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Top Management Teams and the Digital Transformation Innovation Performance Relationship

Rizqa Sulaiman Wibisono [1 *]

[1] College of Management, National Yunlin University of Science and Technology, Taiwan; rizqasulaiman@gmail.com

* Correspondence: rizqasulaiman@gmail.com

Abstract

This study examines the impact of digital transformation on enterprise innovation performance and investigates the moderating roles of digital strategic cognition and digital leadership from the perspective of top management teams. Data were collected through a questionnaire survey of Chinese manufacturing enterprises, resulting in 223 valid responses. A theoretical model was developed and empirically tested, with digital transformation as the independent variable, innovation performance as the dependent variable, and digital strategic cognition and digital leadership as moderating variables. Digital transformation was measured through two dimensions: digital technology and digital process. The results indicate that digital transformation significantly enhances innovation performance. Both digital technology and digital process positively contribute to innovation outcomes, although digital process demonstrates a stronger effect. Furthermore, digital strategic cognition positively moderates the relationship between digital process and innovation performance, while its moderating effect on the relationship between digital technology and innovation performance is not significant. In addition, digital leadership positively strengthens the effects of both digital technology and digital process on innovation performance. These findings highlight the importance of combining technological investments with managerial capabilities to maximize innovation outcomes. This study contributes to the literature by extending the understanding of how digital transformation influences innovation performance through the roles of managerial cognition and leadership. It also distinguishes between digital technology and digital process as separate dimensions of digital transformation and demonstrates their different relationships with innovation performance. The findings provide practical implications for manufacturing firms seeking to improve innovation capability and sustain competitiveness in an increasingly digital business environment.

Keywords: Digital transformation; digital technology; digital process; innovation performance; digital strategic cognition

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1. Introduction

The rapid expansion of China's digital economy has reinforced its role as a fundamental driver of national economic development. As highlighted in the report of the 20th National Congress of the Communist Party of China, the accelerated growth of the digital economy requires deeper integration between digital technologies and the real economy to foster internationally competitive digital industrial clusters and strengthen the development of the country's digital sector [1]. This strategic direction underscores the growing importance of digital transformation (DTM) for Chinese enterprises. Consequently, many manufacturing firms have increasingly adopted digital technologies to support organizational digitalization and enhance operational intelligence. Through digital transformation, firms can stimulate innovation, improve innovation efficiency, and ultimately strengthen innovation performance (IP). Recognizing these potential benefits, corporate leaders have actively invested in and promoted digital initiatives within their organizations. Nevertheless, evidence indicates that successful strategy implementation remains relatively rare, with only a small proportion of enterprises achieving their intended outcomes. Moreover, the results of digital transformation vary considerably across firms. For instance, Baili Fashion successfully secured a leading market position by capitalizing on first-mover advantages through the implementation of digital processes (DPS) and digital technologies (DTL). In contrast, established companies such as Kodak and Nokia experienced significant competitive decline due to their inability to adapt to emerging digital opportunities and their continued reliance on traditional sources of advantage. These contrasting cases suggest that digital transformation may generate either positive or negative organizational outcomes (Vial, 2021). Therefore, a deeper understanding of the relationship between DTM and enterprise innovation performance remains necessary.

A key question concerns the mechanism through which digital transformation influences innovation performance in manufacturing enterprises. From a behavioral-performance perspective, DTM involves the application of digital technologies to redesign business processes, products, and service models in ways that enhance organizational value creation (Luo & Zhao, 2022). Prior studies indicate that digitalization can improve both process and product innovation performance (Laa et al., 2021), while digital transformation has been recognized as a critical antecedent of superior innovation outcomes (Chi et al., 2022; Zhou et al., 2021). However, technological adoption alone is insufficient to ensure outstanding innovation achievements. The capabilities of senior executives, particularly their digital strategic awareness and leadership competencies, play an equally important role in determining transformation success. Consequently, explanations based solely on the behavioral-performance perspective may not fully capture the complexity of the DTM–IP relationship. Organizations may struggle to realize the benefits of digital transformation when managerial cognition and leadership approaches fail to evolve alongside technological change. This highlights the importance of top management attitudes and behaviors in shaping digital transformation outcomes. To address this gap, further investigation is required into how the cognitive and behavioral characteristics of top management teams influence digital transformation initiatives and subsequently affect innovation performance. Such insights can help manufacturing firms maximize the value derived from digitalization. Accordingly, this study develops a behavior-performance framework to examine the impact of DTM on innovation performance by incorporating digital strategic cognition (DSC) and digital leadership as moderating variables and exploring their interactions with DTM and IP.

