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The Influence of Digital Transformation on Company Performance in the Chinese Baijiu Industry: Mediating Role of Servitization

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Abstract. This study examines the influence of digital transformation on company performance in the Chinese Baijiu industry, focusing on the mediating role of servitization. By analyzing data from 50 large-scale Baijiu enterprises in Sichuan Province, it reveals that digital transformation significantly enhances servitization and company performance. Servitization partially mediates the relationship between digital transformation and performance, indicating a dual mechanism through which digital initiatives improve business outcomes. The findings provide empirical support for the importance of integrating digital and service strategies in traditional industries.

Keywords: Digital Transformation, Company Performance, Servitization, Chinese Baijiu Industry

1. Introduction

Over the past four decades, China's economy has experienced rapid growth, and corporate development has consistently progressed. Chinese Baijiu companies are significant contributors to China's economy, facilitating high-quality growth (CIIC, 2022). The Baijiu industry holds a crucial role in the Chinese national economy.

In recent years, the rise of artificial intelligence, blockchain, cloud computing, big data, and the Internet of Things has been transforming the global economy(Rosenbloom, 2000; Sia et al., 2016). Digital transformation can decrease costs by 17.6% and augment revenue by 22.6% for manufacturing firms, diminish costs by 34.2% and enhance revenue by 33.6% for logistics services, and lower costs by 7.8% while boosting revenue by 33.3% for the retail sector (Fatorachian & Kazemi, 2021). Through digital transformation, enterprises have reduced product costs by optimizing supply chain management, improving production efficiency, and predictive maintenance (Chidozie et al., 2024).

Using Chinese Baijiu companies as a case study, according to the data from the National Bureau of Statistics of China, the total output of Baijiu produced by large-scale enterprises declined by 5.58% year on year in 2022. However, sales revenue increased by 5%, and profits increased by 9.64% (Zhang, 2023). Amidst diminishing production capacity, both sales income and profits are rising. Insiders assert that, in recent years, numerous leaders in the Chinese Baijiu industry have attained precision marketing, personalized service, and brand promotion via digitalization within China's marketing innovation, thereby enhancing brand awareness and market share (Li, 2025).

In light of the swift expansion of the digital economy and ongoing efforts to achieve profound integration with traditional enterprises, the study of enterprise digitization and performance has emerged as a prominent subject of academic interest (Ravichandran & Liu, 2011). From the standpoint of organizations, digital technology serves as an operational resource. Digitization serves as both a foundation for innovation and entrepreneurship and a beneficial factor in enhancing organizational performance (Lusch & Nambisan, 2015; Nambisan, 2013; Nambisan et al., 2019). This improvement is due to digital technology's capacity to facilitate intelligence collection, decrease expenses, and broaden service objectives. By utilising sophisticated technologies, like big data and the Internet of things, organisations may more accurately predict equipment breakdowns and improve consumer engagement, thereby expanding their reach to a broader audience (Patil et al., 2024; Wang, 2021). Despite digitization not being a novel phenomenon, it persists in evolving and transforming the interactions and value exchanges between enterprises and consumers (Yadav & Pavlou, 2014). To address the demands of enhancing skills in the digital era, these objective realities have compelled organizations to increasingly focus on the development of digital competencies throughout digital transformation (Yu & Moon, 2021).

Research indicates that the coordinated advancement of digital infrastructure and digital application capabilities is a crucial element for organisations undertaking digital transformation (Li et al., 2021). The establishment of business digital infrastructure is the essential physical prerequisite for executing digital transformation and serves as the fundamental foundation for the advancement of the digital economy. Digital infrastructure encompasses both novel information systems and certain conventional physical infrastructures that have undergone digital transformation. Digital infrastructure underpins various innovative enterprises, including the sharing economy, social media, and mobile information services (Greenstein, 2019). For manufacturing company, the digital infrastructure capabilities of the corporation serve as the fundamental assurance for executing various operational tasks, including online marketing, product promotion, and sales services.

Digital application capability denotes an enterprise's proficiency in utilising information and digital technologies to enhance product development, delivery, service improvements, and user engagement while leveraging the current digital infrastructure (Arkhipova & Bozzoli, 2018). Robust digital application capabilities significantly enhance manufacturing organisations' production

efficiency, service efficiency, innovations in service formats, and value creation. Manufacturing organisations can use digital tools to obtain and analyse customer data, product status data, and market data, enhancing interactions with service network partners and improving organisational performance (Heredia et al., 2022). In the marketing strategies of Chinese spirits companies, digital application capabilities have enabled these firms to accurately assess product conditions and market data, facilitating effective consumer engagement and enhancing company performance.

Simultaneously, digital transformation has enhanced the service quality of manufacturing companies, significantly augmenting their operational, research and development, and consulting services through better digital application capabilities. The current market is a dynamic market, especially the development trend of science and technology and the environmental changes of customer demand, resulting in the existing business of manufacturing enterprises full of uncertainty. The extent of digital transformation in manufacturing firms directly influences service quality (Gao et al., 2023). Chinese spirits companies have achieved notable outcomes in the digital transformation, particularly in refining the supply chain, optimising production processes, raising product quality, improving consumer services, and broadening market channels.

