

# Research on the Mechanism and Path of Digital Economy Empowering High-quality Economic Development in Anhui Province

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## Abstract

Select panel data from 16 prefecture-level cities in Anhui Province from 2012 to 2021, use the equal weight assignment method to measure the development index of the digital economy and high-quality economic development, and use the panel regression model to explore the impact of the digital economy on high-quality economic development . , and conducted a heterogeneity test, the conclusions are as follows: first, the digital economy can significantly and positively promote the realization of high-quality economic development. After robustness and endogeneity tests, this conclusion still holds; second, the digital economy It can indirectly promote the realization of high-quality economic development by promoting technological innovation and ecologically sustainable development; third, the impact of the digital economy on high-quality economic development has significant temporal and regional heterogeneity.

## Keywords

Digital Economy; High-quality Development; Technological Innovation; Ecologically Sustainable Development.

## 1. Introduction

In today's era, the digital economy, as one of the engines of the global economy, has a profound impact on my country's economic development. With the continuous development of the digital economy, local governments have adopted a series of beneficial policy measures to achieve better results, such as using digital security systems to improve the efficiency of information management, making social welfare delivery more accurate, and building digital employment platforms to provide Provide more career choices for job seekers, develop digital medical and health services, use telemedicine and electronic health records to enable more people to enjoy high-quality medical services, etc. 0In the tide of digital economy, Anhui Province has obviously become a focus of China's economic transformation. The development of the digital economy has become a powerful engine for Anhui Province to achieve high-quality economic development. Through the extensive application of digital technology, especially big data, artificial intelligence and information and communication technology, Anhui Province is rapidly building a new economic growth model. This wave of digitalization is changing the traditional industrial structure and driving innovation and upgrading. The digital economy has brought huge opportunities to Anhui Province. Intelligent analysis and prediction of big data provide a more precise development direction for the industry. The widespread application of artificial intelligence has effectively improved productivity. The popularization of information and communication technology has accelerated the transmission and sharing of information, and promoted market opening and competition. The comprehensive application of these digital technologies has provided strong support for Anhui Province to create a more competitive and sustainable economic system. However, the application of the digital economy is not smooth

sailing. Especially when the digital economy intersects with various fields, it requires a deeper integration of resources and the embedding of digital technology into various industries to promote the transformation of the traditional economy into digitalization and intelligence. In this process, Anhui Province may face problems such as imbalanced technological development and talent shortage that need to be solved [2].

At the same time, high-quality economic development has become the main line leading China's economic new era. Against this background, Anhui Province is working hard to formulate and implement a series of policies to promote the upgrading of industrial structure and improve innovation capabilities. The rise of the digital economy is only one aspect of the high-quality economic development of Anhui Province. High-quality development requires not only an increase in speed, but also a leap in quality. Against this background, Anhui Province has formulated and implemented a series of policies to promote the upgrading of industrial structure, improve scientific and technological innovation capabilities, and achieve sustainable economic growth. However, in the process of high-quality development, Anhui also faces challenges such as resource bottlenecks and environmental pressure. In the intertwining of digital economy and high-quality economic development, Anhui Province has become a focus worthy of study. Through an in-depth analysis of the digital economy empowerment mechanism and high-quality economic development path, we are expected to find a sustainable solution that is consistent with Anhui's reality [3]. Therefore, it is of great theoretical and practical significance to conduct in-depth research on the mechanism and path of digital economy empowering high-quality economic development in Anhui Province.

## 2. Literature Review

The digital economy is a series of economic activities that use digital knowledge and information as key production factors, modern information networks as an important carrier, and the effective use of information and communication technology as an important driving force for efficiency improvement and economic structure optimization. The development of the digital economy has become an important driving force for global economic growth, and various countries are vigorously promoting the development of the digital economy. Chinese scholars are also studying and analyzing the importance of the digital economy in promoting high-quality economic development. The digital economy is the source of power for high-quality development, which can promote industrial transformation and upgrading, help new business forms flourish, and improve public service levels [4]. Data serves as a new production factor for economic growth in the high-quality development stage, and the digital economy has become a crucial new driving force for China's development [5]. With the integration of digital technology and the real economy, the wave of information revolution is sweeping across. Driven by digital industrialization and industrial digital transformation and upgrading, the digital economy has injected new momentum into economic and social development [6]. The development of China's digital economy is generally conducive to promoting the transformation of industrial structure, and the digital economy empowering industrial upgrading is becoming a new approach to high-quality economic development [7]. From this point of view, the digital economy plays an important role in promoting high-quality development and is an important way to achieve high-quality economic growth.