2. Literature Review and Hypothesis Development

This study adopts a quantitative approach to examine the influence of digital transformation (DTM) on innovation performance (IP) within manufacturing enterprises

while considering the moderating roles of digital strategic cognition (DSC) and digital leadership (DL). Digital transformation is widely recognized as a strategic organizational initiative that integrates advanced digital technologies into business processes to improve operational efficiency, enhance customer value, and facilitate the development of innovative business models (Lu & Ramamurthy, 2011; Fitzgerald et al., 2014; Hess et al., 2016; Vial, 2021). In the manufacturing sector, digital transformation involves the application of digital technologies and digital processes to redesign production systems, optimize organizational operations, and strengthen innovation capabilities (Nambisan et al., 2017).

Drawing upon the behavior–performance perspective, this study proposes that digital transformation directly contributes to innovation performance. The implementation of digital technologies enables firms to expand innovation opportunities, improve resource integration, and accelerate technological development (Zhang & Du, 2022). Furthermore, digital technologies transform organizational knowledge structures, cultures, and operational systems, thereby creating new pathways for innovation and value creation (Hinings et al., 2018). The integration of digital technologies with traditional production factors also generates synergistic effects that continuously improve organizational processes and innovation outcomes (Chen et al., 2023). Consequently, digital transformation is expected to positively influence innovation performance through two primary dimensions: digital technology (DTL) and digital process (DPS).

The study further incorporates management cognition theory to explain how managerial characteristics shape the effectiveness of digital transformation. According to Hambrick and Mason (1984), managerial experiences, values, and cognitive orientations influence strategic decision-making and organizational outcomes. Within the digital economy, the ability of top management teams to interpret and respond to digital developments becomes increasingly important (Firk et al., 2021). Digital strategic cognition (DSC) refers to managers' understanding of digital environments and their capability to recognize strategic opportunities arising from digital technologies (Gavetti & Rivkin, 2007). Managers possessing strong digital strategic cognition demonstrate greater information-processing capabilities, enhanced cognitive flexibility, and stronger abilities to identify and exploit digital opportunities (Ying & Chen, 2023). Therefore, DSC is expected to strengthen the positive relationship between digital transformation and innovation performance.

In addition to cognitive factors, leadership characteristics are also considered essential in determining digital transformation success. Digital leadership (DL) represents a contemporary leadership approach that leverages digital technologies to influence organizational members, facilitate communication, and improve organizational performance (Avolio et al., 2000). Digital leaders encourage the adoption of digital technologies, foster collaboration across organizational units, and support innovation-related activities (Roman et al., 2019). Through enhanced coordination, communication, and resource allocation, digital leadership can improve the effectiveness of digital transformation initiatives and reinforce their contribution to innovation performance (Vial, 2021). Consequently, this study proposes that digital leadership positively moderates the relationship between digital transformation and innovation performance.

Based on the theoretical foundations and previous empirical findings, the conceptual framework consists of digital transformation as the independent variable, innovation performance as the dependent variable, and digital strategic cognition and digital leadership as moderating variables. Digital transformation is operationalized through two dimensions: digital technology and digital process. The study proposes nine hypotheses:

H1. *digital transformation positively affects innovation performance;*

H1a. *digital technology positively affects innovation performance;*

H1b. *digital process positively affects innovation performance;*

H2. *digital strategic cognition positively moderates the relationship between digital transformation and innovation performance;*

H2a. *digital strategic cognition positively moderates the relationship between digital technology and innovation performance;*

H2b. *digital strategic cognition positively moderates the relationship between digital process and innovation performance;*

H3 *digital leadership positively moderates the relationship between digital transformation and innovation performance;*

H3a *digital leadership positively moderates the relationship between digital technology and innovation performance; and*

H3b. *digital leadership positively moderates the relationship between digital process and innovation performance.*

3. Research Methods

The empirical investigation focuses on manufacturing enterprises in China. This sector was selected because manufacturing firms are actively engaged in digital transformation initiatives and provide an appropriate context for examining the relationship between digital transformation and innovation outcomes. The sample was obtained from firms listed in the Guotai Data Service Center (CSMAR) database, covering various industries such as computer communication equipment, food processing, textiles, apparel, and furniture manufacturing. Data collection was conducted between August and October 2023 through both online and offline questionnaire surveys targeting members of top management teams. Prior to the main survey, a pilot study involving 30 respondents was conducted to evaluate the clarity, reliability, and validity of the measurement instruments. Based on the pilot results, several items were refined to improve data quality. During the formal survey stage, 400 questionnaires were distributed, yielding 256 returned questionnaires. After screening for completeness and consistency, 223 valid responses were retained for analysis, resulting in an effective response rate of 87.1%.

