

The Review of Digital Transformation of Internal Resources on Innovation Performance in China

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Abstract

This article delves into the intricate relationship between digital transformation and innovation performance in Chinese manufacturing enterprises. It thoroughly examines how digitalization influences innovation performance by analyzing the impact of internal resources on organizational innovation. Through a review of existing literature, it highlights the significance of enterprise digitalization, exploring its origins, development, and current state. Additionally, it scrutinizes digital innovation performance from various angles, including human resources, capital, products, and management, to elucidate the intricate interplay between internal resources and digital innovation performance. Recognizing the imperative for enterprises to adapt to the ever-evolving digital landscape, this paper underscores the necessity of leveraging digital transformation to enhance innovation capabilities. By clarifying the principles and mechanisms underlying the impact of digital transformation on innovation, it offers theoretical insights to facilitate effective digital transformation strategies. Ultimately, this systematic examination aims to empower enterprises to unlock their intrinsic value and foster a culture of innovation amidst the challenges and opportunities of digitalization.

Keywords: Chinese manufacturing enterprises, digital, industry, innovation performance, resource

Introduction

In recent years, the rapid growth of digital technologies such as 5G, cloud computing, and artificial intelligence has led to the continuous emergence of new forms and models that meet consumer demand and drive organizational digital transformation. The application of the Internet of Things, cloud computing, big data, and mobility is known as enterprise digital transformation (Dai et al., 2023). Enterprise innovation has become a critical need due to national strategy and market competition (Oysterfish & Totenberg, 2016). The collaboration between technology and the real economy not only enhances company networking, intelligence, and digitization but also accelerates the transformation of economic development and governance models. The Chinese government has introduced various strategies to promote the digital economy, emphasizing digital transformation as a core driver to advance the rapid development of the nation's real economy (Liu et al., 2022). Since 2012, the government has prioritized the development of digital technology-related industries, issuing the "Twelfth Five-Year Plan" and documents such as the "National Strategic Emerging Industry Development Plan" to support research in digital technologies like big data, cloud computing, and the Internet of Things, and to promote the integration of informatization and industrialization (14th Five-Year Plan, n.d.).

The 14th Five-Year Development Report mentions that digitalization has become an important aspect of business operations (Zhang et al., 2023), highlighting the need to push upgrades and speed up digitalization (G. Li et al., 2023). The government then released several "Internet"-related policy documents, which further encouraged the digital transformation of conventional businesses.

Between 2011 and 2022, the scale of China's digital economy surged from 9.5 trillion yuan to 50.2 trillion yuan, securing the second rank globally for several consecutive years. This rapid growth in the digital economy has significantly accelerated the innovation processes within enterprises. In 2022, the added value of China's manufacturing industry accounted for 27.7% of GDP, maintaining its position as the world's largest manufacturing industry for 13 consecutive years. Through digital transformations and digital management, enterprises bring value enhancement and innovation performance to enterprises, at the same time, they share high-quality resources of enterprises, promote product and R&D innovation, and achieve the effect of increasing revenue and reducing expenditure, improving quality, and increasing efficiency, digital transformation has become the core driving force for the development of China's digital economy, is a common feature of current and future digital economic development.

Practically speaking, the diversity of innovations resulting from the various technological and commercial integration phases pose serious obstacles to company digital innovation, to address the issue of how businesses may achieve digital innovation performance, it is essential to investigate the digital innovation process and the road to digital transformation.

Theoretically, the academic community hasn't done a thorough and in-depth research on the precise effects of digital transformation on corporate innovation (Müller et al., 2018). China's manufacturing industry is in a period of great opportunity for transformation, and the importance of the quality of enterprise management personnel has become particularly prominent, and their quality level has an important impact on the level of enterprise performance (Kaixin, 2013). The digital transformation of real economy enterprises is a crucial necessity for enhancing resource allocation, boosting operational effectiveness, and attaining high-quality innovation and growth (Cheng et al., 2023). Exploring the process and path of different types of digital business model innovation is crucial to solving the problem of how start-ups realize digital business model innovation.

