

## Retraction

# Retracted: Innovation and Entrepreneurship Coupling Based on Simultaneous Equation Model and Its Energy Economic Effect Measurement

### International Transactions on Electrical Energy Systems

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

### References

- [1] W. Chen, "Innovation and Entrepreneurship Coupling Based on Simultaneous Equation Model and Its Energy Economic Effect Measurement," *International Transactions on Electrical Energy Systems*, vol. 2022, Article ID 8218645, 8 pages, 2022.

## Research Article

# Innovation and Entrepreneurship Coupling Based on Simultaneous Equation Model and Its Energy Economic Effect Measurement

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In order to quantitatively analyze the synergistic relationship between the digital economy and high-quality development, the author proposes a measure of the coupling and coordination of China's digital economy and high-quality development. Based on the data of 271 prefecture-level and above cities in China from 2016 to 2021, the coupling coordination degree model is used to examine the coupling relationship between the digital economy and high-quality development. The result shows that China's digital economy and high-quality development are highly coupled, with an average coupling value of 0.9227. *Conclusion.* This study reveals the characteristics and facts of the coupling and coordination relationship between China's digital economy and high-quality development and provides useful policy inspiration for the central and regional formulation of differentiated digital economy development policies and high-quality development strategies.

## 1. Introduction

Since the revolution, China's economic development has been strong and healthy, contributing to the country's economy and modern development, and contributing to the improvement of the comprehensive national strength. With the release of "Made in China 2025" in May 2015, it is said that the business industry has taken an important position in the national economy, and the manufacturing industry has passed to carry out important economic activities in the country. As the world's second largest economy, China has become active on the international stage, and China's economic development is also the emergence of deep economic ties by examining economic agglomeration levels and spatial patterns. It is important to understand more about the practice of Chinese production. In 2017, the report of the 19<sup>th</sup> National Congress of China's economy pointed out that China's economy has moved from the stage of rapid growth to the stage of good growth, and also talked about the importance of good growth. After the revolution, high investment, development, and spending a lot of money on the development of the economy have achieved success and

created many problems, and the old model is increasing. In the new situation, the development should be changed from general expansion to qualitative development [1]. Now, the Chinese people want a better life, and it is necessary to support this growth with good economic development. The successful development of China's economy has pointed out such issues as the direction and path of the country's further economic development, the meaning of development quality, the state of development, and the difference in level. It is worth having a deep discussion about the good development in different areas of my country. The point of connection is to break the boundaries of the central system, remove the limitations of the central system, and reconnect and integrate various things. The cooperation network has three characteristics: One is that the systems are independent of each other. Another thing is that the systems manage communication and connection at the same time. The third is the interaction and influence of the body and various parts of the body [2]. Industrial agglomeration and high-quality economic development are two independent systems, and as a result of their relationship, a large integrated system of industrial agglomeration and high-quality economic

development grow up. Connections are of different types based on different distribution systems. According to the development of the system, it can be divided into good connections and bad connections. According to the development time of the system, it can be divided into static connections and dynamic connections. Depending on the nature of the system, it can be divided into homogeneous connections and heterogeneous connections. According to the influence of the system, it can be divided into isotype bindings and other isotype bindings, as shown in Figure 1.