All constructs were measured using previously validated scales adapted from established studies. Innovation performance (IP) was measured using four items adapted from Pesch et al. (2021), Xu et al. (2020), and Liu et al. (2016), with a Cronbach's alpha value of 0.789, indicating satisfactory reliability. Digital transformation (DTM) was measured using an eleven-item scale adapted from Hess et al. (2016), Chi et al. (2020), and Xie et al. (2023), consisting of five items representing digital technology and six items representing digital process. The scale demonstrated high internal consistency with a Cronbach's alpha value of 0.897. Digital strategic cognition (DSC) was assessed using a four-item scale adapted from Annosi et al. (2019) and Wilms et al. (2019), producing a Cronbach's alpha coefficient of 0.763. Digital leadership (DL) was measured using an eight-item scale developed by Li et al. (2016) and Liu et al. (2018), yielding a Cronbach's alpha value of 0.862.

All measurement items employed a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), with higher scores indicating stronger agreement with the statements presented. To reduce potential confounding effects, several control variables were included in the analysis, namely firm age, organizational size, ownership structure, and industry classification. Firm age was measured based on the number of years since establishment, while organizational size was categorized according to the number of employees. Ownership structure was coded as a binary variable, where state-owned or state-controlled enterprises were assigned a value of 1 and all other firms were assigned a value of 0. These control variables were incorporated to ensure a more robust assessment of the relationships among digital transformation, digital strategic cognition, digital leadership, and innovation performance.

4. Results

A descriptive analysis was conducted to examine the characteristics of the 223 valid responses collected from manufacturing enterprises. The sample represented various ownership structures, industrial sectors, geographical locations, and organizational sizes. The majority of participating firms were private enterprises, while the remaining respondents consisted of state-owned enterprises, joint ventures, and other ownership forms. The sample also covered several manufacturing industries, including food and beverage processing, textile and apparel production, furniture manufacturing, biological and pharmaceutical industries, electrical equipment manufacturing, transportation equipment production, and computer and communication equipment manufacturing.

Table 1. Descriptive Statistics of Sample Characteristics

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables						
Establishment period	0.032	-0.004	**-0.027**	-0.031	-0.017	-0.020
Enterprise scale	0.080	0.039	**0.034**	0.034	0.051	0.049
Nature of ownership	0.205	0.117	**0.123**	0.128	0.088	0.085
Industry nature	0.089	0.114	**0.120**	0.117	0.082	0.091
Independent Variables						
Digital technology (DTL)	/	0.158*	**0.114**	0.115	0.120*	0.113*
Digital process (DPS)	/	0.602**	**0.408****	0.416**	0.358***	0.341***
Adjusted Variables and Interaction Terms						
Digital strategy cognition (DSC)			**0.469****	0.487**		
Digital technology (DTL) × Digital strategy cognition (DSC)				0.126		
Digital process (DPS) × Digital strategy cognition (DSC)				0.175*		
Digital leadership (DL)					0.519***	0.522***
Digital technology (DTL) × Digital leadership (DL)						0.144*
Digital process (DPS) × Digital leadership (DL)						0.107**
R^2	0.053	0.488	**0.605**	0.607	0.597	0.602
Adjusted R^2	0.036	0.474	**0.592**	0.590	0.584	0.585
F	3.079*	34.359***	**47.013*****	36.512***	45.446***	35.758***

To assess the potential presence of common method bias, Harman's single-factor test was employed. The results indicated that four factors were extracted without rotation, and the first factor accounted for 33.295% of the total variance. Since this value was below the recommended threshold of 50%, common method bias was not considered a significant concern. Furthermore, the cumulative variance explained by all extracted factors reached 53.335%, suggesting that no single factor dominated the variance structure.

Reliability and validity analyses were subsequently performed. The overall Cronbach's alpha coefficient of the measurement instrument was 0.946, indicating excellent internal consistency. The Cronbach's alpha values for digital technology (DTL), digital process (DPS), innovation performance (IP), digital strategic cognition (DSC), and

digital leadership (DL) were 0.837, 0.823, 0.789, 0.763, and 0.862, respectively. All values exceeded the recommended threshold of 0.70, confirming satisfactory reliability. Construct validity was further examined through factor analysis, where the KMO values were within the acceptable range and Bartlett's Test of Sphericity was significant at the 1% level. Confirmatory factor analysis demonstrated an adequate model fit with χ^2/df = 1.664, RMSEA = 0.055, RMR = 0.042, IFI = 0.924, and CFI = 0.923, indicating strong discriminant validity among the constructs.

Correlation analysis was then conducted to examine the relationships among the study variables. The results revealed significant positive correlations between digital transformation, digital strategic cognition, digital leadership, and innovation performance, providing preliminary support for the proposed hypotheses.

