

Research on the Mechanism of Digital Leadership Affecting Organizational Resilience: Based on Organizational Improvisation

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Abstract: Changes in the market environment have placed demands on the organizational resilience of modern enterprises, and the impact of digital leadership on the organizational resilience of enterprises is becoming increasingly evident. This paper aims to reveal how digital leadership enhances organizational resilience through organizational improvisation, focusing on the mechanism of its impact in the enterprise. The study adopts the literature analysis method to construct a theoretical framework between digital leadership and organizational resilience by combing the existing relevant research results, and further explores the mechanism of organizational improvisation as a mediating variable. It is found that digital leadership can improve the improvisation ability of organizations in the aspects of digital thinking transformation, digital resource construction, digital ethical empathy and digital cognitive practice, and the enhancement of improvisation ability can further enhance the resilience of organizations and enable enterprises to better cope with the uncertainty of external environment. The research provides theoretical support and practical guidance for enterprises to improve organizational resilience under the background of digital transformation.

Keywords: Digital Leadership; Organizational Resilience; Organizational Improvisation.

1. Introduction

In the surging tide of digitalization, the uncertainty, complexity and ambiguity of the market environment have increased significantly, and the content and form of work have undergone unprecedented profound changes, forcing enterprises to re-examine and design their operation mode, and digital transformation has gradually become an inevitable trend of enterprise development. Organizational resilience, as the key ability of enterprises to cope with adversity and resist risks, is not only related to whether enterprises can respond quickly to market changes under the disruptive progress of digital technology, but also whether they can maintain corporate security and competitive advantages in the fierce competition. Since digital leadership plays a crucial role in the digital transformation of enterprises, studying the impact of digital leadership on organizational resilience can provide a new perspective for understanding the adaptation and change of organizations in the process of digital transformation, and has important practical value.

In front of the existing organization toughness for study, scholars mainly focus on organizational resources, organizational culture groups such as the influence of the

qualities and abilities of toughness. However, with the disruptive development of digital technologies, enterprises must not only deal with the challenges of traditional markets and operations, but also face emerging issues such as technological change, data security, and network competition. The complexity and dynamic nature of these challenges require companies to develop new capabilities and seek new paths to maintain and enhance their resilience. Existing research has not paid enough attention to how enterprises maintain and enhance organizational resilience under the digital background. It has been pointed out that enterprises adopting digital transformation will help shape their resilience [1], which implies the importance of digital leadership in the process of organizational resilience acquisition. Digital leadership is the specific leadership style and ability that leaders demonstrate to lead organizations to successful transformation and sustained growth in the digital age. Zhang Zhixin and Zheng Xiaoming deconstruct digital leadership from four structural dimensions of digital thinking transformation ability, digital resource construction ability, digital ethical empathy ability and digital cognitive practice ability. Digital thinking enables organizations to change quickly.

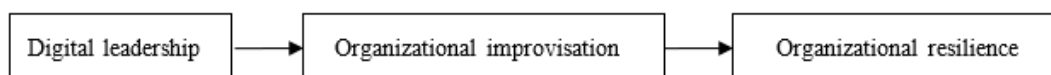


Fig 1. Research framework

This study is committed to in-depth analysis of how digital leadership plays a role in the maintenance and enhancement process of organizational resilience, to enrich the scope of the antecedents of organizational resilience research, to further enrich the connotation of organizational improvisation theory,

and to provide a new path for enterprises to improve organizational resilience under the background of digital transformation.

2. Theoretical Basis

2.1. Digital Leadership

Digital leadership is a relatively advanced research field, and there is no consensus definition of this concept in the academic community. Starting from the successful results of digital transformation, some scholars define digital leadership as a leader who guides the successful implementation of digital strategies of enterprises and promotes the smooth realization of digital transformation and sustainable development of organizations [2]. Starting from the actions and strategies taken in the process of digital transformation, some scholars define digital leadership as the governance concept that integrates digital technology and traditional leadership, which is mainly manifested in that leaders actively adapt to changes under the digital background, stimulate employees' innovative thinking, and rapidly optimize organizational structure and processes to cope with the constantly changing environment [3]. In short, different from traditional leadership, digital leadership focuses on adapting to the continuous changes in the external environment brought about by the development of digital technology, accurately judging the value of digitalization and its impact on enterprises, and encouraging employees to master digital skills that match job demands, so as to promote enterprises to adapt to digital changes [4][5]. According to the research questions and purposes involved in the research, this paper is mainly based on the research results of Zhang Zhixin and Zheng Xiaoming, combined with the definition of digital leadership by domestic and foreign scholars, and starts from the four structural dimensions of digital thinking transformation, digital resource construction, digital ethical empathy and digital cognitive practice, to understand the connotation of digital leadership.