This paper explores innovation performance both at the industry and enterprise levels, focusing on how digital transformation affects enterprise innovation outcomes.

Theoretical Background and Framework

Resource-Based View

Waterfield's publication of "Resource-Based Theory of Enterprise" in 1984 introduced the concept of resource-based theory. This theory suggests that enterprises have various tangible and intangible resources that can be developed into unique capabilities, which are both immobile and hard to replicate. These distinctive resources and capabilities are key to maintaining a competitive edge. The fundamental idea of the theory is to view an enterprise as a collection of resources, focusing on their characteristics and strategic value, to explain the sustained advantages and differences among enterprises.

The theory identifies the source of competitive advantage as unique, heterogeneous resources and considers the sustainability of this advantage to depend on the difficulty of imitating these resources. However, resource-based theory has some limitations. It often places too much emphasis on internal factors and not enough on external market conditions, which can lead to strategies that are not responsive to market changes. Moreover, the concepts of incomplete imitation and resource replicability are often ambiguous and challenging to apply, making it easier for competitors to replicate these strategic resources.

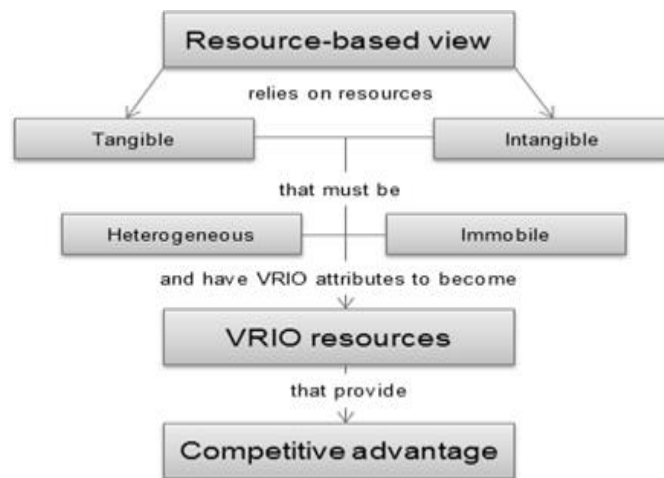


Figure 1: Resource-Based View

Technology Innovation Theory

The initial development of the concept of corporate innovation can be traced back to Schumpeter (2017). The principles of the theory of national economic development in the early to mid-20th century are specifically concerned with the success and maintenance of a capitalist economy, viewing innovation or innovative entrepreneurship as how a firm uses its assets. The accumulated knowledge is restructured into "new production functions" to generate greater added value or productivity. This added value translates into more efficient operations, leading to the introduction of new processes, services, organizational structures, markets, or methods of outsourcing raw materials or semi-finished products (Sarma & Pais, 2008). Schumpeter also emphasized that there is an essential difference between innovation and invention. Innovation is the category of the economic field, while invention is the category of the technical field. Innovation is the application of new elements or the use of new methods. Invention can be a part of innovation, but it is not a necessary part, only when the invention is applied to the economic field and brings an increase in benefits can be called innovation. Therefore, at the enterprise level, innovation includes not only novelty but also usability (Baron & Kenny, 1986) and productivity. Further refining innovative concepts, productivity encompasses not only the availability of resources but also the efficiency in implementing innovative ideas by utilizing the optimal combination of resources to achieve greater output. Ultimately, the combination or recombination of resources for these innovations to achieve optimal productivity Schumpeterian concept, if not always particularly recognized as such - gives rise to the relevance of business models as a research area of innovation's mother field (C. Sun, 2020).

