Analysis and Reflection on the Spatial Distribution of Taobao Village in Henan Province under the Background of Digital Economy

Fang Lu

School of Economics and Management, Zhongyuan University of Technology, Zhengzhou 450007, China

Abstract

In recent years, with the rapid development of human information and communication technology, the digital economy is profoundly changing the development momentum and development mode of the world economy. The development of the digital economy in China's rural areas is reflected in the deep integration of digital technology and agricultural economy. Its typical performance is the rapid rise and growth of e-commerce represented by "Taobao Village". When analyzing the development achievements and spatial distribution characteristics of Taobao villages in Henan Province, this paper found that the spatial distribution of Taobao villages in Henan Province is highly uneven, and there are still 7 out of 18 prefecture-level cities that have not developed Taobao villages. The reason is that this is a concrete manifestation of the digital divide in Henan Province. In response to this phenomenon, it is necessary to find ways to bridge the digital divide in terms of government services, platform introduction, and talent training.

Keywords

Digital Economy; Digital Divide; Henan Province; Taobao Village; Spatial Distribution.

1. Introduction

In recent years, with the rapid development of human information and communication technology, a digital economy represented by big data, cloud computing, and blockchain is emerging. According to the definition of the "White Paper of China Digital Economy Development (2020)" issued by the China Academy of Information and Communications Technology, the digital economy is based on digital knowledge and information as key production factors, digital technology as the core driving force, and modern information networks as an important carrier , through the deep integration of digital technology and the real economy, continue to improve digitization, networking, and accelerate the reconstruction of new economic forms of economic development and governance models [1]. The digital economy is profoundly changing the development momentum and development mode of the world economy. The Chinese government attaches great importance to the development of the digital economy. For the first time, the 2017 "Government Working Report" clearly stated the requirements for promoting the digital economy. The "Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-term Goals for 2035" issued in March 2021 is the first time to adopt a separate chapter to propose the task of "accelerating digital development and building a digital China" . According to the "China Internet Development Report 2020" issued by the Internet Society of China, as of the end of 2019, the number of mobile Internet users in my country reached 1.319 billion, accounting for 32.17% of the total number of Internet users in the world; the total number of 4G base stations reached 5.44 million, accounting for the global 4G More than half of the total

number of base stations; mobile Internet access traffic consumption reached 122 billion GB, a year-on-year increase of 71.6%; e-commerce transaction scale reached 34.81 trillion yuan, ranking first in the global e-commerce market for many years; online payment transaction volume reached 249.88 Trillion yuan, the penetration rate of mobile payment is at the world's leading level; the national digital economy has a value-added scale of 35.8 trillion yuan, accounting for 36.2% of GDP, ranking second in the world [2].

The rural digital economy is an important part of Digital China. If the rural digital economy lags behind, it will become a shackle that restricts my country's digital economy construction. In order to promote the development of my country's rural digital economy, the State Council issued the "Digital Rural Development Strategy Outline" in 2019 to provide a top-level design for the development of my country's rural digital economy. The development of digital economy in rural areas is reflected in the deep integration of digital technology and agricultural economy. Its typical performance is the rapid rise and growth of e-commerce represented by "Taobao Village". In the 12 years from the first appearance of "Taobao Villages" in my country in 2009 to 2020, the number of Taobao Villages has increased from 3 to 5,425 (as of the end of June 2020), distributed in 28 provinces, autonomous regions and municipalities in my country. This e-commerce model is blooming everywhere in our country's rural areas, and it has quickly become a representative form of rural e-commerce.

2. The Development Achievements of Taobao Village in Henan Province under the Digital Economy

In the context of the rapid development of the digital economy, the scale of the rural e-commerce industry in Henan Province has further expanded, the transaction volume has continued to rise, and the influence has continued to increase. According to the "2019 Henan Province Internet Development Report" issued by the Henan Provincial Communications Administration, the number of Internet users in Henan Province reached 87.98 million in 2019, of which rural Internet users increased to 27.93 million, accounting for 31.7%, and the proportion continued to increase. . At the same time, the number of Internet of Things users of rural Internet users also increased by 86.4% over the previous year. As a typical product of "Internet + Countryside", Taobao Village closely integrates the Internet and the rural real economy to become a professional rural e-commerce village with Chinese characteristics.