Whether digital transformation and service enhancement promote enterprise performance improvement needs to be measured. Company performance not only reflects the company's operating conditions in a certain period, but also reflects the company's progress in achieving long-term strategic goals (Kogan & Pristavka, 2020). Company performance is a multifaceted and complex variable, which brings measurement challenges (Brush & Vanderwerf, 1992), and different measurement methods produce different results (Sapienza & Grimm, 1997). The complexity of company performance evaluation stems from factors such as financial condition, market competitiveness and future expansion. No single indicator can thoroughly and accurately assess a company's performance (Jobira & Mohammed, 2021; Kotane, 2016). Among them, profit performance and growth performance are important indicators to judge company performance (Lenka et al., 2016).

China strongly supports and encourages the deep integration of the digital economy with traditional business. At the same time, businesses are strongly inclining towards digital transformation. It is important to address the need to improve the quality and efficiency of this transformation. How might the augmentation of digital capabilities influence, and in what manner will it impact, enterprise performance? As a traditional Chinese Baijiu company, figuring out how digital improvements affect the organization's performance is both interesting for academics and useful for business people. It's also a good idea to look into possible ways to improve performance management.

The point of this study is to use structural equation modelling to examine "the influence of digital transformation on performance in the Chinese Baijiu Industry" and how servitization. This study will explain the research design, how the data was collected, and how it was analysed using a statistical method that checks for causal relationships and confirms the findings with real-world data.

2. Literature Review

2.1 Dynamic Capabilities Theory

Dynamic capabilities theory is a management framework developed in the 1980s, emphasizing that a firm is composed of a set of resources, and its competitive advantage stems from these resources, including its inherent capabilities (Foss, 1997). A corporation is essentially a collection of capabilities, and its core competencies form the primary source of sustained competitive advantage (Xie, 2021). This perspective asserts that the sustained accumulation of core competences derived from internal knowledge is essential for a company's distinctive competitive advantage; nevertheless, these competencies become unsustainable in a dynamic environment due to their prolonged development and accumulation. To achieve strategic objectives under ever-evolving market and

technological conditions, firms must effectively acquire, allocate, integrate, and upgrade the skills, experience, and knowledge essential for value-creating activities across a wide range of internal and external organizational resources (Teece, 2023; Wataru et al., 2015; Zollo & Winter, 2002). The dynamic capabilities framework highlights that both the external environment and internal capabilities of an enterprise are in constant flux (Eisenhardt & Martin, 2000; Morgan et al., 2009). Consequently, enterprises must continuously adapt to the dynamic business landscape and enhance their competitiveness by reconfiguring existing resources and exploring innovative alternatives (Eriksson, 2014; Makadok, 2001).

2.2 Model building

A novel generation of information and communication technologies, encompassing cloud computing, big data, the Internet of Things, artificial intelligence, and mobile Internet, is instigating a new wave of industrial revolution and transformation. An increasing number of countries regard the digitalization of manufacturing as a crucial means and foundation for advancing the transformation and enhancement of conventional industries. Nonetheless, the phenomenon of the "digital paradox" suggests that certain manufacturing companies' digital investments may not yield optimal returns. McKinsey's poll, conducted in September 2018 among 1,773 corporate leaders globally, indicates that over 80% of the surveyed companies had undertaken digital transformation in the past five years; yet, just 14% have realized sustained performance enhancement, this represents only 3% of the company's overall successful performance (Gebauer et al., 2020). Therefore, to study the impact of digital transformation on enterprise performance is the realistic need of the development of digital economy.

In the ever-changing marketing environment of Chinese Baijiu company, the implementation of digital transformation to improve service quality is an important aspect of improving company performance. The goal of digital transformation is to integrate digital technologies into an enterprise's business model and skillfully collect market data through digital means to facilitate stakeholder decision making and ultimately impact company performance (Andriole et al., 2017; Gray & Rumpe, 2017; Valdez-de-Leon, 2016). Servitization is a business model in which enterprises increase service content to make products more in line with user needs, thereby enhancing customer value experience (Barnett et al., 2013; Weeks & Benade, 2014). During the service-oriented expansion, service-oriented objects were added to the company's management tasks. This meant that management practices had to be improved to keep up with changes in the outside world (Lin et al., 2012). The extensive adoption of digital technologies has enabled the diversification and swift evolution of services, allowing enterprises to more effectively comprehend and fulfil consumer expectations while markedly decreasing the marginal costs linked to servitization initiatives(Blichfeldt & Faullant, 2021). In today's dynamic market environment, advancing digital transformation and servitization is conducive to better meeting market needs and thereby improving business performance. Therefore, this study proposes a research model (Figure 1).