Table 2 .Correlation Matrix

Variable	Establishment Period	Enterprise Scale	Nature of Ownership	Industry Nature	Digital Technology (DTL)	Digital Process (DPS)	Digital Strategy Cognition (DSC)	Digital Leadership (DL)	Innovation Performance (IP)
Establishment Period	1								
Enterprise Scale	0.489**	1							
Nature of Ownership	0.050	0.068	1						
Industry Nature	0.172*	0.248**	-0.050	1					
Digital Technology (DTL)	0.136*	0.159*	0.015	-0.041	1				
Digital Process (DPS)	0.123	0.124	-0.013	0.030	0.754**	1			
Digital Strategy Cognition (DSC)	0.173**	0.147*	0.036	0.009	0.604**	0.629**	1		
Digital Leadership (DL)	0.138*	0.111	0.044	0.054	0.623**	0.683**	0.749**	1	
Innovation Performance (IP)	0.133*	0.180**	0.063	0.106	0.574**	0.679**	0.704**	0.719**	1

To test the proposed hypotheses, hierarchical regression analysis was performed following the procedure suggested by Wen et al. (2005). Model 1 included only the control variables. Model 2 introduced digital technology (DTL) and digital process (DPS). Model 3 incorporated digital strategic cognition (DSC), while Model 4 added the interaction terms involving DSC. Subsequently, Model 5 introduced digital leadership (DL), and Model 6 included the interaction terms between DL and the dimensions of digital transformation.

Table 3. Regression Results and Hypothesis Testing

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables						
Establishment period	0.032	-0.004	-0.027	-0.031	-0.017	-0.020
Enterprise scale	0.080	0.039	0.034	0.034	0.051	0.049
Nature of ownership	0.205	0.117	0.123	0.128	0.088	0.085
Industry nature	0.089	0.114	0.120	0.117	0.082	0.091
Independent Variables						
Digital technology (DTL)	/	0.158*	0.114	0.115	0.120*	0.113*
Digital process (DPS)	/	0.602**	0.408**	0.416**	0.358***	0.341***
Adjusted Variables and Interaction Terms						
Digital strategy cognition (DSC)			0.469**	0.487**		

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Digital technology (DTL) × Digital strategy cognition (DSC)				0.126		
Digital process (DPS) × Digital strategy cognition (DSC)				0.175*		
Digital leadership (DL)					0.519***	0.522***
Digital technology (DTL) × Digital leadership (DL)						0.144*
Digital process (DPS) × Digital leadership (DL)						0.107**
R^2	0.053	0.488	0.605	0.607	0.597	0.602
Adjusted R^2	0.036	0.474	0.592	0.590	0.584	0.585
F	3.079*	34.359***	47.013***	36.512***	45.446***	35.758***

The regression results demonstrated that both digital technology and digital process positively influenced innovation performance. Specifically, digital technology exerted a significant positive effect on innovation performance ($\beta = 0.158$, $p < 0.05$), whereas digital process showed a stronger positive influence ($\beta = 0.602$, $p < 0.01$). These findings support H1, H1a, and H1b.

Regarding the moderating role of digital strategic cognition, the results showed that DSC had a significant positive effect on innovation performance ($\beta = 0.469$, $p < 0.01$). Moreover, the interaction between DSC and DPS was positive and significant ($\beta = 0.175$, $p < 0.05$), indicating that DSC strengthened the influence of DPS on innovation performance. However, the interaction between DSC and DTL was not statistically significant ($\beta = 0.126$, $p > 0.05$). Therefore, H2 and H2b were supported, whereas H2a was not supported.

The moderating role of digital leadership was also confirmed. Digital leadership had a significant positive direct effect on innovation performance ($\beta = 0.519$, $p < 0.001$). Furthermore, DL strengthened the relationship between DTL and innovation performance ($\beta = 0.144$, $p < 0.05$) as well as the relationship between DPS and innovation performance ($\beta = 0.107$, $p < 0.01$). Consequently, H3, H3a, and H3b were fully supported.

Overall, the findings indicate that digital transformation significantly enhances innovation performance in manufacturing enterprises. In addition, managerial factors, particularly digital strategic cognition and digital leadership, play a critical role in strengthening the effectiveness of digital transformation initiatives and maximizing innovation outcomes.

5. Discussion

The findings of this study confirm that digital transformation (DTM) plays a significant role in enhancing innovation performance (IP) among manufacturing enterprises. Both dimensions of digital transformation, namely digital technology (DTL) and digital process (DPS), were found to positively influence innovation outcomes. These results support previous studies suggesting that digital technologies provide organizations with opportunities to strengthen innovation capabilities, improve operational efficiency, and generate competitive advantages (Liu, 2022). Through the adoption of digital technologies, firms can establish technological barriers that support innovation activities, while digital processes facilitate resource integration, streamline organizational workflows, and reduce inefficiencies during innovation implementation (Amit & Han, 2017). The stronger influence of DPS further indicates that process-oriented digital transformation may produce more immediate benefits for innovation performance than technology adoption alone.

