

The Impact of Digital Business Transformation on the Competitiveness of Medical Enterprises: Evidence from Jiangyang, China

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Abstract

The objectives of this study were (1) to explore how digital business transformation is understood and implemented within medical enterprises in Jiangyang, China, (2) to examine the perceived influence of digital business transformation on enterprise competitiveness, and (3) to analyze the organizational and environmental dynamics shaping digital transformation processes and competitive outcomes. This study employed a qualitative research design based on an interpretive approach. The population comprised medical enterprises operating in Jiangyang, China, and the sample consisted of 18 participants selected through purposive sampling, including senior and middle managers, executives, and key operational personnel responsible for administration, finance, information systems, operations, and strategic planning. The research tools used for data collection were semi-structured, in-depth interviews guided by a structured interview protocol. Data were analyzed using qualitative content analysis, involving systematic coding, categorization, and theme development to identify recurring patterns and meanings related to digital business transformation and competitiveness. The study's results found that digital business transformation is perceived as a continuous, organization-wide process characterized by gradual implementation, learning, and adaptation rather than a one-time technological investment. The findings further indicate that digital business transformation enhances enterprise competitiveness in multidimensional and long-term ways by improving operational efficiency, service reliability, decision-making quality, and organizational adaptability. Moreover, leadership commitment, employee engagement, organizational culture, and external pressures—particularly market competition and government regulation—were identified as critical factors shaping both digital transformation processes and competitive outcomes. Overall, the study highlights that digital business transformation in regional medical enterprises is a context-dependent and socially embedded process that plays a strategic role in sustaining competitiveness.

Keywords: Digital Business Transformation; Enterprise Competitiveness; Medical Enterprises; Healthcare Digitalization; Jiangyang, China

Introduction

In recent years, digital business transformation has emerged as a critical strategic priority for enterprises seeking to remain competitive in increasingly complex and technology-driven markets. Rapid advances in digital technologies—such as big data analytics, cloud computing, AI, and digital platforms—have fundamentally reshaped how organizations design their business models, manage internal operations, deliver services, and interact with external stakeholders. Rather than serving solely as supporting tools, digital technologies now play a central role in shaping strategic direction, organizational capabilities, and long-term competitiveness (Aker et al., 2022; Agustian et al., 2023; Chen et al., 2024; Shangchart et al., 2025; Tetteh et al., 2025). Within the healthcare and medical industry, digital business transformation has been particularly significant due to the sector's increasing demand for efficiency, transparency, and service quality. Digital systems have been widely applied in areas such as administrative management, financial control, information sharing, supply chain coordination, and patient engagement. For medical enterprises, the adoption of digital business

practices extends beyond technological upgrades and often requires substantial changes in organizational structures, managerial mindsets, and decision-making processes. Therefore, digital transformation has become closely linked to enterprises' ability to enhance operational performance and sustain competitive positioning (Ahmed et al., 2022; Al-Assaf et al., 2024; Javanmardi et al., 2024; Ullagaddi et al., 2024; Chansanguan et al., 2025; Limna & Siripipattanakul, 2026; Siripipattanakul, 2026). In the Chinese context, the medical sector has experienced rapid expansion alongside strong governmental support for digital innovation and healthcare modernization. National policies and initiatives promoting "Internet Plus Healthcare," smart medical services, and digital health infrastructure have encouraged medical enterprises to incorporate digital technologies into their business operations and strategic planning. Despite this supportive policy environment, the outcomes of digital business transformation are not uniform. Differences in organizational resources, managerial capabilities, and local institutional conditions mean that the influence of digital transformation on enterprise competitiveness varies considerably across regions (Hu et al., 2025; Wang et al., 2025; Xu et al., 2025; Yuan, 2025).

While existing studies have largely focused on large metropolitan areas and leading healthcare institutions, comparatively limited scholarly attention has been given to smaller cities such as Jiangyang. Medical enterprises in Jiangyang operate in a highly competitive environment characterized by rising patient expectations, increasing cost pressures, strict regulatory requirements, and continuous technological change. These enterprises often face unique challenges in balancing digital innovation with resource constraints and local market conditions. Consequently, there is a need for in-depth, context-sensitive research that captures how digital business transformation is actually understood and implemented in such regional settings. In response to this research gap, the present study adopts a qualitative approach to explore the experiences and perspectives of managers and key stakeholders in medical enterprises in Jiangyang. Through in-depth interviews, the study seeks to illuminate how digital business transformation is enacted at the organizational level and how it shapes enterprises' perceived competitiveness. By providing rich, empirical insights from a regional medical enterprise context, this study contributes to the digital transformation literature by extending understanding beyond major urban centers, offers practical insights for medical enterprise managers navigating digital change, and provides evidence that may inform policy discussions on supporting digital business transformation in regional healthcare industries.

