

디지털화 전환과 비즈니스 모델혁신이 기업성과에 미치는 영향

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A Study on the Impact of Digital Transformation and Business Model Innovation on Enterprise Performance

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요약 본 연구에서는 2013년부터 2023년까지 중국 산둥성과 장쑤성의 293개 상장기업을 연구대상으로 선정하고, 설문조사 방법을 사용하였다. 디지털화 전환을 추진하는 기업을 조사하여 설문조사에서 수집된 데이터를 통계적으로 분석하였다. 이론적 정교화와 실증적 연구를 결합하여, 기업의 디지털화 전환, 비즈니스 모델혁신과 기업성과 간의 관계를 분석하였다. 연구 결과에 따르면 디지털화 전환은 기업성과와 비즈니스 모델혁신에 긍정적인 영향을 미치고 있는 것으로 나타났으며, 비즈니스 모델혁신은 디지털화 전환과 기업성과 사이에서 매개역할을 하는 것으로 나타났다. 연구의 결론을 바탕으로 기업들은 디지털화 전환을 적극적으로 추진하여야 하고, 프로세스를 가속화해야 한다. 또한 기업들도 기업의 경쟁력을 높이기 위해 기업의 비즈니스 혁신모델을 최적화하도록 노력해야 한다. 기업은 기업의 디지털화 전환을 위한 발전적 지원시스템을 구축하고, 디지털화 전환과 비즈니스 모델혁신의 실천에 대한 지원과 협력을 제공할 수 있는 시스템을 구축하는데 노력해야 한다.

주제어 : 디지털화 전환, 비즈니스 모델혁신, 기업성과, 정보기술, 경쟁우위

Abstract In this study, 293 listed enterprises in Shandong Province and Jiangsu Province, China, from 2013 to 2023 are selected as the research object, and the questionnaire method is used to investigate the enterprises that carry out digital transformation, and the data collected from the questionnaires are statistically analyzed. By combining theoretical elaboration and empirical research, the relationship between enterprise digital transformation, business model innovation and corporate performance is investigated. The research results show that digital transformation has a positive impact on corporate performance and business model innovation, and business model innovation plays a mediating role between digital transformation and corporate performance. Based on the conclusions of the study, companies should actively promote digital transformation and accelerate its process. Companies should optimize the company's business innovation model to enhance the company's competitiveness. Companies should accelerate the establishment of a sound policy support for the digital transformation of enterprises, to provide support and reference for the implementation of digital transformation and business model innovation.

Key Words : Digital Transformation, Business Model Innovation, Corporate Performance, Information Technology, Competitive Advantage

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1. Introduction

In the current era of rapid development of information technology, digital transformation has become an inevitable trend of enterprise development. In the ‘2020 China Enterprise Digital Transformation Index Study’, it is pointed out that the scale of industrial digitalisation in China has reached 28.8 trillion yuan in 2019, accounting for 80.2% of the country’s total digital economy, indicating that the digital transformation of enterprises has become the main driving force of China’s digital economy[1]. Along with the traditional production factors or production mix is replaced or updated, the great change of value system is also triggering the upsurge of enterprise business model innovation. In the process of business model innovation and digital transformation, how to deal with the internal and external environment turbulence factors, improve the competition barriers of enterprises and improve the performance of enterprises has become a common concern of the business and academic circles.

Digital transformation is an inevitable choice for the survival and development of enterprises. The world is moving towards a digital economy, and all aspects of production, life, work, and consumption are closely related to digitalisation, and with the arrival of Internet+, society has changed dramatically. However, in practice, enterprises have invested heavily in digital transformation, but it is difficult for them to achieve the expected growth in revenues[2]. Despite the potential value of digital transformation, companies find it difficult to make the digital switch. Companies face a high degree of overlapping uncertainties such as digital capability development uncertainty, organizational readiness uncertainty, stakeholder engagement uncertainty, digital technology development uncertainty, and globalization uncertainty[3]. Currently, business managers and employees lack sufficient awareness and attention to the importance of digital transformation[4].

This study aims to explore the relationship between enterprise digital transformation and corporate performance, and analyze the mediating role of business model innovation. Enterprise digital transformation can help enterprises fully grasp the future development direction of the market and realize external collaboration and innovation, which is conducive to providing innovative direction and resources for enterprise business model innovation, and then improve corporate performance. By studying the relationship between enterprise digital transformation, business model innovation and corporate performance, this study enriches the relevant content of corporate performance and digital transformation, and provides reference for subsequent research on digital transformation.