In reviewing the existing literature study, comprehensive analysis, observed leadership research using the digital technology, digital study focusses mainly concentrated in two aspects: one is the definition of the concept of digital led, and the impact of digital on leadership itself; The second is a case study of the application of digital leadership in a specific industry or context. However, the research on the influence mechanism of digital leadership on organizational characteristics, the influence mechanism of digital leadership on organizational characteristics and the promotion path are still relatively weak, and further in-depth discussion and theoretical construction are needed.

2.2. Organizational Resilience

The concept of resilience, derived from ecology and engineering, describes a system's ability to resist and recover in the face of internal and external shocks. In the 1990s, the American business management field began to apply the concept of resilience to organizational management, thus giving birth to the term organizational resilience, which is defined as the resistance and resilience of an organization in the face of internal and external disasters or challenges. At present, the concept of organizational resilience is mainly divided into three categories. These are static capabilities (the ability to bear shocks and bounce back [6]), dynamic processes (the process by which a business or group positively adjusts and operates effectively before, during and after adversity [7]), or an emphasis on both. Although scholars have different opinions on the definition of organizational resilience, they all emphasize the ability of

enterprises to adapt to shocks brought by crises and environmental fluctuations. In recent years, research has focused on the ability to help organizations improve their learning to transcend the original state. The resilience studied in this paper is a dynamic capability of enterprises, which can not only help enterprises recover from crisis situations, but also help enterprises create new development opportunities and achieve leapfrog development in the rapidly changing business environment under the digital background.

At present, the research on organizational resilience at home and abroad has made some progress, mainly focusing on the definition, measurement methods and improvement strategies of organizational resilience, but there are still some gaps in the research on the specific influencing factors and mechanism of organizational resilience. Especially in the digital context, how organizational resilience is shaped and influenced by digital leaders, and how to enhance organizational resilience through what path need to be further studied.

2.3. Organizational Improvisation

Organizational improvisation is an important theory in the study of organizational behavior. It is the ability of an organization to react quickly and solve problems creatively in the face of unforeseen events. Although the academic community has not reached a complete consensus on the definition of organizational improvisation, it generally agrees on its core characteristics such as rapid responsiveness, creative intent, and resource dependence. From the perspective of timeliness, Moorman et al. define organizational improvisation as a high concentration of creation and execution in time, emphasizing the synchronization of planning and execution [8][9]. From the perspective of innovation, organizational improvisation is understood as the significant difference between improvisation and planned behavior, emphasizing the originality and non-traditional nature of improvisation [10]. Cunha et al. further linked organizational improvisation with resource utilization, arguing that the core features of organizational improvisation include dependence on existing resources [11]. On the basis of the existing concepts, this paper holds that organizational improvisation can be understood from three dimensions: rapid response, intention creation and resource dependence. Rapid response reflects the organization's ability to respond quickly to emergencies. Intention creation emphasizes the innovative thinking and new approaches to problem solving that organizations exhibit during improvisation; Resource dependence relates to how efficiently an organization mobilizes and uses existing resources to support improvisation.

The building of organizational resilience depends not only on advance planning and thorough preparation, but also on the ability of the organization to react instantly in a changing and complex environment. Organizations need to respond in a relatively short period of time through creative and non-traditional behaviors to reduce environmental threats or seize potential opportunities, which is organizational improvisation. From the perspective of organizational improvisation theory, this study deeply analyzes how digital leadership shapes and enhances organizational resilience by stimulating organizational improvisation ability, thus revealing the internal logic of the interaction between digital leadership and organizational resilience to a certain extent, and revealing the complex dynamics behind the relationship between the two to

a certain extent.

3. Research on the Path of Digital Leadership Influencing Organizational Resilience

3.1. The Impact of Digital Leadership on Organizational Improvisation

The top echelon theory points out that the personal characteristics of leaders will have an impact on the strategic decisions of enterprises, and then on organizational behavior [12]. Through the personal style and behavior pattern of leaders, digital leadership has an impact on the organization's behavioral strategy choice, and then affects the development of the organization's improvisation ability. With transformational thinking, the courage to take risks, and the ability to change and innovate [13], digital leaders can lead organizations to respond effectively to the dynamic environment faced by enterprises, improve the improvisation ability of enterprises, and thus enhance organizational resilience.