Research Methodology

This study employed a qualitative approach to explore digital business transformation and its influence on enterprise competitiveness within medical enterprises in Jiangyang, China. A qualitative approach was selected to enable an in-depth exploration of participants' experiences, interpretations, and organizational contexts, which are vital for understanding complex, dynamic, and process-oriented phenomena such as digital transformation. The research adopted an interpretive qualitative design based on semi-structured interviews, allowing flexibility to probe emerging issues while capturing socially constructed meanings shaped through managerial practices, organizational routines, and lived experiences. The study was conducted among medical enterprises at different stages of digital adoption, reflecting the growing importance of digital transformation in the regional medical sector. Using purposive sampling, 18 participants were selected, including senior and middle-level managers, executives, and key operational personnel responsible for administration, finance, information systems, operations management, and strategic planning, ensuring representation of both strategic and operational perspectives. The data were collected through in-depth interviews. The interviews were guided by a structured protocol focusing on participants' understanding of digital business transformation, implementation processes, perceived impacts on

competitiveness, and relevant organizational dynamics, while follow-up questions were used to enrich the data. All interviews were transcribed verbatim and systematically analyzed using qualitative content analysis, involving coding, categorization, and theme development, to identify recurring patterns and meanings related to digital transformation and competitiveness within the organizational and regional context.

Result

The study drew on insights from 18 respondents working in medical enterprises in Jiangyang, China, all of whom possessed direct experience or substantial knowledge of digital business transformation initiatives. The participants represented a range of organizational roles, including senior and middle managers, executives, and key operational staff responsible for administration, finance, information systems, operations, and strategic planning. Their professional experience ranged from several years to over a decade, enabling the study to capture both long-term and recent perspectives on digital change. In addition, the participating enterprises varied in size and business orientation, encompassing healthcare service providers, medical management organizations, and related medical businesses. This diversity strengthened the qualitative findings by reflecting multiple organizational contexts and transformation experiences within the regional medical sector.

Understanding and Implementation of Digital Business Transformation: Respondents consistently understood digital business transformation as a continuous, organization-wide process rather than a single technological investment. Transformation was described as unfolding gradually through changes in managerial thinking, operational routines, and internal coordination mechanisms. Participants emphasized staged implementation, beginning with basic digital tools and progressively integrating them into everyday management practices. Learning, adaptation, and problem-solving were central to this process, with organizations adjusting their approaches as challenges emerged. Digital business transformation was framed as an experience-driven journey shaped by ongoing managerial sense-making and organizational learning, rather than by rigid or purely technical planning.

Influence of Digital Business Transformation on Competitiveness: Digital business transformation was widely perceived as a key driver of enterprise competitiveness, although its effects were understood to be multidimensional and long term. Respondents linked transformation to improved operational efficiency, reduced errors, enhanced service reliability, and more informed and timely decision-making. Competitiveness was not viewed solely in terms of short-term financial gains, but rather as the capacity to sustain performance, differentiate from competitors, and adapt to changing market conditions. In this sense, digital transformation was seen as a strategic mechanism that strengthens organizational resilience and supports long-term development within an increasingly competitive medical industry.

Dynamics Shaping Digital Business Transformation and Competitiveness: Participants highlighted that digital business transformation and its competitive outcomes are shaped by interacting organizational and environmental dynamics. Leadership commitment emerged as a critical enabler, influencing employee acceptance and engagement with digital initiatives. Employee adaptation was described as a gradual process supported by training and organizational learning, while an open and change-oriented culture facilitated smoother implementation. External pressures, including market competition and government regulations, further motivated enterprises to adopt digital systems, although resource constraints often limited the speed and scope of transformation. Together, these dynamics illustrate that digital transformation is a socially embedded process influenced by both internal organizational conditions and external institutional forces.

