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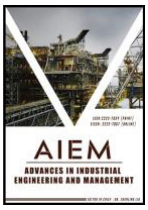

REVIEW ARTICLE

DIGITAL CAPABILITY AND VALUE CREATION OF MANUFACTURING ENTERPRISES: EMPIRICAL TEST BASED ON BOHAI RIM REGION

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ABSTRACT

In China, digital technology and real economy are deeply integrated. Under the background of cultural development strategy to promote digital industrialization and industrial digital, it is urgent for manufacturing enterprises to regard digital ability as the key link to promote enterprise value creation. Based on the sample data of listed manufacturing enterprises in Bohai Rim region from 2013 to 2022, this paper explores the mechanism of digital ability on value creation of manufacturing enterprises through empirical research. The research shows that digital ability has a significantly positive impact on the value creation of manufacturing enterprises, and digital ability promotes the value creation of manufacturing enterprises by improving the production efficiency and R&D innovation ability of enterprises.

KEYWORDS

Digital ability, enterprise value creation, manufacturing industry, Bohai rim region

1. PROPOSE A QUESTION

The secondary industry is an important part of a country's economy. In the development of modern industry and urbanization, it has an important role and contribution for the development of the country. From 2013 to 2022, China's GDP has risen steadily from 59296.32 billion yuan to 121020.72 billion yuan, and the GDP index remained at 106% on the whole. Among them, the contribution rate of the added value of the secondary industry remained at around 40%, and the added value index was basically the same as that of the whole country. As one of the three coastal economic development zones in China, the Bohai Rim Economic Zone has increased the added value of the secondary industry from 5157.39 billion yuan to 7646.41 billion yuan, contributing nearly 20% to the economic growth of the secondary industry in China.

From 2013 to 2021, the national average number of employed people was 758.02 million, of which the secondary industry contributed about 30%. As the main component of the secondary industry, the importance of manufacturing industry is self-evident. Manufacturing industry is an important pillar of the national economy, which can create a large number of employment opportunities for the country and improve its economic strength and competitiveness. From 2013 to 2021, the number of employed people in manufacturing cities and towns fluctuated around 40 million, accounting for one-third of the national urban employed population. As the largest industrial intensive area in China, the Bohai Economic Zone has accepted nearly 20% of the manufacturing employees in China with 5% of its land area.

With the development of our country's modernization from rapid development to high-quality development, the incompatibility between China's industrial structure and economic development is prominent, and the road for the real economy to rely on traditional production factors is getting narrower and narrower. General Secretary Xi Jinping has repeatedly proposed that the development of digital economy should promote digital industrialization and industrial digitization, transform traditional industries with new technologies, improve total factor productivity, and realize the deep integration of digital economy and real economy. As the main force of the real economy, manufacturing industry is the main driving force to promote rapid industrialization and achieve the rapid growth of the national economy. On the one hand, the traditional factors of production have more and more limited space to enhance the value of manufacturing enterprises. On the other hand, as a new factor of production, data is not only an important strategic asset of enterprises, but also significantly improves the utilization efficiency of other factors of production and becomes the key factor of production