3.1.1. Digital Thinking Change and Rapid Response

Digital thinking change, an important dimension of digital leadership, can promote the rapid response of organizations in the face of emergencies and play a key role in stimulating the efficient use of improvisation. Digital mindset change is the ability of leaders and their organizations to proactively adapt and adopt new mindsets and working methods in the face of digital transformation and a changing business environment. Digital thinking transformation emphasizes that leaders need to be forward-looking and adaptable, and forward-looking requires leaders to have the ability to predict future trends and changes, so as to formulate adaptive strategies for the organization [14]. This adaptability helps organizations to quickly identify and respond to environmental changes and stay ahead of the curve in a highly competitive market. Adaptability encourages organization members to break traditional thinking patterns and adopt a more flexible and innovative perspective to deal with problems, thereby improving the speed and efficiency of the organization's response to emergencies.

3.1.2. Digital Resource Construction and Rapid Response, Resource Dependence and Intention Creation

The construction of digital resources promotes the construction of internal technical infrastructure of organizations, promotes the multiple acquisition of data and information by organizations, and realizes interconnection, which is conducive to the rapid acquisition and integrated scheduling of organizational information [15]. The flow of information between the organization and the environment creates the premise for the occurrence of improvisation, so that the organization can understand the change of the environment in time. The rapid flow of information enables organizations to adapt more quickly to changes in the external environment. This adaptability is the key to rapid response in an organization's ability to improvise. The flow of information within the organization not only facilitates the occurrence of improvisation, but also improves the effectiveness of improvisation. The integrated dispatch of information can help to break the barriers between departments and promote inter-departmental collaboration. The improvement of collaborative efficiency is crucial for

organizational improvisation, ensuring that organizations can pool resources and people to jointly address challenges in response to emergencies.

Digital leadership provides the necessary foundation for organizational improvisation in terms of resource construction. The organization's memory material, including technical conventions, past experience, and knowledge base, provides the basis for improvisation. Some studies have pointed out that organizations with strong technical conventions tend to have rich knowledge reserves and experience, and these organizations are more likely to generate improvisation in the innovation process [16]. Digital leadership provides the necessary information and experiential foundation for organizational improvisation by building and maintaining rich digital memory materials such as databases, case libraries, and knowledge management systems. These resources enable members of the organization to quickly access and leverage lessons learned from past successes and failures, enabling them to react quickly and make innovative decisions when faced with new challenges. This resource building capacity enables organizations to rely on existing resources and quickly mobilize needed resources to support improvisation, so that they can act quickly when faced with challenges and effectively use resources to solve problems.

In addition, the rapid access and sharing of information provides members of the organization with a broader perspective and more knowledge resources, thus stimulating innovative thinking. Intention creation, as the core of improvisation, encourages organizations and employees to come up with new solutions when faced with problems, which is important for organizations to maintain competitiveness and sustainable development in the digital age.

3.1.3. Empathy with the Intention to Create Digital Ethics

Digital ethical empathy shown by leaders encourages people to think outside the box and try new ideas. When leaders understand and respect employees' perspectives and needs, employees are more likely to exhibit innovative and improvisational behavior at work [17]. When leaders pay attention not only to the use of technology and the improvement of efficiency, but also to the feelings, needs and values of employees, employees will feel that their work is valued and their personal value is recognized. This positive feedback mechanism encourages employees to be more actively involved in their work and more willing to come up with their own ideas and innovations. Second, digital ethical empathy helps reduce employees' sense of risk when trying new ideas. During digital transformation, employees may feel uncertain and concerned about new technologies and processes. Through empathy, leaders are able to understand the concerns of their employees and provide the support and resources necessary to help them overcome their fears, experiment and explore. This kind of support not only reduces the psychological barrier for employees to try new things, but also stimulates their innovation potential.

Digital ethical empathy can create an open and trusting working atmosphere, promote mutual understanding and support among team members, and thus enhance team cohesion. It has been proved that team cohesion can have a significant impact on individual improvisation [18]. Digital ethical empathy helps build a supportive team environment, promotes the sharing of knowledge and skills, and enhances collaboration and innovation among team members. Motivate

employees to work together to achieve the common vision of the team.

