

Reconfiguring Strategic Decision Making through Dynamic Managerial Capabilities in Conditions of Digital Uncertainty

A Agung Feinnudin^{1*}, Puji Wahono², Sri Indah Nikensari³

Universitas Negeri Jakarta, Indonesia

Corresponding Author: A Agung Feinnudin a.agung@mhs.unj.ac.id

ARTICLE INFO

Keywords: Dynamic Managerial Capabilities; Strategic Decision Making; Digital Uncertainty; Strategic Management; Digital Transformation

Received : 15 August

Revised : 20 September

Accepted: 06 October

©2026 Feinnudin, Wahono, Nikensari:

This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

The rapid advancement of digital technologies has increased organizational uncertainty, requiring adaptive strategic decision-making processes. This study examines the influence of *dynamic managerial capabilities* on *strategic decision making* and the role of *digital uncertainty* in shaping this relationship. Using a mixed-method approach with a sequential explanatory design, this research involved a quantitative survey of 150 managers and organizational decision-makers, followed by in-depth interviews with 15 key informants. Quantitative data were analyzed using moderated regression analysis, while qualitative data were examined through thematic analysis. The findings reveal that *dynamic managerial capabilities* positively influence strategic decision-making through managerial abilities to recognize changes, utilize experience, and build networks. Digital uncertainty strengthens the relationship between dynamic managerial capabilities and strategic decision-making effectiveness. This study contributes to strategic management theory and provides practical insights for adaptive digital transformation strategies

INTRODUCTION

The rapid advancement of digital technologies has transformed the global business environment into a more dynamic, complex, and unpredictable landscape. The emergence of digital transformation, artificial intelligence, data analytics, and automation has created significant opportunities for innovation while simultaneously increasing strategic uncertainty for organizations in determining their future directions. Under these conditions, organizations require not only technological investments but also managerial capabilities to interpret environmental changes, utilize available information, and make adaptive strategic decisions. The increasing turbulence of the business environment indicates that traditional static decision-making approaches are becoming insufficient in addressing the challenges of digital disruption (Vial, 2021). Furthermore, digitalization requires organizations to develop new capabilities that enable continuous adaptation and sustainable competitive advantage (Warner & Wäger, 2020).

From a strategic management perspective, organizational survival in uncertain environments is closely associated with the concept of dynamic capabilities, particularly dynamic managerial capabilities that enable managers to sense, seize, and transform organizational resources in response to external changes. Dynamic managerial capabilities emphasize that managers are not merely decision-makers but also strategic actors who actively reshape organizational resources and capabilities according to environmental demands. Previous studies have demonstrated that managerial capabilities significantly influence the success of digital transformation because strategic decisions are strongly shaped by leaders' knowledge, experience, and ability to understand technological changes (Mikalef et al., 2020). Moreover, the alignment between information technology flexibility and dynamic capabilities has been shown to enhance organizational adaptability in responding to rapidly changing business environments (van de Wetering et al., 2021).

Although research on digital transformation and dynamic capabilities has grown substantially, a research gap remains regarding how managerial capabilities specifically influence strategic decision-making processes under conditions of digital uncertainty. Previous studies have predominantly focused on the impact of digital transformation on organizational performance, technological readiness, or innovation outcomes, while the cognitive and behavioral mechanisms through which managers reshape strategic decisions remain relatively underexplored (Kraus et al., 2021). Warner and Wäger (2020) highlighted the importance of digital dynamic capabilities; however, their study did not extensively explain how strategic decisions are reconfigured when organizations encounter technological uncertainty. Therefore, further investigation is required to integrate the perspective of dynamic managerial capabilities with strategic decision-making processes to understand how organizations can effectively respond to digital disruption.

Furthermore, prior research suggests that digital uncertainty represents a critical environmental factor influencing the relationship between organizational capabilities and strategic effectiveness. In rapidly changing technological

environments, managers must evaluate incomplete information, anticipate potential risks, and develop flexible strategic responses. Verhoef et al. (2021) emphasized that digital transformation involves not only technological adoption but also fundamental changes in organizational structures, strategies, and decision-making processes. Similarly, Al-Moaid and Almarhdi (2024) demonstrated that dynamic capabilities play an essential role in successful digital transformation by enabling organizations to manage continuous change. However, existing studies have not sufficiently examined how digital uncertainty strengthens the importance of managerial capabilities in shaping strategic decision-making processes.