2. Theoretical Background

2.1 Digital Transformation

The concept of supply chain management emerged with the transition from “vertical integration” to “horizontal integration” management models, and its earliest research can be traced back to Drucker’s “economic chain” and then to Porter’s “value chain”. Harrison defines the supply chain as a functional network that involves the procurement of raw materials, their transformation into intermediate products/final products, and their ultimate sale to consumers.

Digital transformation refers to the use of digital technology and information technology to carry out comprehensive upgrades and changes in all aspects of the enterprise, both internally and externally, in order to improve the efficiency, innovation and competitiveness of the enterprise[5]. Digital transformation is a broad concept, and there is no consensus in the academic community on the definition of digital transformation, but the content mostly encompasses digital technology and changes due to digital technology. For example, digital transformation

as the use of new digital technologies to achieve corporate-wide change (incremental vs transformational), including the reconstruction of managerial cognitive models (designing new digital business models), the establishment of new digital processes, and the creation of new organisational forms, which in turn create and distribute new value in established or new business ecosystems to create and distribute new value; Wager sees digital transformation as a continuous process of strategic renewal that leverages the development of digital technologies to reconfigure an organisation's business models [6]. And Qi Yu dong and Xiao Xu define digital transformation as the business through a new generation of digital technologies upgrading [7]. The deep integration of digital technology with the real economy, so as to achieve the improvement of production efficiency and the innovation of management paradigm.

2.2 Business Model Innovation

Business model innovation refers to the enterprise in the market competition, through the innovation of its own business model, to improve the competitiveness and profitability of the enterprise. With the intensification of market competition and changes in consumer demand, the traditional business model has been difficult to adapt to the needs of the market, business model innovation has become one of the keys to the survival and development of enterprises. This study discussed the significance of business model innovation in detail from both the importance of business model innovation and the real needs.

Currently, scholars have defined business model innovation from two main perspectives, one of which links business model innovation to the design or introduction of new business models, i.e. 'designing novel business models for start-up organisations'. For example, Zott and Amit in their study of entrepreneurial corporates, suggest that business model innovation is the introduction of new ways of

conducting economic exchanges between different stakeholders [8]. Another approach links business model innovation to changes in the existing business model, including changes in the elements and the relationships between them, 'reconfiguration of the existing business model', and defines business model innovation as a significant change in a corporate's value proposition as a result of changes in the functioning of value creation, value distribution and value delivery.

2.3 Corporate Performance

Corporate performance is the sum of achievements and benefits achieved by an enterprise to achieve certain goals. Corporate performance has always been a hot topic in management research, and most scholars have carried out in-depth research on the factors affecting corporate performance. The connotation of corporate performance is divided into a narrow sense and a broad sense: the focus of corporate performance in the narrow sense is on financial indicators, which are used to evaluate the previous operating results, as reflected in the rate of return on assets and the rate of return on investment in various projects [9]. The broad sense of corporate performance on this basis, consider more non-financial indicators performance such as employee work efficiency, enterprise growth value, corporate culture, and innovation ability [10].

At present, more studies on corporate performance mainly focus on enterprise financial performance, enterprise innovation performance, enterprise business performance and other aspects. Enterprise financial performance refers to the daily production and operation activities of the enterprise financial personnel in the process of achieving the strategic objectives of the enterprise's contribution and the embodiment of the effect of the work, is an important part of the content of the enterprise financial management [11]. Enterprise innovation performance refers to the degree of increase in enterprise value after

the implementation of new technologies, which can be measured by the increase in the amount of business[12]. In contrast, enterprise business performance refers to the business results of the enterprise as well as the performance of the operator over a specific period of time[13].

3. Research Hypothesis

3.1 Digital Transformation and Corporate Performance

When enterprises carry out digital transformation, the data assets that are continuously collected and accumulated will become the unique market competitiveness possessed by the enterprise, and this core competence is a capability that other enterprises do not have. Enterprises should avoid short-sighted tendencies in the face of transformation pains at the early stage of transformation, view the relationship between digital transformation and enterprise costs with a developmental perspective, and actively carry out digital transformation.

