Research on the Mechanism Test and Spatial Optimization of Digital Economy driving the Improvement of New Quality Productivity in Hebei Province

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Abstract

At the critical moment of industrial structure transformation and the kinetic energy conversion, the new digital economy as the core engine to foster productivity can assign role increasingly highlighted. As a major industrial province in northern China, Hebei province needs to solve the development dilemma of high proportion of traditional industries and insufficient innovation capacity. Based on the panel data of 11 cities in Hebei Province from 2011 to 2023, this paper constructs a comprehensive evaluation system of digital economy and new quality productivity, and uses entropy method, panel data model, mediating effect model and spatial Durbin model to systematically explore the enabling effect, mechanism, regional heterogeneity and spatial characteristics of digital economy on new quality productivity. Based on this, this paper puts forward countermeasures and suggestions from the four dimensions of digital infrastructure improvement, regional collaborative development, mechanism innovation activation and policy system optimization, providing decision-making reference for Hebei Province to solve the problems of industrial transformation and cultivate new quality productivity with the help of digital economy.

Key words

Digital economy; New quality productivity; Enabling mechanism; Regional heterogeneity; Spatial spillover effect

数字经济驱动河北省新质生产力提升的机制检验与空间优化研究

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摘要

在产业结构转型与动能转换的关键时期，以数字经济为核心引擎培育新质生产力的作用日益凸显。河北省作为中国北方工业大省，亟需破解传统产业占比偏高、创新能力不足的发展困境。本文基于河北省 11 个地级市 2011—2023 年的面板数据，构建数字经济与新质生产力综合评价体系，运用熵值法、面板数据模型、中介效应模型及空间杜宾模型，系统探究数字经济对新质生产力的赋能效应、作用机制、区域异质性与空间特征。在此基础上，从完善数字基础设施、推动区域协同发展、激活机制创新活力、优化政策制度体系四个维度提出对策建议，为河北省借助数字经济破解产业转型难题、培育新质生产力提供决策参考。

关键词

数字经济；新质生产力；赋能机制；区域异质性；空间溢出效应

1. Introduction

1.1 Research background

Digital economy, with data as the core production factor and supported by digital technology, is profoundly reshaping the combination of production functions, promoting the transformation of quality, efficiency and driving force of economic development, and becoming the key support for cultivating new quality productivity. As an advanced form of productivity dominated by innovation and characterized by informatization, networking and intelligence, the cultivation level of new quality productivity is directly related to the effect of high-quality development of regional economy.

Hebei Province is located in the core region of Beijing-Tianjin-Hebei coordinated development, and is an important industrial base and populous province in China. Traditional industries such as steel, equipment manufacturing and chemical industry account for a high proportion, and problems such as over-emphasis on industrial structure, insufficient innovation ability and weak transformation power have long existed. In recent years, Hebei Province has actively promoted the deep integration of digital economy and real economy. In 2023, the scale of digital economy will exceed 1.3 trillion yuan, accounting for 35.2% of GDP. However, there is still a big gap compared with Beijing, Tianjin and other surrounding developed regions. How to rely on digital economy to solve the dilemma of traditional industrial transformation and upgrading, activate the development momentum of new quality productivity, and achieve high-quality development of regional economy has become an important issue facing Hebei Province.

Existing studies focus on the national level, or the eastern developed provinces, in view of the special research is relatively scarce in Hebei province, and lack of refinement measure of provincial level within the city space and interactive analysis. Based on this, this paper constructs a comprehensive evaluation system based on the panel data of 11 cities in Hebei Province from 2011 to 2023, and systematically examines the impact mechanism and spatial effect of digital economy on new quality productivity, so as to make up for the existing research shortcomings and provide empirical support for Hebei Province to formulate precise digital economy development policies.

1.2 Literature review

1.2.1 Connotation and measurement of new quality productivity

The core connotation of new quality productivity has reached a consensus, that is, "innovation-led" and "factor upgrading", focusing on strategic emerging industries and future industrial development, showing the characteristics of information, networking and intelligence. In terms of measurement methods, scholars mostly adopt the multi-index comprehensive evaluation method, construct the two-dimensional framework of "technological progression-factor upgrading" or the three-dimensional framework of "labor-labor data-labor object", and use the entropy method, principal component analysis and other objective weighting methods to measure the development level. But existing research has focused on the provincial level, city level within the provincial refinement measure is not enough, difficult to

reflect the difference of development in the region.