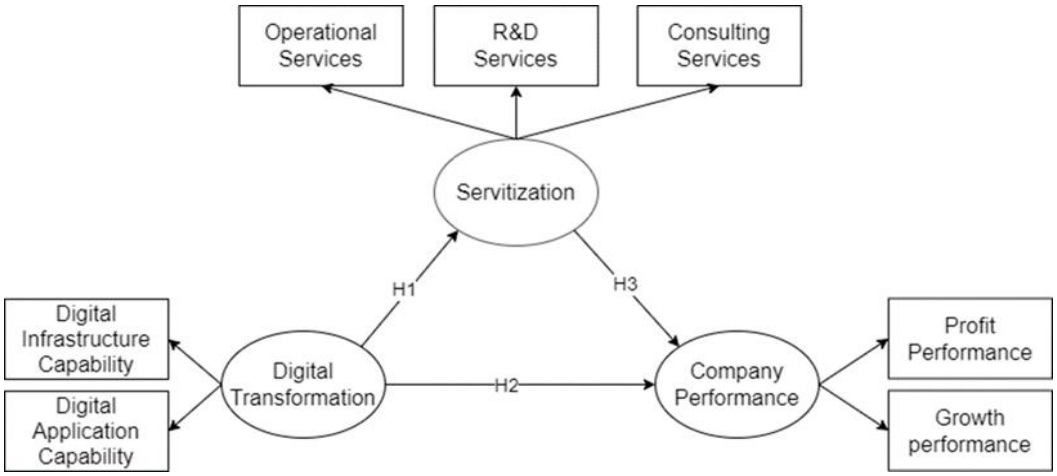

Fig.1: Research Framework

2.3. Research Hypothesis

2.3.1 Digital Transformation and Servitization

Manufacturing servitization refers to a strategic transformation in which manufacturing firms enhance their organizational capabilities and business processes to shift from merely selling products to delivering integrated product-service systems, thereby gaining a sustainable competitive advantage (Kowalkowski et al., 2017). This service-oriented transformation is heavily dependent on the support of emerging technologies such as the Internet of Things, cloud computing, and big data. The widespread adoption of digital technologies has significantly accelerated and diversified the process of servitization. On one hand, it has expanded opportunities for service innovation within manufacturing firms and broadened the scope of service business models. For example, China's Sany Heavy Industry Group has embedded sensors and location modules into its machinery, enabling real-time monitoring of operational conditions by the company's headquarters. Through data analysis, the company provides predictive maintenance services for clients and even supports governmental economic decision-making through big data insights. On the other hand, digital technologies facilitate the development of new service offerings, promote a shift from transactional to relational customer engagements, and enhance the processes of value proposition, value delivery, and value capture (Kharlamov & Parry, 2021). Similarly, China's Wuliangye Baijiu Group has established a global data platform that enables real-time, unified management and analysis of internal and external data resources. This allows the company to accurately identify consumer preferences and behavior. For instance, customers can verify product authenticity instantly by scanning a code, which in turn enhances brand trust and loyalty. This service-oriented digital transformation enhances client engagement and value creation in the service domain. Moreover, digital platforms built on big data technologies have improved firms' capabilities to acquire, process, analyze, and operationalize data (Kohtamäki et al., 2019). Reliable and comprehensive data support enables firms to better understand and meet customer needs, while simultaneously reducing the marginal costs associated with expanding service-oriented business models. This study proposes the following hypothesis:

Hypothesis1 (H1): Digital transformation has a positive influence on servitization.

2.3.2 Digital Transformation and Company Performance

Digital transformation is a strategic approach through which organizations leverage digital technologies and capabilities to innovate their business models and restructure corporate ecosystems, thereby promoting business innovation and sustainable growth. Its core lies in the application of

digital technologies and the reconfiguration of enterprises' processes, structures, and organizational frameworks (Ritter & Pedersen, 2020). Within the digitalization paradigm, firms can achieve competitive advantages through various mechanisms: enhancing process efficiency via modular division of labor, fostering technological innovation through open collaboration, and improving product functionality by means of cross-industry integration. Digital technologies support enterprises in adopting scalable production techniques, increasing operational efficiency, and reducing costs. Simultaneously, they enhance customer experience, improve responsiveness, and enable precision marketing through personalized customization and service extensions. These strategies address the increasingly diverse and individualized demands of consumers, allowing firms to deliver value at reduced costs and thus improve overall business performance (Buchi et al., 2018). Moreover, digitalization strengthens organizations' capabilities in knowledge acquisition, information processing, and learning. It enhances flexibility, agility, and adaptability, enabling companies to respond more effectively to dynamic environmental changes. This, in turn, facilitates the rapid integration of internal and external resources, accelerates the adoption of new technologies, and expedites product development—ultimately reinforcing competitive advantage (Rialti et al., 2019). By fostering innovation in both organizational processes and product offerings, digital transformation improves collaboration across the business ecosystem, enhances the integration of innovative activities among partners, and enables firms to swiftly meet individualized customer needs, thereby achieving differentiated competitive positioning. Recent empirical studies have confirmed a strong positive relationship between digitalization and firm performance. Therefore, this study proposes the following hypothesis:

Hypothesis2 (H2): Digital transformation has a positive influence on the performance of Chinese Baijiu companies.