The study also demonstrates the importance of managerial cognition in maximizing the benefits of digital transformation. Consistent with managerial cognition theory, digital strategic cognition (DSC) was found to strengthen the relationship between digital process and innovation performance. Managers with strong digital strategic cognition are more capable of identifying digital opportunities, responding to environmental changes, and promoting innovation-oriented organizational processes. However, DSC did not significantly moderate the relationship between digital technology and innovation performance. This finding may be explained by the existence of cognitive barriers and organizational resistance toward emerging technologies. As argued by Chesbrough (2010), dominant organizational logic can hinder the acceptance of new technological paradigms. Furthermore, digital technology adoption often involves experimentation, learning, and adaptation processes that may not immediately generate observable innovation outcomes (Frankenberger et al., 2013). Consequently, managerial cognition may be more effective in facilitating process transformation than in directly influencing the effectiveness of technological investments.

The results further highlight the critical role of digital leadership (DL) in strengthening the impact of digital transformation on innovation performance. Digital leadership positively moderated the relationships between digital technology and innovation performance as well as between digital process and innovation performance. These findings are consistent with the view that organizations operating in digital environments require leadership approaches capable of supporting technological innovation, organizational change, and knowledge integration (Zhang & Long, 2022). Digital leaders utilize information technologies to facilitate communication, coordinate organizational resources, and support strategic decision-making processes (Avolio et al., 2014). As noted by Roman et al. (2019), digital leadership enhances organizational adaptability and innovation capability by promoting collaboration and knowledge sharing. Moreover, digital leaders can leverage information technologies to improve information accessibility, reduce transformation costs, and increase organizational responsiveness to environmental changes (Avolio & Kahai, 2003). Therefore, digital leadership serves as a key managerial capability that enables organizations to maximize the value generated by digital transformation initiatives.

From a theoretical perspective, this study contributes to the literature by providing additional empirical evidence regarding the positive relationship between digital transformation and innovation performance. The findings support previous research indicating that digital transformation enhances innovation capability and organizational value creation (Jian & Wang, 2024). Furthermore, the study extends the application of managerial cognition theory and digital leadership theory by examining their roles within digital transformation contexts. The incorporation of digital strategic cognition broadens understanding of how managerial cognition influences strategic behavior and organizational outcomes (Gao & Li, 2019), while the inclusion of digital leadership expands its application within the field of strategic management and organizational innovation (Avolio et al., 2000).

From a managerial perspective, manufacturing enterprises should prioritize investments in digital technologies and digital process development to improve innovation performance. Organizations should also strengthen digital strategic cognition among executives through digital training programs, data-driven decision-making practices, and digital performance evaluation systems. Additionally, firms should cultivate digital leadership capabilities by enhancing executives' digital literacy, innovation management skills, technological competencies, and organizational change management capabilities. These initiatives can help organizations achieve sustainable innovation advantages in increasingly dynamic digital environments.

6. Conclusions

This study investigated the effect of digital transformation on innovation performance in manufacturing enterprises and examined the moderating roles of digital strategic cognition and digital leadership. The results indicate that digital transformation significantly improves innovation performance through both digital technology and digital process dimensions. Among these dimensions, digital process demonstrated a stronger contribution to innovation outcomes, highlighting the importance of process-oriented transformation initiatives in manufacturing organizations.

The findings further reveal that digital strategic cognition positively moderates the relationship between digital process and innovation performance but does not significantly influence the relationship between digital technology and innovation performance. In contrast, digital leadership was found to strengthen the effects of both digital technology and digital process on innovation performance. These results suggest that while technological investments are essential, managerial capabilities remain critical for achieving successful digital transformation outcomes.

Despite its contributions, this study has several limitations. The analysis relies primarily on questionnaire-based data collected from Chinese manufacturing enterprises, which may limit the generalizability of the findings. Future research is encouraged to examine different industrial sectors and geographical contexts, utilize alternative data sources, and explore additional organizational and environmental factors that may influence the relationship between digital transformation and innovation performance. Such efforts will contribute to a more comprehensive understanding of how organizations can leverage digital transformation to achieve sustainable innovation and long-term competitiveness.

References

Amit, R., & Han, X. (2017). Value Creation Through Novel Resource Configurations In A Digitally Enabled World. *Strategic Entrepreneurship Journal*, *11*(3), 228–242.