3.1.4. Digital Cognitive Practice and Rapid Response, Intention Creation

The practice of digital cognition is embodied in active learning and the use of digital tools, constantly improving their own digital management and application capabilities [19], improving communication and collaboration efficiency among employees, and transforming digital cognition into practical actions. This cognitive practice enables leaders to quickly understand and adapt to the digital environment in order to promote and implement new ideas and strategies in the organization. For example, decision-making based on intelligent analysis of big data [20] effectively improves the decision-making and execution efficiency of the management. Through the demonstration of the leader's behavior, the members of the organization are able to learn and adapt faster, so that they can react quickly and solve problems creatively in the face of uncertainty. At the same time, experimental culture can effectively promote the occurrence of organizational improvisation [21]. The combination of digital cognitive practice and an experimental culture encourages employees to constantly try new approaches and learn from failure. This culture not only tolerates mistakes, but also encourages employees to act quickly, driven by a sense of urgency, which increases the incidence of improvisation.

3.2. The Influence of Organizational Improvisation on Organizational Resilience

Organizational resilience not only depends on the organization's pre-made plans or thorough arrangements, but also depends to a large extent on the organization's real-time response in the face of adversity. Organizational improvisation plays a crucial role in maintaining organizational resilience in the face of emergencies.

Organizational improvisation emphasizes rapid response in the face of emergencies. This rapid response capability enables organizations to quickly identify problems, assess situations and take action, thereby maintaining continuity of operations in a crisis [22] and helping organizations to quickly return to normal in the face of challenges.

Organizational improvisation involves reliance on and optimal use of existing resources. During digital transformation, organizations need to efficiently mobilize and use existing resources to support improvisation. In emergencies, the resources available to enterprises are often very limited, and resource optimization and flexible application relying on digital technology can effectively improve organizational resilience.

Organizational improvisation emphasizes the ability of an organization to react quickly through innovative behavior without prior planning. This ability requires that members of the organization be able to use existing resources flexibly, adapt quickly to change, and think outside the box when necessary. The implementation of the organization improvisation can not only help the organization maintain the continuity of operation in the crisis, but also find new development opportunities in the changing environment, thus enhancing the competitiveness and adaptability of the organization. Organizational improvisation encourages innovative thinking and creative problem solving. In the digital context, this innovative thinking can help

organizations identify new market opportunities, develop new products or services, and thus find new growth points in a changing environment, adapt to environmental changes, and even achieve growth in adversity.

To sum up, by promoting the transformation of digital thinking, building digital resources, cultivating digital ethical empathy and practicing digital cognition, digital leadership improves the ability of organizations to respond quickly, stimulate innovative thinking, optimize resource utilization, etc., thus having a positive impact on organizational resilience and enabling organizations to not only deal with crises but also seize opportunities in the digital era. Achieve sustainable development and leapfrog growth.

4. Summary

4.1. Research Conclusion

In order to explore the impact of digital leadership on organizational resilience, this study examines the impact path of digital leadership on organizational resilience from the perspective of organizational improvisation. By combing and analyzing the existing literature, this paper constructs a theoretical framework of the relationship between digital leadership and organizational resilience by deeply exploring the mechanism of the effect of digital leadership and organizational improvisation on the improvement of organizational resilience, and discusses the mechanism of organizational improvisation. The rationality and validity of the framework are supported by literature analysis. The study drew the following specific conclusions:

Digital leadership plays a key role in enhancing organizational resilience. Specifically, digital leadership enables organizations to identify and respond more quickly to changes in the external environment by facilitating digital thinking change; By building digital resources, companies can integrate internal and external information more efficiently, thereby reducing uncertainty in the decision-making process. Digital ethical empathy can create an open and trusting organizational culture and stimulate the innovation enthusiasm of employees. The digital cognitive practice helps enterprises to continuously learn and adapt in the digital environment, ensuring that the organization continues to innovate.

Organizational improvisation plays a mediating role between digital leadership and organizational resilience. Organizational improvisation enhances the response ability of enterprises in the face of emergencies through the three dimensions of rapid response, resource dependence and intention creation, thus enhancing organizational resilience. This means that in digital transformation, enterprises can maintain operational continuity in crises through organizational improvisation, and seize new opportunities in turbulent environments to achieve leapfrog growth.