Enterprises carrying out digital transformation can enhance their innovation ability, grasp market demand, help enterprises achieve transformation and upgrading, bending the road to overtake the car, so that the performance of the enterprise is improved. Enterprises can accelerate the process of intelligence and informatisation through digital transformation, use new technologies such as big data, cloud computing, blockchain and Internet of Things, etc. To realise the transformation of traditional manufacturing enterprises to intelligent manufacturing enterprises, and improve their technological innovation ability[14]. Which in turn improves corporate performance. Digital transformation can prompt enterprises to achieve cross-border integration and development, give rise to new products, enhance the competitiveness of enterprises, and then enhance corporate performance. Based on this, this

paper proposes the following hypotheses:

H1: Digital transformation has a significant positive impact on corporate performance.

3.2. Digital Transformation and Business Model Innovation

As a result of the application of digital technologies, there has been a digital transformation of enterprise business models, including the emergence of digital platforms, the convergence of digital resources, and so on. The primary feature of digital transformation is information, and the rapid flow of information will break the information asymmetry between enterprises. The application of digital technology by enterprises can better provide enterprises with the ability of information collection, information integration and information processing. Enterprises can not only obtain market and competitor information in the first time, but also be able to respond more quickly to market changes. Making full use of digital technology can fully integrate limited resources and further promote the innovation of business models. Through the use of digital technology, enterprises can effectively integrate the boundaries of industrial transactions, achieve the transformation of competitive relationships, establish a harmonious win-win relationship, achieve mutual benefits, and innovate the original business logic. This paper divides the digital transformation driven enterprise business model innovation into three paths: value creation driven business model innovation with digital technology as the carrier, business model innovation driven by co-creating value between consumers and enterprises, and business model innovation driven by cross-border business logic. Based on this, this paper puts forward the following hypotheses:

H2: Digital transformation has a positive impact on business model innovation.

3.3. Business Model Innovation and Corporate Performance

Business model is regarded as the actual expression of enterprise strategy, which describes the logic of enterprises to improve efficiency, reduce costs and obtain profits through effective business model innovation of various elements, which is crucial for establishing competitive advantages and improving corporate performance. Enterprises diffuse the advantages of digital transformation into their business models to achieve digital empowerment in value creation, value delivery and value acquisition, and the enterprise's products or services are differentiated in the market, or even create a new track in the market competition, establish new competitive barriers, and help the enterprise improve its performance[15]. Business ecosystems are able to rationally deploy resources from an overall perspective and achieve efficient collaboration among various participants [16], which in turn achieves mutual benefits and is conducive to the improvement of corporate performance. Based on this, this paper proposes the following hypotheses:

H3: Business model innovation has a significant positive effect on corporate performance.

3.4. The Mediating Role of Business Model Innovation

The mediating effect of business model innovation can be explained by combining the views of the strategic choice school and the evolutionary school of business model innovation research. The strategic choice school of business model innovation believes that business model innovation is rational, and that enterprises fully analyse the environment they are in and design business model prototypes based on sufficient information; the evolutionary school of business model innovation believes that business model innovation is an exploratory process, and that the enterprise's resources and environment are

unpredictable, and that the enterprise needs to innovate through its business model, and then increase its market share.

The causal logic of digital transformation emphasises goal-orientation, based on internal and external circumstances, and careful strategic planning to ensure the achievement of goals[17]. The effect logic of digital transformation emphasises short-cycle experimentation oriented to the means currently available, by constantly trying out new business opportunities in a rapidly changing external environment[18]. Corporates respond quickly to business opportunities and continuously optimise and improve their business models through short-cycle, low-cost trial and error to improve their performance. Based on this, this paper proposes the following hypothesis:

H4: Business model innovation mediates between digital transformation and corporate performance.

4. Research Design

4.1 Research Model

The study model diagram is shown in Figure 1 :

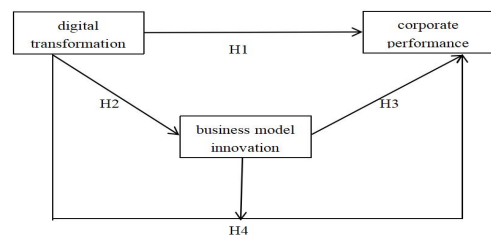


Figure 1 Research Model

4.2 Data Collection

This study selected 293 listed companies in Shandong Province and Jiangsu Province, China, from 2013 to 2023, and the questionnaire was distributed over a period of 3 months, adopting the snowball sampling method of distribution. The questionnaire respondents were able to have a deeper understanding

of digital transformation, business model innovation, and corporate performance, and responded to the research questionnaire more accurately. In this study, a total of 360 questionnaires were distributed, 340 questionnaires were recovered, 47 invalid questionnaires were excluded, and 293 valid questionnaires were finally obtained, with a validity of 86.1%. Overall, the age distribution, size distribution, industry distribution and stage distribution of the sample enterprises are more reasonable, indicating that the sample is representative.