High-quality economic development refers to maintaining economic growth while focusing on improving the economic structure, technological level, innovation capabilities and ecological environment quality to achieve the goal of sustainable development. The paths for high-quality economic development also vary from country to country and region. Different countries and regions face different systems, development stages, resource endowments, and advantageous industries. Therefore, there are differentiated path choices in the pursuit of high-quality

development. In addition, high-quality economic development requires the joint efforts of the government, enterprises and all parties in society. Research shows that factors such as commercialization structure, per capita GDP, R&D investment, and resident supply and demand structure have a very high impact on high-quality economic development, with correlations all above 0.97, and the level of foreign direct investment and digital economy development has a very high impact on the high-quality development of the real economy. The impact of development is also important [8]. The construction of national innovative cities provides regions with innovation-driven strategic direction and policy support, and the increase in entrepreneurial activity has a positive impact on the high-quality development of the regional economy. Moreover, national innovative city construction and entrepreneurial activity are important factors in high-quality regional economic development, and there is a close correlation and synergistic effect between the two [9]. The upgrading of industrial structure is also closely related to high-quality economic development, which can promote the transformation of economic growth mode and improve the economy's innovation ability, competitiveness and sustainable development capabilities [10]. As a knowledge-intensive and technology-intensive economic form, the digital economy can perfectly fit the requirements of high-quality development. It has the potential to provide strong impetus for the sustained and healthy development of the economy and society, and is also necessary and important in realizing the "change of lane and overtaking" of China's economy [11].

In summary, existing research has done some research on the current development and theoretical mechanisms of digital economy and high-quality economic development, and believes that there is a certain relationship between the two. However, there are few articles that deeply explore the digital economy's empowerment of Anhui Province's economy. Mechanisms and paths for high-quality development. Therefore, this article uses the Anhui part of the Statistical Yearbook of Anhui Province and the Statistical Yearbook of China to construct an evaluation index system for the digital economy and high-quality economic development respectively. On this basis, it studies the mechanism and path for the digital economy to empower the high-quality economic development of Anhui Province. , the comprehensive use of data analysis methods enriches existing research results, reveals the internal mechanism, and helps government departments formulate relevant policies in a targeted manner.

### **3. Theoretical Analysis**

#### **3.1. The Direct Impact of Digital Economy on High-quality Economic Development**

The development of the digital economy provides new ideas and paths for high-quality economic development. As a new economic form, the digital economy uses data as a key production factor, modern information networks as an important carrier, and digital technology applications as an important driving force. It has the characteristics of high innovation, strong penetration, and wide coverage. It has Become an important engine to promote economic development. The digital economy can promote high-quality economic development, which is reflected in the following aspects: First, improve production efficiency. The digital economy can promote the transformation and upgrading of traditional industries. Through the implementation of intelligent manufacturing, industrial Internet and other measures, it can improve production efficiency and reduce production costs. , enhance the competitiveness of enterprises; second, cultivate new business formats and new models. The digital economy has given birth to new business formats and new models, such as e-commerce platforms, webcasts, online education, Internet medical care, etc. These new business formats and new models have injected vitality into economic development. New vitality creates more job opportunities; third, optimizes resource allocation, the digital economy can realize real-

time sharing of data, improve resource allocation efficiency, reduce transaction costs, help promote supply-side structural reform, and realize the economic structure optimization adjustments. Therefore, this article proposes hypothesis 1 : The digital economy can promote high-quality economic development.

### **3.2. The Indirect Impact of Digital Economy on High-quality Economic Development**

Technological innovation is the key point for the digital economy to empower high-quality economic development. The digital economy promotes high-quality economic development through the following technological innovations: First, big data technology, which can collect, process, and analyze large amounts of complex data to provide enterprises with in-depth insights and market trend predictions. Enterprises can use this data to make smarter decisions, optimize production processes, and improve efficiency; second, blockchain technology, which has the characteristics of distributed accounting, decentralization, and data cannot be tampered with, can improve transactions. Transparency, reduce trust costs, accelerate industry chain collaboration, and promote industrial upgrading; third, virtual reality ( VR ) and augmented reality ( AR ) technology, the application of VR and AR technology in entertainment, education, medical and other fields, brings users It provides an immersive experience and gives birth to new business models. Therefore, this article proposes hypothesis 2 : The digital economy can promote high-quality economic development through technological innovation.