2.3.3 Servitization and Company Performance

Servitization has become a key strategy for manufacturing firms to improve profit margins and achieve sustainable competitive advantage in the context of the digital and internet economy. The transformation toward servitization requires the adoption of advanced service systems and platforms to support this shift (Baines et al., 2013). In recent years, many manufacturing enterprises have embraced service-oriented strategies, transitioning from a product-centric approach to a customer-centric model and evolving from transactional relationships to long-term, collaborative partnerships. This transformation has emerged as one of the most dynamic drivers of enterprise value creation (Kowalkowski et al., 2017). Manufacturers can leverage the distinctive characteristics of services—often difficult to imitate—to offer high value-added solutions such as remote operations, maintenance support, and integrated system solutions. Through the creation of differentiated "product-service" offerings, firms can enhance both their business performance and market competitiveness. Furthermore, servitization enables a shift in value creation from a firm-centered process to a co-creative approach involving customers throughout the product life cycle—including design, R&D, production, and after-sales support. Consumer goods manufacturers, including those in home appliances, furniture, and Baijiu, can more precisely identify customer needs and deliver customized solutions by leveraging big data analytics, Internet of Things (IoT) technologies, and modular design frameworks. These capabilities allow firms to respond quickly to personalized customer demands while reducing operational costs, enhancing user experience, and converting customers into core strategic assets and long-term sources of competitive advantage. In addition, servitization contributes to the accumulation of social capital within manufacturing enterprises. Firms adopting service-oriented strategies must evaluate resource efficiency and the environmental impact of products across their full lifecycle, including R&D, design, production, recycling, and usage. By actively fulfilling their corporate social responsibilities, such companies can strengthen customer loyalty, enhance their economic returns, and support sustainable organizational development.

Empirical research has increasingly confirmed the positive impact of servitization on company performance. For example, a study involving 247 Chinese manufacturing firms examined the relationship between service innovation strategies and dynamic capabilities. The findings indicated that service strategy improvements significantly enhance market performance (Lilong et al., 2017). This study proposes the following hypothesis:

Hypothesis3 (H3): Servitization has a positive influence on the performance of Chinese Baijiu companies.

2.3.4 Servitization Intermediary Role

The process theory model suggests that information technology (IT) investments must progress through three key phases — technology transformation, technology application, and market competitiveness—before they can ultimately translate into improvements in firm performance (Soh & Markus, 1995). The first phase involves converting IT investments into usable enterprise information assets; the second phase requires the effective application of those assets to support business operations; and the third phase reflects the extent to which IT contributes to enhanced company performance. Among these, the second phase—effective utilization and integration of IT into operational processes—is critical for transforming digital investments into competitive advantages (Soh & Markus, 1995). Some scholars emphasize that digitalization must create value for customers in order to yield meaningful returns. In this context, service-oriented information technology is considered both a vital means for value creation and capture, and the most efficient pathway for leveraging the potential of IT investments (Kohtamäki et al., 2020). As digital technology adoption deepens, the range and complexity of service innovation models in manufacturing firms are expected to expand accordingly. Service-oriented models that emphasize efficiency, flexibility, and innovation are increasingly integrated with digital technologies, thereby promoting greater collaboration with customers and enabling co-creation of value. This digital-service integration facilitates the transition to IT-based services, pure digital services, and a focus on digitally enabled product-service offerings. As a result, firms can deliver low-cost, timely, convenient, and personalized service packages, which enhance customer satisfaction, create competitive differentiation, and ultimately improve overall business performance. Empirical research supports this intermediary mechanism. Studies have shown that digital strategy influences service levels and organizational outcomes through service-oriented pathways (Coreynen et al., 2017). Moreover, digital technologies provide a foundational infrastructure for servitization, enabling manufacturing firms to generate higher value-added outcomes (Ardolino et al., 2018). This study proposes the following hypothesis:

Hypothesis4 (H4): Servitization plays an intermediary role between digital transformation and company performance.

3. Research Methods

3.1 Population

To ensure the applicability and representativeness of the research findings, this study focuses on the distribution of Chinese Baijiu enterprises, with the sampling concentrated in Sichuan Province, China. Located in southwestern China, Sichuan is the leading region for Baijiu production. As of 2022, China had approximately 186,500 Baijiu enterprises, of which 32,100 were situated in Sichuan. Among these, there are 963 recognized large-scale Baijiu enterprises nationwide, including 294 located in Sichuan Province. These 294 companies account for 52% of the nation's total Baijiu industry revenue and production. Therefore, Baijiu enterprises in Sichuan Province are highly representative in terms of both quantity and industrial output.