2.1. The Scale of Development of Taobao Village in Henan Province

"Taobao Village" in Henan Province started in 2014. In 2014, Sangpo Village, Nanzhuang Town, Mengzhou City, Jiaozuo, Henan Province, was certified by the Ali Research Institute and became the first "Taobao Village" in Henan Province and won the reputation of "The First Taobao Village in Central Plains". Since 2014, Henan "Taobao Village" has entered a period of vigorous development. According to the definition of Ali Research Institute, the identification of "Taobao Village" requires the following conditions: first, the trading place and business premises are located in rural areas, mainly with administrative villages as the unit; second, there are more than 100 active online stores in this administrative village or account for more than 10% of the number of local households; third, the total annual transaction volume of the village's online merchants reaches more than 10 million yuan. In the past seven years, the number of Taobao villages in Henan Province has increased from 1 in 2014 to 135 in 2020, with an average annual growth rate of 123.42%. This figure ranks first among the six central provinces. Since 2014, the number of Taobao villages in Henan Province has always accounted for more than 50% of the total number of Taobao villages in the six central provinces (except in 2015), see Table 1.

Table 1. Changes in the Number of Taobao Villages in the Six Central Provinces

Year	Shanxi Province	Hunan Province	Anhui Province	Jiangxi Province	Hubei Province	Henan Province
2013	0	0	0	1	0	0
2014	0	0	0	0	1	1
2015	1	3	0	3	1	4
2016	1	1	1	4	1	13
2017	2	3	6	8	4	34
2018	2	4	8	12	10	50
2019	2	6	13	19	22	75
2020	7	12	27	34	40	135

According to the "2020 China Taobao Village Research Report", the performance of Henan Taobao Village in the central region in 2020 will be particularly eye-catching, with the number of Taobao villages reaching 135, becoming the first province outside of the six coastal provinces with the number of Taobao villages "breaking one hundred" [3]. Among them, Changge City and Xinzheng City, Henan Province were shortlisted in the list of "Top 100 Taobao Village Counties in 2020", ranking 94th and 99th respectively. Among the other five central provinces, only Zhijiang City, Hubei Province was selected on the list.

On the basis of Taobao Village, three or more adjacent "Taobao Villages" can form a "Taobao Town". Compared with Taobao Village, the development of Taobao Town in Henan Province is slower, and only two Taobao towns appeared in 2017. Alibaba Research Institute expanded the definition of "Taobao Town" in 2019, that is, if a township has e-commerce sales of more than 30 million RMB yuan a year and more than 300 active online stores, it can become a Taobao town, not limited to whether there is a Taobao village. Based on the change in this standard, the number of Taobao towns in Henan Province soared to 44 in 2019, an increase of 41 from the previous year, and the growth rate reached 1367%. In 2020, the number of Taobao towns increased to 94. Compared with the other five central provinces, the number and scale of Taobao towns in Henan Province are second to none, see Table 2.

Table 2. Changes in the Number of Taobao Towns in the Six Central Provinces

Year	Shanxi Province	Hubei Province	Hunan Province	Jiangxi Province	Anhui Province	Henan Province
2017	0	0	0	0	0	2
2018	0	0	0	0	0	3
2019	3	15	20	46	48	44
2020	11	29	33	54	68	94

2.2. Product Structure of Taobao Village in Henan Province

Among the existing 135 "Taobao Villages" in Henan Province, most of the products sold are concentrated in areas where the local area has comparative advantages, and they are mainly divided into three types. The first category is the "Taobao Village" with local specialty agricultural products as the mainstay. Such "Taobao Villages" mainly consist of primary products such as honey, dates, black fungus, fruits, peppers, and sweet potatoes. For example, the four "Taobao Villages" of Shangzhuang Village and Gangli Village in Fuerhu Town, Changge City, Xuchang, and Monkyang Village and Shuangmiaoli Village in Dazhou Town, Changge City,

Xuchang, all use bee products as their leading products. In the list of "Top 100 Taobao Villages for Agricultural Products in 2020", the above four villages are all selected.