Ecological sustainable development is an important influencing factor for the digital economy to empower high-quality economic development. The digital economy can improve energy utilization efficiency through energy management, intelligent dispatching and other technologies, achieve energy conservation and efficient use, thereby reducing pollutant emissions and easing environmental pressure; the digital economy can help promote the application of green production processes and technologies, reduce industrial Waste and pollutant emissions during the production process improve resource utilization efficiency; the digital economy has spawned shared economic models, such as shared bicycles, shared cars, etc., which promote the sharing and use of resources, reduce resource waste, and reduce environmental pressure; the digital economy has The application of environmental protection industry, such as pollution prevention and ecological restoration, has provided new development opportunities for the environmental protection industry, spawned new business models, and improved the efficiency and competitiveness of the environmental protection industry; the digital economy has provided a wealth of environmental protection information and knowledge, improve public awareness and participation in environmental protection, and create a good atmosphere for green development. Therefore, this article proposes hypothesis 3 : The digital economy can promote high-quality economic development by maintaining ecological sustainability.

## **4. Research Design**

### **4.1. Variable Selection**

1) The explained variable: high-quality economic development. High-quality economic development refers to the transformation of economic growth mode from relying on factor input to relying on innovation-driven, from mainly relying on low-quality labor to relying on high-quality labor, and from mainly relying on resource consumption to relying on resource conservation and environmental friendliness. Starting from the connotation of high-quality economic development, this article refers to the practice of Hong Qitong ( 2023 ) [12] , selects panel data from 16 cities in Anhui Province from 2012 to 2021 , and constructs an evaluation system containing 5 dimensions and 15 indicators. The equal-weighted assignment method

calculates the comprehensive evaluation index of high-quality economic development. The specific dimensions and indicators included are shown in Table 1.

**Table 1.** Evaluation indicators for high-quality economic development

Dimensions	index	Indicator properties
coordination	Engel coefficient	Negative
	Regional Gini coefficient	Negative
	urbanization rate	forward
	per capita consumption expenditure	forward
shared	Number of museums per capita	forward
	Teacher-student ratio at school	forward
	Number of beds in medical institutions	forward
	health technician	forward
green	Forest cover rate	forward
	CO2 emissions per capita	Negative
Innovation	Number of patents granted	forward
	Number of technology contracts in the technology market	forward
open	Foreign trade dependence	forward
	Proportion of foreign exchange income	forward
	Railway passenger traffic share	forward

2) Explanatory variables: digital economy. Digital economy refers to a new economic form that uses data as a key production factor, modern information networks as an important carrier, and digital technology applications as an important driving force to promote economic transformation, upgrading, and economic development. Starting from the connotation of digital economy, this article refers to the approach of Xu Huilin ( 2023 ) [13] , selects panel data from 16 prefectures and cities in Anhui Province from 2012 to 2021 , and constructs an evaluation system containing 3 dimensions and 10 indicators, using etc. Calculate the comprehensive evaluation index of digital economic development using the weight assignment method. The specific dimensions and indicators included are shown in Table 2.

**Table 2.** Evaluation indicators for high-quality economic development

Dimensions	index	Indicator properties
digital infrastructure	Internet penetration rate	forward
	Mobile phone penetration rate	forward
	Number of web pages	forward
	Number of domain names	forward
Digital industrialization	Express business income	forward
	Postal and telecommunications business income	forward
	Number of high-tech enterprises	forward
	Main business income of high-tech enterprises	forward
Industrial digitalization	Digital Financial Index	forward
	E-commerce transaction sales	forward

3) Mediating variables: technological innovation and ecologically sustainable development. In order to explore the indirect impact of digital economy on the high-quality economic development of Anhui Province, technological innovation and ecological sustainable development are used as intermediary variables, where technological innovation is

represented by the number of patent authorizations, and ecological sustainable development is represented by forest coverage.

4) Control variables: population density, infrastructure level, economic growth rate, human capital level, social demographic structure and degree of openness to the outside world.

## 4.2. Model Setting

A panel regression model is used to verify the impact between the digital economy and high-quality economic development. The set model is as follows:

$$Digital_{it} = \beta_0 + \beta_1HQE_{it} + \beta_2 Controls_{it} + v_i + \mu_t + \varepsilon_{it} \quad (1)$$

In the formula,  $Digital_{it}$ ,  $HQE_{it}$ ,  $Controls_{it}$ ,  $v_i$ ,  $\mu_t$ ,  $\varepsilon_{it}$ ,  $\beta_0$ ,  $\beta_1$ ,  $\beta_2$ .