1.2.2 Relationship between digital economy and new quality productivity

At the theoretical level, scholars generally believe that digital economy enables the development of new quality productivity through technological innovation effect, structural optimization effect and resource allocation effect. In terms of empirical research, Jiao Fangyi et al.(2024), based on provincial panel data, confirmed that digital economy promotes the growth of new quality productivity through industrial digitalization and digital governance[1]; Taking the Yangtze River Delta urban agglomeration as a sample, Wu Wensheng et al.(2024) found that digital economy promotes regional productivity through technological innovation and employment structure optimization[2]; Luo Shuang et al.(2024) pointed out that the core industrial agglomeration of digital economy has a significant role in promoting the new quality productivity[3]. But the existing research of Beijing-Tianjin-Hebei region especially less attention in Hebei province, failed to regional industry characteristics analysis can assign mechanism of heterogeneity.

1.2.3 Research on spatial spillover effects

Digital economy has significant spatial network characteristics, and its impact on new quality productivity has spatial spillover effect. Xia Wenhao et al. found that the digital economy can promote the new quality productivity of the local region, but may have a "siphon effect" on the neighboring regions. At present, there is insufficient research on the spatial interaction between cities in a province, which makes it difficult to reveal the spatial correlation characteristics between digital economy and new quality productivity in a region.

In summary, the existing research provides a solid theoretical basis and method reference for this paper, but there is still room for improvement in three aspects: first, there is a lack of special research on Hebei Province, which is difficult to reflect the impact of regional industrial characteristics on the enabling effect; The second is the lack of refined measurement and regional heterogeneity analysis at the provincial city level; Third, the discussion on the spatial interaction mechanism between digital economy and new quality productivity is not deep enough. This paper will focus on the above research gaps to analyze.

2. Theoretical analysis and research hypotheses

2.1 The core logic of enabling new quality productivity in digital economy

New mass productivity elements forming rely on scientific and technological innovation and upgrade of the double drive, embodied in high-quality workforce, new quality, and the organic combination of labor and labor object. Digital economy with information technology as the core, through the unique attributes of the data elements refactoring production elements configuration mode, and the new quality, and the productivity is highly theory in particular, embodies in three aspects: one is the data elements in a non-competitive and unlimited supply, break through the traditional factors of production of scarcity, provide new mass productivity continued power; Second, the permeability of digital technology and the collaborative, promote the development of traditional digital transition and emerging industry, optimize the industrial structure; The third is the network effect and aggregation effect of digital platform,

which promotes the agglomeration and sharing of innovation factors and improves the efficiency of resource allocation.

Digital economy through perfecting digital infrastructure, promoting industrialization and digital industry, provide technical support for the development of new mass productivity elements, industrial foundation and guarantee. The improvement of digital infrastructure reduces the cost of information transmission and provides hardware support for technological innovation. Digital industrialization promotes artificial intelligence, big data and other emerging industries, and industrial digitalization promotes the transformation and upgrading of traditional industries, which together constitute the industrial carrier of the development of new quality productivity. Digital economy promotes the deep integration of data factors with traditional factors such as labor and capital, and further improves the efficiency of factor allocation.

2.2 Research hypotheses

2.2.1 Benchmark enabling effect hypothesis

Digital economy creates favorable conditions for the development of new quality productivity through the multiple functions of technology support, industrial carrier and factor guarantee. Therefore hypothesized that H1: the new digital economy of Hebei province productivity development has significant effect are assigned to.

2.2.2 Hypothesis of action mechanism

In terms of structural optimization effect, digital economy promotes the upgrading of industrial structure to the direction of high technology and high added value, which not only promotes the core industries of digital economy, but also promotes the digital transformation of traditional industries, agglomerates production factors into efficient industries, and lays an industrial foundation for new quality productivity. Therefore hypothesized that H2: digital economy through industrial structure optimization effect to promote new mass productivity development in Hebei province.

Technological innovation effect, the digital economy provide new tools, new platform for technological innovation, the fusion of digital technology and the real economy the disruptive innovation, enhance technical achievements transformation efficiency, while technological innovation is the core of the new mass productivity development momentum. Therefore hypothesized that H3: digital economy, through technological innovation effect to promote new mass productivity development in Hebei province.

