

Retraction

Retracted: Path Analysis of the e-Commerce Platform Driven by Multimodal Multimedia Information to Promote the Upgrading of Beautiful Countryside

Advances in Multimedia

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret 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 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] X. Chen and F. Deng, "Path Analysis of the e-Commerce Platform Driven by Multimodal Multimedia Information to Promote the Upgrading of Beautiful Countryside," *Advances in Multimedia*, vol. 2023, Article ID 2040533, 10 pages, 2023.

Research Article

Path Analysis of the e-Commerce Platform Driven by Multimodal Multimedia Information to Promote the Upgrading of Beautiful Countryside

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In today's society, the fastest and most active technology in the field of information technology is multimedia technology, which is the focus of the development and competition of the new generation of electronic technology. Computer technology, text, image, sound, animation, video, communication, military, finance, and a series of functions are integrated into one, which is multimedia technology. With the help of the increasingly popular information network, multimedia technology realizes the global networking of computers and the sharing of information resources, so it is applied in many industries and changes people's lives subtly. It is necessary to innovate the methods and methods in the multimedia environment, redefine the current situation of the application of multimedia in rural areas, and analyze the method of applying multimedia e-commerce in rural enterprises, which is the main core of promoting rural education informatization in rural enterprises. However, there are some problems in its e-commerce methods and concepts. Here, it mainly analyzes how to correctly apply modern multimedia for e-commerce so that it can truly enter into rural enterprises. With the rapid development of computer technology, the computer-based multimedia foundation plays an important role in the production and life of human beings, and it is profoundly affecting the progress of the world economy and science and technology. Multimedia equipment can fully mobilize villagers' enthusiasm for learning, and the rational application of multimedia equipment can effectively improve the efficiency and quality of e-commerce. Therefore, this article will discuss the development trend of multimedia technology on the basis of discussing the current situation of multimedia technology. This paper focuses on analyzing the significance and specific strategies of applying multimedia equipment in rural revitalization e-commerce, in order to improve the level of rural revitalization e-commerce. Through data analysis, it is found that the application of multimedia has increased the level of rural revitalization e-commerce by 32.74%.

1. Introduction

In today's information technology field, the development of multimedia technology is particularly prominent, and the update and change are fast and the application range is wide [1]. This is not only its important technical features and advantages but also the key to the formation of its core competitiveness [2]. Nowadays, in the fields of rural education, service, communication, etc., there are applications of multimedia technology, which also play an important role. It can be said that in today's development of modern technology,

information transmission, information management, and information sharing have become the key to the progress of modern society [3].

The so-called media refers to the complex process of transmitting information, generally including the format storage of physical data objects and the carrier of information transmission [4]. Specifically, for example, U disk and disk are physical storage and also convey the entity of information, while numerical value, text, image, etc. are the carriers of conveying information. The multimedia we say does not refer to the multimedia information itself, but

refers to the corresponding technology of processing and corresponding [5]. Then, multimedia technology data formatting is a combination of computer technology and technology, combined with communication technology, large broadcast file transfer technology, etc., which can interactively process and transmit various media information such as data and voice [6]. At the same time, it is a comprehensive technology closely related to the application.

Agriculture is the foundation of China's economy and the cornerstone of the development of all walks of life [7]. We must insist on solving the "three rural" issues as the top priority of our work and take promoting rural revitalization as a major task to achieve the great rejuvenation of the Chinese nation [8]. However, at this stage, China's inland "three rural" development and rural revitalization policy reform still faces a series of problems such as fragmentation of cultivated land, weak agricultural competitiveness or even inaction, and large urban-rural income gap [9]. Therefore, improving agricultural productivity has become the only way to achieve rural revitalization and solve the problem of agriculture [10].

Since the beginning of the 21st century, China's agricultural labor productivity has been at a relatively low level relative to the three industries [11]. Figure 1 shows the annual progress of multimedia revitalization and e-commerce rural upgrading in each year. The ratio of the added value of the primary industry in GDP to the proportion of the employed population in the primary industry represents the relative level of labor productivity in the primary industry.

Therefore, how to rapidly improve China's agricultural labor productivity has become a topic of concern to scholars at present. The research mainly holds the following viewpoints. From the perspective of factor input, the accumulation of physical capital and human capital can improve agricultural labor productivity. Physical capital mainly refers to the input of agricultural mechanization and agricultural infrastructure [12]. For example, agricultural water project construction and agricultural science and technology investment; human capital investment mainly refers to strengthening agricultural vocational education in rural areas and encouraging professional technology to be transferred to agriculture [13]. From the perspective of agricultural services, providing professional agricultural technical services and guidance, promoting urban and rural financial lending, such as inclusive financial services, and providing nonagricultural employment services can improve agricultural productivity [14]. From the perspective of institutional factors, peasant circulation and industrial agglomeration can expand the production model. The reform of the household registration system accelerates the transfer of agricultural population and urban development [15]. The expansion of land scale and the transfer of agricultural population can drive the improvement of agricultural labor productivity. However, this paper finds that the scholars' research has certain limitations [16]. First, in the context of the national economic slowdown, the yearly tightening of capital and the aging of the rural population all limit the role of factor input. Second, the promotion of agricultural services requires long-term accumulation to achieve results, and labor productivity