This study aims to guarantee the representativeness and scientific rigor of the data. The participants are employees of Baijiu Company, aged between 18 and 60 years. In China, employment

is restricted to individuals aged 18 and above, with retirement age set at 60 years. The studied population comprises professional technical and management workers from the technology, finance, and marketing departments, with educational qualifications spanning from university to doctoral levels. Employees from these departments possess a superior comprehension of the company's digital transformation and service-oriented dimensions. Taking these factors into account, the collected samples can give more detailed information about the performance and trends of Baijiu businesses in different places, as well as useful information for their efforts to go digital.

3.2 Sample

This study primarily examines the impact of digital transformation on the performance of Baijiu enterprises and explores the mediating role of servitization. The survey data were collected from employees of Baijiu companies located in Sichuan Province, China. Researchers have extensively discussed the importance of appropriate sample sizes in data analysis (Hair, 2010). According to established guidelines, a sample size of 50 is considered very poor for factor analysis, 100 is poor, 300 is good, 500 is very good, and 1,000 is excellent. To enhance the precision and representativeness of the sample, this study adopts a stratified random sampling approach. From a total of 294 Baijiu companies in Sichuan Province, 50 firms were randomly selected. Survey participants consist of individuals aged between 18 and 60 years, in accordance with China's legal employment age range. The respondents include a diverse group of staff: general employees, administrative personnel, technical experts, middle managers, and senior executives. This diverse representation helps ensure a comprehensive understanding of digital transformation and servitization practices across different organizational levels.

3.3 Variable measurement

The Likert 5-point scale serves as the measurement tool for all the scales in this study, which are all mature scales from the existing literature. Digital transformation has two dimensions: digital infrastructure capabilities and digital application capabilities, with 8 items (Khin & Ho, 2019; Li et al., 2021). Servitization has three dimensions: operational services, Research and developmen services, and consulting services, with 22 items(Partanen et al., 2017). Corporate performance has two dimensions: profit performance and growth performance, with 7 items (Hogan & Coote, 2014). A total of 518 questionnaires were collected. After a comprehensive review, 515 of them were determined to be valid. In order to conduct statistical analysis on the information obtained from the questionnaires, this study will use SPSS 21.0 and AMOS 21.0 to analyze the collected data.

4.Data Analysis

4.1Model validation

This study employed Cronbach's alpha to assess the reliability of the constructs. Cronbach's alpha values greater than .7 indicate acceptable reliability; greater than .8 indicates good reliability; greater than .9 indicates excellent reliability; values between .6 and .7 indicate fair reliability; and values less than .6 indicate low reliability (Setyaedhi, 2024). Cronbach's alpha values for the seven latent variables exceed .7, signifying strong internal consistency among all variables.The Kaiser-Meyer-Olkin test and Bartlett's test of sphericity are significant indicators of validity. The KMO values were between 0.8 and 0.9, and Bartlett's test of sphericity $p < 0.05$, allowing factor analysis(Shrestha, 2021). Following evaluation, the KMO value for each variable exceeds .8, and the P value is below .05, satisfying the criteria for factor analysis. Confirmatory Factor Analysis (CFA) was then applied to evaluate the goodness-of-fit of the seven-factor measurement model. The model fit indices, CMIN/DF, GFI, NFI, IFI, TLI, CFI, and RMSEA, all met the recommended thresholds, indicating a satisfactory model fit and strong construct validity(Kline, 2023) (see Table 1).

Furthermore, the Average Variance Extracted (AVE) for all constructs exceeded the recommended value of 0.50, and the Composite Reliability (CR) exceeded 0.70. Pearson correlation coefficients among the seven latent variables also met the discriminant validity criteria. These results collectively demonstrate strong convergent and discriminant validity for the measurement model (see Table 2).

Table 1. Model Fit Summary for Overall

Fit Parameters	**CMIN/DF**	**GFI**	**NFI**	**IFI**	**TLI**	**CFI**	**RMSEA**
Value	1.138	.934	.935	.992	.991	.992	.016
Standard	<2	>.9	>.9	>.9	>.9	>.9	<.08

Table 2. Correlation analysis of all latent variables

	AVE	**CR**	**IC**	**AC**	**OS**	**RD**	**CS**	**PP**	**GP**
IC	.548	.784	.740						
AC	.553	.861	.539	.744					
OS	.584	.894	.487	.268	.764				
RD	.542	.914	.421	.330	.571	.736			
CS	.590	.910	.309	.277	.530	.614	.768		
PP	.584	.849	.397	.353	.346	.428	.335	.764	
GP	.562	.794	.333	.341	.286	.472	.293	.563	.750

Note: IC= Digital infrastructure capability; AC= Digital application capability; OS=Operational services; RD=Research and development services; CS= Consulting services; PP= Profit performance; GP= Growth performance.