Based on this research gap, this study aims to examine the influence of dynamic managerial capabilities on strategic decision-making and investigate the role of digital uncertainty in shaping the relationship between these variables. This research adopts a mixed-method approach to obtain a comprehensive understanding of the relationship between managerial capabilities, digital uncertainty, and strategic decision-making processes. The quantitative phase analyzes the relationship among variables through a survey involving 150 respondents consisting of managers and organizational decision-makers, while the qualitative phase explores managerial experiences through in-depth interviews with 15 key informants. This integrative approach is expected to provide deeper insights into how organizations reconfigure strategic decisions in response to continuous digital changes (Gong & Ribiere, 2021).

This study contributes to both theoretical development and practical implementation in the field of strategic management. Theoretically, this research extends the dynamic capabilities perspective by positioning managerial capabilities as a key mechanism underlying strategic decision-making processes in conditions of digital uncertainty. It also enriches existing knowledge regarding the role of human factors in successful digital adaptation beyond technological considerations. Practically, the findings provide valuable insights for organizations and business leaders in developing adaptive managerial capabilities, designing flexible strategies, and improving decision-making effectiveness amid continuous technological transformation (Kane et al., 2021). Therefore, this study contributes to addressing the challenges faced by modern organizations in achieving sustainable competitive advantage through more dynamic and adaptive strategic decision-making.

LITERATURE REVIEW

Strategic Decision Making in Dynamic Business Environments

Strategic decision making is a fundamental element in strategic management because it determines how organizations allocate resources, respond to environmental changes, and maintain competitive advantage. In increasingly complex and uncertain business environments, strategic decisions are no longer based solely on stable internal and external analyses but require organizations to manage ambiguity, limited information, and rapid technological changes. Digital transformation has intensified the complexity of strategic decision-making because managers must evaluate multiple strategic alternatives under conditions of high uncertainty and unpredictability. Bouncken et al. (2021)

argued that digital business environments require organizations to enhance strategic flexibility in order to continuously adapt their business models and decision-making processes. Furthermore, Mikalef et al. (2021) emphasized that the value of digital information depends not only on technological availability but also on managerial capability to interpret information and transform it into strategic actions. Therefore, strategic decision making in the digital era requires a dynamic approach that integrates managerial judgment, organizational learning, and continuous adaptation.

Dynamic Managerial Capabilities as a Strategic Management Perspective

Dynamic managerial capabilities (DMCs) represent an extension of the dynamic capabilities perspective, emphasizing the role of managers as key actors in sensing environmental changes, seizing opportunities, and transforming organizational resources. Unlike traditional capability perspectives that focus primarily on firm-level resources, DMCs highlight how managerial cognition, experience, and social relationships influence strategic change and organizational adaptation. Helfat and Peteraf (2021) explained that managerial capabilities are essential because strategic transformation is fundamentally shaped by the decisions and interpretations of individuals who possess authority within organizations. Dynamic managerial capabilities consist of three important dimensions: managerial cognition, managerial human capital, and managerial social capital. Managerial cognition reflects the ability of managers to interpret environmental changes, managerial human capital represents knowledge and experience that support strategic actions, while managerial social capital refers to networks that provide access to valuable information and external resources. Heubeck (2024) further emphasized that DMCs play an important role in explaining how managers facilitate organizational renewal through learning processes and resource reconfiguration. Therefore, this study adopts Dynamic Capabilities Theory as the primary theoretical foundation to explain how managerial capabilities enable strategic decision adaptation under digital uncertainty.

Digital Uncertainty and Strategic Adaptation

Digital uncertainty refers to a condition in which organizations face difficulties in predicting technological developments, customer behavior changes, and competitive dynamics caused by rapid digital innovation. Unlike conventional environmental uncertainty, digital uncertainty is characterized by accelerated technological evolution, disruptive innovations, and interconnected business ecosystems that continuously reshape competitive landscapes. Kraus et al. (2022) stated that digital transformation increases the need for organizational flexibility because technological changes can significantly alter industry structures, customer expectations, and strategic priorities. In such conditions, organizations require more than technological adoption; they need strategic capabilities that enable them to interpret changes and redesign their strategies effectively. Ciriello et al. (2021) highlighted that successful digital transformation depends on integrating digital technologies with organizational decision-making processes and managerial capabilities. Therefore, digital uncertainty represents

an important contextual factor that increases the necessity for managers to develop adaptive capabilities, evaluate incomplete information, and formulate flexible strategic responses.