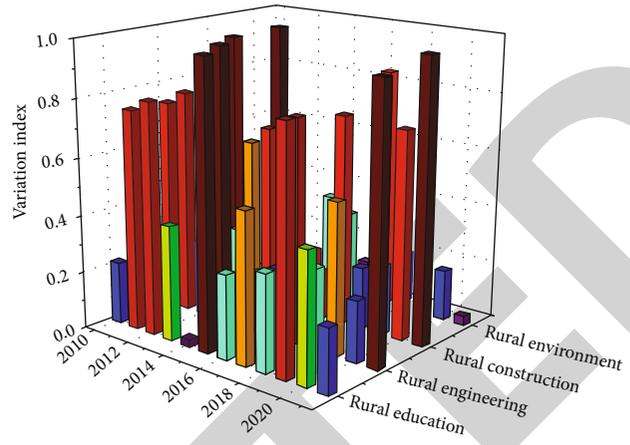


FIGURE 1: Annual progress of multimedia revitalization and e-commerce rural upgrading.

is difficult in the short term [17]. Third, there are many thresholds for the implementation of the system [18]. For example, under the current land system, if there are farmers who need to transfer land, more than 2/3 of the villagers must agree to the approval of the people's government at the town or county level to take effect. This is undoubtedly an objective obstacle to farmers, circulation and concentration of the earth [19].

This paper attempts to find an effective way to improve agricultural labor productivity from the perspective of rural e-commerce [20]. The process is shown in Figure 2. Domestic academic circles have little research on whether rural electricity has higher industrial labor productivity. Based on the academic research and policy background, this paper further analyzes the impact of county policies on labor productivity according to the steps in Figure 2. Compared with the existing ones, this paper tries to make the following innovations. The domestic literature seldom discusses agricultural labor productivity from the perspective of agricultural subbusiness. The paper studies the deficiencies of the existing literatures, comprehensive demonstration of enterprises entering the countryside. Whether e-commerce can help improve agricultural labor productivity is controversial in academic circles. Some studies have found that information infrastructure can help farmers improve their ability to obtain information, facilitate the entry of agricultural products into the market, and improve labor productivity [21]. But some learned behavior, the actual effect of e-commerce will be overestimated. This paper argues that, in addition to different research samples, the differences in empirical conclusions of the above scholars may be affected by endogeneity [22]. Therefore, this figure takes the e-commerce policy into rural comprehensive counties as an entry point and constructs a quasinalatural experiment to understand the impact of e-commerce policies on agricultural labor rates [23]. In response to the development of e-commerce in China's rural areas, the Ministry of Commerce issued the "Notice on Launching Comprehensive Demonstration of e-Commerce in Rural Areas" for the first time

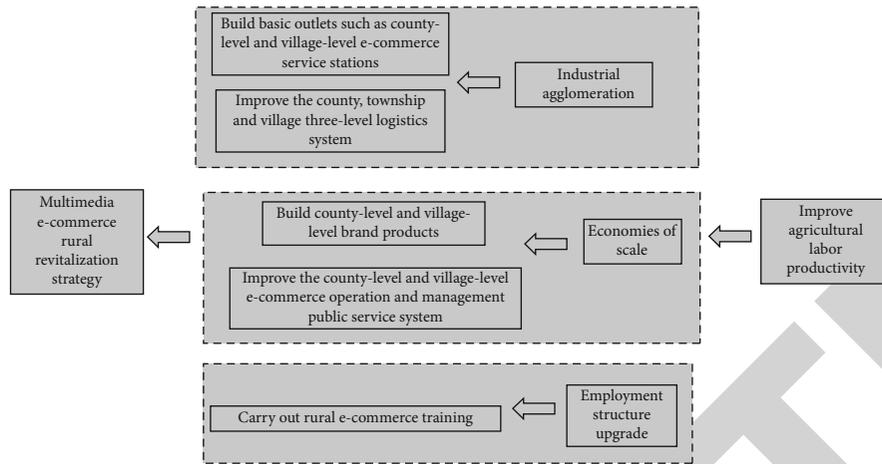


FIGURE 2: Flowchart of rural upgrading of multimedia e-commerce.

in July 2014. As of 2018, a total of 1,010 counties benefit from this policy [24].

2. Multimedia Technology and Development Status

2.1. Multimedia Technology Concept. Multimedia technology is a technology that comprehensively processes media information corresponding to logically related content expressed in various forms such as text, graphics, sound, pictures, and videos for users. In other words, multimedia is also based on computer interactive synthesis technology and digital communication network technology to process a variety of media information such as text, graphics, video, and audio. Before the popularization of computers in 1950, the growth rate of human society was doubling every 150 years. Later, with the popularization of computers, the growth rate of world information doubled every 10 years from 1950 to 1960 as shown in Figure 3. As shown in Figure 4, the period from 1960 to 1992 was shortened to doubling every five years. However, the amount of information in the new era has exploded, and it is expected that after 2020, the amount of information will double at a rate of doubling every 73 days, as shown in Figure 5.