In terms of resource allocation effect, digital platform reduces information asymmetry, promotes the free flow of production factors among regions, industries and enterprises, alleviates the distortion of factor market, improves the efficiency of resource allocation, and provides factor guarantee for the development of new quality productivity. Therefore, this paper proposes the hypothesis: H4: digital economy promotes the development of new quality productivity in Hebei Province through the optimization effect of resource allocation.

2.2.3 Hypothesis of regional heterogeneity

There are significant differences in economic foundation, industrial structure and digital

infrastructure level among the 11 cities in Hebei Province. As the political, economic and cultural centers, the central region of Hebei Province (Shijiazhuang, Baoding, Langfang) has perfect digital infrastructure and diversified industries. Jidong area, Tangshan, Qinhuangdao, Cangzhou) strong industrial base, digital economy and the traditional industry fusion potential; Western Hebei (Zhangjiakou, Chengde, Xingtai, Handan, Hengshui) has a relatively weak economic foundation, and the construction of digital infrastructure lags behind. The enabling effect of digital economy is restricted by regional basic conditions. Based on this, this paper puts forward the hypothesis: H5: the enabling effect of digital economy on the new quality productivity in Hebei Province has regional heterogeneity, showing the gradient characteristics of "central Hebei > eastern Hebei > western Hebei".

2.2.4 Spatial spillover effect hypothesis

The unbounded nature of digital technology makes the digital economy have a significant spatial spillover effect. Based on the spatial correlation characteristics of cities in Hebei Province, this paper proposes the following hypothesis: H6: Digital economy has a spatial spillover effect on the new quality productivity in Hebei Province, which has a promotion effect on the local area and an inhibitory effect on the neighboring areas.

3.Statistical measurement of the development level of digital economy and new quality productivity in Hebei Province

3.1Weight calculation results of entropy method

Using entropy value method to the new digital economy and productivity indexes at all levels of empowerment, the result shows: the new qualitative index of productivity level, innovation factors of highest weight (0.428), (0.352) times of technological innovation, industrial innovation lowest (0.220); Industrialization of digital weight was the highest in the digital economy level index (0.362), industrial digital times (0.353), digital infrastructure, the lowest (0.285). Among the third-level indicators, the weight of high-tech R&D personnel investment (E15), the number of artificial intelligence enterprises (E18), digital inclusive finance index (D12) and other indicators is relatively high, reflecting the important impact of these indicators on the development of new quality productivity and digital economy.

3.2 The analysis of characteristics of time evolution

3.2.1 The new quality, and the level of productivity development time evolution

Hebei province in 2011-2023 new quality steadily rising trend overall development level of productive forces, from 0.102 in 2011 to 0.305 in 2023, the average annual growth rate of 9.2%. In stages to see: 2011-2015 years of slow growth, growth rate of 6.5%, mainly by digital infrastructure is imperfect, insufficient technical innovation ability; For rapid growth from 2016 to 2020, the growth rate of 11.3%, thanks to the advancement of "Internet +" plan of action, digital economy and real economy integration accelerate; For rising steadily from 2021 to 2023 period, the growth rate of 8.7%, the new mass productivity development into the mass increase stage.

3.2.2 Time evolution of digital economy development level

Digital level of economic development in Hebei province and the new productivity growth, from 0.098 in 2011 to 0.298 in 2023, the average annual growth rate of 10.1%, slightly higher than the new productivity growth. In 2020, due to the impact of the epidemic, the development level of the digital economy fell slightly, but it still maintained a high level, reflecting the strong ability of the digital economy to resist risks. The highly synchronized development of digital economy and new quality productivity provides preliminary evidence for the causal relationship between the two.

3.3 Spatial distribution characteristics analysis

3.3.1 Spatial distribution of new quality productivity

11 cities in Hebei province in 2011-2023 new productivity development level exists significant regional differences, present "core - edge" pattern. Shijiazhuang, Tangshan has always been the top two, development index were 0.309 and 0.308 in 2023, mainly thanks to the abundant industry foundation, the perfect digital infrastructure, and strong ability of technology innovation; Langfang, Baoding, followed by relying on the advantages, the development of collaborative digital economy and the new effective fusion mass productivity development; Hengshui, Chengde and Zhangjiakou lagged behind with their development indexes lower than 0.305 in 2023. Due to the constraints of economic foundation, industrial structure and other factors, the cultivation of new quality productivity is insufficient.