Annosi, M. C., Brunetta, F., Monti, A., Et Al. (2019). Is The Trend Your Friend? An Analysis Of Technology 4.0 Investment Decisions In Agricultural Smes. *Computers In Industry*, *109*, 59–71. Https://Doi.Org/10.1016/J.Compind.2019.04.006

Ardito, L., Raby, S., Albino, V., Et Al. (2021). The Duality Of Digital And Environmental Orientations In The Context Of Smes: Implications For Innovation Performance. *Journal Of Business Research*, *123*, 44–56. Https://Doi.Org/10.1016/J.Jbusres.2020.09.022

Avolio, B. J., Kahai, S., & Dodge, G. E. (2000). E-Leadership: Implications For Theory, Research, And Practice. *The Leadership Quarterly*, *11*(4), 615–668. Https://Doi.Org/10.1016/S1048-9843(00)00062-X

Avolio, B. J., & Kahai, S. S. (2003). Adding The "E" To E-Leadership: How It May Impact Your Leadership. *Organizational Dynamics*, *31*(4), 325–338. Https://Doi.Org/10.1016/S0090-2616(02)00133-X

Avolio, B. J., Sosik, J. J., Kahai, S. S., Et Al. (2014). E-Leadership: Re-Examining Transformations In Leadership Source And Transmission. *The Leadership Quarterly*, *25*(1), 105–131. Https://Doi.Org/10.1016/J.Leaqua.2013.11.003

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. V. (2013). Digital Business Strategy: Toward A Next Generation Of Insights. *MIS Quarterly*, *37*(2), 471–482.

Bresciani, A., Ferraris, M., Romano, G., & Santoro, G. (2021). Digital Transformation Management For Agile Organizations: A Compass To Sail The Digital World. *Management Decision*, *59*(13), 97–115.

Chen, L., Wang, X. F., & Fu, Y. H. (2023). Self-Viability And Digital Transformation Path Of Manufacturing Enterprises. *Research In Science Of Science*, (4), 1–16.

Chesbrough, H. (2010). Business Model Innovation: Opportunities And Barriers. *Long Range Planning*, *43*(2–3), 354–363. Https://Doi.Org/10.1016/J.Lrp.2009.07.010

Chi, M. M., Wang, J. J., & Wang, W. J. (2022). Research On The Influencing Mechanism Of Enterprise Innovation Performance Under The Background Of Digital Transformation: A Hybrid Approach Based On NCA And SEM. *Research In Science Of Science*, *40*(2), 319–331.

Chi, M. M., Ye, D. L., & Wang, J. J. (2020). How To Improve The Performance Of New Product Development For Small And Medium-Sized Manufacturing Enterprises In China: From The Perspective Of Digital Empowerment. *Nankai Business Review, 23*(3), 63–75.

Clohessy, T., Acton, T., & Morgan, L. (2017). The Impact Of Cloud-Based Digital Transformation On IT Service Providers: Evidence From Focus Groups. *International Journal Of Cloud Applications And Computing, 7*(4), 1–19. Https://Doi.Org/10.4018/IJCAC.2017100101

Feng, J., Daviqi, & Zhou, D. (2002). Executive Team Functional Background And Corporate Venture Capital: The Mediating Role Of Attention Focus. *Management Review, 34*(12), 121–130.

Firk, S., Hanelt, A., Oehmichen, J., Et Al. (2021). Chief Digital Officers: An Analysis Of The Presence Of A Centralized Digital Transformation Role. *Journal Of Management Studies, 58*(7), 1990–2021. Https://Doi.Org/10.1111/Joms.12618

Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing Digital Technology: A New Strategic Imperative. *MIT Sloan Management Review, 55*(2), 1–15.

Frankenberger, K., Weiblen, T., Csik, M., & Gassmann, O. (2013). The 4I-Framework Of Business Model Innovation: A Structured View On Process Phases And Challenges. *International Journal Of Product Development, 18*(3–4), 249–273.

Gao, H., & Li, L. (2019). The Impact Of Institutional Support On The Digital Transformation Of Manufacturing Enterprises: Based On The Cognitive Perspective Of Managers. *Journal Of Enterprise Economics, 41*(12), 151–160.

Gavetti, G., & Rivkin, J. W. (2007). On The Origin Of Strategy: Action And Cognition Over Time. *Organization Science, 18*(3), 420–439. Https://Doi.Org/10.1287/Orsc.1070.0282

Gong, J. (2019). The Effect And Mechanism Analysis Of Digital Transformation On Innovation Performance Of Manufacturing Enterprises: Based On The Empirical Evidence Of 2558 Manufacturing Enterprises. *Investment Research, 42*(12), 21–38.

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization As A Reflection Of Its Top Managers. *Academy Of Management Review, 9*(2), 193–206. Https://Doi.Org/10.5465/Amr.1984.4277628

Han, X. F., Song, W. F., & Li, B. X. (2019). Can The Internet Become A New Driving Force For Improving China's Regional Innovation Efficiency? *China Industrial Economics, 7*, 119–136.