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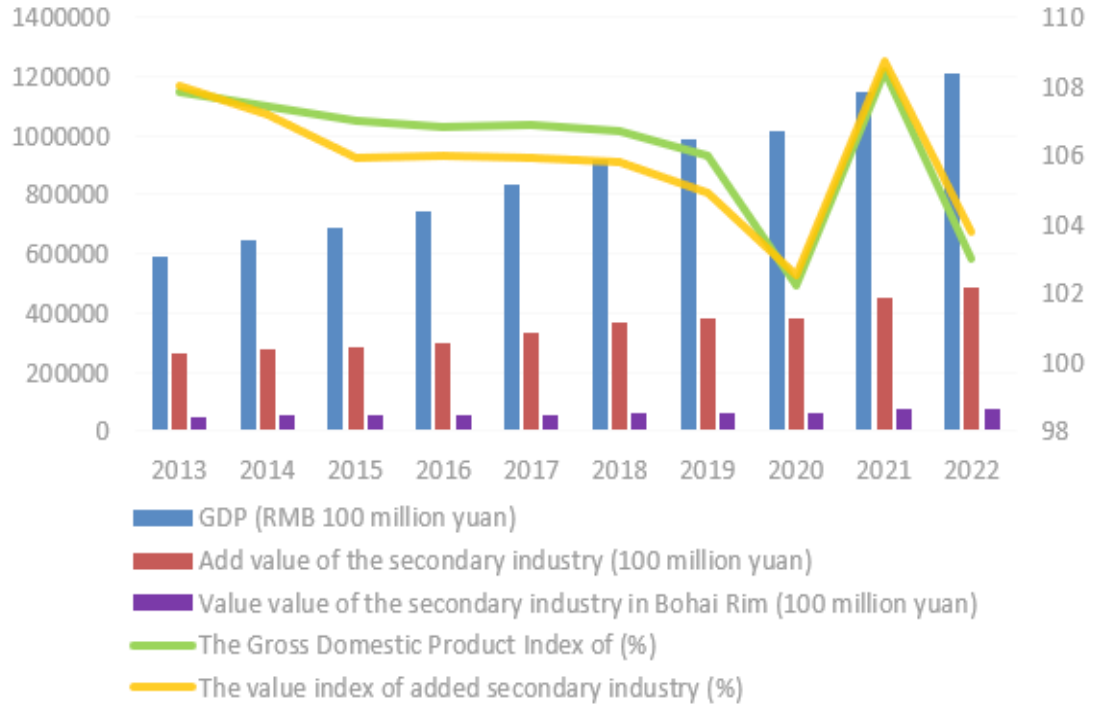

Figure 1: The added value and index of the secondary industry in 2013-2022.

in the process of enterprise value creation. From the national level, the state proposes to implement the integration of digital economy and real economy, and promote manufacturing enterprises to catch the fast bus of digital technology. From the industrial level, the digitization of China's manufacturing industry is backward, and the focus is still on the price war, and industrial competition needs to be upgraded. From the enterprise level, digital transformation brings not only the integration of technology and enterprises, but also the overall change from the inside out.

2. LITERATURE REVIEW

(A) Enterprise value creation

The concept of enterprise value was first put forward by Fisher, who believed that enterprise value was reflected in the discount of future income of capital, that is, the capitalization of future income. With the gradual improvement of the property rights market and the continuous development of the value theory, the enterprise value is considered to be the sum of the stock market value and the debt market value of the enterprise. Since then, the theory of enterprise value has been further extended to the levels of book value, market value and intrinsic value. Researchers have put forward a variety of methods to measure enterprise value, including discounted cash flow model, dividend discount model, relative valuation model and so on. Subsequent scholars put forward that enterprise value creation is a process of maximizing value creation