The second category is the "Taobao Village" that focuses on industrial products. And it is mainly based on light industry and handicraft products such as furniture, sheepskin products, clothing, peony paintings, Tang Sancai, and jade articles. For example, Shifosi Town, Zhenping County, Nanyang City is known as "the first town of jade carvings in China" and has 5 Taobao villages, mainly selling jade; Xiangzhai Village, Houji Town, Zhenping County, Nanyang City mainly sells ornamental fish online. Become the first living Taobao village in China; Sangpo Village, Nanzhuang Town, Jiaozuo City, has a long history of sheepskin and wool processing, and is the world's largest sheep shearing processing base and the fur capital of China; Matun Village, Yanshi City, Luoyang relies on this The village has a hundred years of drum-making history, and the 2008 Taiwan drums used in the opening ceremony of the Beijing 2008 Olympic Games are all from this village; Pingle Village, Pingle Town, Luoyang City has become a "Taobao Village" relying on farmers' peony paintings, and is the only "peony painting production base" in the country . Such "Taobao Villages" often rely on the existing local industrial foundation to quickly form industrial chains such as family workshops, professional markets, small and medium-sized factories, e-commerce operations and logistics on the e-commerce platform, and realize the development of industrial clusters.

The third category is Taobao Village, which provides e-commerce training and incubation as its main products. Only one Taobao Village provides such products, namely Shuanglong Village, Shuanglong Town, Xixia County, Nanyang City.

According to the questionnaire, the current product structure of the Henan Taobao Village online store is: agricultural products account for 55%, industrial products (including handicrafts) account for 44%, and services account for 1% [4].

3. The Spatial Distribution Characteristics of Henan Taobao Village under the Digital Economy

3.1. The Overall Spatial Distribution Characteristics of Henan Taobao Village: Extremely Unbalanced

As of June 2020, Henan Province has 135 "Taobao Villages" and 94 "Taobao Towns". These 135 "Taobao Villages" are distributed in 11 of the 18 municipalities in Henan Province. Among them, Zhengzhou has the most, with 27 "Taobao Villages", followed by Luoyang with 21 "Taobao Villages". There are also zero "Taobao Villages" owned by seven municipalities. Among the existing 135 "Taobao Villages", the distribution is concentrated in Zhengzhou (27), Luoyang (21), Nanyang (16) and Xuchang (15). The geographical distribution is extremely uneven,see Figure 1.
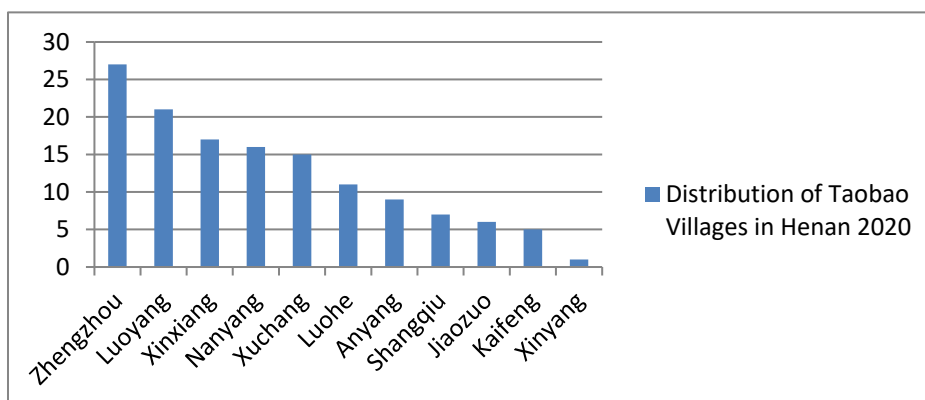

Figure 1. Distribution of Taobao Villages in Henan Province in 2020 (Unit: Unit)