He, X. W., Hong, L., & Wang, Y. (2023). Research On The Impact Mechanism Of Executive Team Cognition On Embedded Innovation. *Scientific Management Research, 41*(1), 112–120.

Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options For Formulating A Digital Transformation Strategy. *MIS Quarterly Executive, 15*(2), 123–139.

Hinings, B., Gegenhuber, T., & Greenwood, R. (2018). Digital Innovation And Transformation: An Institutional Perspective. *Information And Organization, 28*(1), 52–61. Https://Doi.Org/10.1016/J.Infoandorg.2018.02.004

Huang, J. P. (2023). *Research On The Impact Of Digital Transformation On Innovation Performance Of Manufacturing Enterprises* (Master's Thesis, Harbin University Of Science And Technology).

Huang, W. J., & Li, S. P. (2023). Research On Digital Transformation, Executive Cognitive Ability, And Enterprise Investment Efficiency. *Scientific Decision Making, 308*(3), 83–98.

Ilona, I., Stefan, T., Markus, M., Et Al. (2018). Reconciling Digital Transformation And Knowledge Protection: A Research Agenda. *Knowledge Management Research & Practice, 16*(2), 235–244. Https://Doi.Org/10.1080/14778238.2018.1428063

Jarvenpaa, S. L., & Tanriverdi, H. (2003). Leading Virtual Knowledge Networks. *Organizational Dynamics, 31*(4), 403–412. Https://Doi.Org/10.1016/S0090-2616(02)00135-3

Jian, G. Q., & Wang, X. B. (2024). Mechanism And Effect Of Digital Transformation Driving Value Creation In Manufacturing Enterprises: A Case Study Based On Green Electric Appliances. *Journal Of Finance And Accounting, 14*, 154–159.

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). *Strategy, Not Technology, Drives Digital Transformation*. MIT Sloan Management Review.

Laa, B., Sr, C., Va, A., Et Al. (2021). The Duality Of Digital And Environmental Orientations In The Context Of Smes: Implications For Innovation Performance. *Journal Of Business Research, 123*, 44–56. Https://Doi.Org/10.1016/J.Jbusres.2020.09.022

Li, W., Liu, K., Belitski, M., Et Al. (2016). E-Leadership Through Strategic Alignment: An Empirical Study Of Small- And Medium-Sized Enterprises In The Digital Age. *Journal Of Information Technology, 31*(2), 185–206. Https://Doi.Org/10.1057/Jit.2016.10

Liu, X. P. (2022). The Threshold Effect Of R&D Investment On Enterprise Performance: A Case Study Of Guangdong Province. *Statistics And Decision, 3*, 172–177.

Liu, X. Y., Ding, W. J., & Zhao, X. D. (2016). Research On The Relationship Strength, Absorption Capacity, And Innovation Performance In Enterprise Innovation Networks. *Nankai Business Review, 19*(1), 30–42.

Liu, Z., Yan, S. D., & Jiang, H. Y. (2018). The Influence Of E-Leadership On Employee Engagement: The Mediating Role Of Perceived Organizational Support. *Soft Science*, *32*(7), 65–69.

Lu, Y., & Ramamurthy, K. (2011). Understanding The Link Between Information Technology Capability And Organizational Agility: An Empirical Examination. *MIS Quarterly*, *35*(4), 931–954. Https://Doi.Org/10.2307/41409967

Luo, B. Y., & Zhao, S. H. (2022). Research On The Impact Of Digital Transformation On Innovation Performance Of Manufacturing Enterprises. *Journal Of Innovation And Technology*, *22*(3), 57–68.

Nadkarni, S., & Barr, P. S. (2008). Environmental Context, Managerial Cognition, And Strategic Action: An Integrated View. *Strategic Management Journal*, *29*(13), 1395–1427. Https://Doi.Org/10.1002/Smj.717

Nadkarni, S., & Narayanan, V. K. (2007). Strategic Schemas, Strategic Flexibility, And Firm Performance: The Moderating Role Of Industry Clock Speed. *Strategic Management Journal*, *28*(3), 243–270. Https://Doi.Org/10.1002/Smj.576

Nambisan, S., Lyytinen, K., Majchrzak, A., Et Al. (2017). Digital Innovation Management: Reinventing Innovation Management Research In A Digital World. *MIS Quarterly*, *41*(1), 223–238. Https://Doi.Org/10.25300/MISQ/2017/41:1.03

Ocasio, W., Laamanen, T., & Vaara, E. (2018). Communication And Attention Dynamics: An Attention-Based View Of Strategic Change. *Strategic Management Journal*, *39*(1), 155–167. Https://Doi.Org/10.1002/Smj.2702