4.2 Structural equation model analysis

This study confirmed the adequacy of the structural model encompassing all latent variables and employed Structural Equation Modeling (SEM) to evaluate the proposed conceptual framework. Initial model fit indices revealed that the CMIN/DF and RMSEA values exceeded the recommended thresholds, indicating the need for model modification. In the initial measurement model, all seven latent variables demonstrated standardized factor loadings above 0.60, suggesting acceptable item reliability. Although the model met the criteria for incremental fit indices, the overall model fit required improvement. Given that the factor loadings were acceptable, the Modification Index (MI) was examined to further refine the model fit. Based on the MI results, measurement errors were sequentially correlated to improve the model fit. Specifically, covariances between the error terms e2 and e3, as well as e4 and e7, were added to the model. To maintain model parsimony and avoid overfitting, only two error covariances were introduced, and unnecessary parameters were restricted accordingly. The revised structural model is presented in Figure 2.

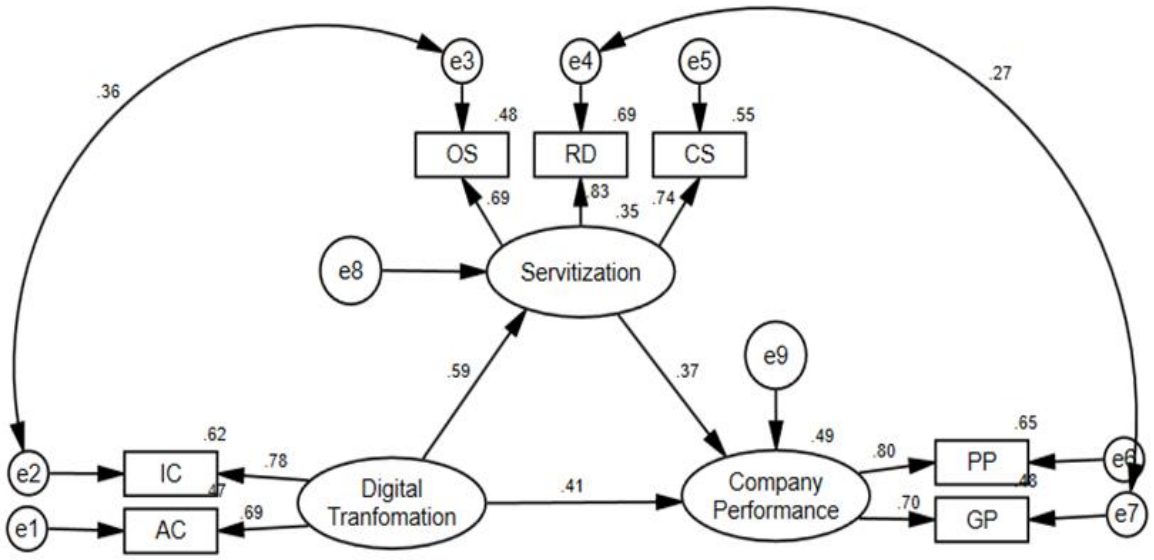

Fig.2: Revise Model Path Analysis

The CMIN/DF and RMSEA values met the standard for model fit indices after the structural equation model was improved. The GFI, NFI, IFI, TLI, and CFI values also fell within the set reference range, this shows that the revised structural equation model has a good fit (Table 3).

Table 3. Model Fit Summary for Final SEM

Fit Parameters	CMIN	DF	CMIN/DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Final SEM	11.719	9	1.302	.994	.991	.998	.995	.998	.024
Standard			<2 >.9	>.9	>.9	>.9	>.9		<.05

4.3 Direct effect analysis

The empirical results reveal that digital transformation has a significant positive effect on the level of servitization, with a standardized path coefficient of 0.590. This indicates that digital transformation can effectively promote the development of servitization within enterprises. Furthermore, servitization exerts a significant positive influence on company performance, with a standardized path coefficient of 0.370, confirming its critical role in enhancing firm-level outcomes.

Notably, digital transformation also demonstrates a strong direct positive effect on company performance, independent of the mediating role of servitization, with a standardized path coefficient of 0.414. These findings indicate that digital transformation contributes to firm performance through both direct and indirect pathways. All standardized path coefficients were statistically significant, and the overall model validation results substantiate the dual mechanism through which digital transformation influences company performance. These results provide empirical support for Hypotheses H1, H2, H3, and H4 (see Table 4).

Table 4. Structural Model Path Analysis Results

	Path		Estimate	S.E.	C.R.	P	β
Servitization	<---	Digital transformation	.598	.073	8.166	***	.590
Company Performance	<---	Servitization	.433	.083	5.213	***	.370
Company Performance	<---	Digital transformation	.491	.087	5.650	***	.414

4.4 Mediating effects analysis

This study employed the bootstrap method using AMOS 21.0 to test the mediating effect of servitization. The bootstrapping procedure was conducted with 5,000 resamples at a 95% confidence level. To ensure accuracy, bias-corrected confidence intervals were used to assess the upper and lower bounds of the indirect effect estimates. The results indicated that the bias-corrected confidence interval did not contain zero, confirming the significance of the mediating effect (see Table 5). These findings demonstrate that servitization partially mediates the relationship between digital transformation and company performance.