## 2. Literature Review

From the perspective of a specific region, Li, X. introduced the economic-ecological environment effect coupling coordination degree model into the microscopic research field of “geopark,” more objectively reflecting the sustainable development level of the Geopark [3]. Jt and Yl analyzed the sustainable development capability and industrial efficiency of Xixi National Wetland Park by constructing comprehensive indicators of ecological environment and economy, and then explored the effective mode of resource protection in Xixi Park [4]. From an inter-provincial perspective, Kilambi constructed a comprehensive evaluation index system for ecological sustainability and high-quality economic development with the province as the research unit, and then comprehensively analyzed the coupling and interactive development relationship between the two systems [5]. Wen deeply investigated the coupling and coordination effect of green technology innovation and industrial transformation and upgrading in 28 provinces in China [6]. Zhang presented a revised model to evaluate the cooperation and integration of three major systems: “economic development-economic economy-ecological environment” in 31 provinces of China [7]. From the perspective of the river basin, Ravisankar, P. analyzed the spatial pattern and spatio-temporal coupling characteristics of ecological environment and high-quality development level in the Yellow River Basin, and the research conclusions provided a useful reference for the coordinated development of the two systems [8]. Forbes, D. L., drew on the sensitivities, resilience, and stress theory to explore the coupling and coordination relationship between ecological environmental vulnerability and economic poverty in poor areas [9]. Through the integration of the connection model and the level of the problem model, an in-depth analysis of the combination and process of water efficiency and economic development can be done [10]. In terms of urbanization and the ecological environment, Fazekas theoretically explores the nonlinear relationship between urbanization and the ecological environment and aims to provide theoretical support for the sustainable development of mega-city agglomerations [11]. Li introduced the concept of “connectivity cube” to explain the connection between the process and the dynamic change of urban and ecological environment [12]. Luo in an in-depth discussion of spatio-temporal evolution characteristics of urbanization and ecological resilience in the Pearl River Delta using a connectivity model provides a scientific

approach to realize cooperation and sustainable development of urbanization and ecological resilience [13].

From the perspective of system theory, this paper comprehensively investigates the coordinated interaction between China's digital economy and high-quality development. Taking Chinese urban data as research samples, this paper analyzes the regional differences and spatial effects of the coupling and coordination between digital economy and high-quality development in China.

## 3. Research Methods

*3.1. Measurement of Coupling Coordination Degree.* The degree of coordination of the connection is the degree of interaction between two or more systems, including the degree of connection and the degree of integration, and the degree of connection indicates the degree of cooperation between machines, the higher the degree of connection, the stronger cooperation. Relationship between systems cooperation refers to the degree of interaction between subsystems, and the higher the cooperation, the stronger the system power [14]. The level of connection of the joint together with the level of connection and the level of cooperation, which can describe the level of development and coordination of systems. The author uses an integration model to evaluate the integration of digital economy and economic growth in 271 cities at the provincial and higher levels in China. The levels of joint degree integration are explained in the following.

*3.1.1. Standardization of Index Data.* Consider  $k_{xi}$  and  $k_{yi}$  are the original values of the  $i$ -th indicator of the digital economic system and the high-quality development system, respectively, the value of  $i$  is  $1, 2, \dots, n$ , and  $k'_{xi}$  is the standardized index data. The following formula is obtained, as shown in

$$\left\{ \begin{array}{l} k'_{xi} = \frac{k_{xi} - \min(k_{xi})}{\max(k_{xi}) - \min(k_{xi})}, \\ \text{when } k_{xi} \text{ is a positive indicator,} \\ k'_{xi} = \frac{\max(k_{xi}) - k_{xi}}{\max(k_{xi}) - \min(k_{xi})}, \\ \text{when } k_{xi} \text{ is a negative indicator.} \end{array} \right. \quad (1)$$

*3.1.2. Comprehensive Development Level of Computing Subsystem.* Let  $w_{xi}$  and  $w_{yi}$  be the weights of the  $i$ -th index of the digital economic system and the high-quality development system, respectively, and the information entropy is used to determine the weight. The following formula is obtained, as shown in