	26-30 years	37	12.63
	> 30 years	34	11.6
	< 30 million	79	26.96
	30 million - 150 million	38	12.97
Your company's total sales in 2023	150 million - 500 million	41	13.99
	500 to 1 billion	42	14.33
	1 to 1.5 billion	44	15.02
	1.5 to 2 billion	41	13.99
	> 2 billion	8	2.73
Your company's industry is now in	early stage	106	36.18
	growth period	62	21.16
	maturating stage	60	20.48
	recessionary period	65	22.18

4.3 Measurement of Variables

In order to ensure the reliability and validity of the measurement questionnaire, the questionnaire variables were mainly measured using scales developed by previous scholars. The questionnaire was scored using the Likert-5 scale. Digital transformation was borrowed from Hu's research, and considering the special context of digital transformation, the original items were appropriately modified and adjusted to form a set of scales specifically designed to measure digital transformation, with eight items for each dimension. Business model innovation was measured using Zhao's nine-item scale, which is a comprehensive adaptation of the classic research scale[19]. Corporate performance was measured using Guo's the items integrated and the expression of the translation of the developed scale to form the scale, which includes two dimensions of task performance and peripheral performance, with six questions[20]. Finally, combining with previous related studies, this survey chooses the year of establishment, size and stage of the industry as control variables. Table 1 shows the sample statistical information.

Table 1 Sample Statistics Frequency Analysis

Statistical items	Options	frequency	Percentage (%)
Your company has since been established.	< 3 years	44	15.02
	4-8 years	26	8.87
	9-14 years	32	10.92
	15-19 years	86	29.35
	20-25 years	34	11.6

5. Data Analysis

5.1 Reliability Analysis

As seen in Table 2, the Cronbach's alpha values for the Digital Transformation Scale, the Business Model Innovation Scale, and the Corporate Performance Scale are .933, .861, and .825, respectively. The Cronbach's alpha values for the subdimensions of the three scales also satisfy the reliability coefficients of greater than .7, and the reliability indicators are relatively satisfactory. Therefore, it indicates that the Digital Transformation Scale, Business Model Innovation Scale and Corporate Performance Scale have better reliability and stability.

Table 2 Scale Reliability Analysis

	Cronbach's Alpha	Number of terms
Causal logic	.906	8
Effect logic	.919	8
Digital transformation	.933	16
Value delivery innovation	.822	3
Value architecture innovation	.872	4
Income model innovation	.760	2
Business model innovation	.861	9
Mission performance	.833	4
Peripheral performance	.750	2
Corporate performance	.825	6

5.2 Validity Analysis

As seen in Table 3, When the squared multiple correlation (SMC) is .40 or higher, it can be said that the observed variable is fully explained by the corresponding latent variable. In this measurement model, factor loading of the variables on sub-dimension explained by the corresponding e dimension of DT, BMI, and CP are all significant. Finally, according to validity, the average variance extracted (AVE) should be greater than or equal to .50. The AVE values of the three factors on the corresponding variables on sub-dimension are all greater than .50, indicating that the aggregation validity is good.

Table 3 Confirmatory Factor Analysis of Measurement Model

Dimension	Sub-Dimension	β	S.E.	C.R.	SMC	AVE
DT	CL	.837	-	-	.701	.656
DT	EL	.782	.128	8.112	.611	
BMI	VDI	.694			.482	.520
BMI	VAI	.635	.126	6.919	.404	
BMI	IMI	.821	.18	7.782	.674	.597
CP	MP	.876			.768	
CP	PP	.653	.124	6.684	.426	

5.3 Linear Regression Analysis

5.3.1 Regression Analysis of Digital

Transformation and Business Performance

In this study, linear regression was used to regress digital transformation on corporate performance. As can be seen from Table 4, the model formula is: corporate performance = 1.252 + 0.003* your company has been established from now on - 0.005* your company's total sales in 2023 is + 0.011* your company's industry is now in + 0.568* digital transformation, the model R-square value is 0.238, when F-test was conducted on the model, it was found that the model passed the F-test (F= 22.441, p=0.000<0.05), indicating that your company has been established, your company's total sales in 2023, the

industry in which your company is located is now in the, digitatransformation can explain the reasons for the change of 23.8% of the performance of the enterprise and the digital transformation of at least one of them will have an impact on the performance of the enterprise relationship, the model of the VIF value of all are less than 5, means that there is no cointegration Problems, the final specific analysis can be seen: your company has been established from now on the regression coefficient value of 0.003 (t = 0.126, p = 0.900 > 0.05), means that your company has been established from now on and will not have an impact on corporate performance relationship.