In this regard, under the high pressure of large transmission volume, the contradiction between multimedia means and today's network transmission environment is becoming more and more prominent. Multimedia technology is integrated. The integration of multimedia technology is multimedia information integration and multimedia equipment integration. Different from a pen, a book, and a piece of music in reality, multimedia technology combines these elements together to reflect, which greatly enriches people's lives in today's society. People are already dissatisfied with reading materials in the library and in one place, but they can be consulted through multiple technologies, which greatly improves people's quality of life and saves time. Now with multimedia, people only need to query on the multimedia through voice or text according to their own needs, which reduces people's costs. The art of interactive operation. The 21st century is the century of multimedia

development. People got rid of the era of messenger pigeons, legs to walk, and cash to pay. With the continuous improvement and innovation of computer technology, it has become a fact that scholars can know thousands of miles without going out. As long as there is a computer that can be connected to the Internet, all kinds of knowledge, all kinds of videos, and all kinds of things on the Internet can be obtained through the Internet. Knowledge makes people's lives more flexible. Multimedia is a kind of human-machine interactive communication media that integrates two or more media. Among them, the media includes words, images, sounds, and animations. Various media have different forms, but they all exist in the form of numbers, that is, the binary of the computer. Combined with the development of current body technology, its main multimedia data processing technology, such as interactive, image, audio signal, and processing, also includes compression and encoding and reality and other aspects. The problems faced in the development of multimedia, with the development of human society and the continuous popularization of the Internet, computers are also undergoing a networked revolution.

2.2. The Booming Development of Multimedia Technology. In the new era, with the continuous development of society, the world is moving towards an era of networking, digitization, and global integration. Information technology will permeate every aspect of human society development, especially multimedia technology, which is the key technology to promote the development of various fields. Generally speaking, the communication network represented by the Internet contains a variety of multimedia services, which in turn can provide more comprehensive and comprehensive services for the development of society in the new era. Through information sharing and communication, while improving overall work efficiency, a highly collaborative work environment is created. And this is not only the concentrated expression of multimedia technology, the fastest growing and most active technology in today's information technology field, but also the way to create and exert social and economic value. The development of fast information meeting

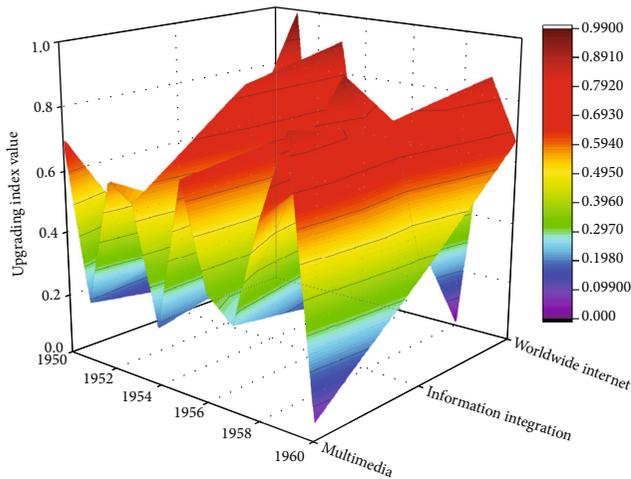


FIGURE 3: Changes in multimedia usage information during 1950-1960.

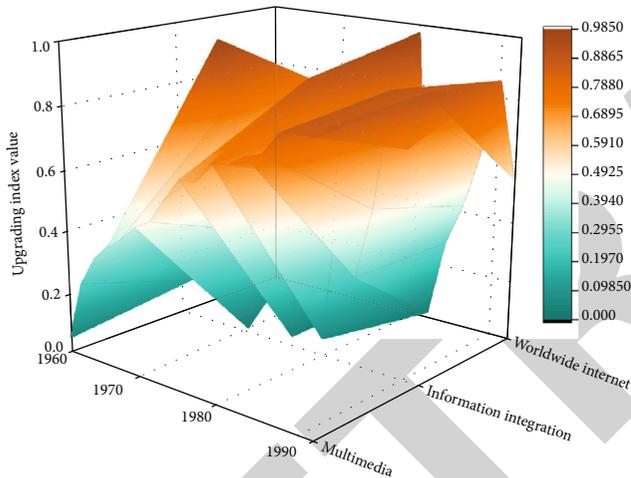


FIGURE 4: Changes in multimedia usage information during 1960-1992.

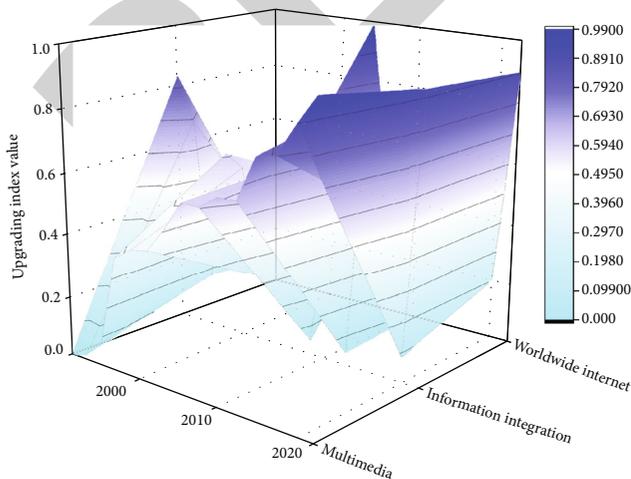


FIGURE 5: Changes in multimedia usage information from 1992 to 2020.

multimedia technology is not only the need and necessity of the development of the information age. Based on the integration, interaction, and real-time potential characteristics of multitechnology, the way for people to obtain information is more and more convenient, and the process of obtaining information is more humanized.