The geographical distribution of "Taobao Villages" in our province shows an obvious distribution pattern of "high in the center and low in the surroundings" with the provincial capital Zhengzhou as the center. Luoyang City , Xinxiang City , Xuchang City , Jiaozuo City, Kaifeng City surrounding Zhengzhou City all have "Taobao Villages" distributed, only Pingdingshan City does not "Taobao Village" distribution. Only Nanyang City , Luohe City , Anyang City, Shangqiu City and Xinyang City have "Taobao Villages" located far away from Zhengzhou City. There are no "Taobao Villages" in the rest of the prefecture-level cities. This geographical distribution characteristic shows that the number of "Taobao Villages" is closely related to the level of local economic development. At the same time, this also shows that the economic development of Henan Province is mainly centered on Zhengzhou and Luoyang. The economic development of other cities is relatively backward, and there is no such thing as a flourishing situation, see Table 3.

Table 3. Descriptive Statistics of Spatial Distribution of the Number of Taobao Villages in 18 Prefecture-level Cities in Henan Province (2014-2020)

Year	Total number of Taobao Village	Coverage Individual	Maximum individual	Minimum individual	Individual mean	The maximum value of the individual accounted for the total number of Taobao villages
2014	1	1	1	0	0.06	100%
2015	4	4	2	0	0.22	50%
2016	13	5	6	0	0.72	46%
2017	34	9	8	0	1.89	23%
2018	50	10	15	0	2.78	30%
2019	75	10	19	0	4.17	25%
2020	135	11	27	0	7.5	20%

The "coverage of prefecture-level cities" in Table 3 refers to the number of prefecture-level cities with Taobao villages in the 18 prefecture-level cities in Henan Province in each year; "maximum (small) individual value" refers to the individual with the most (less) Taobao villages. The number of Taobao villages in prefecture-level cities is extreme; the "individual average" is the average number of Taobao villages owned by each prefecture-level city in Henan Province that year. The above statistical results show that from 2014 to 2020, while the overall number and spatial distribution of Taobao villages in Henan Province have both expanded, their distribution has shown obvious regional imbalance: the number of Taobao villages in the province has soared, and its maximum value has increased from 2014. The increase from 1 year to 27 in 2020; but at the same time, the individual minimum value has remained zero for many years, that is, there are still some prefecture-level cities in Henan Province that have not been distributed in Taobao villages for a long time.

3.2. The Regional Distribution Characteristics of Taobao Village in Henan Province

The regional distribution characteristics of Taobao villages in Henan Province can also be carried out by measuring the spatial distribution density of Taobao villages. Since Taobao Village is essentially a networked industrial cluster phenomenon that occurs in rural society, its occurrence and development are the result of economic and social conditions. Therefore, this article uses the number of Taobao villages owned by the fixed population of each

prefecture-level city in Henan Province to measure, that is, the number of Taobao villages owned by every million people reflects the distribution density of Taobao villages in the prefecture-level city, namely:

D = the number of Taobao villages in the area (a) / the total population of the area (million people). [1]

In the above formula, the total population of the area is selected by the author instead of the total permanent population, because the permanent population in an area is the main contributor to the economic construction of the area. Among them, the total number of Taobao villages in the country and the total number of Taobao villages in each province are based on the total number of Taobao villages published by Ali Research Institute since 2014. The number of Taobao villages in various cities in Henan Province is based on the list of national Taobao villages and their belongings published by Ali Research Institute each year. Ground is the basis. The national population data is subject to the annual National Economic and Social Development Statistical Bulletin, and the national population data for 2020 is subject to the data of the seventh national census in 2020. The total permanent population of each city in Henan Province is based on the number of permanent residents in the National Economic and Social Development Statistical Bulletin issued by the Henan Provincial Bureau of Statistics each year, see Table 4 and Table 5.