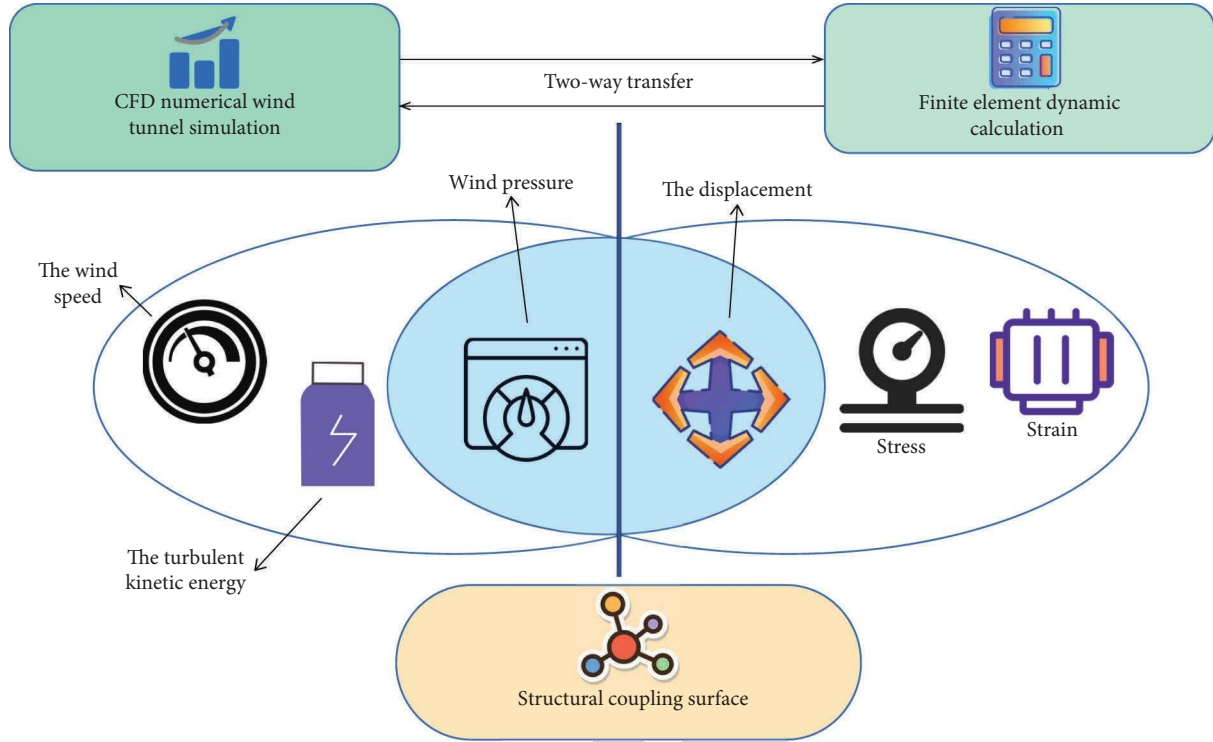


FIGURE 1: The innovation and entrepreneurship coupling of the simultaneous equation model.

$$\begin{cases} U_x = \sum_{i=1}^n k_{xi}' \times w_{xi}, \\ U_y = \sum_{i=1}^n k_{yi}' \times w_{yi}. \end{cases} \quad (2)$$

$$\begin{cases} D_{xy} = (C_{xy} \times T_{xy})^{1/2}, \\ T_{xy} = \alpha U_x + \beta U_y. \end{cases} \quad (5)$$

3.1.3. *Calculation of the Coupling Degree and Coupling Coordination Degree.* The following formula is obtained, as shown in

$$C = n \left[ \frac{U_1 U_2 \cdots U_L}{(U_1 + U_2 + \cdots + U_L)^L} \right]^{1/L}. \quad (3)$$

Among them,  $C$  represents the coupling degree between subsystems, and its value range is  $[0, 1]$ , and  $L$  represents the number of subsystems. When  $L = 2$ , the following formula is obtained, as shown in

$$C_{xy} = 2 \left[ \frac{U_x U_y}{(U_x + U_y)^2} \right]^{1/2}. \quad (4)$$

Among them, it represents the connection between digital marketing and quality improvement. The level of connectivity can only represent the interaction between digital economy and positive development [15]. To realize the hierarchical model of integration to accurately measure the relationship and relationship between digital marketing and the strategic development process. The standard level of integration is obtained by the formula given by

Among them,  $D_{xy}$  represents the coupling coordination value of the digital economy and high-quality development, and the value range is  $[0, 1]$ ,  $U_x$  and  $U_y$  are the comprehensive scores of the digital economy and high-quality development, respectively, and  $\alpha$  and  $\beta$  are the undetermined coefficients, respectively.