The regression coefficient value of your company's total sales in 2023 is -0.005 (t=-0.234, p=0.815 > 0.05), which means that your company's total sales in 2023 will not have an impact on business performance. The value of regression coefficient of your corporate's industry is now at is 0.011 (t=0.313, p=0.754 > 0.05), implying that your corporate's industry is now at does not have an impact relationship on corporate performance. The regression coefficient value for digital transformation is 0.568 (t=9.348, p=0.000 < 0.01), implying that digital transformation will have a significant positive impact relationship on business performance.

5.3.2 Regression analysis of digital transformation and business model innovation

This study further validates the relationship between digital transformation and business model innovation. As can be seen from Table 5, the model formula is: business model innovation = 1.545-0.032*your company has been established from today-0.009*your company's total sales in 2023 is +0.008*your company's industry is now in the +0.574*digital transformation, and the model R-square value is 0.328, which means that your company has been established from today, your company's total sales in 2023 is, and digital transformation can explain 32.8 per cent of the change

Table 4 Regression Analysis of Study Variables
linear regression analysis

	Unstandardised coefficient		Standardised coefficient	t	p	collinear diagnostics	
	B	standard error	Beta			VIF	tolerance
constant	1.252	0.233	-	5.369	0.000**	-	-
Your company has been established since	0.003	0.023	0.007	0.126	0.9	1.088	0.919
The total sales of your business in 2023 are	-0.005	0.023	-0.013	-0.234	0.815	1.097	0.912
The industry in which your business operates is now in	0.011	0.036	0.017	0.313	0.754	1.069	0.935
Digital Transformation	0.568	0.061	0.486	9.348	0.000**	1.021	0.98
R ²				0.238			
Adapt R ²				0.227			
F				F (4,288)=22.441,p=0.000			

Dependent Variables: Corporate Performance

* p<0.05 ** p<0.01

Table 5 Regression Analysis of Research Variables
Linear regression analysis results (n=293)

	Unstandardised coefficient		Standardised coefficient	t	p	collinear diagnostics	
	B	standard error	Beta			VIF	tolerance
constant	1.545	0.188	-	8.214	0.000**	-	-
Your company has been established since	-0.032	0.019	-0.086	-1.713	0.088	1.088	0.919
The total sales of your business in 2023 are	-0.009	0.018	-0.025	-0.496	0.62	1.097	0.912
The industry in which your business operates is now in	0.008	0.029	0.014	0.289	0.773	1.069	0.935
Digital Transformation	0.574	0.049	0.572	11.727	0.000**	1.021	0.98
R ²				0.328			
Adapt R ²				0.318			
F				F (4,288)=35.079,p=0.000			

Dependent Variable: Business Model Innovation

* p<0.05 ** p<0.01

in the relationship between business model innovation and digital transformation. Total sales are, Your corporate's industry is now in, Digital transformation explains 32.8% of the change in business model innovation. The F-test of the model found that the model passed the F-test (F=35.079, p=0.000<0.05), which means that your company has already been established in the present day, the total sales of your company in 2023 is, the industry in which your company is located is now in the, digital transformation in at least one of the relationship will have an impact on the innovation of the business model, in addition, for the model of the test of multiple covariance found that, the model in the VIF values are all less than 5, meaning

that there is no covariance problem; the final specific analysis can be seen.

The value of regression coefficient of your company has been established from today is -0.032 (t=-1.713, p=0.088>0.05), which means that your company has been established from today does not affect the relationship of business model innovation. The regression coefficient value of your company's total sales in 2023 is -0.009 (t=-0.496, p=0.620>0.05), which means that your company's total sales in 2023 will not have an impact on business model innovation. The regression coefficient value of your enterprise's industry is now at is 0.008 (t=0.289, p=0.773>0.05), meaning that your enterprise's industry is now at does

not have an impact relationship on business model innovation. The regression coefficient value of digital transformation is 0.574 ($t=11.727$, $p=0.000<0.01$), implying that digital transformation will have a significant positive impact relationship on business model innovation.