Relationship between Dynamic Managerial Capabilities and Strategic Decision Making

The relationship between dynamic managerial capabilities and strategic decision making can be understood through the perspective that strategic decisions emerge from managerial abilities to interpret situations, process information, and direct organizational change. Managers with strong dynamic capabilities are more capable of identifying opportunities, recognizing threats, and selecting appropriate strategic alternatives in changing environments. Foss and Klein (2020) explained that strategic actions under uncertainty depend heavily on managerial judgment because decision-makers often operate with incomplete information and unpredictable future conditions. Furthermore, Kump et al. (2021) demonstrated that managerial abilities to integrate new knowledge and facilitate organizational learning contribute significantly to firms' capacity to respond effectively to environmental changes. These findings suggest that dynamic managerial capabilities provide the foundation for adaptive strategic decision making because they enable managers to continuously evaluate, modify, and reconfigure organizational strategies according to evolving circumstances.

Digital Uncertainty as a Moderating Context

Digital uncertainty does not merely represent an external challenge but also functions as a contextual condition that influences the effectiveness of managerial capabilities in strategic decision-making processes. In relatively stable environments, organizations may rely on established procedures and traditional decision-making mechanisms; however, under conditions of rapid digital disruption, stronger managerial capabilities are required to ensure strategic decisions remain relevant and effective. Bresciani et al. (2021) suggested that technological uncertainty increases the importance of dynamic capabilities because organizations must continuously adapt their resources, processes, and strategies to maintain competitiveness. Consequently, digital uncertainty may strengthen the relationship between dynamic managerial capabilities and strategic decision making by increasing the demand for managerial abilities related to environmental sensing, knowledge integration, and strategic adaptation. This perspective highlights that successful strategic decision making in the digital era depends not only on internal organizational resources but also on how effectively managerial capabilities are mobilized to respond to external uncertainty.

METHODOLOGY

Research Design and Approach

This study employs a mixed-method research approach using a sequential explanatory design to examine the relationship between dynamic managerial capabilities, strategic decision making, and digital uncertainty. The quantitative phase is conducted first to test the relationship among variables, followed by a qualitative phase to provide deeper explanations regarding managerial experiences and decision-making processes. This design is appropriate for investigating complex organizational phenomena because it combines statistical evidence with contextual understanding (Creswell & Plano Clark, 2023). The mixed-method approach enables this research to identify both the measurable effects of managerial capabilities and how these capabilities are applied in responding to digital uncertainty.

Population and Sampling Technique

The population of this study consists of managers, organizational leaders, and decision-makers involved in strategic planning and digital transformation initiatives. The research applies non-probability sampling using purposive sampling, as participants are selected based on specific criteria relevant to the research objectives (Palinkas et al., 2020). The quantitative phase involves 150 respondents who meet four criteria: (1) holding managerial or leadership positions, (2) having a minimum of three years of work experience, (3) being involved in strategic decision-making processes, and (4) working in organizations undergoing digital transformation. The qualitative phase involves 15 key informants, including chief executive officers, business owners, senior managers, digital transformation managers, and strategic planning managers, selected until data saturation is achieved (Hennink & Kaiser, 2022).

Data Collection and Research Instruments

Data collection is conducted through questionnaires and semi-structured interviews. The quantitative instrument uses a structured questionnaire adapted from previous studies on dynamic managerial capabilities, strategic decision making, and digital uncertainty. The variables are measured using a five-point Likert scale, covering managerial cognition, managerial human capital, managerial social capital, strategic decision-making effectiveness, and digital uncertainty. Instrument testing includes validity analysis and reliability testing using Cronbach's alpha, with values above 0.70 indicating acceptable internal consistency (Hair et al., 2021). The qualitative data are collected through semi-structured interviews focusing on how managers interpret digital uncertainty, utilize managerial capabilities, and adapt strategic decisions.

Research Procedure

The research procedure consists of several stages, beginning with literature review and development of the conceptual framework and research instruments. The quantitative stage is conducted by distributing questionnaires to 150 respondents, followed by statistical analysis to examine relationships among variables. Based on quantitative findings, interviews are conducted with

15 key informants to explore managerial perspectives and organizational practices. Finally, quantitative and qualitative findings are integrated to provide a comprehensive explanation of how dynamic managerial capabilities support strategic decision-making adaptation under digital uncertainty. The integration of both approaches strengthens research validity through complementary evidence (McKim, 2020).

