development and validation of a multidimensional measure. *The Leadership Quarterly*, *22*(1), 51-69.

Kidwell, R. E., & Sprague, R. (2009). Electronic surveillance in the global workplace: Laws, ethics, research and practice. *New Technology, Work and Employment, 24*(2), 194-208.

Liang, Y., Lee, M. J., & Jung, J. S. (2022). Dynamic capabilities and an ESG strategy for sustainable management performance. *Frontiers in Psychology*, *13*, 887776.

Lourenço, I. C., Branco, M. C., Curto, J. D., & Eugénio, T. (2012). How does the market value corporate sustainability performance?. *Journal of Business Ethics*, *108*(4), 417-428.

Lu, Y., Xu, C., Zhu, B., & Sun, Y. (2024). Digitalization transformation and ESG performance: Evidence from China. *Business Strategy and the Environment*, *33*(2), 352-368.

Lyu, Y., Liu, X., & Lu, Y. (2025). Digital transformation as an ESG performance catalyst with insights from China's external governance. *Scientific Reports*, *15*(1), 32589.

Mahringer, C. A., & Renzl, B. (2018). Entrepreneurial initiatives as a microfoundation of dynamic capabilities. *Journal of Accounting & Organizational Change*, *14*(1), 61-79

Manley, S. C., Hair Jr, J. F., Williams Jr, R. I., & McDowell, W. C. (2021). Essential new PLS-SEM analysis methods for your entrepreneurship analytical toolbox. *International Entrepreneurship and Management Journal*, *17*(4), 1805-1825.

Nguyễn, X. H., Doan, X. T., & Tran, H. L. (2019). CEO ethical leadership, corporate social responsibility and financial performance in the industrial revolution 4.0: Evidence from garment and textile industry. *Management Science Letters*, *9*(13), 2433-2442.

Robinson, M., Kleffner, A., & Bertels, S. (2011). Signaling sustainability leadership: Empirical evidence of the value of DJSI membership. *Journal of Business Ethics*, *101*(3), 493-505.

Scuotto, V., Nicotra, M., Giudice, M. D., Krueger, N., & Gregori, G. L. (2021). A microfoundational perspective on SMEs' growth in the digital transformation era. *Journal of Business Research*, *129*, 382-392.

Shin, Y., Sung, S. Y., Choi, J. N., & Kim, M. S. (2015). Top management ethical leadership and firm performance: Mediating role of ethical and procedural justice climate. *Journal of Business Ethics, 129*(1), 43-57.

Su, W., & Hahn, J. (2022). A multi-level study on whether ethical climate influences the affective well-being of millennial employees. *Frontiers in Psychology*, *13*, 1028082.

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319-1350

Teece, D. J. (2017). Business models and dynamic capabilities. *Long Range Planning*, *51*(1), 40-49.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509-533.

Tigre, F. B., Henriques, P. L., & Curado, C. (2025). The digital leadership emerging construct: a multi-method approach. *Management Review Quarterly*, *75*(1), 789-836.

Ullah, M. S., Muttakin, M. B., & Khan, A. (2019). Corporate governance and corporate social responsibility disclosures in insurance companies. *International Journal of Accounting & Information Management*, *27*(2), 284-300.

Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing Digital Transformation*, 13-66.

Warner, K., & Wäger, M. (2018). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning, 52*(3), 326-349.

Wei, J., & Zheng, Q. (2024). Environmental, social and governance performance: dynamic capabilities through digital transformation. *Management Decision*, *62*(12), 4021-4049.

Witschel, D., Döhla, A., Kaiser, M., Voigt, K. I., & Pfletschinger, T. (2019). Riding on the wave of digitization: Insights how and under what settings dynamic capabilities facilitate digital-driven business model change. *Journal of Business Economics*, *89*(8), 1023-1095.

Xu, J., & Yin, J. (2024). Digital transformation and ESG performance: The chain mediating role of technological innovation and financing constraints. *Finance Research Letters, 71*, 106387

Yuan, L., Chia, R., & Gosling, J. (2023). Confucian virtue ethics and ethical leadership in modern China. *Journal of Business Ethics*, *182*(1), 119-133.