In order to test Hypothesis 2 and Hypothesis 3, the model constructed is as follows:

$$tein_{it} = \beta_0 + \beta_1HQE_{it} + \beta_2 Controls_{it} + v_i + \mu_t + \varepsilon_{it} \quad (2)$$

$$Digital_{it} = \beta_0 + \beta_1HQE_{it} + \beta_2 Controls_{it} + \beta_3 tein_{it} + v_i + \mu_t + \varepsilon_{it} \quad (3)$$

$$ecology_{it} = \beta_0 + \beta_1HQE_{it} + \beta_2 Controls_{it} + v_i + \mu_t + \varepsilon_{it} \quad (4)$$

$$Digital_{it} = \beta_0 + \beta_1HQE_{it} + \beta_2 Controls_{it} + \beta_3 ecology_{it} + v_i + \mu_t + \varepsilon_{it} \quad (5)$$

In the formula,  $tein_{it}$ ,  $ecology_{it}$ .

## 4.3. Data Description

The data in this article mainly come from the Anhui Province part of the "Anhui Province Statistical Yearbook" and the "China Statistical Yearbook". The panel data of 16 prefecture-level cities from 2012 to 2021 were sorted and selected, outliers were eliminated and the missing values were filled through linear interpolation. After the value is obtained, the data is processed and analyzed.

## 5. Empirical Analysis

### 5.1. Baseline Regression Results

This paper performs regression on panel data. In order to overcome the problem of heteroskedasticity, heteroscedasticity-robust standard errors are used for estimation. The results are shown in Table 3. Among them, model (1) is the result of not adding control variables. Based on the consideration of model robustness, Model (2) adds control variables and controls for province and year solid effects. It can be seen from the regression results that the regression coefficients of the two models are 0.009 and 0.011 respectively, both are significantly positive at 1%, indicating that regardless of whether control variables are added or not, they are significantly positive, proving that the digital economy can promote high-quality economic development. accomplish. Therefore, hypothesis 1 was verified.

**Table 3.** Baseline regression results

variable	high-quality economic development	high-quality economic development
	( 1 )	( 2 )
digital economy	0.009 ***	0.011 ***
	( 0.012 )	(0.012)
economic growth rate		0.029 ***
		(0.011)
Population density		0.022 ***
		(0.00)
infrastructure level		0.003
		(0.017)
economic growth rate		0.003 **
		(0.005)
human capital level		0.021 **
		(0.017)
sociodemographic structure		0.033
		(0.0257)
Degree of openness to the outside world		0.011 **
		(0.007)
Province fixed effects	YES	YES
year fixed effects	YES	YES
Constant term	0.456 ***	0.360 ***
	(0.009)	(0.035)
R <sup>2</sup>	0.589	0.660

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

### 5.2. Test of the Mediating Effect of Technological Innovation

In order to further study the indirect impact of digital economy empowering high-quality economic development, this paper uses the mediation effect model to test the mediating role of technological innovation in this process. The results are shown in Table 4.

**Table 4.** Regression results of the mediating effect of technological innovation

variable	technological innovation	high-quality economic development
	( 1 )	( 2 )
digital economy	0.062 ***	0.006 ***
	( 0.012 )	(0.023)
technological innovation	0.002 ***	0.005 ***
	( 0.012 )	(0.011)
control variables	YES	YES
Province fixed effects	YES	YES
year fixed effects	YES	YES
Constant term	0.412 ***	0.460 ***
	(0.033)	(0.013)
R <sup>2</sup>	0.448	0.398

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

It can be seen from the model ( 1 ) in Table 4 that every unit increase in the development level of the digital economy will positively promote an increase of 0.062 in the technological innovation index , which is significant at the 1% level; it can be seen from the model ( 2 ) in Table 4 that every increase in the technological innovation index One unit will positively promote an increase of 0.006 in the level of high-quality economic development , and is significant at the 1% level. In summary, the digital economy positively promotes technological innovation, and technological innovation can positively promote the development of high-quality economic development. The digital economy indirectly promotes the realization of high-quality economic development by promoting technological innovation. Therefore, hypothesis 2 was verified.

### 5.3. Test of the Mediating Effect of Ecologically Sustainable Development

In order to further study the indirect impact of the digital economy empowering high-quality economic development, this paper uses the mediation effect model to test the mediating role of ecological sustainability in this process. The results are shown in Table 5.