Data Analysis Techniques

Quantitative data are analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 29, including descriptive statistics, validity testing, reliability testing, and moderated regression analysis. Moderated regression is applied to examine the direct influence of dynamic managerial capabilities on strategic decision making and the moderating role of digital uncertainty. Qualitative interview data are analyzed using thematic analysis supported by NVivo 14 software to identify key patterns and managerial perspectives. Thematic analysis is selected because it provides a systematic approach to identifying meaningful themes from qualitative data (Braun & Clarke, 2021). The final analysis integrates both quantitative and qualitative findings to develop a comprehensive understanding of strategic decision reconfiguration in digitally uncertain environments.

RESEARCH RESULTS

Respondent Characteristics

The quantitative analysis involved 150 respondents consisting of managers and organizational decision-makers who were involved in strategic planning and digital transformation initiatives. Respondent characteristics were analyzed based on gender, age, managerial position, work experience, and organizational sector to provide an overview of the research sample.

Table 1. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	89	59.3
	Female	61	40.7
Age	25–35 years	54	36.0
	36–45 years	63	42.0
	>45 years	33	22.0
Position	Middle Manager	78	52.0
	Senior Manager	42	28.0
	Director/Owner	30	20.0
Work Experience	3–5 years	38	25.3
	6–10 years	67	44.7
	>10 years	45	30.0

The respondent profile indicates that the majority of participants were middle-level managers (52%) with 6–10 years of professional experience (44.7%).

This composition shows that most respondents had sufficient organizational experience and involvement in strategic decision-making processes. The distribution of respondents reflects the research criteria requiring participants to have managerial responsibilities and experience in dealing with digital transformation initiatives.

Descriptive Statistics of Research Variables

The descriptive analysis was conducted to examine the mean values and standard deviations of the main research variables, including Dynamic Managerial Capabilities (DMC), Digital Uncertainty (DU), and Strategic Decision Making (SDM).

Table 2. Descriptive Statistics of Research Variables

Variable	Mean	Standard Deviation	Interpretation
Managerial Cognition	4.21	0.54	High
Managerial Human Capital	4.18	0.57	High
Managerial Social Capital	4.12	0.61	High
Dynamic Managerial Capabilities	4.17	0.55	High
Digital Uncertainty	3.89	0.68	Moderate-High
Strategic Decision Making	4.23	0.52	High

The results show that Strategic Decision Making obtained the highest mean value ($M = 4.23$), followed by Managerial Cognition ($M = 4.21$). Dynamic Managerial Capabilities recorded an overall mean score of 4.17, indicating that respondents perceived managerial adaptability, knowledge utilization, and networking capabilities as important factors in strategic decision-making processes. Meanwhile, Digital Uncertainty obtained a mean score of 3.89, indicating that organizations experienced considerable challenges related to technological changes and unpredictable digital environments.

Validity and Reliability Testing

Before hypothesis testing, validity and reliability analyses were conducted to ensure the consistency and accuracy of the measurement instruments.

Table 3. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Result
Managerial Cognition	5	0.862	Reliable
Managerial Human Capital	5	0.875	Reliable
Managerial Social Capital	5	0.841	Reliable
Dynamic Managerial Capabilities	15	0.903	Reliable
Digital Uncertainty	5	0.856	Reliable
Strategic Decision Making	6	0.891	Reliable

All variables obtained Cronbach's alpha values above 0.70, indicating that the research instruments demonstrated acceptable internal consistency. The

results confirm that all measurement items were reliable for further statistical analysis.

Moderated Regression Analysis

Moderated regression analysis was conducted to examine the influence of Dynamic Managerial Capabilities on Strategic Decision Making and the moderating effect of Digital Uncertainty.

Table 4. Moderated Regression Analysis Results

Relationship	Coefficient (β)	t-value	Sig.	Result
DMC $\rightarrow$ SDM	0.486	7.214	0.000	Supported
Digital Uncertainty $\rightarrow$ SDM	0.214	3.102	0.002	Supported
DMC $\times$ Digital Uncertainty $\rightarrow$ SDM	0.176	2.645	0.009	Supported

Model Summary

R	R ²	Adjusted R ²	F-value	Sig.
0.712	0.507	0.497	50.238	0.000

The regression results indicate that Dynamic Managerial Capabilities have a positive and significant influence on Strategic Decision Making ($\beta = 0.486$; $p < 0.001$). The results also show that Digital Uncertainty significantly affects Strategic Decision Making ($\beta = 0.214$; $p = 0.002$). Furthermore, the interaction effect between Dynamic Managerial Capabilities and Digital Uncertainty is statistically significant ($\beta = 0.176$; $p = 0.009$), indicating that Digital Uncertainty strengthens the relationship between managerial capabilities and strategic decision-making effectiveness.