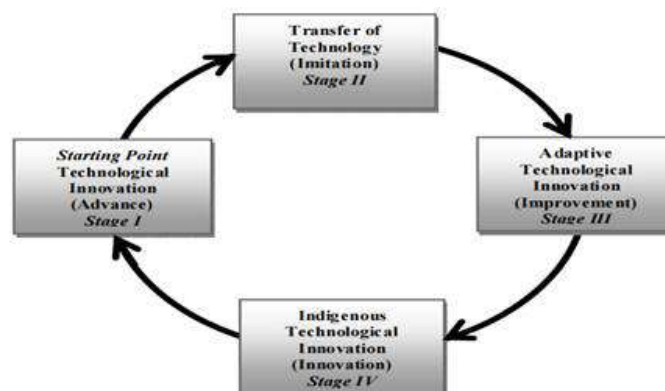


Figure 2: Technology Innovation Theory

Organizational Culture Theory

Organizational culture theory is an important branch of organizational behavior, which involves the study of values, beliefs, norms of behavior, and social norms within organizations. This theory holds that the organization has a unique culture, which is interlinked by the psychological concepts, behavior patterns, beliefs, and values formed by the organization. Organizational culture plays a crucial role in shaping the organizational atmosphere, standardizing employee behavior, promoting the realization of organizational goals, and forming common values and enterprise spirit. The development of organizational culture theory can be linked back to the mid-20th century (Ketprapakorn & Kantabutra, 2022). At the earliest, researchers mainly focused on the structure and process of the organization, ignoring the culture of the organization. However, as organizational scholars gradually realized the important influence of culture on organizational behavior and performance, organizational culture theory gradually emerged. In the 1980s, Edgar Schein proposed the concept of organizational culture for the first time, arguing that organizational culture is the core of an organization, which is the basic assumptions and beliefs shared by members of an organization and affects the organization's behavior and decision-making (Allaire & Firsirotu, 1984). Since then, the theory of organizational culture has developed continuously, and many different research directions and models have emerged. The more influential theories include Denison's corporate culture model, Hofstede's cultural dimension theory, Cameron's, and Quinn's competitive value framework, etc. These theories reveal the influence of culture on organizational performance, employee satisfaction, and innovation ability by comparing and studying the cultures of different organizations (Zilber, 2012). In general, the theory of organizational culture serves as a crucial key in the field of organizational behavior and management, and it has important guiding significance for helping enterprises to establish the core corporate culture, improve the cohesion and creativity of employees, and promote innovation and development of organizations.

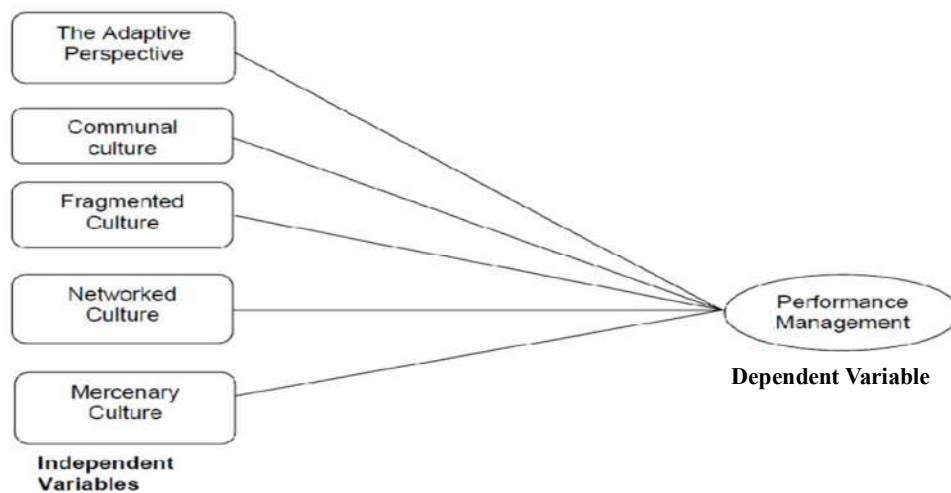


Figure 3: Theoretical Framework

Theoretical framework

Existing literature provides a comprehensive analysis of the factors influencing enterprise value. At the macro level, research has explored influences such as economic policy uncertainty and intellectual property protection. At the micro level, studies have examined how green innovation, organizational capital, and social responsibility disclosure impact enterprise value. These studies offer a robust theoretical foundation and valuable insights into enterprise value enhancement from both macro and micro perspectives.