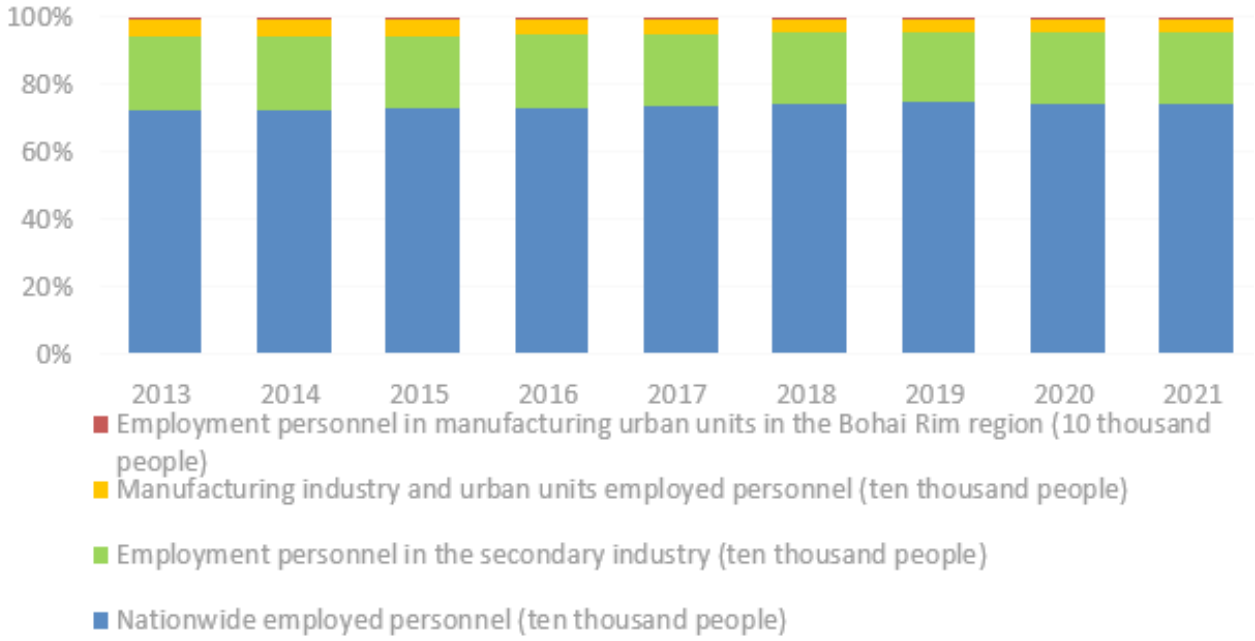

Figure 2: Employment in manufacturing industry in 2013-2022.

through research ability, development ability and production ability and scientific and reasonable management. The enterprise value creation ability should be improved from the perspective of customers, production factors and value network.

The Research Group of China Manufacturing Listed Companies Research Center analyzes the value creation of manufacturing listed companies from four perspectives: capital value creation, industrial value creation, innovative value creation and social value creation. Most researchers focus on capital value creation to discuss. They took economic added value or Tobin Q index as the core index to measure the value creation level of manufacturing enterprises, and analyzed it from the dimensions of industry, region, technical level and pollution degree. They selecting the profit of main business, goodwill and intangible assets, and the return rate of human capital investment to measure the industrial value, using the relevant indicators of R&D personnel and expenses to evaluate the innovative value creation, and through tax contribution, employment number and shareholder dividends to evaluate the social value creation (Faroukhi, et al., 2020; Schoemaker, et al., 2018).

(B)the relationship between digital transformation and enterprise value creation

Scholars' discussion on the relationship between digital transformation and enterprise value creation is mainly divided into theoretical path analysis and empirical analysis. At the level of theoretical path analysis, researchers discussed the path of digital economy enabling the transformation of manufacturing industry, and believed that data, innovation, demand and supply respectively drove the deep integration of manufacturing industry and Internet, R&D end, service industry and new technology (Liu, et al., 2020; Chin, et al., 2021). In addition, they believed that digital technology could not only enhance the input-output effect, but also enable enterprises to obtain a 'learning effect' and further enhance their business capabilities. They discussed the mechanism of the co-evolution of digital empowerment advanced manufacturing enterprises and consumers (Li, et al., 2021). In terms of empirical analysis, researchers built a dynamic panel model to test the mechanism of total risk management affecting enterprise value creation, used qualitative comparative analysis of fuzzy sets to study the configuration path of big data capability intervening in this mechanism, and used fsQCA configuration analysis method to study the value creation mechanism of digital transformation under the value chain process (Verhoef, et al., 2021).

The possible marginal contribution of this paper lies in: trying to build a theoretical framework of digital transformation on value creation of manufacturing enterprises, and revealing the influence path of digital transformation driving value creation of manufacturing enterprises from the perspective of production efficiency and R&D innovation. This paper interprets the value creation of manufacturing enterprises from the perspective of capital value, and analyzes the connotation of capital value from two dimensions: shareholder wealth and profitability.

3. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

(A)Digital ability and enterprise value creation

Value creation is a series of business activities and its cost structure such as R&D design, manufacturing, sales and service carried out by enterprises to meet the needs of target customers. It emphasizes the resource base, subject, process and result of value creation. The value creation of enterprises is not only the promotion of finance, but also the promotion of users and enterprise resources utilization in the digital age. This project studies the value creation of manufacturing enterprises from the perspective of efficiency improvement and technological innovation. As a new factor of production, data is the integration of traditional factors of production and emerging technologies, which breaks through the resource boundary of factors of tangible production and penetrates into all aspects of value creation and value acquisition of manufacturing enterprises. Digital elements can partially replace traditional elements, reduce production costs, alleviate enterprise information asymmetry, optimize internal processes, improve production efficiency and promote enterprise upgrading. Factorization of data resources production can promote enterprise value creation.