### 3.2. Indicator Selection, Data Description, and Coupling Type Division

3.2.1. *Selection Indicator and Information.* According to the reality of China's economic development, the development to be happy shows the real need for a new development strategy, including the availability of information in the city, and creating a multi-level assessment that includes six secondary economic indicators: growth, innovation potential, design, environmental quality, open development, and the quality of life of residents [16]. The specific parameters and their explanations are shown in Table 1. The sources of the indicators are "China Urban Statistical Yearbook," "China Science and Technology Statistical Yearbook," "China Regional Economic Statistical Yearbook," and development of digital accounting. The data were jointly provided by Peking University's Digital Finance Research Center and Ant Financial Group. Excluding province-level cities with large missing data, 1,626 sample surveys from 271 provinces and cities in China were completed between 2016 and 2021, as shown in Table 1.

TABLE 1: Indicator system of digital economy and high-quality development.

	Subsystem	Criterion layer	Indicator layer	Indicator properties	
Digital economy and high-quality development coupling coordination system	Digital economy system	Internet penetration	Internet users per 100 people	+	
		Internet-related practitioners	Proportion of employees in computer services and software	+	
		Internet related output	Total telecom services per capita	+	
		Number of mobile Internet users	Number of mobile phone users per 100 people	+	
		Digital financial inclusion development	China digital financial inclusion index	+	
		Economic growth	GDP growth rate	+	
	High-quality development system	Creativity	Investment in science and technology	+	
		Industrial structure	Advanced industrial structure	+	
		Environmental quality	Proportion of producer services PM2.5	-	
		Open development	The actual amount of foreign capital used in the current year	+	
		Living standard of residents	Education expenditure per capita (yuan/person)		+
			Number of hospital beds per capita (pieces per 10,000 people)		+

3.2.2. *Model and Type Distribution of Connection Coordination Evaluation.* According to Zhang Xu et al., the integration of subsystems is divided into four types: low integration, medium integration, high integration, large integration, and special distribution models are shown in Table 2.

## 4. Results Analysis

4.1. *Overall Features.* Using panel data from 271 provinces and cities in China from 2016 to 2021, according to the joint model developed by the author, social and economic relations Digital marketing and growth are measured. Table 3 shows the level of development of the digital economy and the level of growth of the development quality [17]. Table 3 represents the comparison between the scores of digital marketing and quality improvement, which is used to measure the practice or business level of digital marketing compared to quality improvement, if the ratio more than 1, it means that the digital economy is ahead of good development; If the ratio is less than 1, it means that the digital market lags behind the growth rate; If the ratio is equal to 1, it means that both are developing at the same time [18]. Table 3 is used to measure the relationship between digital economy and sustainable development, and it refers to the connection between digital economy and sustainable development. The development will have a good relationship between the two.

Table 3 shows that China's digital economy and economic growth have a positive relationship, with an average correlation of 0.9227, indicating a positive relationship between digital economy and economic development; the relationship grow well and is increasing year by year. Digital marketing and development have always been mutually exclusive and collaborative, but the level of cooperation and

collaboration has increased year by year during the survey period; from the reports, it is said that both digital marketing and development gradually support and reinforce each other. The digital economy is still falling below the growth rate, but at the same time, it is seen that the gap between the digital economy and the growth rate is gradually narrowing, and continue to develop connections and links between digital marketing and quality improvement.

4.2. *Characteristics of Seven Regions.* Table 4 and Figure 2 show the main characteristics of cooperation and collaboration between the digital economy and the development quality in China's seven regions from 2016 to 2021. Digital economy and the development quality of South China and Northwest China are the development level. In the region, the level of the first level of connection and collaboration has increased from 0.3274 to 0.3074 in 2016 to 0.3878 and 0.3834 in 2021, all of which are medium connection types. The relationship between digital economy and economic growth in East China and North China is in the second stage at the regional level, increasing from 0.3137 to 0.3152 in 2016 to 0.3762 and 0.3754 in 2021 – type of binding medium. The relationship between digital economy and economic growth in the Northeast and Southwest regions is in the third stage at the regional level, increasing from 0.3112 to 0.2657 in 2016 to 0.3638 and 0.3501 in 2021, at the middle level half of the right tie. Central China's cooperation between digital economy and growth is the lowest among the seven regions, from 0.2628 in 2016 to 0.3293 in 2021, changing from low cooperation to high cooperation.