The model summary indicates that the regression model has a strong explanatory capability, with an R-value of 0.712 and an R² value of 0.507, meaning that 50.7% of the variance in Strategic Decision Making can be explained by Dynamic Managerial Capabilities and Digital Uncertainty, while the remaining variance is explained by other factors outside the research model. The model is statistically significant ($F = 50.238$; $p < 0.001$), confirming that the proposed model provides an adequate explanation of strategic decision-making outcomes.

Hypothesis Testing Results

Table 5. Hypothesis Testing

Hypothesis	Statement	Result
H1	Dynamic Managerial Capabilities positively influence Strategic Decision Making	Supported
H2	Managerial Cognition positively influences Strategic Decision Making	Supported
H3	Managerial Human Capital positively influences Strategic Decision Making	Supported
H4	Managerial Social Capital positively influences Strategic Decision Making	Supported

Hypothesis	Statement	Result
H5	Digital Uncertainty strengthens the relationship between DMC and Strategic Decision Making	Supported

The hypothesis testing results demonstrate that all proposed hypotheses were supported. The findings indicate that managerial capabilities consisting of cognitive ability, knowledge experience, and social networks contribute significantly to improving strategic decision-making effectiveness. Furthermore, digital uncertainty strengthens the importance of dynamic managerial capabilities in enabling organizations to formulate adaptive strategies.

Qualitative Findings: Managerial Perspectives on Digital Uncertainty and Strategic Decision Making

The qualitative phase involved 15 key informants consisting of CEOs, business owners, senior managers, digital transformation managers, and strategic planning managers. The thematic analysis identified three main themes: (1) managerial ability to interpret digital change, (2) strategic adaptation through organizational learning, and (3) the importance of networks in uncertain environments.

Informants emphasized that understanding technological changes was a critical factor in improving strategic decisions. Managers explained that digital uncertainty requires continuous learning and environmental scanning. *"Digital transformation changes the way we evaluate business decisions. Managers cannot rely only on previous experience; they need to understand emerging technologies and how these technologies influence future strategies."* (INF-03, 18 March 2026). The statement supports the quantitative finding that managerial cognition obtained a high mean score ($M = 4.21$), indicating that the ability to interpret environmental changes represents an important component of dynamic managerial capabilities.

Informants highlighted that previous managerial experience helped organizations respond more effectively to uncertain digital conditions. *"Experience helps managers decide which digital initiatives should be prioritized because not every technological trend provides strategic value for the organization."* (INF-07, 22 April 2026). This finding corresponds with the quantitative result showing that Managerial Human Capital achieved a high score ($M = 4.18$). The interview results indicate that managerial knowledge and experience contribute to more selective and adaptive strategic decisions.

Several informants explained that external networks provided valuable information for responding to technological uncertainty. *"Collaboration with external partners allows us to understand technological developments faster and reduce uncertainty when making strategic decisions."* (INF-11, 10 May 2026). This qualitative finding supports the role of Managerial Social Capital, which obtained a mean score of 4.12. The results indicate that networking capabilities help managers obtain external knowledge required for strategic adaptation.

Summary of Findings

Overall, the quantitative and qualitative results demonstrate that Dynamic Managerial Capabilities significantly influence Strategic Decision Making, while Digital Uncertainty strengthens this relationship. The statistical analysis confirms the proposed relationships among variables, while interview findings provide contextual explanations regarding how managers utilize cognition, experience, and networks to respond to digital uncertainty.

DISCUSSION

The findings of this study indicate that Dynamic Managerial Capabilities (DMC) have a positive and significant influence on Strategic Decision Making (SDM), while Digital Uncertainty strengthens the relationship between these variables. The regression results show that DMC contributes substantially to strategic decision-making effectiveness, with the interaction between DMC and digital uncertainty indicating that managerial capabilities become increasingly important when organizations face rapid technological changes. These findings support the assumption that strategic decision-making in digital environments is not solely determined by technological resources but also by managerial abilities to interpret, evaluate, and respond to environmental changes. From the perspective of Dynamic Capabilities Theory, organizations achieve competitive advantage when they are able to continuously sense changes, seize opportunities, and transform internal resources according to external demands (Teece, 2020). Therefore, the findings confirm that managerial capabilities represent a critical mechanism through which organizations adapt their strategies in uncertain digital environments.