Based on the above analysis, this paper puts forward the following research hypotheses:

Hypothesis 1: Digital ability affects enterprise value creation.

The mechanism of digital ability affecting enterprise value creation

Digital ability, enterprise production efficiency and enterprise value creation

From the perspective of efficiency improvement, production factors are the basis of enterprise value creation. Enterprises can reduce resource mismatch, optimize industrial structure, improve productivity and maximize value creation by integrating various production factors. In the aspect of resource allocation efficiency, data elements can combine with traditional production factors to reconstruct the system of production factors, realize mutual empowerment with traditional production factors, and constantly update and optimize the reorganization, thus improving the efficiency of factor allocation. Data elements provide more allocation ways for traditional production factors, alleviate the contradiction between supply and demand among factors, improve the allocation efficiency of factors and promote the production efficiency of enterprises. With the application of digital technologies such as artificial intelligence, it can help enterprises to correct resource mismatch and improve the efficiency of resource allocation. Therefore, data elements can improve the total factor productivity by improving enterprise resource allocation.

Digital transformation drives traditional manufacturing industry to upgrade industrial structure and modernize economic system. Deeply integrated with traditional industries at the same time, data resources improve the digitization, intelligence and networking level of traditional industries and realize industrial dataization. In the process of integration of data resources and manufacturing industry, the processing flow of artificial intelligence technology imitates the processing process of human brain. And the sensor equipment transmits the captured data to the cloud platform for analysis, storage, processing and prediction, so as to realize the visualization of the whole production process and supervise and warn the whole production process. In addition, the cross-border integration of data resources realizes the deep collaboration among enterprises, industries and industries, and builds an industrial ecological community, which is manifested in data-driven industrial integration and industrial correlation at the industrial level. Data optimizes and upgrades traditional industries, and promotes new formats with data as the core, realizing industrial dataization and data industrialization, thus improving industrial production efficiency and realizing value creation of data at the industrial level. The process of data participating in value creation at the industrial level is not only the process of capitalization at the data industry level, but also the process of forming the mechanism of industrial integration and related creation.

Based on the above analysis, this paper puts forward the following research hypotheses:

Hypothesis 2a: Digitization ability promotes enterprise value creation by improving enterprise production efficiency.

Digitization ability, enterprise R&D innovation ability and enterprise value creation

From the perspective of technological innovation, with the continuous influx of information technology into the production and operation of enterprises, the value creation of enterprises is increasingly dependent on technological innovation. The patented technology and innovation achievements of enterprises are easy to form technical barriers, inhibit the development of competitors, and are more conducive to consolidating their own markets and customers, which is an important condition for enterprises to maintain their competitiveness. The prospect of economic growth brought by digital elements makes enterprises more willing to increase their investment in digital technology innovation. At the

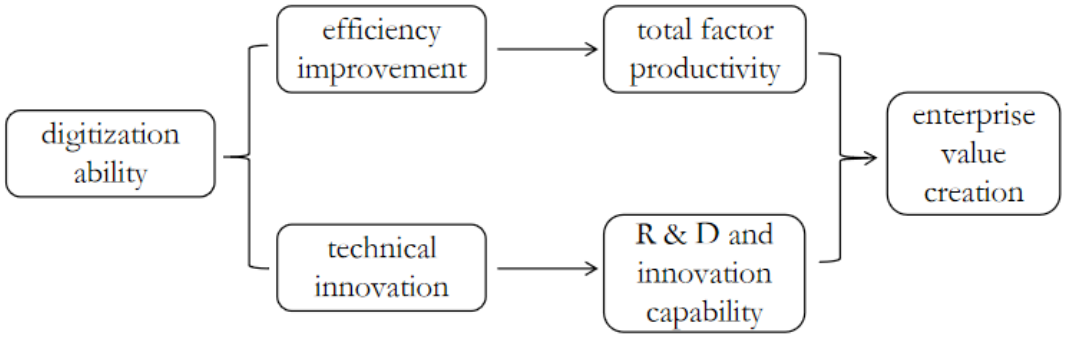

Figure 3: Mechanism diagram of the influence of digital capability on enterprise value creation