In addition, under the rapid development and vigorous promotion of computer technology, multimedia technology has the ability to process text, audio, and video. In addition, various developments including information storage and compression have made multimedia technology more diversified. Multitechnology has penetrated into the field of subject rural education, national economic construction, and people's cultural life and is changing people's lives subtly. Of course, this is inseparable from the practical application and innovation of multimedia. For example, it includes tools for electronic publishing of multimedia works, digitization of libraries and synchronization of multimedia, and hypermedia texts. For another example, the retrieval based on the body database, etc., in order to better serve people to obtain information and obtain knowledge, it is convenient and supported. In the new era, with the rapid development of computers, the multimedia foundation based on the computer-based foundation plays an important role in human production and life and plays an important role at the same time. For example, the application of physical technology in the field of rural education telecommunications, on the one hand, has a great impact on traditional e-commerce and on the other hand has greatly affected and improved e-commerce and its effects. Teachers can integrate audio, video, and text into rural classroom e-commerce based on electronic content and needs, so as to better create good electronic scenarios for teachers, improve the electronic efficiency of scenarios, enhance students' understanding and mastery, stimulate learning interest, and achieve overall electronic performance improvement. In addition, multimedia technology is widely used in medical, engineering, communication, and many other fields and has achieved remarkable application results.

2.3. Status Quo of Multimedia Technology Application. The application of multimedia technology in communication, under the current development status, the application of multimedia technology in communication is still extensive. Communication is mainly to transmit emotions, information, and appeals to another person or another place. In ancient times, there was a saying that flying pigeons passed down books and family letters arrived at a million gold. When multimedia technology was initially developed, telegrams were still used for instant communication, charged a thousand dollars per word. Then, in today's development of multimedia technology, there are more and more communication devices and communication methods. Except for the earliest ones, which are based on people's different needs, with voice, when people are dissatisfied with voice communication, there is a frequency. Meet and chat instantly. In my country, the continuous reform and innovation of the existing instant messaging technology can basically meet people's needs. Figure 6 shows the application

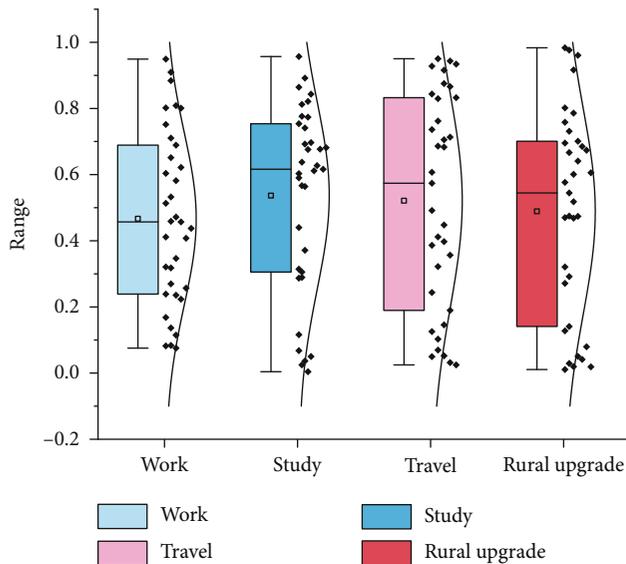


FIGURE 6: The application status of multimedia technology in various industries from 2000 to 2010.

status of multimedia technology in various industries from 2000 to 2010. Multimedia technology combines text, pictures, audio, and other technologies to show the final result in front of people so that people can enjoy the experience of multimedia technology.

We can also share your current situation with friends and family by posting on your Moments. Figure 7 shows the application status of multimedia technology in various industries from 2010 to 2020. In particular, with the development of 5G network, the speed of the network will be faster and the technology will be more perfect, which will greatly improve people's quality of life. Applications in the multimedia technology industry, computer multimedia has also played a significant role in industrial development. Technology is the primary productive force, and this sentence is also practical in industry. To develop the social economy, we must develop the industrial economy. During the epidemic in 2020, factories could not find people, job seekers could not go out to work at home, and some jobs were stagnant, bringing an irreversible status quo for both factories and workers. So now under the multimedia technology, job seekers can find jobs without staying home, through the prevalence of Internet technology, job seekers can work on the Internet, and rural enterprises can use physical technology to hold meetings with their staff on the Internet. On the one hand, it can save rural expenses, and on the other hand, it can improve work efficiency and save manpower. The application of multimedia in rural education, in the traditional e-commerce, the books of the rulers only conveyed the culture to the villagers.

Now, with the continuous development of multimedia technology, the content of e-commerce on the Internet can also be used in the daily e-commerce of the rulers. Now, more and more rulers pass on cultural knowledge to the villagers through multimedia technology, which can not only reduce the problem of teaching blackboard writing but also

enrich the villagers' wildness and interest. It is customary that interest is the foundation of learning, and only if the interest in learning is improved, the academic performance of the villagers will be improved. At the same time, this multitechnology can also realize knowledge sharing and remote e-commerce between rulers and villagers. During the epidemic in 2020, some companies cannot start school on time, and the rulers can conduct e-commerce in the form of classes. This kind of online e-commerce reduces the contact between people, controls the spread of the epidemic, and will not delay learning of the villagers. It is also convenient for the villagers to learn by themselves after the village hall. For example, the whole class can be called into a group, the class schedule is taught at the specified time, and the ruler can share the screen through the method and show his voice and electronic interface to the villagers; the villagers can also take a screenshot of the operation interface and feedback to the teacher in real time, to achieve real-time text, sound, and image interaction.