The positive relationship between Dynamic Managerial Capabilities and Strategic Decision Making demonstrates that managers play a central role in shaping organizational responses to digital disruption. The qualitative findings reveal that managerial cognition, experience, and external networks enable managers to identify technological opportunities and determine strategic priorities more effectively. This finding is consistent with the argument that digital transformation requires not only technological adoption but also managerial capabilities to integrate digital resources into organizational strategies (Hanelt et al., 2021). However, this study extends previous research by emphasizing the decision-making mechanism through which managerial capabilities influence strategic choices, rather than focusing only on digital transformation outcomes. The novelty of this finding lies in positioning managers as strategic architects who actively reconfigure organizational decisions under conditions of uncertainty.

The findings regarding managerial cognition indicate that the ability to understand technological changes is a fundamental component of strategic adaptation. Managers who possess stronger cognitive capabilities are better able to interpret uncertain information, recognize emerging opportunities, and evaluate potential risks associated with digital transformation. This result supports previous studies emphasizing that digital transformation requires changes in managerial mindset because technological disruption often challenges existing assumptions and business models (Nadkarni & Prügl, 2021).

Unlike studies that primarily examine organizational readiness for digital transformation, this research highlights the individual managerial processes that shape strategic responses. Consequently, the study contributes to strategic management literature by explaining how managerial interpretation becomes an important antecedent of adaptive decision-making.

The role of managerial human capital also provides important insights into why some organizations respond more effectively to digital uncertainty than others. The results indicate that managerial experience, knowledge, and learning capabilities contribute to more selective decisions regarding digital initiatives. This finding supports the view that experienced managers possess greater ability to evaluate strategic alternatives because they can combine previous knowledge with emerging information. Similar findings were reported by Ritter and Pedersen (2020), who emphasized that organizational digital adaptation depends on the ability to develop and leverage internal capabilities rather than merely adopting digital technologies. Nevertheless, this study differs from previous research by demonstrating that managerial experience specifically influences strategic decision quality in uncertain digital contexts, rather than only affecting digital capability development.

The moderating role of Digital Uncertainty provides an important contribution to understanding when Dynamic Managerial Capabilities become more valuable. The results show that higher levels of digital uncertainty strengthen the relationship between managerial capabilities and strategic decision making, suggesting that uncertainty creates greater demand for adaptive leadership. This finding is consistent with the perspective of organizational resilience, where firms require flexible capabilities to maintain strategic effectiveness during turbulent conditions (Duchek, 2020). However, previous studies have often considered uncertainty as a challenge that negatively affects organizational performance, whereas this research demonstrates that uncertainty can also increase the strategic importance of managerial capabilities. Thus, digital uncertainty should not only be viewed as a threat but also as a contextual factor that encourages organizations to enhance managerial adaptability.

The findings also reveal both similarities and differences compared with previous empirical studies. Similar to the findings of Warner and Wäger (2020) and other digital transformation studies, this research confirms that adaptive capabilities are essential for organizational survival in rapidly changing environments. However, unlike previous studies that mainly focus on technological capability, innovation performance, or business model transformation, this study specifically investigates how managerial capabilities reshape strategic decision-making processes. This difference provides a broader understanding of digital transformation by incorporating the human and cognitive dimensions of strategy formation. Therefore, the study bridges the gap between digital transformation research and strategic management research by explaining the managerial mechanisms behind organizational adaptation.

From a theoretical perspective, this study contributes by extending the application of Dynamic Capabilities Theory into the context of strategic decision-

making under digital uncertainty. Previous studies have emphasized organizational capabilities as a source of competitive advantage, but this research highlights the importance of managerial-level capabilities as the foundation of organizational transformation. The integration of DMC and digital uncertainty provides a more contextual explanation of why some organizations are more capable of adapting strategically despite facing similar technological pressures. This contribution strengthens the argument that strategic management research should consider the interaction between individual managerial capabilities and environmental conditions. Furthermore, the mixed-method approach provides richer insights by combining statistical relationships with managerial experiences.