To further analyze the reasons for the lack of connection and cooperation between the digital economy and the positive development of the regions, Table 5 reports descriptive statistics on the composite scores of digital economy and quality development for the seven regions during

TABLE 2: The distribution of types of collaboration and the connection between digital marketing and sustainable development.

Coordination value	$1 \leq D \leq 0.2$	$0.4 < D \leq 0.6$	$0.4 < D \leq 0.7$	$0.9 < D \leq 1.1$
Basic type	Low-coupling coordination	Moderately coupled coordination	Highly coupled coordination	Extremely coupled coordination

TABLE 3: The general characteristics of cooperation and collaboration between the digital economy and sustainable development.

years	$U_x$	$U_y$	$U_x/U_y$	$C_{xy}$	$D_{xy}$	Coupling coordination type
2016	0.0697	0.1432	0.4877	0.8943	0.3018	Moderately coupled coordination
2017	0.0766	0.1498	0.5102	0.9011	0.3125	Moderately coupled coordination
2021	0.0823	0.1606	0.5114	0.9082	0.3256	Moderately coupled coordination
2019	0.0907	0.1703	0.5328	0.9237	0.3411	Moderately coupled coordination
2020	0.1014	0.1685	0.6026	0.9481	0.3507	Moderately coupled coordination
2021	0.1152	0.1755	0.6556	0.9605	0.3665	Moderately coupled coordination

TABLE 4: Degree of collaboration and cooperation between digital economy and sustainable development in seven regions in China.

Years	North-east area	Huadong region	North China	Central China	South China	Southwest region	North-west region
2016	0.3112	0.3137	0.3152	0.2628	0.3274	0.2657	0.3074
2017	0.3151	0.3226	0.3257	0.2761	0.3405	0.2815	0.3202
2021	0.3225	0.3354	0.3386	0.2897	0.3511	0.3024	0.3338
2019	0.3412	0.3524	0.3545	0.3089	0.3594	0.3172	0.3428
2020	0.3513	0.3632	0.3631	0.3105	0.3695	0.3317	0.3593
2021	0.3638	0.3762	0.3754	0.3293	0.3878	0.3501	0.3834
Average value	0.3343	0.3438	0.3455	0.2963	0.3561	0.3082	0.3412
Sample size	205	469	199	253	223	181	101

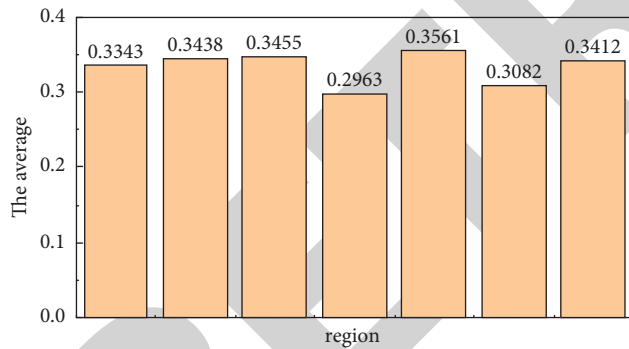


FIGURE 2: Average value of coupling coordination between digital economy and high-quality development in seven regions of China.

the observation period. Table 5 shows that regional disparities in the digital economy are greater than positive growth rates. The highest average digital marketing score is 0.1294, the lowest is 0.0631, and the highest is 2.05 times. The highest average score for good construction is 0.1778, the lowest is 0.1354, and the highest is 1.31 times lower [19]. It can be seen that the big difference in the level of digital economy between the regions is the main reason for the discrepancy between the link between digital economy and economic growth, and the relationship links between digital marketing mix scores and growth. In Central China, the least is the link between digital marketing and sustainable development; South China is the only region with an average score of more than 0.10 in the digital economy score, and it is

the first of the seven regions in terms of the quality of digital economy and the average of cooperation and collaboration.