Table 5. Results of The Mediation Effect Test

Mediation path	Effect type	Estimate	Lower	Upper	P value
Digital Transformation →Company Performance	direct effect	.491	.298	.697	.000
Digital transformation → Servitization → Company Performance	indirect effect	.259	.153	.397	.000
Digital transformation →Company Performance	total effect	.750	.598	.910	.000

Digital transformation exerts a significant indirect effect on company performance through servitization, with a direct effect of 0.491, an indirect effect of 0.259, and a total effect of 0.750, all of which are statistically significant ($p < .001$). These results provide robust evidence that servitization serves as a mediating mechanism in the relationship between digital transformation and company performance. The findings confirm that the overall impact of digital transformation—both direct and mediated—is substantial and positive.

5. Discussion

This study demonstrates that digital transformation has a statistically significant positive effect on servitization, with a standardized path coefficient of 0.590, thereby confirming Hypothesis 1 (H1). This finding implies that a higher degree of digital transformation enhances the implementation of servitization strategies. Organizations can leverage digital technologies—such as the Internet of Things, cloud computing, and data analytics—to streamline operational processes, improve product functionality, and elevate service systems (Zancul et al., 2016). Prior research also supports the notion that digitalization fosters service-oriented innovation and operational performance (Coreynen et al., 2017). In the context of the Chinese Baijiu industry, digital transformation has played a pivotal role in

improving service quality and customer engagement.

Furthermore, the results indicate that digital transformation significantly impacts company performance, with a standardized path coefficient of 0.414, confirming Hypothesis 2 (H2). This suggests a positive correlation: the more extensive the digital transformation, the stronger the company's performance. Conversely, companies with limited digital transformation tend to exhibit weaker performance. This outcome supports the growing consensus that digital transformation is a key driver of competitive advantage and operational success in the Chinese Baijiu industry. For large-scale Baijiu enterprises, digital transformation represents not only a technological upgrade but also a cultural and strategic reorientation, reshaping organizational processes and managerial practices.

The study also confirms that servitization significantly contributes to company performance, with a standardized path coefficient of .370, supporting Hypothesis 3 (H3). This finding highlights that an increased level of servitization is associated with better business outcomes. By expanding into value-added services such as operations support, R&D, and consulting, Baijiu enterprises can improve both product and service quality, enhance customer satisfaction, and foster brand loyalty. Servitization thus emerges as a critical strategy to improve competitiveness and respond effectively to dynamic market demands.

Lastly, the study identifies that servitization partially mediates the relationship between digital transformation and company performance, confirming Hypothesis 4 (H4). The total effect of digital transformation on performance is 0.750, with an indirect effect of 0.259 mediated through servitization. These findings suggest that while digital transformation directly enhances company performance, it also improves service capabilities, which in turn amplify organizational performance. This dual pathway underscores the importance of integrating digital and service strategies to maximize business value. By prioritizing customer needs and service quality through digital tools, Baijiu firms can better adapt to market changes and sustain long-term growth.

5.1. Theoretical contributions

This study enriches the theoretical framework concerning the relationship between digital transformation and company performance. Prior research suggests that digital transformation enhances firm performance by strengthening resource integration capabilities and optimizing business processes (Verhoef et al., 2021). By introducing servitization as a mediating variable, this study adds depth to the theoretical understanding of how digital transformation translates into economic value. The emphasis on the bridging role of servitization offers new insights into the mechanism through which digital transformation yields performance benefits (Kowalkowski et al., 2017). The empirical findings indicate that digital transformation indirectly improves company performance by facilitating servitization, and that a higher level of servitization further amplifies the positive effects of digital transformation. In this regard, servitization plays a crucial mediating role in the relationship between digital transformation and company performance within the context of Chinese Baijiu enterprises.

Moreover, this study extends the applicability of servitization theory to traditional manufacturing sectors. While servitization in industrial enterprises has attracted increasing academic attention (Baines et al., 2017) , most studies have focused on defining the concept of servitization (Kowalkowski et al., 2017) , examining its impact on product value (Vandermerwe & Rada, 1988) , and exploring servitization strategies in general manufacturing contexts (Neely et al., 2011). However, there remains a paucity of research in the context of traditional Chinese industries such as Baijiu. By conducting a targeted empirical investigation in a regionally representative sample of Baijiu enterprises, this study provides context-specific evidence on the interplay between digital transformation, servitization, and firm performance. The findings demonstrate that even in a product-centric industry like Baijiu, service-oriented strategies can significantly enhance business

performance, thereby contributing to the broader discourse on the practical relevance of servitization theory (Coreynen et al., 2017).