same time, the development of digital technology will strengthen joint research and development among enterprises, improve the innovation efficiency of enterprises and form economies of scale, thus expanding the market demand for digital technology innovation. In addition to product technology innovation, digital technology can also reshape the innovation system and mode of enterprises, expand the flow of data elements within enterprises, and strengthen the dissemination of innovative knowledge, thus improving the innovation efficiency of enterprises. Increasing the expenditure on digital technology research and development can not only improve the innovation efficiency of digital technology, but also improve the overall innovation efficiency of technology research and development.

The innovation mechanism of enterprise mode is mainly manifested in the innovation of production and R&D mode. Enterprises combine the massive data resources continuously fed back by users with analysis models to mine the deep logic behind the shallow information of data, and choose the optimal solution for multiple intelligent solutions. At the same time, the application of data in R&D can effectively improve R&D efficiency and optimize product R&D links. The modularization and intelligent production of digital technology realize the loose coupling between data resources, enable enterprises to have rapid response ability, realize the coordinated development of popular market and niche blue ocean region, meet the personalized and diversified needs of consumers, promote the dynamic matching between supply and demand, and improve production efficiency and transaction efficiency. Data resources are integrated with enterprise business processes, participating in the whole process of product production, promoting enterprise model innovation, driving business efficiency improvement and realizing value creation of data at the enterprise level. The process of data participating in enterprise value creation is not only the process of data enterprise level capitalization, but also the process of enterprise model innovation mechanism formation.

Based on the above analysis, this paper puts forward the following research hypotheses:

Hypothesis 2b: Digitization capability promotes enterprise value creation by enhancing enterprise R&D innovation capability.

4. VARIABLE SELECTION AND MODEL SETTING

(A) Variable selection

1. Explained variable: enterprise value creation.

Based on the analysis methods of most researchers, this paper measures the value creation of manufacturing enterprises from the perspective of capital value creation. Considering that a single variable can't fully reflect enterprise value creation, taking into account the availability and integrity of data, a comprehensive index of enterprise value creation is constructed from two dimensions: shareholder wealth and profitability. Shareholders' wealth is expressed by economic added value, and profitability is expressed by return on assets.

2. Explanatory variable: digital ability.

Using digital transformation index to represent the digital ability of enterprises. Breaking down the digitization into artificial intelligence technology, block chain technology, cloud computing technology, big data

Table 1: Variable definition table

type	index	symbol	Variable definition
explained variable	shareholder wealth	EVA	Economic added value = net profit after tax - total capital × weighted average cost of capital
	profitability	ROA	Return on assets = net profit after tax/total assets
explanatory variable	digitization ability	DIG	$\ln\left(\text{Digital word frequency of five dimensions in enterprise annual report} + 1\right)$
control variable	enterprise assets	ASS	The total assets of an enterprise take the natural logarithm
	total employees	EMP	The total number of employees in the enterprise takes the natural logarithm.
	enterprise age	AGE	$\ln\left(\text{year of observation} - \text{year of establishment} + 1\right)$
	enterprise nature	OWN	State-owned enterprises =1 non-state-owned enterprises =0
	shareholding ratio	INS	institutional investors' shareholding ratio
	sales policy	SP	Sales expenses/operating income

technology, digital technology application and other five dimensions. Using the number of words frequency of digital related keywords in the annual report of listed companies to measure the digital transformation of enterprises (Wu Fei, 2021).

3. Control variable

Enterprise assets, total number of employees, enterprise age, enterprise nature, shareholding ratio and sales policy are important factors affecting enterprise value creation. The total assets represent the assets of the enterprise, the number of employees on the job represents the total number of employees, and the number of years of establishment represents the age of the enterprise. Whether it is a state-owned enterprise is regarded as the nature of the enterprise, the shareholding ratio of institutional investors represents the shareholding ratio, and the proportion of sales expenses is regarded as the sales policy of the enterprise.