3. e-Commerce Promotes Rural Upgrading

In the context of rural revitalization, the development of e-commerce is the top priority. The development of e-commerce directly affects the development of new consumption. In fact, the development of electronics not only requires professional technology and strict professional ethics but also requires a lot of financial support. If even the funds managed by the big data platform cannot operate normally, it will be difficult to improve the professional quality of the relevant personnel and even more difficult to promote the construction of the electricity service platform. This paper briefly expounds some problems existing in the implementation of e-commerce to help farmers and poverty alleviation, in the hope of benefiting the development of the work.

3.1. Factors Influencing the Promotion of Rural Upgrading by Multimedia e-Commerce. In today's society, people put forward higher requirements for the accuracy of e-commerce technology. At present, various e-commerce technologies in our country have obviously failed to achieve this goal. My country's rural development is still in the late stage, lack of effective integration of resources to develop e-commerce, leading to difficulties in the development of rural electricity, which is very unfavorable to the development of our country. The establishment of an informatization model of e-commerce development can not only ensure the smooth progress of e-commerce work but also support and cooperate with a large number of e-commerce personnel. Therefore, as a key factor restricting e-commerce in my country, the focus will be on the establishment of an e-commerce development model, superior. The development of e-commerce requires money, especially in the early stage of development, which requires investment. The promotion of e-commerce is a long-term process, which requires the continuous efforts of relevant departments and sufficient capital investment. In the stage of e-commerce development, there may be some necessary business outsourcing or direct

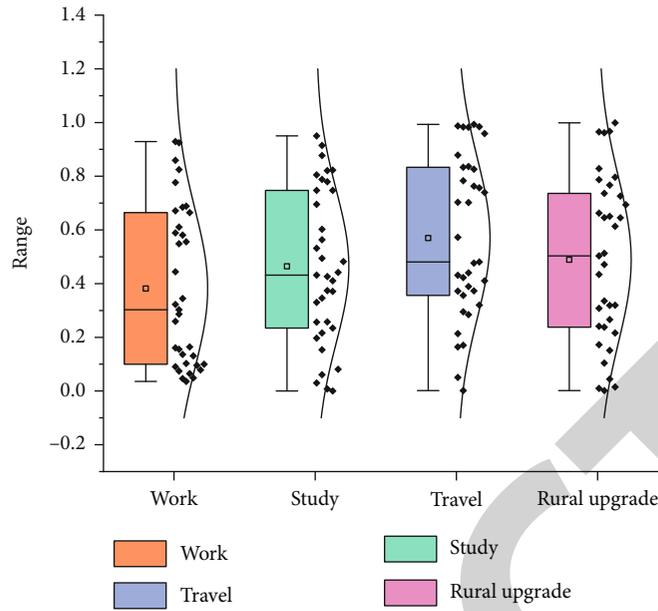


FIGURE 7: The application status of multimedia technology in various industries from 2010 to 2020.

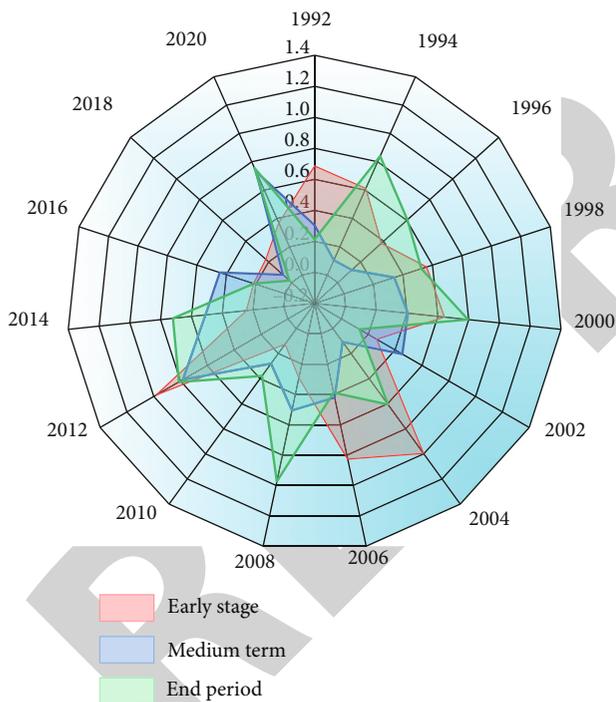


FIGURE 8: The amount of funds required for each stage of e-commerce development.

purchase of professional equipment. Figure 8 shows the amount of funds required for each stage of e-commerce development.

Either way, it requires a lot of money. The follow-up maintenance work of intelligent equipment must also be completed by specialized technical personnel, resulting in higher cost of informatization construction of village enterprises. In order to better develop and promote, there must

be sufficient funds. Therefore, government funding has played a decisive role in the development of e-commerce. With the continuous development of Internet technology, the development of e-commerce will be more and more. The biggest trend of information technology is to be able to store all kinds of information in the database and to have a certain database to check the data in the database at any time and to easily restart the related e-commerce. For example, when we use information technology to understand the agricultural infrastructure of a village, consult a large number of documents, or obtain the required information through inquiry, we will improve work efficiency and quality when applying e-commerce.