While academic research predominantly focuses on the relationship between digital transformation and enterprise performance, a consensus has yet to be reached. Digital transformation can potentially enhance manufacturers' profits, productivity, and competitiveness. However, the digital paradox highlights that despite substantial investments in digitization, businesses often do not realize the anticipated revenue gains. Some studies have explored the links between digital transformation and productivity, or between innovation performance and business model innovation, but there is a lack of direct research on the relationship between digital transformation and enterprise value (Autio et al., 2018; Zhu et al., 2020).

Digital transformation positively affects business value. The "2021 Chinese Enterprise Digital Transformation Index" by Accenture reports that digital advantages for enterprises have doubled and converted into significant financial benefits, with a gap of up to 3.7 times compared to other firms. Digital transformation enhances enterprise value through data-driven effects. Manufacturing companies, for example, use digital technologies to create big data platforms for data mining and resource optimization, reducing waste in production processes (Popkova & Giyazov, 2021). Additionally, data-driven strategies enable companies to accurately predict and swiftly respond to customer needs, identify digital business opportunities, and ultimately increase enterprise value (Bousdekis et al., 2021).

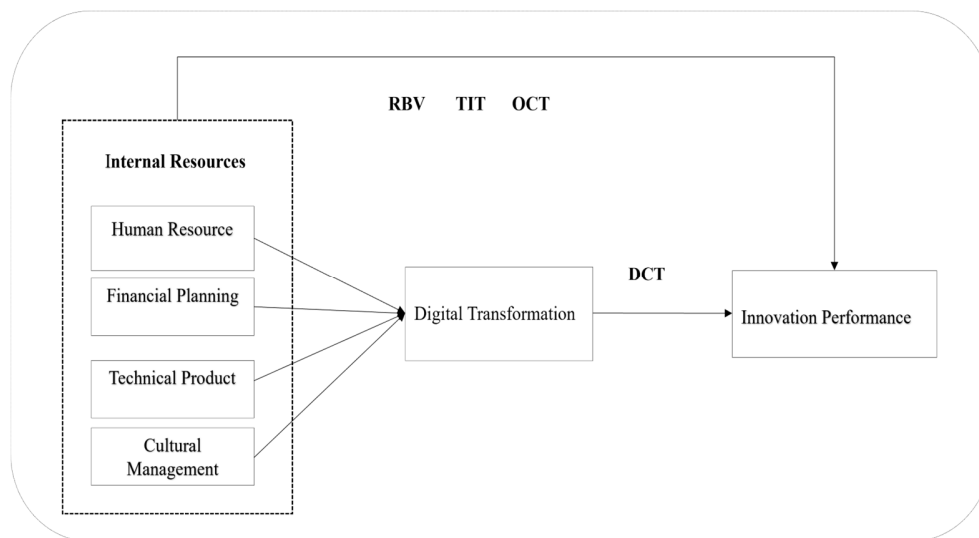


Figure 4: Theoretical Framework

Internal Resources and Innovation Performance

From the perspective of resource base, human capital as an internal resource, has a crucial impact on the innovation performance of an enterprise. Alipour et al. (2022) believe that an enterprise's competitive advantage comes from its own resources and capabilities, and human capital, as a core resource, serves as a crucial role in the innovation ability and performance of an enterprise. First, high-quality human capital can enhance the innovation ability of enterprises. The knowledge and skills of employees are an important foundation for business innovation, and their expertise and experience can drive the development of new products, technologies, and businesses. It is found that excellent employees can often create unique solutions and bring new competitive advantages to enterprises (Chen & Huang, 2009). In addition, high-quality human capital can also improve the innovation awareness and acuity of enterprises, so that enterprises can pay more attention to changes in market demand and technological trends, adjust the direction of innovation in a timely manner, and avoid missing opportunities. Secondly, the high quality of human capital can promote the accumulation and inheritance of knowledge within the enterprise, which is conducive to the continuous promotion of innovation. The experience and knowledge generated by excellent employees in the process of work can be accumulated through internal learning and knowledge sharing, thus forming the core competitiveness of enterprises. Muñoz-Pascual et al., (2021) believe that such knowledge accumulation enables enterprises to better absorb external information and technology in the innovation process and accelerate the innovation process. In addition, high-quality human capital can also promote the innovation culture and learning atmosphere of enterprises, making employees more willing to try new innovative practices, and constantly learn and improve. Third, high-quality human capital can also shape a culture of innovation. The innovation performance of enterprises is often closely related to an innovation culture. Active and creative employees tend to form a positive innovation atmosphere within the enterprise, encouraging employees to participate in innovation activities and share innovation results. Excellent employees can become promoters and leaders of enterprise innovation and lead other employees to participate in innovation (Baykal, 2019; Fleisher et al., 2010). Under the guidance of this innovation culture, enterprises can better boost the innovation