(B) Model setting

The basic models set in this paper are as follows:

$$Y_{i,t} = \alpha + \beta X_{i,t} + \gamma U_{i,t} + \varepsilon_{i,t}$$

Among them, $Y_{i,t}$ is the explained variable, that is enterprise value creation, including two variables: economic added value (EVA) and return on assets (ROA). $X_{i,t}$ is the explanatory variable, that is digitization ability (DIG). $U_{i,t}$ is control variables, including six variables: enterprise assets (ASS), total number of employees (EMP), enterprise age (AGE), enterprise nature (OWN), shareholding ratio (INS) and sales policy (SP). α is a constant term, $\varepsilon_{i,t}$ is a random perturbation term, and subscripts i and t respectively represent enterprise and year.

(C)Data description and descriptive statistical analysis

This paper takes listed A-share enterprises in Shanghai and Shenzhen stock exchanges as samples, and selects manufacturing enterprises in Bohai Rim region which is regarded as the site. The research period is from 2013 to 2022. The data comes from enterprise annual report data in the CSMAR database. Excluding the samples with less than ten years of establishment, ST enterprises and excessive lack of information, the final sample contains 2070 observations of 207 listed companies. The descriptive statistical results of each observed value are shown in Table 2.

5. EMPIRICAL RESULT ANALYSIS

(A) the benchmark regression results

The balanced panel data is used for modeling and estimation, and mixed model, fixed effect model and random effect model are used for modeling respectively. Through LR test and Hausman test, the fixed effect model is finally selected. The F value of the model is highly significant at the level of 0.01, and the fitting effect is good.

After testing, the parameter model residuals estimated by ordinary least square method have cross-sectional correlation in the same period and heteroscedasticity between groups. The parameters are corrected by panel correction standard error method, and the specific regression results are shown in Table 3.

From the results of benchmark regression, the explanatory variables and most control variables have significant effects on the explained variables at 10% significance level, and the overall fitting degree of the two models is good.

The data shows that digital ability has a significant and positive impact on shareholders' wealth and profitability. This means that the stronger the digital ability, the more beneficial it is to the value creation of manufacturing enterprises, and hypothesis 1 is verified.

From the control variables, the expansion of enterprise assets and the increase of shareholding ratio have a positive effect on the value creation of manufacturing enterprises, while the increase of employee number, enterprise age and sales expenses have a negative effect on the value creation of manufacturing enterprises.

(B) Robustness test

In order to ensure the reliability of the research conclusion, this paper has carried out a series of robustness tests. First of all, according to the region where the sample is located, the sub-samples in each region are subjected to benchmark regression, and the test results are shown in Table 4.

The data shows that the digitization ability of all regions around Bohai Sea has a significant and positive impact on the value creation of manufacturing enterprises, which is consistent with the results of benchmark regression. No matter from the perspective of shareholders' wealth or profitability, the digital ability in Tianjin, Hebei province and Liaoning province has a strong influence on the value creation of manufacturing enterprises, while the influence in Beijing and Shandong province is relatively weak. The main reason is that the digital foundation in Tianjin, Hebei province and Liaoning province is relatively weak, and enterprises have realized the rapid promotion of enterprise value after increasing digital investment. However, the digital foundation in Beijing and Shandong province is relatively good. Due to the diminishing marginal effect, the value generated by digital investment is not as good as that of weak areas.

Secondly, the robustness test is carried out by replacing the explained variables. The calculation method of shareholder's wealth (EVA) in basic regression adopts the first calculation caliber of the CSMAR database, that is, the balance of net profit after deducting the cost of capital, which is suitable for internal management and business decision-making, and is mainly used to reflect the profit level and capital investment effect

Table 2: Descriptive statistics of variables

variable	observed value	average/mean value	Standard error	minimum	maximum
EVA	2,070	1.030	14.857	-199.907	209.812
ROA	2,070	0.034	0.065	-0.586	0.759
DIG	2,070	1.140	1.286	0.000	5.468
ASS	2,070	22.575	1.286	19.552	26.406
EMP	2,070	8.071	1.236	1.085	11.604
AGE	2,070	2.939	0.298	1.609	3.611
OWN	2,070	0.446	0.497	0.000	1.000
INS	2,070	0.560	0.436	4.95e-06	4.657
SP	2,070	0.089	0.104	0.004	1.034