3.2. Multimedia e-Commerce Promotes Rural Upgrading Path. At present, rural revitalization and poverty alleviation have become a key goal of government work at all levels, and how to achieve this goal with the help of the development of e-commerce platforms is the key. Efforts should be made to use and promote the e-commerce platform from both the social and national levels. From a social point of view, it is necessary to increase the publicity of the construction of rural platforms and increase the application of agricultural business in rural promotion; in the whole area, it is necessary to guide the construction of subbusiness platforms of relevant departments to be placed in the strategic position of rural revitalization and development. The government can also spend cents to do a good job in network infrastructure. At the same time, local governments should increase the use of e-commerce platforms, and regular meetings will elevate the application of e-commerce to a strategic level so that e-commerce can better develop in rural areas. On the basis of meeting the requirements of the poverty alleviation strategy, the planning of e-commerce is an important measure to develop e-commerce in the context of rural revitalization. In the process of developing e-commerce, the spirit of careful

planning should also be reflected. In e-commerce, technology investment can be added in many ways. But now it seems that this technique has not attracted the attention of the relevant departments. This has become an important factor for the efficient development of e-commerce in my country, and it must be dealt with in the future. We do a lot of research to find better business development rules and apply them in real-world construction. At present, the electronic business in our country is still very short, and it is urgent to strengthen the training of technicians in the field.

Only with a reasonable talent team, the industry will grow bigger and more people can benefit from it. At the same time, the addition of this talent will further purify the entire e-commerce circle and improve the cohesion of the industry. At present, from all perspectives, government departments have not played a sufficient guiding role in the business model of rural areas. Compared with its strategic importance, e-commerce has less investment in custody. Due to the lack of attention to supervision in our country for a long time, the support that electronics can get is far from meeting the needs of its development. Therefore, although there is demand, the situation of e-commerce is not very good. Only the management loopholes, the e-commerce will be more perfect. The state and society pay enough attention to provide funds for e-commerce work. Specifically, it is the first time to recruit professional village revitalization practitioners and set up professional agricultural revitalization application institutions. Secondly, according to the specific situation, formulate the actual development strategy that suits you. On this basis, it is necessary to carry out the application of e-commerce according to the original plan and make corresponding adjustments according to the actual situation in a timely manner so that each farmer can smoothly improve his production level and transmit the latest technological developments to farmers. Friends, motivate them to use e-commerce technology.

4. Research Hypotheses and Theoretical Analysis Models

4.1. Model Study Assumptions. By sorting out the demonstration counties covered by the comprehensive demonstration county policy of e-commerce villages and drawing on Tang Yue's research, this paper divides the policy support fund flow of the demonstration counties into the following five aspects: one is the infrastructure construction of service sites, township and village three-level logistics system, the third is to cultivate brand products, the fourth is to improve the operation and management of the public service system, and the fifth is to carry out rural electronic training. This paper believes that the flow of the policy support will promote the improvement of agricultural labor production through the following channels. Industrial agglomeration, the development of electronic business activities in rural areas is in stages: the first stage is when people open stores; the second stage is the increase of farmers who imitate electricity business operations; the third stage is to imitate and start innovation to ensure their income The fourth stage is

differentiated management, covering the upstream and downstream of business, forming a village electricity ecosystem; i.e., the main task of the rural electric service site infrastructure construction logistic system investment in the model county policy is to build a county-level e-commerce industry incubator, an e-commerce service network, and a county, township, and village three-level system. The purpose is to help farmers and villages to link industries and create a shared industrial chain. With the large-scale influence of rural commerce, the industrial agglomeration generated by the e-commerce policy should form a market network with agricultural products as the core of upstream and downstream industries and bring about an increase in regulated remuneration from farmers. In terms of cost, industrial clusters reduce logistics costs, and farmers share public infrastructure for skilled labor, which reduces farmers' production costs and improves farmers' dynamic productivity, economies of scale. In the county policy, the brand cultivates each demonstration county to create characteristic products and helps the products to be promoted offline through the operation service system. The formation of the brand is the embodiment of the core competition. The economic benefits brought by brand promotion will prompt farmers to change their planting structure and produce branded products on a large scale, forming an internal model economy brought about by the reconfiguration of land production. In addition, the expansion of land scale is conducive to the promotion of modernized production, which can generate profits while liberating a large number of laborers, thereby improving the scale benefit of single-person land economy and improving productivity. As shown in Figure 9, the policy of e-commerce entering rural comprehensive demonstration counties changes with years through three mechanisms: industrial agglomeration effect, economies of scale, and employment structure upgrading and adjustment. In terms of production cost, the data in Figure 9 adopts the batch mining of data and the sharing of agricultural model production methods to reduce agricultural production costs and improve land productivity and agricultural productivity. The upgrading of the employment structure means that the surplus training enables farmers to master business skills through the popularization of e-commerce knowledge and agricultural power skills training, and the reporting rate of entering the primary industry is higher than that of the secondary and tertiary industries. As mentioned above, expanding the scale of private land operations can increase industrial labor productivity, and the realization of economies of scale is essentially the transfer of rural surplus labor. The introduction of e-commerce into rural comprehensive demonstration counties has practical significance for improving agricultural labor productivity.