5.3.3 Regression analysis of business model innovation and corporate performance

In this study, linear regression was used to analyse the linear regression between business model innovation and corporate performance. As can be seen from Table 6, the model formula is: corporate performance = 0.970 + 0.026*your company has been established from now on + 0.005*your company's total sales in 2023 is + 0.017*your company's industry is in now + 0.624*business model innovation, the model R-square value of 0.291. F-test of the model found that the model passes the F-test ($F= 29.582$, $p=0.000<0.05$), indicating that your company has been established from now on, the total sales of your enterprise in 2023 is, the industry where your enterprise is located is now in, the business model innovation can explain the reason for the change of 29.1% of the performance of the enterprise and the relationship between at least one

of the business model innovations that will have an impact on the performance of the enterprise, in addition, for the model of the test of multiple covariance found that the model In addition, the test for multicollinearity of the model found that all the VIF values in the model are less than 5, which means that there is no problem of covariance. The final analysis shows that the regression coefficient of your company has been established for a long time is 0.026 ($t=1.188$, $p=0.236>0.05$), which means that your company has been established for a long time will not have an impact on the performance of the enterprise. The regression coefficient value of your company's total sales in 2023 is 0.005 ($t=0.249$, $p=0.804>0.05$), which means that your company's total sales in 2023 will not have an impact on business performance. The value of regression coefficient of your enterprise's industry is now in is 0.017 ($t=0.486$, $p=0.627>0.05$), which means that your enterprise's industry is now in does not have an impact on corporate performance relationship. The regression coefficient value of business model innovation is 0.624 ($t=10.760$, $p=0.000<0.01$), implying that business model innovation will have a significant positive impact relationship on corporate performance.

Table 6 Regression Analysis of Study Variables
linear regression analysis

	Unstandardised coefficient		Standardised coefficient	t	p	collinear diagnostics	
	B	standard error	Beta			VIF	tolerance
constant	0.97	0.231	-	4.193	0.000**	-	-
Your company has been established since	0.026	0.022	0.061	1.188	0.236	1.09	0.918
The total sales of your business in 2023 are	0.005	0.022	0.013	0.249	0.804	1.093	0.915
The industry in which your business operates is now in	0.017	0.035	0.025	0.486	0.627	1.066	0.938
Business Model Innovation	0.624	0.058	0.536	10.76	0.000**	1.007	0.993
R ²				0.291			
Adapt R ²				0.281			
F				F (4,288)=29.582,p=0.000			

Dependent Variables: Corporate Performance

* $p<0.05$ ** $p<0.01$

5.3.4 Test of the mediating role of business model innovation

This study uses linear regression method to test the mediating effect of business model innovation. As can be seen from Table 7, there are three models involved in mediation effect analysis, which are as follows: Corporate performance =1.252+0.003* Your company has been established now -0.005* Your company's total sales in 2023 is +0.011* Your company's industry is now in +0.568* digital transformation. Business model innovation =1.545-0.032* Your company has been established now -0.009* Your company's total sales in 2023 is +0.008* Your company's industry is now in +0.574* digital transformation. Corporate performance =0.558+0.017* Your company has been established - 0.001* Your company's total sales in 2023 is +0.008* Your company's industry is now in +0.310* digital transformation +0.449* business model innovation.

Next, this study uses bootstrap method for sampling to test the mediation effect of conducting business model innovation, if the direct effect does not hold, the indirect effect holds, and the total effect holds, it means

it is fully mediated. From Table 8, it can be seen that the direct effect holds, the indirect effect holds, and the total effect holds, indicating partial mediation.

Table 8 Regression Analysis of Research Variables

	Effect	SE	LLCI	ULCI
total effect	0.5676	0.0607	0.4481	0.6872
direct effect	0.3095	0.0689	0.1739	0.4452
indirect effect	0.2581	0.0472	0.1691	0.3531

5.3.4 Research Hypothesis Test Results

The research hypothesis test results as shown in Table 9.