3.3.2 Spatial distribution of digital economy

The spatial distribution of the development level of digital economy is highly consistent with the new quality productivity. The digital economy development index of Shijiazhuang and Tangshan is always leading, which is 0.310 and 0.309 respectively in 2023. Baoding and Langfang have developed rapidly in digital economy by virtue of their location advantages. Hengshui, Chengde digital economy development lags behind, but with the leading city of gap is narrowing. The spatial distribution of digital economy and new quality productivity is highly consistent, which further confirms the enabling effect of digital economy on new quality productivity.

3.4 Correlation analysis

The results of variable correlation analysis show that the correlation coefficient between digital economy and new quality productivity is 0.876, which is significant at the level of 1%, indicating that there is a strong positive correlation between the two. Among the control variables, the marketization index, urbanization level and the degree of opening up are significantly positively correlated with the new quality productivity, while the degree of government intervention is negatively correlated with the new quality productivity, which is consistent with the theoretical expectation and provides preliminary support for the subsequent empirical analysis.

4. Empirical analysis results

4.1 Benchmark regression analysis

The benchmark regression results show that the digital economy has a significantly positive enabling effect on the new quality productivity. For every unit increase in the level of digital economy, the development level of the new quality productivity increases by 0.197 units on average, and it is significant at the level of 1%.

In terms of control variables, the coefficient of Mardex is 0.085, which is significant at the level of 1%, indicating that the higher the degree of marketization is, the more conducive the development of new quality productivity is. The coefficient of urbanization level (Urlevel) is 0.062, which is significant at 5% level. The urbanization process promotes the agglomeration of factors and promotes the improvement of new quality productivity. The coefficient of the degree of opening-up (Opeup) is 0.048, which is significant at the level of 10%. Opening up introduces advanced technology and management experience to help cultivate new quality productivity. The coefficient of government intervention degree (Govin) is − 0.039, significant at 10% level. Excessive government intervention may distort resource allocation and inhibit the development of new quality productivity.

4.2 Endogeneity test

Considering that there may be a reverse causality between digital economy and new quality productivity (the development of new quality productivity may also promote the progress of digital economy), the first-order lag term of digital economy is used as the instrumental variable for system GMM estimation. The results show that the coefficient of digital economy is still significantly positive at the level of 1%, indicating that even considering the endogeneity problem, the enabling effect of digital economy on the new quality productivity is still significant, and the benchmark regression results are reliable.

4.3 Robustness test

Three methods were used to conduct the robustness test: first, winnowing the core variables to avoid the influence of extreme values; The second is to replace the explained variable and use principal component analysis method to recalculate the development index of new quality productivity. The third is to replace the explanatory variables and use the principal component analysis method to recalculate the digital economy development index. The results of the three robustness tests all show that the positive enabling effect of digital economy on new quality productivity is robust, which further verifies the reliability of the benchmark regression conclusion.

4.4 Regional heterogeneity test

The results of regional heterogeneity test show that the enabling effect of digital economy presents the gradient characteristics of "central Hebei Province > eastern Hebei Province > western Hebei Province", which validates H5. The coefficient of digital economy in central Hebei is 0.256, significant at the level of 1%. Eastern Hebei region is 0.187, significant at 1% level; In the west of Hebei province, it is 0.124, significant at 5% level. Central Hebei as political economic and cultural center, the digital infrastructure, high degree of industrial diversification, the new digital economy and productivity convergence effect significantly; Eastern Hebei has a solid industrial foundation, and the digital economy has achieved obvious results in promoting the digital transformation of traditional industries. The economic foundation of western Hebei is

relatively weak, the construction of digital infrastructure lags behind, the industrial structure is biased, and the enabling effect of digital economy is restricted.

4.5 Test on the mechanism of action

The intermediary effect model test structure optimization and technological innovation, resource allocation effect, the results showed that the mediation effect of industrial structure upgrade, digital economy by promoting the development of industrial structure to the fundamentals, industrial foundation for new mass productivity, hypothesis H2 verified; The mediating effect of technological innovation level is significant. Digital economy provides new tools and platforms for technological innovation, stimulates disruptive innovation, and improves the transformation efficiency of technological achievements, so Hypothesis H3 is verified. The mediating effect of resource allocation efficiency is significant. Digital economy alleviates the distortion of factor market, promotes the free flow of production factors, and improves the efficiency of resource allocation, which verifies H4. The three mechanisms all play a partial intermediary role and jointly promote the enabling effect of digital economy on new quality productivity.