potential of employees and the extensive development of innovation activities. In general, the resource-based perspective provides us with a way to deeply understand the impact of input capital on firm innovation performance. High-quality human capital provides enterprises with the driving force of continuous innovation and promotes enterprises to continuously gain advantages in market competition. Therefore, in the digital era, enterprises should attach importance to the cultivation and management of human capital, provide employees with continuous learning and development opportunities, stimulate their innovation potential, and boost the continuous improvement of enterprise innovation performance.

From the perspective of resource-based theory, financial planning plays a crucial role in the realization of enterprise innovation performance. Effective financial planning supports and drives the innovation efforts of enterprises through rational allocation of funds and investment planning to allocate funds to innovation-related activities such as research and development, technology acquisition, and talent development (De Lucia et al., 2020). At the same time, financial planning also focuses on cash flow to ensure continued funding for innovative projects. Financial planning also helps manage the risks associated with innovation investments during the innovation process. By balancing risk and reward considerations, financial planning encourages companies to take calculated risks in innovation and promotes a culture of experimentation to explore new opportunities for innovation. This approach to risk management enables companies to be more flexible and agile in the innovation process, thereby improving innovation performance. In addition, it is also important to consider the impact of financial planning on innovation performance from a long-term perspective (Kapitani & Luci, 2019). Financial planning of long-term goals and objectives enables businesses to continuously invest in innovation and focus on sustainable growth and the achievement of competitive advantage. This kind of long-term financial planning provides stable financial support for enterprises, enabling them to continue to advance innovative projects and maintain sustained efforts in the innovation process (Kautsar et al., 2019). To sum up, the perspective of resource-based theory enables us to have a deeper understanding of the key impact of financial planning on enterprise innovation performance. Financial planning supports and drives the innovation efforts of enterprises through rational capital allocation, investment planning, and cash flow, while effectively managing the risks associated with innovation investments. Financial planning with a long-term perspective ensures that companies can continue to invest in innovation to achieve their goals of sustainable growth and competitive advantage. Therefore, when formulating financial strategies, enterprises need to fully consider the perspective of resource-based theory, ensure that financial planning is consistent with the goal of innovation performance, and provide continuous and stable support for innovation.