This paper not only reveals the internal mechanism between digital leadership and organizational resilience, but also fills the gap in the existing research on the relationship between the two, and provides a new theoretical perspective and practical guidance for enterprises to enhance resilience in the complex and changeable digital era. Future studies can be further combined with empirical data to verify the applicability of this theoretical framework in different enterprise and industry contexts, and explore the potential negative effects that digital leadership may bring and their mitigation strategies.

4.2. Research Contribution

4.2.1. Expand Research Perspectives in the Field of Digital Leadership

As a new research field, most of the current academic circles pay attention to the impact of digital leadership on the digital transformation of enterprises. Existing studies focus on internal processes and strategies, but there are relatively few studies on how digital leadership plays a role in the construction of enterprise resilience, that is, the digitalization of organization and management, and the role of digital leadership in complex and uncertain environments. By introducing the important concept of organizational resilience, this paper explores the key role of digital leadership in improving the adaptability and crisis response ability of enterprises, and expands the research boundaries of digital leadership. Specifically, this paper not only focuses on how digital leadership promotes organizational development through technological change in the context of digital transformation, but also systematically analyzes its role path in building enterprise resilience, thus enriching the application scenarios of digital leadership theory.

4.2.2. Fill in the Research Gap on the Impact of Digital Leadership on Organizational Resilience

Most of the existing studies focus on how digital leadership promotes innovation, improves organizational performance or promotes strategic transformation, but there are few studies on how it affects organizational resilience, especially through what mechanism. By introducing organizational improvisation theory, this paper reveals the concrete path of digital leadership to improve organizational resilience by stimulating organizational improvisation ability, filling the research gap in this field. Through theoretical construction and framework analysis, this paper opens the "black box" between digital leadership and organizational resilience, and provides a new theoretical perspective for future research.

4.2.3. Deepen the Application and Extension of Organizational Improvisation Theory

Organizational improvisation theory focuses on how to solve problems through rapid response and creative behavior in the face of emergencies or crises. On this basis, this paper combines the organizational improvisation theory with digital leadership, and proposes that digital leadership indirectly enhances the organization's improvisation ability by improving the organization's quick response ability, resource optimization ability and innovation ability. This combination not only expands the applicable scope of organizational improvisation theory in the digital background, but also provides a new application scenario for it. Through the further analysis of the relationship between organizational improvisation and organizational resilience, this paper provides strong support for the deepening and expansion of organizational improvisation theory.

4.2.4. Construct a Dynamic Relationship Model Between Digital Leadership and Organizational Resilience

The theoretical framework proposed in this study provides a new analytical path for the study of the anthems of organizational resilience through the construction of the dynamic relationship between digital leadership, organizational improvisation and organizational resilience. Traditional studies on organizational resilience mostly focus on static factors such as organizational resources and organizational culture, but this paper introduces dynamic capability (organizational improvisation) as a mediating

variable to explain how digital leadership can enhance organizational resilience by stimulating dynamic response mechanisms within organizations. This model has not only enriched the theoretical research of organizational resilience, but also provided new practical guidance for enterprises to deal with complexity and uncertainty in the digital environment.

4.2.5. Provide Theoretical Support for Management Practice in the Era of Digital Transformation

With the acceleration of the global digitization process, the market environment faced by enterprises has become more complex and uncertain, and resilience has become a key capability for enterprises to cope with crises and maintain competitiveness. By revealing how digital leadership can improve organizational resilience, this paper provides a new theoretical basis for business managers to better understand how to enhance the resilience of enterprises through leadership shaping and improvisation in the process of digital transformation. The concrete pathways in the theoretical framework can not only help companies design more effective digital transformation strategies, but also provide clear guidance for leaders on how to stimulate organizational innovation and resilience in practice.

4.3. Shortage and Prospect

Although this paper has comprehensively discussed the impact of digital leadership on organizational resilience from a theoretical perspective, there are still some limitations in the research. First, the paper fails to fully consider the possible negative effects of digital leadership. Inappropriate or excessive use of digital technology by enterprises may pose a threat to managers and employees [23]. Future research could provide an in-depth analysis of the impact of digital threats on employees and organizations, in particular how these threats can be mitigated through effective leadership strategies and how these strategies influence the formation of organizational resilience.

Besides this paper mainly analyzes the impact of digital leadership on organizational resilience based on theoretical derivation, and lacks empirical analysis to verify these theoretical hypotheses. Although theoretical analysis provides a basic framework for understanding the relationship between digital leadership and organizational resilience, the actual effects and influencing mechanisms still need to be further verified by empirical studies. Future research should consider collecting and analyzing relevant data to assess the actual effects of digital leadership in different organizations and contexts, and how it affects the construction and enhancement of organizational resilience in the real world.