Table 9 Summary of Hypothesis Test Results

Hypothesis	Content	Result
H1	Digital transformation has a significant positive impact on corporate performance.	Accepted
H2	Digital transformation has a positive impact on business model innovation.	Accepted
H3	Business model innovation has a significant positive effect on corporate performance.	Accepted
H4	Business model innovation mediates between digital transformation and corporate performance.	Accepted

Table 7 Regression Analysis of Research Variables
Analysis of the role of intermediaries

	Corporate performance			Business Model Innovation			Corporate performance		
	B	standard error	β	B	standard error	β	B	standard error	β
constant	1.252**	0.233	-	1.545**	0.188	-	0.558*	0.242	-
Your company has been established since	0.003	0.023	0.007	-0.032	0.019	-0.086	0.017	0.022	0.04
The total sales of your business in 2023 are	-0.005	0.023	-0.013	-0.009	0.018	-0.025	-0.001	0.021	-0.003
Your company's industry is now in	0.011	0.036	0.017	0.008	0.029	0.014	0.008	0.034	0.011
Digital transformation	0.568**	0.061	0.486	0.574**	0.049	0.572	0.310**	0.069	0.265
Business model innovation							0.449**	0.068	0.386
R ²		0.238			0.328			0.338	
Adapt R ²		0.227			0.318			0.326	
F Numerical	F (4,288)=22.441,p=0.000			F (4,288)=35.079,p=0.000			F (5,287)=29.277,p=0.000		

Dependent Variable: Business Model Innovation
* p<0.05 ** p<0.01

6. Conclusion and Discussion

6.1 Research Conclusion

After in-depth research and analysis of the relationship between digital transformation, business model innovation and corporate performance, this thesis draws the following conclusions:

First, digital transformation has a significant positive effect on corporate performance, which is consistent with the findings of Long's[21]. Since digital transformation as a scarce resource can help enterprises obtain strong competitiveness, and at the same time convey positive information to the outside world that the enterprise is operating well, it helps to improve enterprise performance. Second, digital transformation has a positive effect on business model innovation, which is consistent with the findings of Wei's[22]. Enterprises' digital transformation can improve their business model innovation output capacity and innovation input capacity, which is enough to stimulate the innovation power and vitality of enterprises, thus improving their competitive advantage. Third, business model innovation has a significant positive impact on enterprise performance, which is consistent with the findings of Hu's[23]. When corporates adapt to market changes and consumer demands through business model innovation, they are more likely to improve their competitiveness and profitability. Fourth, business model innovation plays a mediating role in the relationship between digital transformation and corporate performance, which is consistent with the findings of Zhang's[24]. Enterprises undergoing digital transformation can push them to increase their R&D investment and promote the continuous increase of innovation outputs such as patents and copyrights, thus indirectly improving their performance.

6.2 Shortcomings and Prospects of the Study

In this study, we provide some insights into enterprise development strategies in the digital era

by examining the relationship between digital transformation, business model innovation and corporate performance. However, the theoretical framework of our study is broader, but we did not elaborate each concept in detail during specific analyses, and future research can deepen the understanding of these concepts. This study relies on literature review and theoretical analyses, and lacks the support of empirical research, and more empirical research methods can be used in the future to verify the conclusions. Although our study initially explored the relationship between digital transformation, business model innovation and corporate performance, it did not take into account the differences of enterprises, and future research could be conducted in different areas. Overall, this study needs to address the lack of depth and breadth in order to improve the research content and provide stronger support for sustainable enterprise development.

References

- [1] Wu, F., Hu, H. Z., Lin, H. Y., & Ren, X. Y. (2021). Corporate digital transformation and capital market performance - Empirical evidence from stock liquidity. *Management World*(07),130-144+10.doi:10.19744/j.cnki.11-1235/f.2021.0097.
- [2] Yang, Q. Y. (2023). A study of the impact of enterprise digital transformation decision logic on digital transformation performance. Master's thesis, Southwestern University of Finance and Economics. doi:10.27412/d.cnki.gxncu.2023.000754.
- [3] Reuschl, A. J., Deist, M. K., & Maalaoui, A. (2022). Digital transformation during a pandemic: Stretching the organizational elasticity. *Journal of Business Research*, 144, 1320-1332. doi:10.1016/j.jbusres.2022.01.088.
- [4] Hu, X. B. (2022). A study of the relationship between digital transformation decision logic, business model innovation and corporate performance. *Management World*(07),130-144+10.doi:10.19744/j.cnki.11-1235/f.2022.0097.