Finally, this study offers meaningful insights into addressing the servitization paradox. Some researchers have argued that manufacturers transitioning toward service-based models may experience underperformance compared to those that retain product-centric strategies (Neely, 2008). Empirical case studies have further shown that service-oriented strategies can, in some cases, negatively impact firm performance (Gebauer et al., 2005) , highlighting the paradoxical nature of servitization. In contrast, the findings of this study suggest that effective servitization strategies, when implemented alongside digital transformation, can enhance customer loyalty, improve operational efficiency, and positively influence firm success — thereby helping to reconcile the servitization-performance contradiction in the context of Chinese Baijiu enterprises.

5.2. Practical implications

Digital transformation can promote changes in business models. This study demonstrates that organizations can shift from traditional product manufacturers to comprehensive service providers through digital empowerment. Baijiu enterprises, in particular, can leverage big data to analyze consumer preferences, develop customized products, and offer personalized brewing services—such as "private customization"—to enhance user experience and build brand loyalty (Zhang & Xiong, 2023). Therefore, Baijiu firms are advised to increase their investments in digital infrastructure and capabilities, thereby driving performance improvements through digitally enabled transformation.

Digital transformation can promote the improvement of servitization strategies. The findings of this study suggest that the widespread adoption of digital technologies not only improves production efficiency but also strengthens service-oriented capabilities. For example, blockchain technology enables anti-counterfeiting and traceability systems that boost consumer trust; artificial intelligence supports inventory optimization and minimizes overstock and loss; and intelligent customer service systems improve the quality and responsiveness of after-sales support. These digital applications significantly elevate service quality and, in turn, foster stronger brand loyalty and greater market competitiveness (Kohtamäki et al., 2019).

Servitization transformation is an important path towards performance improvement in digital transformation. Traditionally, Baijiu companies have primarily relied on product sales to drive performance. However, in the context of digital transformation, new revenue streams can be generated through service innovation. For instance, several Baijiu enterprises have begun offering value-added services—such as personalized tasting sessions, premium winery tours, and interactive online marketing via live streaming—to attract a broader customer base. By integrating digital tools with service innovation, Baijiu companies can diversify their offerings and unlock new sources of competitive advantage and profitability (Bentalha et al., 2020).

6. Limitations and Future Research Directions

This study employed a convenience sampling strategy, focusing on 50 large-scale Baijiu enterprises located in Sichuan Province. While Sichuan is a representative region for Baijiu production, this geographical limitation restricts the generalizability of the findings to other regions of China. As a result, the interpretation and inference of the research outcomes may be regionally biased. Future research should aim to expand the geographical scope of the sample by including Baijiu companies from a wider range of provinces to improve the comprehensiveness of data collection and enhance the external validity of the study.

Additionally, this study primarily examined the influence of digital transformation and servitization on company performance, without accounting for other potential moderating or mediating factors. Various organizational elements—such as environmental resources, dynamic

capabilities, and organizational learning—may also play critical roles in shaping firm performance (Dörner & Rundel, 2021; Feroz et al., 2021). Future studies are encouraged to incorporate these variables into the analytical framework to provide a more nuanced and comprehensive understanding of the determinants of performance, thereby yielding more precise and generalizable insights.

7. Conclusion

Digital transformation refers to the integration of advanced information technologies across all aspects of organizational operations. The findings of this study reveal a strong and positive relationship between digital transformation and servitization, both of which significantly enhance company performance. Moreover, servitization plays a mediating role in the relationship between digital transformation and performance, indicating that the impact of digital initiatives on business outcomes is partially realized through service-oriented strategies. To strengthen the effects of digital transformation, enterprises should increase investment in digital infrastructure—such as the Industrial Internet, smart manufacturing systems, and Internet of Things (IoT)—to improve production efficiency, product quality control, and cost management. At the same time, firms should enhance their use of digital analytics tools to increase application capabilities, achieve equipment interconnectivity, and extract insights from data across both manufacturing and service processes. These efforts enable the delivery of personalized, value-added products and services, thereby improving operational efficiency and customer satisfaction. In particular, the application of big data analytics can facilitate consumer behavior profiling and precision marketing, resulting in better customer engagement and loyalty.

The study further confirms that servitization positively affects company performance, providing empirical support against the so-called "service paradox." By demonstrating the partial mediating role of servitization between digital transformation and organizational performance, this research underscores the importance of enhancing both digital and service capabilities in traditional manufacturing contexts such as the Chinese Baijiu industry.

In implementing digital transformation strategies, it is essential to ensure that digital technologies complement and enhance existing organizational resources. Baijiu enterprises should pursue digital transformation in tandem with service-oriented strategies to improve service quality and expand value creation. Additionally, collaboration with technology providers, e-commerce platforms, and logistics service firms is essential to build a robust digital ecosystem. Establishing interdepartmental data-sharing systems will prevent the formation of information silos and enable integrated operations. Strategic partnerships with platforms such as JD.com and Tmall can further enhance digital marketing capabilities and boost overall firm performance (Hoyer et al., 2020) .

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