Advanced technologies and tools provide enterprises with a more efficient way to work and a platform for innovation, making it easier for them to develop and implement innovative solutions. Technology products provide the infrastructure and capability for innovation and provide strong support for the innovation activities of enterprises. The introduction of technology products promotes the digital transformation of enterprises, enhances the innovation ability and innovation consciousness of enterprises, and thus promotes the continuous improvement of the innovation performance of enterprises (Jiang & Xu, 2023). Market differentiation also has a positive impact on enterprise innovation performance. Innovative technology products have unique and cutting-edge characteristics, which can enable enterprises to stand out in the market and gain competitive advantages. In the rapidly developing digital era, the differentiation of technology products is one of the important means for enterprises to obtain market share and enhance their market position. By introducing technology products with market competitiveness, enterprises can better meet customer needs and improve customer satisfaction, thus promoting the improvement of enterprise innovation performance. The application of technology products also drives customer-centric innovation. Technology products are often developed to meet specific customer needs and preferences, and as such, they have advantages in terms of product customization and personalization. Understanding customer needs and meeting these needs through technology products can help enterprises better realize customer-centric innovation and provide products and services that are more in line with market needs (Yin et al., 2020), thus promoting the improvement of enterprise innovation performance. In short, as an innovation enabler, technology products provide innovation infrastructure and capabilities and promote the digital transformation and innovation implementation of enterprises. Market differentiation of technology products and customer-centric innovation also provide strong support for enterprises to win competitive advantage and continuous innovation. Therefore, in the process of pursuing innovation performance, enterprises should make full use of the potential of technological products as an important driving force to promote innovation and combine with other innovation elements to comprehensively improve the innovation performance of enterprises.

Cultural management plays a crucial role in shaping an organization's innovation culture. A supportive and innovative culture fosters an environment that encourages employees to take risks, share ideas, and experiment, leading to improved innovation outcomes (Srisathan et al., 2020). According to the theory of organizational culture, cultural management can guide the performance and attitude of employees in the innovation process by shaping the values, beliefs, and codes of conduct of the organization, thus affecting the realization of innovation performance. However, leadership also plays a key role in organizational culture. Driven by effective leadership, it influences the way innovation is perceived, communicated,

and rewarded within an organization. Transformational leadership and visionary leaders can inspire and empower employees to embrace innovation and drive change.

According to the theory of organizational culture, the behaviors and decisions of leaders will have an impact on the behaviors and attitudes of organization members, thus affecting the realization of innovation performance. Organizational culture theory emphasizes the important role of cultural management in shaping innovation culture and the pivotal role of leadership in influencing innovation performance (Liu et al., 2022). In the context of digital transformation, reasonable cultural management and effective leadership can stimulate the innovation potential of employees, cultivate a cultural atmosphere that actively supports innovation, and then promote the development of innovation capability in the process of digital transformation, and finally achieve the improvement of enterprise innovation performance.

However, it should also be noted that there are other factors in organizational culture theory, such as organizational structure and communication mechanism, which may also have an impact on the relationship between digital transformation and innovation performance. Therefore, in research and practice, it is necessary to comprehensively consider various factors to deeply understand and promote the interaction between digital transformation and enterprise innovation performance.

Digital Transformation and Innovation Performance

Digital transformation refers to enterprises using digital technologies such as big data, cloud computing, and social platforms to transform their business models, thereby transforming their products and organizational structures and automating processes (Hess et al., 2016). In essence, the process of enterprises implementing digital transformation is a process of using digital technology to innovate products and processes. The realization of digital innovation by traditional manufacturing enterprises is not just a matter of utilizing digital technology, it has risen to a management issue at the strategic level of the enterprise. Digital transformation strategy plays an important role in promoting digital innovation performance for traditional manufacturing companies. First, manufacturing companies help companies improve their innovation capabilities by applying digital technology and through digital empowerment., 2023). Secondly, organizational structural changes can improve the independent R&D capabilities of manufacturing companies through adjustments (Eiteneyer et al., 2019). In the context of digitalization, many traditional companies obtain corporate innovation performance by embedding knowledge, technology and innovation into traditional products and services (Pesch et al., 2021). Especially f (Pesch et al., 2021). Especially for small and medium-sized manufacturing companies, it can improve the company's R&D utilization capabilities and R&D exploration capabilities through digital transformation, thereby improving the company's new product development performance (Chi, 2019). Finally, implementing a digital transformation war can transform systems into all entities in the manufacturing enterprise value chain should be fully connected and integrated with the enterprise's business activities to quickly achieve personalized innovation of products while meeting the individual needs of customers. Specifically, the implementation of digital transformation by traditional manufacturing enterprises can promote the exchange of new ideas between enterprises and partners in the value chain, allowing enterprises to further improve or innovate business processes and related products (Nambisan et al., 2019), which helps to further improve enterprises' use of technology for product innovation