In general, the cooperation and integration of the digital economy and the development of the seven regions are all central and integrated, and all the cooperation and cooperation is not very high. Although there is a positive relationship between the digital economy and growth, because of the short term of the digital economy and the integration of the digital economy and the traditional economy, great business and social relations have never existed. Digital economy and high-quality development have not established a mature and stable interactive development relationship. From the point of view of time, the integration and integration of all areas of the digital economy and the development of the quality are increasing, indicating the growth of the digital economy and it penetrates into business and people. The positive interaction between the digital economy and the positive development will be improved. From the point of view of regional comparison, the author believes that the relationship between digital economy and positive development in the northwest, which has a poor economy, is likely associated with the relative return of digital marketing. In 2021, the ratio score of digital economy and development quality is 0.6131 in Northwest China, 0.5548 in Central China, 0.5747 in Southwest China, and the score of digital economy in Northwest is high. China's economy is far from Central China and Southwest China in the high-quality development system, and the degree of synchronization between the digital economy and the development quality of

TABLE 5: Descriptive statistics of comprehensive scores of digital economy and high-quality development in seven regions.

Area	Digital economy			Area	High-quality development		
	Average value	Maximum value	Minimum		Average value	Maximum value	Minimum
Central China	0.0631	0.2086	0.0186	Central China	0.1354	0.3637	0.0698
Southwest	0.0665	0.2293	0.0137	Southwest	0.1538	0.3347	0.0872
Northeast	0.0757	0.1952	0.0216	East China	0.1603	0.6015	0.0784
Northwest	0.0866	0.2805	0.0255	South China	0.1678	0.7193	0.0755
North China	0.0897	0.3337	0.0344	Northeast	0.1721	0.2807	0.1025
East China	0.0996	0.4966	0.0173	Northwest	0.1764	0.3263	0.0994
South China	0.1294	0.7198	0.0212	North China	0.1778	0.6642	0.0746

Northwest China is more than that of Central China and Southwest China. But in the long run, government departments should support the development of digital economy in economically developed regions such as southern, northern, and eastern China. The government should take the lead in implementing the construction of digital China in the region and explore the role of digital economy in promoting high-quality development and the law of interactive development between the two.

*4.3. Urban Hierarchical Characteristics.* Overall, 271 sample cities are divided into different cities, and the degree of integration is connected to different levels of different cities, and the results are shown in Table 6. For the first city, the cooperation between the digital economy and high cities – The improvement is the highest, from 0.6134 in 2016 to 0.6688 in 2021, the cooperation relationship is normal in high-level collaboration, and high-level. Of continuous integration [20]. The cooperation between the digital economy and the cooperation efficiency of the first new city has increased from 0.4267 in 2016 to 0.4963 in 2021, which is the cooperation average, and it is approximately 0.4963 in 2021, which achieved a very good management style, but there is still a big difference compared to the first-tier cities. The relationship between digital economy and the development quality of secondary cities has increased from 0.3756 in 2016 to 0.4433 in 2021, and the average integration and cooperation has increased to 0.4433 in 2021 during the survey period. Lower than the first-tier city and the new first-tier city, but far ahead of the third-tier city. For third-, fourth-, and fifth-tier cities, the general result of social interaction is that the third-tier city is larger than the fourth-tier city, and the fourth-tier city is smaller. In the fifth city, the difference in the degree of connection rules is very small, and they have moved from low connection rules to medium connection rules during the observation period.

Cooperation and coordination of China's digital economy and development have a great impact on cities at different stages, and the integration of cities in the first stage is more as new first-tier cities and second-tier cities. The integration of the second cities is more than the third, fourth-, and fifth cities. The coupling degree of digital economy and high-quality development in third-tier, fourth-tier, and fifth-tier cities is at a low level. On the one hand, the economic structure of third-tier and fourth-tier cities is mainly based on primary and secondary industries,

which deviates from the purpose of high-quality development to a certain extent. There is little cooperation and integration between the digital economy and the successful development of the third, fourth, and fifth cities. Secondary production deviates to any extent from the goal of good growth. On the other hand, digital marketing is high technology and requires not only some business needs but also requires a lot of investment and expertise at the first stage, which meet the needs of developing digital businesses. The low level of digital economy and quality development have created a low level of coordination and integration between third and fourth level cities. The digital economy is a product of economic growth that has reached a certain level, and the third-, fourth-, and fifth-tier cities cannot support the costs and risks of digital business; so at this stage, we must seize the opportunity to control the country's production. We must put business development first.