**Table 5.** Mediation effect regression results of ecologically sustainable development

variable	ecologically sustainable development	high-quality economic development
	( 1 )	( 2 )
digital economy	0.082 ***	0.016 ***
	( 0.012 )	(0.023)
ecologically sustainable development	0.018 ***	0.005 ***
	( 0.009 )	(0.011)
control variables	YES	YES
Province fixed effects	YES	YES
year fixed effects	YES	YES
Constant term	0.412 ***	0.460 ***
	(0.033)	(0.013)
R <sup>2</sup>	0.258	0.283

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

It can be seen from the model ( 1 ) in Table 5 that every unit increase in the development level of the digital economy will positively promote the ecological sustainability development index to increase by 0.082 , which is significant at the 1% level; it can be seen from the model ( 2 ) in Table 5 that the ecological sustainability index Every unit increase in the sustainable development index will positively promote an increase in the level of high-quality economic development by 0.016 , which is significant at the 1% level. In summary, the digital economy positively promotes ecologically sustainable development, and ecologically sustainable development can positively promote the development of high-quality economic development. The digital economy indirectly promotes the realization of high-quality economic development by promoting ecologically sustainable development. . Therefore, hypothesis 3 was verified.

### 5.4. Endogeneity Analysis

The realization of high-quality economic development is easily affected by factors that are difficult to observe such as the natural environment and residents' habits, and there may be a reverse causal relationship between the digital economy and high-quality economic development. These may cause bias in the empirical results, so it is necessary to Use



instrumental variables for processing to alleviate endogenous problems. Referring to the approach of Qi Diming ( 2023 ), this article selects “ one lag period of the digital economy ” as the instrumental variable of the digital economy. The regression results are shown in Table 6.

**Table 6.** Instrumental variable method regression results

	Two-stage least squares ( 2SLS )	
	The first stage	second stage
digital economy		0.028 ***
		( 0.072 )
The lag phase of the digital economy	0.034 ***	
	( 0.036 )	
control variables	Controlled	Controlled
F	131.057	
Cragg-DonaldWald F		454.623
Kleibergen-Paap rk LM		684.159
R <sup>2</sup>	0.206	0.209

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

The two-stage least squares method ( 2SLS ) is used on the data. According to the results, the coefficient of the instrumental variable in the first stage is 0.034 , which is significant at the 1% level, and the F statistic is much greater than 10 , indicating that the correlation requirements are met; in the second stage The coefficient of the core explanatory variable is 0.028 , which is still significant at the 1% level, indicating that after dealing with the endogeneity problem, the digital economy still has a significant promoting effect on the realization of high-quality economic development, which is consistent with the results of the benchmark regression . Moreover, the Cragg-Donald Wald-F value and Kleibergen-Paak rk LM statistic of the non-identifiable test and the weak identification test are both much greater than 10. The null hypothesis of weak instrumental variables is rejected, and the instrumental variables are appropriately selected.

### 5.5. Robustness Check

Considering that there are certain statistical deviations in actual statistics, this article uses the following methods to test the robustness of the regression results:

1) Change the method of measuring the explained variable. In the previous article, the equal weight assignment method was used in the process of calculating the comprehensive index of high-quality economic development, and the calculation method was further changed to the entropy method and recalculated. The results are shown in Table 7 ( 1 ) . It can be seen that the explanatory variable digital economy is still significantly positive at the 1% level, which proves the robustness of the previous results.

2) Tobit model regression. Since the score of the explained variable high-quality economic development is between 0 and 1 , which is a two-sided restricted variable, the Tobit model is further used to regress the data, and the results are shown in Table 7 ( 2 ) . It can be seen that the explanatory variable digital economy is still significantly positive at the 1% level, which proves the robustness of the previous results.

**Table 7. Robustness test results**

variable	( 1 )	( 2 )
	Entropy method for high-quality economic development	Tobit model
digital economy	0.042 ***	0.063 ***
	( 0.010 )	( 0.040 )
control variables	Controlled	Controlled
Constant term	0.493 ***	0.411 ***
	( 0.006 )	( 0.027 )
R <sup>2</sup>	0.266	0.211

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

### 5.6. Heterogeneity Analysis

1) Heterogeneity caused by time differences. This article divides 2012-2021 into two time samples, before 2016 and after 2016 , and conducts heterogeneity testing. The results are shown in columns ( 1 ) and ( 2 ) of Table 8.