4.6 Test of spatial spillover effect

4.6.1 Spatial correlation test

Moran's I index was used to test the spatial correlation of the new quality productivity, and the results showed that the Moran's I index was significantly positive at the level of 1% from 2011 to 2023, indicating that there was a significant spatial agglomeration effect of the development of the new quality productivity in 11 cities in Hebei Province, which was suitable for the analysis by spatial econometric model.

4.6.2 Regression results of spatial Durbin model

The regression results of spatial Durbin model show that the digital economy has a significant role in promoting the new quality productivity of the region, and the coefficient is 0.193, which is significant at the level of 1%. The digital economy has a weak inhibitory effect on the new quality productivity in the adjacent areas, and the spatial spillover coefficient is − 0.000966, which verifies H6.

The decomposition results of direct effect, indirect effect and total effect show that the promoting effect of digital economy on new quality productivity is mainly reflected in the local area, and the direct effect is 0.193, which is significant at the level of 1%. The inhibitory effect of digital economy on neighboring areas was weak, and the indirect effect was -0.000836. The total effect is 0.155, significant at 1% level. This reflects that there is a problem of "insufficient core agglomeration - insufficient peripheral diffusion" in the development of digital economy in Hebei Province. The technology diffusion and element sharing of core cities to surrounding cities are not sufficient, and even the phenomenon of element siphoning occurs.

5.The study conclusion and policy recommendations

5.1 Research conclusion

The development level of new quality productivity and digital economy in Hebei Province shows a steady upward trend. From 2011 to 2023, the average annual growth rate of new quality productivity is 9.2%, and the average annual growth rate of digital economy is 10.1%. The development of the two are highly synchronized, and the correlation coefficient is 0.876, which provides intuitive evidence for the digital economy enabling new quality productivity.

The regional differences are significant, and the spatial distribution presents a "core-periphery" pattern. Shijiazhuang and Tangshan have always taken the lead in the development level of digital economy and new quality productivity, while Hengshui and Chengde have lagged behind. The regional ranking of new quality productivity and digital economy is highly consistent, reflecting the enabling effect of digital economy on new quality productivity.

The digital economy has a significantly positive enabling effect on the new quality productivity in Hebei Province. For every unit increase in the level of digital economy, the development level of new quality productivity will increase by 0.197 units on average.

The enabling effect of digital economy has regional heterogeneity, showing the gradient characteristics of "central Hebei > eastern Hebei > western Hebei". The enabling effect of digital economy in central Hebei is the most significant by virtue of perfect digital infrastructure and diversified industrial structure, while the enabling effect of digital economy in western Hebei is relatively weak due to the constraints of economic foundation and industrial structure.

The digital economy enables the development of new quality productivity through three mechanisms: structural optimization, technological innovation and resource allocation. Industrial structure upgrading, technological innovation and resource allocation efficiency play a partial intermediary role between the two.

The digital economy has a spatial spillover effect on the new quality productivity, which significantly promotes the local area, but has a weak inhibitory effect on the neighboring areas, presenting a spatial pattern of "core agglomeration - insufficient peripheral diffusion".

5.2 Policy suggestions

5.2.1 Improve digital infrastructure and lay a solid foundation for empowerment

First, we will promote the construction of digital infrastructure in a coordinated manner, focusing on strengthening the layout of 5G base stations, big data centers, industrial Internet and other new infrastructure in western Hebei to narrow the regional digital divide. By 2025, all prefecture-level cities and urban areas in Hebei Province will be covered by 5G networks, and more than 95 percent of counties and key towns will be covered by 5G networks. The second is to promote digital infrastructure and the traditional infrastructure integration development, key industrial city, Tangshan, Handan and other industrial Internet platform construction, support steel, equipment manufacturing digital transformation of traditional industries such as construction of infrastructure, promote digital technology application scenario supply ability. Third, we will increase digital infrastructure support for small and medium-sized enterprises, and encourage them to access industrial Internet platforms through tax incentives and financial subsidies to reduce the cost of digital transformation.