Pesch, R., Endres, H., & Bouncken, R. B. (2021). Digital Product Innovation Management: Balancing Stability And Fluidity Through Formalization. *Journal Of Product Innovation Management*, *38*(6), 726–744. Https://Doi.Org/10.1111/Jpim.12591

Rerup, C., & Feldman, M. S. (2011). Routines As A Source Of Change In Organizational Schemata: The Role Of Trial-And-Error Learning. *Academy Of Management Journal*, *54*(3), 577–610. Https://Doi.Org/10.5465/Amj.2011.61968107

Roman, A. V., Van Wart, M., Wang, X. H., Et Al. (2019). Defining E-Leadership As Competence In ICT-Mediated Communications: An Exploratory Assessment. *Public Administration Review*, *79*(6), 853–866. Https://Doi.Org/10.1111/Puar.12980

Rossini, M., Cifone, F. D., Kassem, B., Et Al. (2021). Being Lean: How To Shape Digital Transformation In The Manufacturing Sector. *Journal Of Manufacturing Technology Management*, *32*(9), 239–259. Https://Doi.Org/10.1108/JMTM-12-2020-0467

Swift, M., Lange, D., Pike, J., Et Al. (2018). *Leaders For The Digital Age: The Role Leaders Play In Achieving Digital Sustainability*. Korn Ferry Institute.

Tian, H. N., Sun, M. L., & Wang, L. J. (2023). How Digital Leadership Promotes Green Innovation In Enterprises: SEM And Fsqca Methods. *Technological Progress And Countermeasures*, *40*(8), 54–65.

Torre, T., & Sarti, D. (2020). The "Way" Toward E-Leadership: Some Evidence From The Field. *Frontiers In Psychology*, *11*, Article 554253. Https://Doi.Org/10.3389/Fpsyg.2020.554253

Van Knippenberg, D., Dahlander, L., Haas, M., & George, G. (2015). Information, Attention, And Decision Making. *Academy Of Management Annals*, *9*(1), 649–709. Https://Doi.Org/10.5465/19416520.2015.1038412

Vial, G. (2021). Understanding Digital Transformation: A Review And A Research Agenda. In G. Vial (Ed.), *Managing Digital Transformation* (Pp. 13–66). Routledge. Https://Doi.Org/10.4324/9781003008637-2

Walsh, J. P. (1995). Managerial And Organizational Cognition: Notes From A Trip Down Memory Lane. *Organization Science*, *6*(3), 280–321. Https://Doi.Org/10.1287/Orsc.6.3.280

Wen, Z. L., Hou, J. T., & Zhang, L. (2005). Comparison And Application Of Moderation Effect And Mediation Effect. *Acta Psychologica Sinica*, *37*(2), 268–274.

Wilms, R., Winnen, L. A., & Lanwehr, R. (2019). Top Managers' Cognition Facilitates Organisational Ambidexterity: The Mediating Role Of Cognitive Processes. *European Management Journal*, *37*(5), 589–600. Https://Doi.Org/10.1016/J.Emj.2019.03.004

Xie, W. H., Yan, C. Y., & Zheng, D. W. (2023). How To Measure The Digitalization Level Of Manufacturing Enterprises? Taking Manufacturing Enterprises In Guangdong Province As An Example. *Science And Technology Management Research*, *43*(3), 66–76.

Xu, F., Tian, M., & Xu, G. H. (2020). Research On The Impact Of Big Data Application Capability On Enterprise Innovation Performance: The Mediating Effect Of Supply Chain Collaboration And The Moderating Effect Of Strategic Matching. *Macroeconomic Research*, *3*, 101–119.

Ying, Q. Y., & Chen, Y. T. (2023). The Impact Of Executive Cognition On Product Innovation In The New Digital Context. *Science Research Management*, *44*(3), 167–178.

Zhang, G. H., & Du, P. F. (2022). The Impact Of Digital Transformation On Technological Innovation In Chinese Enterprises: Incremental Or Qualitative? *Economic Management*, *44*(6), 82–96.

Zhang, J. H., & Long, J. (2022). Digital Transformation, Dynamic Capability, And Enterprise Innovation Performance: Empirical Evidence From High-Tech Listed Companies. *Economics And Management*, *36*(3), 74–83.

Zhang, Z. X., & Zheng, X. M. (2023). Digital Leadership: Structural Dimensions And Scale Development. *Economic Management*, Advance Online Publication, 1–18.

Zhou, H. H., Li, H. X., & Zhao, L. R. (2021). Research On The Impact Of Digital Transformation Of Manufacturing Industry On Green Innovation Performance: The Moderating Effect Of Digital Level. *Science And Management*, *23*(1), 33–43.