4.2. Model Design and Data Interpretation. This paper introduces e-commerce policies into rural demonstration counties as a quasinalatural experiment to determine the causal effects of e-commerce policies on labor productivity. Based on the multiperiod difference research method, this paper takes the e-commerce demonstration area as the

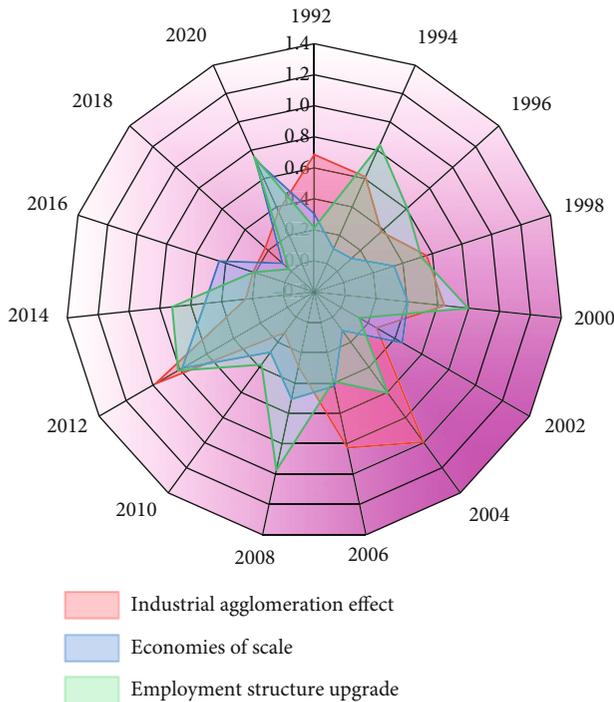


FIGURE 9: Trends of the three mechanisms over time.

treatment group and the unselected areas as the control group, which is the county pseudovariate. In addition, the paper needs to construct the time dummy variable post, that is, post, before the sample is selected and after the sample is selected. Explanatory variables are agricultural labor. This paper defines agricultural labor productivity as the quantity or output value produced by agricultural laborers per unit time. Referring to this method, this variable is a core variable derived from the ratio of the GDP of the primary industry to the labor force of the primary industry in each region every year. The influence of e-commerce policy in rural comprehensive demonstration counties on agricultural labor productivity. In order to exclude the interference of missing variables on the core variables, the control variable set Z is added in this paper, which specifically includes the level of agricultural technology, technical efficiency, and technological progress that will affect agricultural labor productivity; therefore, this paper draws on human capital, the quality of labor force engaged in agriculture will affect agricultural labor productivity; this paper refers approximates the replacement of agricultural human capital by the number of villagers among school students.

In addition, due to the different levels of economic development in each county, in order to exclude other external factors that affect agricultural labor productivity, this paper will further introduce the following control variables, as shown in Figure 10, mainly including fiscal revenue, fiscal expenditure. The output value of the primary industry and the proportion of GDP are measured; the advanced industrial structure is measured by the ratio of the output value of the tertiary industry to the output value of the secondary industry; the level of ICT network infrastructure is measured by the number of fixed-line telephone users with reference to

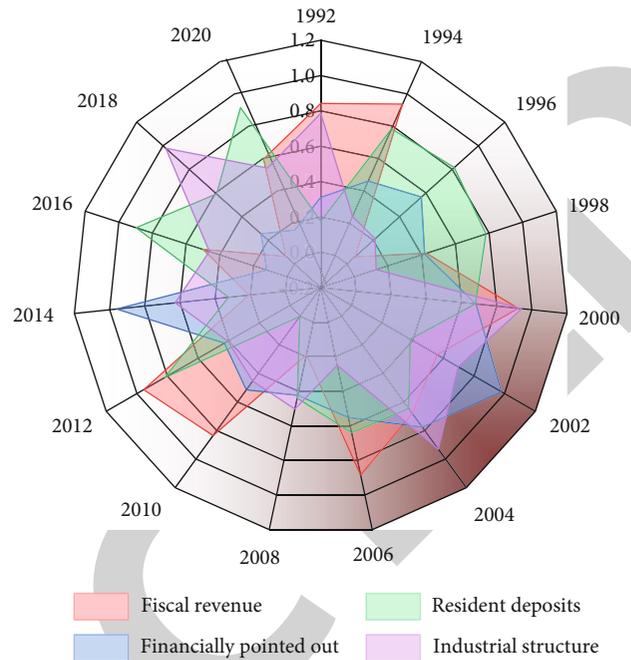


FIGURE 10: Four control variables as a function of time.

the method. Other policy variables, in order to exclude other policy effects by mistake, this paper controls other related policy variables: dummy variables of information entry into villages and households project policy. If the area becomes a pilot household of information entering the village after year t , $INF = 1$; otherwise, it is 0. In addition, the above variables are dealt with as follows. First, excluding the influence of inflation, taking 2010 as the base period, the county's GDP, the added value of the primary, secondary and tertiary industries, fiscal revenue, fiscal expenditure, and residents' deposits are divided by each year. The second is to take the logarithm of the explained variable and the control variable; the third is to consider the counties, cities, and districts renamed during the research period as the same research object.

5. Conclusion

After establishing a multimodal multimedia information-driven model and analyzing the path of e-commerce platforms to promote the upgrading of beautiful villages, the conclusions of this paper are as follows.

- (1) The state and society should attach importance to providing special funds for e-commerce. First of all, it is necessary to recruit professional practitioners in rural revitalization and establish a professional application agency for rural revitalization. According to local conditions, formulate a rural development strategy suitable for one's actual situation. The application of e-commerce should be carried out smoothly according to the original plan, and corresponding adjustments should be made in a timely manner according to the actual situation to ensure

that each farmer can smoothly improve the production level

- (2) e-commerce often depends on whether there is negligence in formulating development plans and whether there are mistakes in implementing development plans. In order to speed up the development of e-commerce, it is necessary to strictly optimize network technology, ensure the accuracy of data, and ensure the normal operation of the entire management system. The development of e-commerce has a lot to do with the ability of the management team. Some effective measures should be taken to reduce the negligence of team members and cause bad influence. In order to ensure the stable development of rural enterprises, it is necessary to strengthen the training of rural enterprise managers. It is necessary to calculate how to expand e-commerce according to the needs, in order to better solve the problems in development and make the development of e-commerce more effective

Data Availability

The dataset used in this paper is available from the corresponding author upon request.