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References

- [1] Jiang Ruan, Ling Yupeng, Zhang Jichang, et al. How Does Digital Transformation Affect Business Resilience? --Based on a dual innovation perspective. *Technology Economics*, 2022, 41 (01): 1-11.
- [2] El Sawy O A, Kræmmergaard P, Amsinck H, et al. How LEGO built the foundations and enterprise capabilities for digital

- leadership. *Strategic information management*. Routledge, 2020: 174-201.
- [3] Kane G C, Phillips A N, Copulsky J, et al. How digital leadership is (n't) different. *MIT Sloan management review*, 2019, 60(3): 34-39.
- [4] Philippart M H. Success Factors to Deliver Organizational Digital Transformation: A Framework for Transformation Leadership. *Journal of Global Information Management*, 2021, 30, (8):1-17.
- [5] Zhu J, Zhang B, Xie M, et al. Digital leadership and employee creativity: The role of employee job crafting and person-organization fit. *Frontiers in Psychology*, 2022, 13: 827057.
- [6] Huang Y, Zhao Y, Li M. Organizational resilience: A capability-based conceptualization. *Journal of Management*, 2018, 44(6): 2350-2374.
- [7] Williams T A, Shepherd D A. Building resilience or providing sustenance: Different paths of emergent ventures in the aftermath of the Haiti earthquake. *Academy of Management Journal*, 2016, 59(6): 2065-2088.
- [8] Moorman C, Miner A S. The Convergence of Planning and Execution: Improvisation in New Product Development. *The Journal of Marketing*, 1998, 12(8):1-20.
- [9] Moorman C, Miner A S. Organizational Improvisation and Organizational Memory. *Academy of Management Review*, 1998, 26(8):698-723.
- [10] Berliner P F. *Thinking in Jazz: The Infinite Art of Improvisation*. Chicago: University of Chicago Press, 1994.
- [11] Cunha M P, Cunha V J, Kamoche K. Organizational Improvisation: What, When, How and Why. *International Journal of Management Reviews*, 1999, 1(3):299-341.
- [12] Neely Jr B H, Lovelace J B, Cowen A P, et al. Metacritiques of upper echelons theory: Verdicts and recommendations for future research. *Journal of Management*, 2020, 46(6): 1029-1062.
- [13] AlNuaimi B K, Singh S K, Ren S, et al. Mastering digital transformation: The nexus between leadership, agility, and digital strategy. *Journal of Business Research*, 2022, 145: 636-648.
- [14] Roberts N, Grover V. Leveraging information technology infrastructure to facilitate a firm's customer agility and competitive activity: An empirical investigation. *Journal of management information systems*, 2012, 28(4): 231-270.
- [15] Mazzei M J, Noble D. Big data dreams: A framework for corporate strategy. *Business Horizons*, 2017, 60(3): 405-414.
- [16] Brown S L, Eisenhardt K M. Product Development: Past Research, Present Findings, and Future Directions. *Academy of Management Review*, 1995, 6(2):343-378.
- [17] Cunha M P, Cunha J V, Kamoche K. Organizational improvisation: what, when, how, and why. *International journal of management reviews*, 1999, 1(3): 299-341.
- [18] Magni M, Proserpio L, Hoegl M, et al. The role of team behavioral integration and cohesion in shaping individual improvisation. *Research policy*, 2009, 38(6): 1044-1053.
- [19] Jiao Hao, Yang Jifeng, Ying Ying. A review of dynamic capabilities research and suggestions for conducting contextualized research in China. *Management World*, 2021, 37(5):191-210,14.
- [20] Nadkarni S, Prügl R. Digital transformation: a review, synthesis and opportunities for future research. *Management Review Quarterly*, 2021, 71: 233-341.
- [21] Huang Yong, Peng Jisheng. Organizational improvisation: status and prospects. *Journal of Management*, 2012, 9(07):1084-1091.
- [22] Lynn G, Reilly R R. Effect of improvisation on product cycle time and product success: A study of new product development (NPD) teams in the United States. *International Journal of Management*, 2008, 25(1): 175.
- [23] Usai A, Fiano F, Petruzzelli A M, et al. Unveiling the impact of the adoption of digital technologies on firms' innovation performance. *Journal of Business Research*, 2021, 133: 327-336.