Table 4. The Distribution Density of Taobao Villages across the Country and some Provinces from 2014 to 2020 (Unit: units/million people)

Location name	D2014	D2015	D2016	D2017	D2018	D2019	D2020
National	0.15	0.57	0.90	1.53	2.30	3.08	3.84
Zhejiang	1.13	5.06	9.05	13.94	20.72	26.89	27.21
Fujian	0.74	1.85	2.76	4.83	5.96	8.00	10.62
Guangdong	0.50	1.45	2.38	3.74	5.50	6.93	8.13
Jiangsu	0.31	1.59	2.51	3.28	5.63	7.62	7.83
Hebei	0.34	0.79	1.22	1.95	3.05	4.73	6.70
Shandong	0.13	0.65	1.09	2.44	3.67	4.47	5.89
Henan	0.01	0.04	0.14	0.36	0.52	0.78	1.36

It can be seen that the distribution density of Taobao villages in Henan Province has always been at the national level, ranking seventh in the country, and there is a huge gap between the top six provinces. However, among the six central provinces of Henan, Shanxi, Jiangxi, Hunan, Hubei, and Anhui, the distribution density of Taobao villages in Henan Province is currently the highest.

It can be seen that the distribution density of Taobao villages in Henan Province, that is, the number of Taobao villages per million people has always been behind the national level. The distribution density of Taobao villages in prefecture-level cities in the province is uneven. In 2020, the distribution density of Taobao villages in Jiaozuo, Xuchang, Nanyang, Luoyan, Anyang, Luohe, Xinxiang, Zhengzhou and other places will exceed the average density of Henan Province, but Shangqiu and Kaifeng The distribution density of Hexinyang is less than the average density of the province, and there are seven prefecture-level cities that have not yet achieved zero

breakthrough in the number of Taobao villages. These data further illustrate the uneven distribution of Taobao villages in various cities in Henan Province.

Table 5. The Distribution Density of Taobao Villages in Cities across the Country and in Henan from 2014 to 2020. (Unit: units/million people)

Location name	D2014	D2015	D2016	D2017	D2018	D2019	D2020
Henan	0.01	0.04	0.14	0.36	0.52	0.78	1.36
Jiaozuo	0.27	0.27	0.27	0.28	0.55	0.82	1.67
Xuchang	--	0.41	1.22	1.21	1.21	2.91	3.36
Nanyang	--	0.12	0.23	0.50	0.50	1.20	1.60
Luoyang	--	--	0.42	1.17	1.54	1.88	3.03
Shangqiu	--	--	0.11	0.14	0.14	0.14	0.75
Anyang	--	--	--	0.58	0.66	0.77	1.73
Luohe	--	--	--	0.38	0.35	0.37	4.12
Xinxiang	--	--	--	0.52	0.69	1.13	2.92
Zhengzhou	--	--	--	0.61	1.48	1.84	2.61
Kaifeng	--	--	--	--	0.22	0.43	1.09
Xinyang	--	--	--	--	--	--	0.15

4. Reflection on the Spatial Distribution of Taobao Village in Henan Province under the Digital Economy

In Henan Province, why has Taobao villages developed so rapidly in some areas, while Taobao villages have not existed in some areas for many years? The answer to this question is that this is the embodiment of the digital divide between regions in rural e-commerce.

The digital divide mainly refers to the gap between the access of information technology and the application of network technology, which leads to the difference in information acquisition and the use of knowledge. It is the gap between the "information rich" and the "information poor". In the early days when the term digital divide was born, this gap was mainly manifested as a "hard" gap between regions in terms of network access and information technology. However, with the increasing popularity of the Internet and the rapid development of information technology, especially with the implementation of a large number of agricultural and rural information construction projects in recent years, the accessibility "digital divide" between various regions in my country has been quickly wiped out. According to the "2020 Henan Province Internet Development Report" compiled and released by the Henan Provincial Communications Administration, the total number of Internet users in Henan Province will reach 88.365 million in 2020, and the Internet penetration rate will reach 91.7% [5]. Moreover, Henan Province has achieved amazing results in the development of rural networks. In 2020, Henan Province will coordinate the implementation of five major projects including rural 4G and 5G network coverage, fiber broadband network coverage, universal telecommunications services, network speed reduction, network information benefiting people, and more than 20 natural villages in the province's 4G network and fiber access. Coverage, the penetration rate of fixed broadband households in rural areas and the penetration rate of mobile broadband users increased by 14.6 units/100 households and 7.5 units/100 people respectively year-on-year. The proportion of broadband users above 100M in rural areas of the province reached

96.4%, ranking first in the country. These data all show that the main reason for the unbalanced difference in the spatial distribution of Taobao villages among the various regions of Henan Province is not the difference in accessibility, but other reasons.