From a practical perspective, the findings suggest that organizations should invest not only in digital infrastructure but also in developing managerial capabilities that support adaptive decision-making. Organizations should strengthen managerial learning programs, improve digital awareness, and encourage external collaboration networks to enhance strategic responsiveness. However, this study has several limitations that should be acknowledged. First, the cross-sectional design limits the ability to observe changes in managerial capabilities and strategic decisions over time. Second, the study relies on managerial perceptions, which may introduce subjective bias in evaluating organizational conditions. Future research should consider longitudinal approaches, larger samples across different industries, and comparative studies between digitally mature and digitally developing organizations to further validate and expand these findings.

CONCLUSION AND RECOMMENDATIONS

This study concludes that Dynamic Managerial Capabilities significantly influence Strategic Decision Making, while Digital Uncertainty strengthens the relationship between these variables. The quantitative findings demonstrate that managerial capabilities, including managerial cognition, managerial human capital, and managerial social capital, contribute significantly to improving strategic decision-making effectiveness. Furthermore, the qualitative findings provide deeper insights that managers rely on their ability to interpret technological changes, utilize previous experience, and develop external networks to respond effectively to digital uncertainty. These findings confirm that organizational adaptation in the digital era is not solely determined by technological resources but also by managerial capabilities in sensing changes, evaluating strategic alternatives, and reconfiguring organizational resources. Theoretically, this study contributes to the development of strategic management literature by extending the Dynamic Capabilities perspective through a managerial-level approach, emphasizing the importance of human factors in shaping strategic responses under uncertain digital conditions.

From a practical perspective, organizations should focus on developing managerial capabilities as a strategic priority to improve adaptability and maintain competitiveness in rapidly changing digital environments. Organizations are recommended to strengthen managerial learning programs, enhance digital

knowledge, encourage cross-functional collaboration, and develop external networks to support more effective strategic decision-making processes. In addition, leaders should recognize digital uncertainty not only as a challenge but also as an opportunity to improve organizational agility and innovation capacity. Although this study provides important insights into the relationship between managerial capabilities, digital uncertainty, and strategic decision making, organizations should continuously evaluate and develop their managerial resources to ensure sustainable strategic adaptation. The findings highlight the importance of integrating technological transformation with human-centered strategic management practices to achieve long-term organizational resilience and competitive advantage.

FURTHER RESEARCH

Future research should expand this study by considering several aspects that remain unexplored. First, future studies may employ a longitudinal research design to examine how dynamic managerial capabilities and strategic decision-making processes evolve over time as digital environments continue to change. Second, research involving larger samples across different industries and organizational contexts is recommended to improve the generalizability of findings. Third, future studies may incorporate additional variables, such as organizational agility, digital leadership, innovation capability, or organizational resilience, to provide a more comprehensive understanding of the mechanisms underlying strategic adaptation under digital uncertainty. Comparative studies between organizations with different levels of digital maturity may also provide deeper insights into how managerial capabilities influence strategic outcomes in diverse contexts.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to all individuals and organizations who contributed to the completion of this research. Special appreciation is extended to the managers, organizational decision-makers, and key informants who participated in the survey and interview processes and provided valuable insights regarding strategic decision-making in digitally uncertain environments. The authors also acknowledge the support and guidance provided by the academic institution and research colleagues throughout the research process. Their contributions and assistance were essential in enabling the successful completion of this study.

REFERENCES

- Al-Moaid, N. A., & Almarhdi, S. G. (2024). Developing dynamic capabilities for successful digital transformation projects: The mediating role of change management. *Journal of Innovation and Entrepreneurship*, 13, Article 10. <https://doi.org/10.1186/s13731-024-00446-9>
- Bouncken, R. B., Kraus, S., & Roig-Tierno, N. (2021). Knowledge management in agile organizations: The role of strategic flexibility. *Journal of Knowledge Management*, 25(8), 2091–2111. <https://doi.org/10.1108/JKM-12-2020-0894>
- Braun, V., & Clarke, V. (2021). Can I use thematic analysis? Should I use thematic analysis? *Qualitative Research in Sport, Exercise and Health*, 13(1), 1–11. <https://doi.org/10.1080/2159676X.2020.1750647>
- Bresciani, S., Huarng, K. H., Malhotra, A., & Ferraris, A. (2021). Digital transformation as a springboard for product, process and business model innovation. *Journal of Business Research*, 128, 204–210. <https://doi.org/10.1016/j.jbusres.2021.02.021>
- Ciriello, R. F., Richter, A., & Schwabe, G. (2021). Digital transformation: Challenges and opportunities for organizational decision making. *Business & Information Systems Engineering*, 63, 245–252. <https://doi.org/10.1007/s12599-021-00677-9>
- Creswell, J. W., & Plano Clark, V. L. (2023). *Designing and conducting mixed methods research* (4th ed.). SAGE Publications. <https://us.sagepub.com/en-us/nam/designing-and-conducting-mixed-methods-research/book241842>
- Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13, 215–246. <https://doi.org/10.1007/s40685-019-0085-7>
- Foss, N. J., & Klein, P. G. (2020). Entrepreneurial judgment and the strategic management of resources. *Strategic Entrepreneurship Journal*, 14(1), 3–19. <https://doi.org/10.1002/sej.1336>
- Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102, 102217. <https://doi.org/10.1016/j.technovation.2020.102217>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer. <https://doi.org/10.1007/978-3-030-80519-7>

- Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>
- Helfat, C. E., & Peteraf, M. A. (2021). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 42(4), 611–634. <https://doi.org/10.1002/smj.3143>
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292, 114523. <https://doi.org/10.1016/j.socscimed.2021.114523>
- Heubeck, T. (2024). Looking back to look forward: A systematic review of and research agenda for dynamic managerial capabilities. *Management Review Quarterly*, 74, 1–40. <https://doi.org/10.1007/s11301-023-00345-5>
- Kane, G. C., Phillips, A. N., Copulsky, J., & Andrus, G. R. (2021). *The technology fallacy: How people are the real key to digital transformation*. MIT Sloan Management Review. <https://sloanreview.mit.edu/>
- Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021). Digital transformation: An overview of the current state of the art of research. *SAGE Open*, 11(3), 1–15. <https://doi.org/10.1177/21582440211047576>
- Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Kump, B., Engelmann, A., Kessler, A., & Schweiger, C. (2021). Toward a dynamic capabilities view of innovation capability. *Journal of Business Research*, 128, 1–10. <https://doi.org/10.1016/j.jbusres.2021.01.017>
- McKim, C. A. (2020). The value of mixed methods research: A mixed methods study. *Journal of Mixed Methods Research*, 14(2), 202–222. <https://doi.org/10.1177/1558689819872422>
- Mikalef, P., van de Wetering, R., & Krogstie, J. (2020). Building dynamic capabilities by leveraging big data analytics: The role of organizational

- inertia. *Information & Management*, 57(6), 103324.
<https://doi.org/10.1016/j.im.2020.103324>
- Mikalef, P., Conboy, K., & Lundström, J. (2021). Artificial intelligence capability and organizational decision-making. *Information & Management*, 58(8), 103540.
<https://doi.org/10.1016/j.im.2021.103540>
- Nadkarni, S., & Prügl, R. (2021). Digital transformation: A review, synthesis and opportunities for future research. *Management Review Quarterly*, 71, 233–341. <https://doi.org/10.1007/s11301-020-00185-7>
- Palinkas, L. A., Mendonça, A., & Hamilton, A. B. (2020). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 47, 685–692.
<https://doi.org/10.1007/s10488-020-01072-1>
- Ritter, T., & Pedersen, C. L. (2020). Digitization capability and its impact on business model innovation and performance: The moderating role of environmental turbulence. *International Journal of Research in Marketing*, 37(4), 706–728.
<https://doi.org/10.1016/j.ijresmar.2020.03.003>
- Schoonenboom, J. (2022). The logic of mixed methods research: Combining quantitative and qualitative approaches. *International Journal of Social Research Methodology*, 25(6), 739–751.
<https://doi.org/10.1080/13645579.2021.1940810>
- Teece, D. J. (2020). Hand in glove: Open innovation and the dynamic capabilities framework. *Strategic Management Review*, 1(2), 233–253.
<https://doi.org/10.1561/111.00000010>
- van de Wetering, R., Mikalef, P., & Pateli, A. (2021). Strategic alignment between IT flexibility and dynamic capabilities: An empirical investigation. *European Journal of Information Systems*, 30(6), 1–20.
<https://doi.org/10.1080/0960085X.2021.1919946>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901.
<https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing Digital Transformation*, 28(2), 118–144.
<https://doi.org/10.1016/j.jsis.2020.101573>

- Warner, K. S. R., & Wäger, M. (2020). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 53(1), 101017.
<https://doi.org/10.1016/j.lrp.2019.101017>