The Mediating Role of Digital Transformation

Internal Resources and Digital Transformation

Human capital, including employees' knowledge, skills, experience, and creativity, is one of the key factors driving the success of digital transformation. Having a high level of human capital means that a company can adapt to new technologies, rapidly changing markets, and complex business environments. In the digital transformation, the cultivation and development of human capital have become a key link to ensure that enterprises achieve innovation and improve performance. Through effective training and development programs, companies can enhance their employees' proficiency in the application of digital tools and technologies, thereby better adapting to the needs of the digital environment. Therefore, investment in human capital is not only for current business needs but also for the sustainable development of future digital transformation. Digital transformation mainly affects the quality structure of employees in the following aspects: On the one hand, digital transformation increases the company's demand for high-quality labor. They found that the company's original workforce may not guarantee the smooth progress of digital transformation (Alexopoulos & Cohen, 2016), because the emergence of advanced technology, often requires personnel with a higher level of knowledge to match it, such as some digital maintenance personnel, and some digital equipment and installed program software purchased by enterprises to achieve transformation also require some professional digitalization personnel to perform installation and debugging (Chemmanur et al., 2020).

Therefore, in order to promote the implementation of enterprise transformation, enterprises need talents with more professional skills and control of digital technology, that is, the demand for high-quality labor is rising; on the other hand, digital transformation will squeeze out part of the low-quality labor force, some simple and repetitive assembly line tasks in enterprises often do not have high technical content, so the requirements for the technical level of employees are not high. Often some employees with low educational levels are competent, but in digitalization During the transformation process, some automated machinery and equipment can replace these assembly lines and repetitive work, which reduces the company's demand for such personnel (Acemoglu & Restrepo, 2018). Such personnel often have lower education levels. This promotes the optimization of the enterprise's employee quality structure.

Financial digitization refers to the application of digital technologies such as big data, intelligence, the Internet of Things, and blockchain to the collection and processing of company operational information. Meaningful data can be obtained, converted, stored, and then analyzed based on internal and external data within the company. In response to environmental changes and resource and business needs, these data management applications are used to achieve the purpose of enhancing the company's value. It has two main connotations: first, financial digitization refers to the use of digital technology by enterprises to achieve the purpose of data collection and processing; second, it is based on building a digital system of company information as the core, collecting, converting and storing company information, and using corporate finance to Base on information fusion, through collaboration between various departments, data islands are opened, thereby achieving full-process management of data-provided enterprise value decision-making and value realization. This article summarizes the concept of financial digital transformation. The author believes that the use of new-generation information technology is linked to corporate finance's response to changes in the internal and external environment and is linked to the need for corporate financial integration. On this basis, building a digital ecosystem for corporate financial management to complete corporate strategic decisions, improve product quality and improve financial operation efficiency, thereby better empowering corporate operations and realizing the process of financial support management and decision-making is the financial Digital transformation (Du, 2023).

Enterprises use the information provided by digital technologies such as blockchain, big data, cloud computing and artificial intelligence to conduct real-time analysis of customer behavior, demand preferences and other patterns, and output it into standardized and structured information through encoding to improve the comparability and accessibility of information. Utilization can quickly capture the potential needs of customers and make flexible adjustments to service plans accurately and efficiently (Liu et al., 2021). It can integrate a large amount of accumulated experience in all processes such as "product design - quality inspection - marketing - order sales - terminal distribution". Information is processed transparently, thereby meeting customers' differentiated needs for products and services at lower costs and achieving a virtuous cycle of product/service collaboration. In summary, digitalization can effectively alleviate the coupling problems caused by the collaborative integration of value chain resources and improve the flexibility of enterprises to respond to external uncertainties, thereby promoting the coordinated development of product innovation and service transformation (Armstrong et al., 2010).