- ter's thesis, Hangzhou University of Electronic Science and Technology. doi:10.27075/d.cnki.ghzdc.2022.000533.
- [5] liang, M. (2023). Research on Enterprise Business Model Innovation in the Context of Digital Transformation. *National Circulation Economy*(18), 40-43. doi:10.16834/j.cnki.issn1009-5292.2023.18.018.
- [6] Warner K S R, Wager M (2019) .Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal[J].*Long Range Planning*,52(3):326-349. doi:10.1016/j.lrp.2018.12.001.
- [7] Qi, Y. D, & Xiao, X. (2020). Changes in Business Management in the Digital Economy. *Managing the World*(06),135-152+250. doi:10.19744/j.cnki.11-1235/f.2020.0091.
- [8] Zott C, Amit R (2007) .Business model design and the performance of entrepreneurial corporates[J].*Organization Science*,18(2):181- 199. doi:10.1287/orsc.1060.0232.
- [9] Shao, D. Y. (2021). CEO background characteristics, a study of the relationship between corporate innovation and performance. Ph.D. thesis, Jilin University. doi:10.27162/d.cnki.gjlin.2021.000691.
- [10] Pan, Y., I, Zhu. K., & Chen, X. Y. (2018). Decision Power Allocation and corporate Value - Empirical Evidence Based on Enterprise Groups. *Managing the World*(12),111-119. doi:10.19744/j.cnki.11-1235/f.2018.0037.
- [11] Sun, Y.H. (2023). Enterprise Digital Transformation, Corporate Governance and Corporate Performance. Master's thesis, Liaoning University. doi:10.27209/d.cnki.glniu.2023.002026.
- [12] Deng, Y. X. (2023). Digital Transformation, Internal Control Effectiveness and Business Performance. Master's thesis, Yunnan University of Finance and Economics. doi:10.27455/d.cnki.gycmc.2023.000189.
- [13] Lu, Y. Y. (2012). A review and outlook on corporate performance evaluation research. *Communication of Finance and Accounting*, (5), 57-58. doi:10.16144/j.cnki.issn1002-8072.2012.05.047.
- [14] Li, H. J., Tian, Y. X., & Li, W. J. (2014). Internet thinking and traditional enterprise reengineering. (10),135-146. doi:10.19581/j.cnki.ciejournal.2014.10.011.
- [15] Foss N J, Saebi T (2017) .Fifteen Years of Research On Business Model Innovation:How Far Have we Come, and Where Should we Go?[J].*Journal of Management*,43(1):200-227. doi:10.1177/0149206316675927.
- [16] Gawer A, Cusumano MA (2014) .Industry platforms and ecosystem innovation[J].*Journal of Product Innovation Management*,31(3): 417-433. doi:10.1111/jpim.12105.
- [17] Chandler G N, DeTienne D R, McKelvie A, et al (2011) .Causation and effectuation processes:A validation study[J].*Journal of Business Venturing*,26(3):375-390. doi:10.1016/j.jbusvent.2009.10.006.
- [18] Perry J T, Chandler G N, Markova G (2012). Entrepreneurial effectuation: a review and suggestions for future research[J].*Entrepreneurship Theory and Practice*,36(4):837-861. doi:10.1111/j.1540-6520.2010.00435.x.
- [19] Zhao, J., Wei, Z. & Yang, D. (2019), "Organizational search, dynamic capability, and business model innovation," *IEEE Transactions on Engineering Management*,68(3),785-796.
- [20] Guo, Y. W. (2018). A study on the relationship between dual-dimensional capability and performance of SMEs in digital transformation. Master's thesis, Zhejiang University. doi:CNKI:CDMD:2.1018.322102.
- [21] Long, X. (2022). Digital transformation, management power, and corporate performance. Master's thesis, Shandong University. doi:10.27272/d.cnki.gshdu.2022.002216.
- [22] Wei, H. (2022). The impact of digital transformation on business models and corporate performance. Master's thesis, Shandong University. doi:10.27272/d.cnki.gshdu.2022.003285.
- [23] Hu, F. F. (2022). The impact of business model innovation on corporate performance under the moderating effect of digital transformation. Master's thesis, Beijing Jiaotong University. doi:10.26944/d.cnki.gbjfu.2022.001530.
- [24] Zhang, C. (2022). The impact of digitalization and business model innovation on corporate performance. Master's thesis, Nanjing University of Information Science and Technology. doi:10.27272/d.cnki.gninfo.2022.002216.

mation Science & Technology. doi:10.27248/d.cnki.g
njqc.2022.000749.

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