5.2.2 Strengthen coordinated regional development and optimize spatial layout

The first is to build a regional development pattern of "central Hebei leading, eastern Hebei

improving, and western Hebei catching up". We will support Shijiazhuang, Baoding, and Langfang in building demonstration zones for the integrated development of digital economy and new quality productivity, and play a leading role. We will encourage Tangshan, Qinhuangdao and Cangzhou to build pilot zones for industrial digital transformation by leveraging their advantages in industrial infrastructure. We will help western Hebei develop new forms of business such as digital agriculture and smart tourism by relying on industries with distinctive features. Second, we will strengthen regional cooperation on the digital economy, establish a mechanism for the coordinated development of the Beijing-Tianjin-Hebei digital economy, promote the sharing of digital technologies and innovation elements among Shijiazhuang and Tangshan with Beijing and Tianjin, and attract high-end talents and innovation resources to Hebei Province. 3 it is to crack space overflow suppression effect, the establishment of core city and the surrounding city digital economy linkage mechanism, encourage the core city of digital enterprise to the surrounding city extends the industrial chain, promote technology diffusion and share elements, form "surrounding the core driving, synergy" development pattern.

5.2.3 Activate the three enabling mechanisms to improve the efficiency of enabling

First, strengthen the effect of structural optimization: promote the deep integration of digital economy and strategic emerging industries, focusing on the development of artificial intelligence, big data, new energy and other industries; We will accelerate the digital transformation of traditional industries, implement the "Go to the cloud and use data to empower intelligence" campaign, and promote the transformation of traditional industries such as steel, equipment manufacturing, and chemicals into intelligent and green industries. Second, strengthen the effect of technological innovation: increase investment in digital technology research and development, and support universities, research institutes and enterprises in Hebei province to cooperate in tackling digital technology; Improve the transformation mechanism of technological achievements, build the transformation platform of digital technological achievements, and improve the efficiency of the transformation of technological achievements; We should foster innovation entities, support the development of high-tech enterprises and small and medium-sized technology-based enterprises, and form innovation clusters. Third, strengthen the effect of resource allocation: deepen market-oriented reform, break down barriers to the flow of factors of production, and promote the free flow of data, capital, talent and other factors of production; We will improve the market for digital factors, establish a data property rights system and trading rules, and improve the efficiency of data factor allocation.

5.2.4 Optimize the policy support system and create a favorable environment

First, we should formulate differentiated regional policies, give more financial support and policy preference to western Hebei, and focus on supporting digital infrastructure construction and digital transformation of traditional industries. Going on, Eastern Hebei area, key support technology innovation and development of emerging industry. Second, strengthen the cultivation and introduction of digital talents, support colleges and universities in Hebei province to set up digital economy related majors, and cultivate compound digital talents; Formulate a talent introduction plan to attract high-end digital talents and innovation teams

from outside the province to develop in Hebei. Third, improve the environment for the development of the digital economy, strengthen the guarantee of digital security, and establish a digital economy security supervision system; Strengthen intellectual property protection and encourage digital technology innovation; We will publicize successful cases of integrated development of the digital economy and new-quality productive forces, and create a favorable social atmosphere.

Foundation Project

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References

[1] Jiao Fangyi, Du Xuan. On the Path of Digital Economy Promoting the Formation of New Quality Productive Forces [J]. Industrial Technology Economics, 2024, 43 (3): 3-13.

[2] Wu Wensheng, Rong Yi, Wu Huaqing. Empowering the Development of New Quality Productive Forces by Digital Economy: A Study Based on the Yangtze River Delta Urban Agglomeration [J]. Finance and Economy, 2024, (4): 15-18.

[3] Luo Shuang, Xiao Yun. The Empowerment of New Quality Productive Forces Development by Agglomeration of Digital Economy Core Industries: Theoretical Mechanism and Empirical Test [J]. Xinjiang Social Sciences, 2024, (2): 29-40.

[4]Li M ,Wang Z ,Wei Z .Digital new quality productivity and high-quality development of enterprises[J].International Review of Financial Analysis,2026,109104811-104811.

[5]Li Y ,Liu C ,Xie H .How data elements fuel new quality productive forces in enterprises: A perspective from digital finance[J].Finance Research Letters,2026,87109068-109068.

[6]Lin Y .Practical Approach of Labor Education in Application-Oriented Colleges and Universities from the Perspective of New Quality Productivity[J].New Explorations in Education and Teaching,2025,3(11)

[7]Wu G ,Li G.Research on the Path of Balanced Development and Quality Improvement of Educational Resources in Zuojiang and Youjiang Areas from the Perspective of New Productivity[J].New Explorations in Education and Teaching,2025,3(11)

[8]Wang X ,Cheng Y ,Li B .Patient Capital and Firms' New Quality Productivity: A Dynamic Capabilities Perspective[J].Finance Research Letters,2025,86(PF):108787-108787.