The synthesis of findings reveals that digital business transformation in medical enterprises is best understood as a continuous, experience-based organizational process shaped

by learning, adaptation, and contextual influences. Digital technologies were not regarded as ends in themselves, but as enabling tools that reshape managerial practices, decision-making processes, and strategic positioning. Competitiveness emerged as a long-term and multidimensional outcome, encompassing efficiency, service quality, adaptability, and sustainability. Leadership, employee responses, organizational culture, and external institutional pressures were found to interact in shaping both transformation processes and competitive outcomes. These findings underscore that digital business transformation in Jiangyang's medical enterprises is deeply embedded in organizational and regional contexts, rather than being a purely technical or managerial endeavor.

Discussion and conclusions

The findings of this study align closely with prior research that conceptualizes digital business transformation as a strategic and evolutionary organizational process rather than a purely technical upgrade. Consistent with Akter et al. (2022) and Agustian et al. (2023), participants in this study emphasized that digital technologies function as enablers of broader changes in business models, decision-making practices, and organizational capabilities, rather than as isolated tools. This reinforces the argument that successful digital transformation requires continuous managerial sense-making and organizational learning.

The perceived influence of digital transformation on competitiveness observed in Jiangyang's medical enterprises also supports earlier studies in the healthcare and medical sectors. Ahmed et al. (2022) and Al-Assaf et al. (2024) similarly found that digital transformation enhances competitiveness by improving efficiency, service quality, and strategic responsiveness. Importantly, the present findings extend this literature by demonstrating that competitiveness is viewed by practitioners as a long-term and multidimensional outcome, encompassing resilience, differentiation, and adaptability rather than short-term financial performance alone. Moreover, the prominence of leadership commitment and employee adaptation in shaping transformation outcomes echoes the findings of Chen et al. (2024) and Chansanguan et al. (2025), who emphasize the role of digital leadership and organizational culture in enabling sustainable transformation. The influence of external institutional pressures identified in this study is also consistent with research on China's healthcare digitalization landscape, which highlights the role of government policies and regulatory frameworks in accelerating digital adoption while simultaneously increasing compliance demands (Wang et al., 2025; Xu et al., 2025). By focusing on Jiangyang, this study contributes to the literature by addressing a contextual gap noted by Lee et al. (2023) and Hu et al. (2025), who argue that regional medical enterprises often experience digital transformation differently from those in major metropolitan areas due to variations in resources, innovation networks, and institutional support. The findings thus underscore the importance of contextualizing digital transformation research within specific regional and organizational settings.

This study concludes that digital business transformation plays a significant and strategic role in enhancing the competitiveness of medical enterprises in Jiangyang, China. Transformation is best understood as a continuous, experience-based organizational journey characterized by learning, adaptation, and incremental change. Digital technologies are not ends in themselves but serve as enabling mechanisms that reshape managerial practices, operational processes, and strategic positioning. Moreover, competitiveness emerges as a long-term and multidimensional construct encompassing efficiency, service quality, organizational resilience, and adaptability to environmental change. The study further concludes that leadership commitment, employee engagement, organizational culture, and external institutional pressures jointly shape both the transformation process and its competitive outcomes. These conclusions highlight that digital business transformation in regional medical

enterprises is deeply embedded in organizational and contextual realities rather than being a purely technical endeavor.

Suggestion

Based on the findings, several key recommendations can be proposed. From a theoretical perspective, future research and scholarly work should continue to incorporate qualitative and context-sensitive approaches to deepen understanding of digital business transformation in regional medical enterprises, thereby broadening the existing literature that has predominantly focused on large urban healthcare institutions. Emphasis should be placed on process-oriented and capability-based frameworks that capture learning, adaptation, and organizational dynamics over time. From a managerial standpoint, medical enterprise leaders are recommended to conceptualize digital transformation as a long-term strategic journey rather than a one-off technological investment. Sustained leadership commitment, continuous workforce upskilling, and the fostering of an open, change-oriented organizational culture are essential to fully realize the competitive advantages of digital initiatives. Managers should also ensure that digital strategies are closely aligned with regulatory requirements and market conditions, while maintaining sufficient flexibility to adapt to ongoing changes. At the policy level, it is recommended that policymakers design targeted interventions to support regional medical enterprises. Such measures may include investment in digital infrastructure, the provision of capacity-building and training programs, and the introduction of financial incentives to reduce resource constraints. These initiatives can facilitate more inclusive and balanced digital transformation across regions. Finally, future studies are recommended to adopt mixed-methods or quantitative research designs to empirically test the relationships identified in this study across broader samples and diverse regional contexts. Longitudinal and comparative research, particularly between regional and metropolitan medical enterprises, would further enhance understanding of how digital transformation capabilities evolve and influence competitiveness over time.

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