As scholars deepen their understanding of the digital divide, some scholars have proposed a new type of digital divide. It refers to the huge gap in the mastery, understanding, and use of information technology under the conditions of universal ownership and use of the Internet, and participation in Internet issues at the first level of Internet knowledge acquisition. The new digital divide is no longer a "hard" gap such as network access and information technology, but a "soft" gap such as network behavior, information use, and knowledge acquisition. This new type of digital divide is the root cause of the huge differences in the distribution of Taobao villages among various regions of Henan Province.

According to the analysis of the "Statistical Report on Internet Development in China 2020", the hardware differences in Internet access in different regions have narrowed, but there are obvious differences in the way Internet users use the Internet in different regions. In some rural areas, digital resources are used more for entertainment than for entrepreneurial operations. This shows that although they can freely enjoy online services, they are limited by their own educational level and Internet concepts. The ability to transform digital information, technology and services into actual productivity. In essence, this difference is a kind of "digital awareness" gap, which is the difference in the ability of people in different regions to obtain, understand, and integrate digital information.

5. Summary and Countermeasures

In the construction of my country's new countryside, exploring a new development path with farmers as the main body is a long-term and arduous task. Since the 19th National Congress of the Communist Party of China, the concept of "rural revitalization" has pointed out the direction for my country's rural economic development. Taobao Village is a reasonable way for my country's rural areas to realize the "village revitalization" strategy in the context of the digital economy. The construction and development of Taobao Village in Henan Province is far ahead in the central region, but there is still a big gap compared with the developed provinces in the east. Moreover, the distribution of Taobao villages within various regions of Henan Province is quite uneven, and its economic and social benefits may widen the gap between regions. As a result, as the digital economy plays an increasingly important role in promoting the real economy, regions with good economic development once again seize development opportunities, while people in underdeveloped regions are once again at a disadvantage, and the gap between the two will be further widened. In order to narrow the digital divide between people in different regions of Henan Province and accelerate the development of rural e-commerce in this province, the following measures are recommended.

One is to give full play to the service functions of local governments. For cities in Henan Province where Taobao villages have not yet appeared, the guidance and services of local grassroots governments are needed to promote rural e-commerce. The grassroots government can promote the spread of information technology by organizing training and promoting e-commerce role models. It can also cooperate with e-commerce companies to conduct e-commerce training for rural households with a better foundation and strong accepting ability, and rely on the professional operation team of e-commerce companies to lead rural e-commerce. Shuanglong Village, Shuanglong Town, Xixia County, Nanyang City, Henan Province, has the only e-commerce training incubator in Henan Province, which can better serve farmers.

The second is to encourage e-commerce platform companies to actively participate. Taobao.com, an e-commerce company under the Alibaba Group, is currently the largest e-commerce company in China. The company has played a huge role in assisting the development

of e-commerce and the construction of Taobao villages in rural areas across the country. In 2014, Alibaba Group launched the "Thousand Counties and Ten Thousand Villages" plan, recruiting professional "rural Taobao partners". The service station staff provide villagers with consulting and shopping guide services, and parcel collection offices; they also provide villagers with online agricultural products, mailing, and sales Wait. JD Group launched county-level service centers and local "JD Bang" service stores. In addition to providing customers with services such as placing orders on behalf of customers, distribution display, etc., it also includes training rural promoters.

The third is to strengthen the training and introduction of rural e-commerce talents. The survey shows that the current development of rural e-commerce in Henan Province generally suffers from a shortage of talents. Online store marketing and promotion staff, online store art staff, and copywriting editors are the three types of e-commerce talents most lacking at present. These professional knowledge and abilities can only be obtained through systematic learning. The vast majority of villagers engaged in e-commerce in rural areas do not have these knowledge and abilities. Therefore, increasing efforts to support rural college students returning home to provide e-commerce services has become one of the keys to solving this problem.

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