The results show that the impact of the digital economy on high-quality economic development has heterogeneity caused by time differences. Among them, before 2016 , the impact coefficient of the digital economy on high-quality economic development was 0.047 , which was significant at the 1% level. After 2016 , the impact coefficient of the digital economy on high-quality economic development was 0.066 , which was significant at the 1% level . Significantly, the coefficient difference between the two groups is 0.019 , indicating that with the development of time, the impact of the digital economy on high-quality economic development gradually increases.

2) Heterogeneity caused by regional differences. Since the historical development, natural environment and economic development levels of different regions are different, resulting in different living habits and preferences of the people, the development of high-quality economic development may be affected by regional factors. This article divides 16 prefecture-level cities in Anhui Province into central Anhui, northern Anhui and southern Anhui, and conducts heterogeneity testing. The results are shown in columns ( 3 ) ( 4 ) ( 5 ) of Table 8.

The results show that the impact of the digital economy on high-quality economic development is heterogeneous due to regional differences. Among them, in central Anhui, the impact coefficient of digital economy on high-quality economic development is 0.059 , which is significant at the 1% level. In northern Anhui, the impact coefficient of digital economy on high-quality economic development is 0.045 , which is significant at 1% level . Significantly, in southern Anhui, the impact coefficient of digital economy on high-quality economic development is 0.037, which is significant at the 1% level, and the maximum coefficient difference between groups is 0.022.

**Table 8. Heterogeneity test results**

variable	( 1 )	( 2 )	( 3 )	( 4 )	( 5 )
	Before 2016	After 2016	Wanzhong	Northern Anhui	Wannan
digital economy	0.047 ***	0.066 ***	0.059 ***	0.045 ***	0.037 ***
	( 0.019 )	( 0.021 )	( 0.030 )	( 0.025 )	( 0.015 )
control variables	Controlled	Controlled	Controlled	Controlled	Controlled
Constant term	0.411 ***	0.398 ***	0.409 ***	0.420 ***	0.401 ***
	( 0.012 )	( 0.013 )	( 0.016 )	( 0.016 )	( 0.009 )
R <sup>2</sup>	0.312	0.345	0.210	0.198	0.168

Note: Robust standard errors are in parentheses, \*\*\* , \*\* and \* represent the significance levels of 1% , 5% and 10% respectively.

## 6. Conclusion and suggestions

This article selects panel data from 16 prefecture-level cities in Anhui Province from 2012 to 2021, uses the equal weight assignment method to separately measure the development index of the digital economy and high-quality economic development, and uses a panel regression model to explore the direct impact of the digital economy on high-quality economic development . , and use the mediation effect model to further study the indirect effects, explore the mechanism of technological innovation and ecological sustainable development, and finally conduct a heterogeneity test on the time and region of the sample. The conclusions reached are as follows:

- 1) The digital economy can significantly and positively promote the realization of high-quality economic development. After robustness and endogeneity testing, this conclusion still holds.
- 2) The digital economy can indirectly promote the realization of high-quality economic development by promoting technological innovation and ecologically sustainable development, both of which are key mechanisms that influence high-quality economic development.
- 3) The impact of the digital economy on high-quality economic development has temporal and regional heterogeneity. With the development of time, the impact of the digital economy on high-quality economic development gradually increases, and the impact gradually decreases from east to west.

Based on the above conclusions, this article puts forward the following suggestions:

As a new economic form, digital economy can promote the high-quality economic development of Anhui Province in various ways. Here are some suggestions:

- 1) Develop intelligent manufacturing: Use digital technology to improve manufacturing efficiency, reduce costs, improve product quality, and help upgrade traditional industries in Anhui Province. Build an efficient online government service platform to integrate and share government service data, improve government work efficiency, and facilitate the public.
- 2) Promote industrial digitalization: Accelerate the digitalization process of various industries in Anhui Province, and use technologies such as the Internet, big data, and artificial intelligence to enhance the competitiveness of various industries. Strengthen digital skills training, improve the quality of the population in Anhui Province, and provide talent guarantee for the development of the digital economy.
- 3) Strengthen the construction of digital infrastructure: Improve the Internet penetration rate, broadband network speed, and 5G network coverage in Anhui Province to lay the foundation for the development of the digital economy. Enterprises in Anhui Province are encouraged to increase investment in research and development, enhance innovation capabilities, master core digital technologies, and improve competitiveness.

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