Table 3: Benchmark regression results of digitization ability on value creation of manufacturing enterprises

variable	EVA	ROA
DIG	0.855*** (0.327)	0.002* (0.002)
ASS	3.602*** (1.071)	0.026*** (0.008)
EMP	-0.266 (0.593)	-0.015*** (0.005)
AGE	-10.878*** (3.225)	-0.007 (0.014)
OWN	-2.606*** (0.601)	-0.020*** (0.005)
INS	2.478*** (0.654)	0.016*** (0.003)
SP	-26.178*** (3.698)	-0.344*** (0.036)
constant	-34.757* (21.610)	-0.379** (0.174)
year/province/industry/ individual fixation effect	yes	yes
sample size	2,070	2,070
R^2 value	0.551	0.434

Note:*、**、*** mean significant at the level of 10%, 5% and 1% respectively.

of enterprises. Replace it with the balance of net operating income after deducting the cost of capital (EVA2) to calculate (the second calculation caliber of the CSMAR database), used for comparative analysis among enterprises, can reflect the operating efficiency and market competitiveness of enterprises. Replace the return on assets with gross profit rate (gross profit/operating income) and name it as GM. Gross profit margin can reflect the direct profitability of enterprises. The explanatory variables and control variables are unchanged, and the new explained variables are regressed. The specific results are shown in columns (1) and (2) in Table 5.

The test results show that after replacing the explained variables, the parameter estimation and significance have not changed significantly compared with the benchmark regression, which verifies that the digitization ability has a significant and positive effect on the value creation of manufacturing enterprises.

Thirdly, the robustness test is carried out by replacing explanatory variables. In the annual report-management discussion and analysis section, the method of adding the sum of word frequencies in five dimensions such as artificial intelligence technology, block chain technology, cloud computing technology, big data technology and digital technology application, to replace explanatory variables with natural logarithm is selected and named DIG2. The explained variables and control variables are unchanged, and the new explained variables are used for regression. The specific results are shown in columns (3) and (4) in Table 5.

The test results show that after replacing the explanatory variables, the parameter estimation and significance have not changed significantly compared with the benchmark regression, which once again verifies that the digitization ability has a significant and positive impact on the value creation of manufacturing enterprises. The test results in Table 4 and Table 5 prove that the core conclusion of this paper has good robustness.

6. MECHANISM ANALYSIS

According to the theoretical analysis above, digital capability can improve the production efficiency of enterprises, improve the R&D and innovation ability of enterprises, and then affect the value creation of manufacturing enterprises. The total factor productivity calculated by LP method represents the production efficiency of enterprises, and the natural logarithm of R&D investment represents the R&D capability. Table 6 examines the regression results of digitization ability and enterprise production efficiency and R&D innovation ability.

The data shows that the regression coefficient of digitization ability to production efficiency is significantly positive at the level of 10%, which indicates that digitization ability has a significant impact on the improvement of production efficiency of enterprises. The regression coefficient of digitization ability to R&D innovation ability is significantly positive at the level of 1%, indicating that digitization ability has a highly significant impact on the promotion of R&D innovation ability of enterprises.

The improvement of enterprise production efficiency and R&D innovation ability can effectively affect enterprise value creation. The regression results in Table 7 test this theory.

The test results show that the regression coefficient of production efficiency and R&D innovation ability to enterprise value creation is significantly positive at the level of 5%, indicating that the higher the production efficiency of enterprises, the stronger the R&D ability of enterprises, and the more conducive to enterprise value creation. Hypothesis 2a and hypothesis 2b are verified.

7. RESEARCH CONCLUSIONS AND SUGGESTIONS

Based on the logical framework that digital ability influences enterprise value creation constructed in this paper, taking the listed companies of manufacturing enterprises in Bohai Rim region during 2013-2022 as samples, it is found that digital ability has a significant and positive impact on shareholders' wealth and profitability in enterprise capital value, that is, digital ability can promote enterprise value creation.