Organizational culture influences employees' values and attitudes towards knowledge and learning, making it a crucial driver of organizational learning and development. However, enterprises often encounter a significant challenge: organizational culture can act as a double-edged sword. While it can offer a solid foundation for highly coordinated innovation and effective technological learning, it may also pose a barrier to innovation and learning (Zhu & Wang, 2010).

In digital transformation, cultural management is the core of shaping, encouraging innovation and leading change. It sets the stage for business success by shaping the values that underpin a digital culture, providing leadership and change management, promoting a culture of innovation and learning, emphasizing transparency and effective communication, delivering core values, motivating employee engagement, and ensuring the health of the culture through measurement and adjustment. Provides critical support in meeting digital challenges. Cultural management not only drives change, but also ensures that companies can flexibly adapt to the dynamic demands of digital transformation and ultimately achieve sustained success.

The Mediating Effect of Digital Transformation on Internal Resources and Enterprise Innovation Performance

Dynamic capability theory highlights the necessity for enterprises to continuously learn, adapt, and innovate in response to a changing external environment. Digital transformation, as a shift in organizational paradigm, encompasses the application of technology, optimization of business processes, and adjustment of organizational culture. This transformation facilitates the integration and reconfiguration of internal resources, thereby enhancing the dynamic capabilities of enterprises (Endrodi-Kovács & Stukovszky, 2022).

Firstly, digital transformation's impact on dynamic capabilities is examined. It equips enterprises with digital technologies and tools that improve their ability to acquire, integrate, and utilize information efficiently. This enhances market and customer insights, as well as decision-making accuracy and agility. Such advancements bolster the dynamic capabilities of enterprises, enabling them to better adapt to external changes.

Secondly, the influence of dynamic capabilities on enterprise innovation performance is analyzed. Dynamic capabilities allow enterprises to identify and capitalize on market opportunities promptly, adjust strategies and resource allocation swiftly, and launch innovative products and services more effectively, thus improving market competitiveness. Consequently, higher dynamic capability leads to better innovation performance.

Finally, intermediary effect analysis reveals the relationship between digital transformation and enterprise innovation performance through dynamic capability. In other words, digital transformation impacts enterprise innovation performance by enhancing dynamic capability (Peng & Tao, 2022).

In summary, dynamic capability theory is instrumental in exploring the relationship between digital transformation as an intermediary variable and enterprise innovation performance. By examining the effects of digital transformation on dynamic capability and the subsequent impact of dynamic capability on innovation performance, researchers can gain a deeper understanding of how digital transformation influences enterprise innovation performance through improved dynamic capability.

Conclusion

The review provides a comprehensive analysis of the intricate relationship between digital transformation and enterprise innovation performance, specifically within the realm of Chinese manufacturing enterprises. It delves into the nuanced impact of internal resources on innovation within organizations, offering insights into how digitalization shapes innovation outcomes. Through an extensive examination of existing literature, the significance of enterprise digitalization is illuminated, tracing its historical trajectory and current state. Additionally, by scrutinizing digital innovation performance across various dimensions such as human resources, capital, products, and management, the review uncovers the complex dynamics between internal resources and digital innovation. As businesses navigate the dynamic digital landscape, the review underscores the urgency for enterprises to embrace digital transformation as a catalyst for enhancing innovation capabilities. By elucidating the underlying principles and mechanisms, it not only provides theoretical insights but also aims to empower enterprises to unleash their intrinsic value and foster a culture of innovation amidst the challenges and opportunities presented by digitalization.

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