*4.4. Typical Analysis of the Yangtze River Basin and the Yellow River Basin.* According to the purpose of the research, sample data of 19 and 29 states and cities that flow from the Yellow River Basin and the Blue River Basin have been taken to measure, and measure the number of businesses and highways growing well between the Yellow River Basin and the Blue River. Table 7 shows the relationship between the basin and the two, and the results. During the survey, the score of the digital economy and development quality of the Blue River Basin was higher than that of the Yellow River Basin. The average score of digital economy and development quality of the Blue River Basin is 0.1002 and 0.1807, and the Yellow River Basin is 0.0905 and 0.1588. Looking at how much the digital business lags behind the positive development, the average of the digital business for positive development is 0.5503. Less than 0.5697 in the Yellow River basin. The connection and integration of the digital economy and the development of the quality of the Blue River Basin and the Yellow River Basin are in the form of medium integration, and the medium of integration of the Blue River Basin is 0.3544, which is higher than 0.3382. First, in the Yellow River Basin, 34.48 percent of the 10 cities with two or more levels are located in the Blue River Basin, while there are only three cities with two or more levels in the Yellow River Basin. 15.78%. As the economic level of the cities flowing through the Blue River Basin is higher than that of the Yellow River Basin, the Blue River Basin has the basis for

TABLE 6: Coupling and coordination degree of digital economy and high-quality development in cities of different levels.

Years	First-tier cities	New first-tier cities	Second-tier cities	Third-tier city	Fourth-tier cities	Fifth-tier cities
2016	0.6134	0.4267	0.3756	0.2857	0.2742	0.2745
2017	0.6228	0.4476	0.3837	0.2971	0.2862	0.2824
2018	0.6287	0.4723	0.3951	0.3094	0.2975	0.2958
2019	0.6507	0.4756	0.4133	0.3244	0.3128	0.3127
2020	0.6452	0.4846	0.4275	0.3335	0.3213	0.3232
2021	0.6688	0.4963	0.4433	0.3508	0.3344	0.3414
Average value	0.6384	0.4672	0.4064	0.3168	0.3043	0.3051
Sample size	25	91	181	415	482	439

TABLE 7: Coupling and coordination characteristics of digital economy and high-quality development in the Yangtze and Yellow River basins.

years	$U_x$	$U_y$	$U_x/U_y$	Coupling coordination	$U_x$	$U_y$	$U_x/U_y$	Coupling coordination
2016	0.0756	0.1593	0.4744	0.3190	0.0708	0.1435	0.4937	0.3107
2017	0.0803	0.1647	0.4876	0.3282	0.0756	0.1564	0.4835	0.3218
2018	0.0927	0.1794	0.5165	0.3477	0.0849	0.1608	0.5276	0.3343
2019	0.1042	0.1932	0.5391	0.3655	0.0946	0.1604	0.5905	0.3445
2020	0.1194	0.1895	0.3604	0.3762	0.0994	0.1632	0.6091	0.3505
2021	0.1298	0.1986	0.6528	0.3897	0.1174	0.1685	0.6963	0.3667
Average value	0.1002	0.1807	0.5503	0.3544	0.0905	0.1588	0.5697	0.3382
Sample size			175				115	

the development of emerging industries such as innovation and business. In Yellow River basin, digital printing is more than marketing. In the river basin and the Ocean River, economic development, sustainable development, and protection of the ecological environment should be the main points of development.

## 5. Conclusion

The author created a digital economy and development performance evaluation system based on data from 271 provinces and cities in China from 2016 to 2021, based on the scores of the digital economy and the development quality are calculated and obtained. In the digital economy, the level of cooperation and integration between the government and the development quality is calculated. Time-series trends and differences in the connections and integration of digital economy and development quality from the perspective of seven regions, cities at different levels, and red rivers and the Yellow River basin were introduced. On the other hand, the author's research supports the results of research on the interaction between digital marketing and positive development. On the other hand, it shows the nature and reality of the relationship between China's digital economy and development from different angles, and provides policy inspiration for the government central and regional to create different policies for the development of digital economy good construction.

## Data Availability

The data used to support the findings of this study are available from the author upon request.

## Conflicts of Interest

The author declares no conflicts of interest.

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