Table 4: Robustness test: regional sub-sample test						
zone	Beijing		Tianjin		Hebei province	
variable	EVA	ROA	EVA	ROA	EVA	ROA
DIG	0.412*** (0.138)	0.002* (0.003)	1.850** (0.658)	0.009* (0.007)	1.143*** (0.900)	0.010* (0.005)
control variable	yes	yes	yes	yes	yes	yes
year/industry/ individual fixation effect	yes	yes	yes	yes	yes	yes
sample size	650	650	180	180	270	270
R^2 value	0.509	0.463	0.551	0.611	0.654	0.386
zone	Liaoning province		Shandong province			
variable	EVA	ROA	EVA	ROA		
DIG	1.624** (0.691)	0.014** (0.006)	0.525*** (0.116)	0.001* (0.003)		
control variable	yes	yes	yes	yes		
year/industry/ individual fixation effect	yes	yes	yes	yes		
sample size	220	220	750	750		
R^2 value	0.457	0.460	0.664	0.533		

Note:*、**、*** mean significant at the level of 10%, 5% and 1% respectively.

Mechanism analysis shows that digital capability can promote enterprise value creation by improving enterprise production efficiency and R&D innovation ability.

According to the research conclusion, this paper puts forward the following suggestions:

First, invest more in digital technology, improve the digitization ability of enterprises, and speed up the digital transformation of manufacturing enterprises. Based on the mechanism of digital technology in production efficiency and R&D innovation ability, enhancing digital capability can accelerate the transformation and upgrading of manufacturing enterprises, realize the digital transformation of enterprises and industries as soon as possible, promote the early upgrading of manufacturing enterprises in Bohai Rim region, and further promote the deep integration of digital economy and real economy.

Second, promote regional economic integration and narrow the gap in regional digital capabilities. Relying solely on the enterprise's own investment to improve the digital ability is weak, and it will lead to the blind investment of enterprises and cause a heavy economic burden. We should promote the digital transformation of infrastructure system

Table 5: Robustness Test: Variable Replacement				
variable	Replace the interpreted variable		Replace explanatory variable	
	(1)	(2)	(3)	(4)
	EVA2	GM	EVA	ROA
DIG	0.674** (0.324)	0.001* (0.002)		
DIG2			1.197*** (0.359)	0.002* (0.002)
control variable	yes	yes	yes	yes
year/province/industry/ individual fixation effect	yes	yes	yes	yes
sample size	2,070	2,070	2,070	2,070
R^2 value	0.571	0.859	0.552	0.434

Note:*□**□*** mean significant at the level of 10%, 5% and 1% respectively.

Table 6: Regression results of digitization ability and enterprise production efficiency and R&D innovation ability		
variable	TFP	RD
DIG	0.096* (0.273)	0.101*** (0.044)
control variable	yes	yes
year/province/industry/ individual fixation effect	yes	yes
sample size	2,070	2,070
R^2 value	0.130	0.687

Note:*、**、*** mean significant at the level of 10%, 5% and 1% respectively.

and create a good external environment for enterprises. At the same time, we should pay attention to the unbalanced level of digitization among regions, reduce the cost of digital technology innovation, and assist economically backward areas catch up on the track of digital transformation.

Third, the traditional elements should be continuously upgraded to realize the coordinated development of digital capabilities and traditional elements. Digitization ability is not only the result of data elements empowering traditional elements, but also the result of interaction between them. Improving the quality of traditional elements is a necessary means for enterprises to improve digitization ability. Enterprises should improve the automation degree of equipment and capital factors as soon as possible, cultivate professionals who master digital technology and improve labor factors and technical factors.

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Table 7: Regression results of enterprise production efficiency and R&D innovation ability on enterprise value creation		
variable	EVA	ROA
TFP	28.065*** (5.891)	0.214*** (0.020)
RD	0.390*** (0.145)	0.002** (0.001)
control variable	yes	yes
year/province/industry/ individual fixation effect	yes	yes
sample size	2,070	2,070
R^2 value	0.572	0.496

Note:*、**、*** mean significant at the level of 10%, 5% and 1% respectively.

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