Conflicts of Interest

The authors declared that they have no conflicts of interest regarding this work.

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References

- [1] Z. W. Abas and H. M. Khalid, "Achieving pedagogical richness to meet the needs of ODL learners," in *International Conference on Teaching and Learning*, p. 161, Hong Kong, PEOPLES R CHINA, 2008.
- [2] C. Anderson, T. Henner, and J. Burkey, "Tablet computers in support of rural and frontier clinical practice," *International Journal of Medical Informatics*, vol. 82, no. 11, pp. 1046–1058, 2013.
- [3] M. Broudo and C. Walsh, "MEDICOL: online learning in medicine and dentistry," *Academic Medicine : Journal of the Association of American Medical Colleges*, vol. 77, no. 9, pp. 926–927, 2002.
- [4] S. Chaisanit, N. S. Hongthong, S. Suksakulchai, and C. Pinpat, "Traditional musical virtual reality on M-learning," in *7th International Conference for Internet Technology and Secured Transactions (ICITST)*, pp. 271–274, London, UK, December 2012.
- [5] J. A. Lampietti, S. Michaels, N. Magnan, A. F. McCalla, M. Saade, and N. Khouri, "A strategic framework for improving food security in Arab countries," *Food Security*, vol. 3, no. S1, pp. 7–S22, 2011.
- [6] S. Hariri, W. Wang, S. Y. Park, and H. Janelli, "Rural Educational System Network (RESNET): design and deployment," in *Workshop on Wide Area Networks and High Performance Computing*, G. Cooperman, E. Jessen, and G. Michler, Eds., pp. 151–160, Springer, London, 1999.
- [7] K. Komala, M. Z. Kurian, and A. S. Shivannavar, "Real time access & control of ECG signals using lab view based web browser," in *3rd International Conference on Anti-Counterfeiting, Security, and Identification in Communication*, p. 406, Hong Kong, Peoples R China, 2009.
- [8] S. Loncaric, E. Pek, M. Silvoic, and A. Margan, "Virtual polyclinic," in *International Conference on Emerging Technologies and Life Sciences - Medicine and Communication (MEDICOM 2000)*, pp. 151–161, Remagen, Germany, 2001.
- [9] L. Ludwig, "Collaboration in the information age: the future of multimedia messaging in healthcare," in *Proceedings Pacific Medical Technology Symposium-PACMEDTek. Transcending Time, Distance and Structural Barriers*, pp. 285–292, Honolulu, HI, USA, August 1998.
- [10] P. Ma, W. Zhao, Z. Hu, and F. Duan, "Three-dimensional display component for rural folk-custom tourism," in *18th International Conference on Geoinformatics*, Beijing, China, June 2010.
- [11] H. H. Oz, "Synchronous distance interactive classroom conferencing," *Teaching and Learning in Medicine*, vol. 17, no. 3, pp. 269–273, 2005.
- [12] M. Alem and J. Jorge Elias, "Allocating production risks through credit cum insurance contracts: the design and implementation of a fund for small cotton growers to access market finance," *International Food and Agribusiness Management Review*, vol. 21, no. 2, pp. 237–248, 2018.
- [13] E. Pallis, C. Mantakas, G. Mastorakis, A. Kourtis, and V. Zacharopoulos, "Digital switchover in UHF: the ATHENA concept for broadband access," *European Transactions on Telecommunications*, vol. 17, no. 2, pp. 175–182, 2006.
- [14] G. Quade, J. Novotny, B. Burde, F. May, L. E. J. Beck, and A. Goldschmidt, "World-wide telemedicine services based on distributed multimedia electronic patient records by using the second generation web server Hyperwave," *Journal of the American Medical Informatics Association*, vol. 75, pp. 916–920, 1999.
- [15] H. Rahman, S. M. Rahman, and M. S. Alam, "Interactive multimedia technology for distance education in Bangladesh Open University (BOU)," in *15th International Conference on Computers and Their Applications*, pp. 76–79, New Orleans, La, 2000.
- [16] H. Junghwan, "Herd behavior in the Bangladeshi loan market," *International Area Studies Review*, vol. 22, no. 1, pp. 123–140, 2018.
- [17] C. M. Simon, H. A. Scharzt, G. E. Rosenthal, E. L. Eisenstein, and D. W. Klein, "Perspectives on electronic informed consent from patients underrepresented in research in the United States: a focus group study," *Journal of Empirical Research on Human Research Ethics*, vol. 13, no. 4, pp. 338–348, 2018.

- [18] F. Ascui and T. F. Cojoianu, "Implementing natural capital credit risk assessment in agricultural lending," *Business Strategy and the Environment*, vol. 28, no. 6, pp. 1234–1249, 2019.
- [19] R. J. Stusser Beltranena, M. J. Albert Cabrera, A. Rodríguez Díaz, S. Echevarría Toledo, R. I. González Fernández, and A. C. Álvarez, "Proyecto Vedado: salud-electrónica en la atención primaria de salud. Diseño y resultados iniciales," *Revista Cubana de Medicina General Integral*, vol. 22, no. 4, 2006.
- [20] A. Sultana and I. Sultana, "E-School: a web-service oriented resource based E-learning system," in *International Conference on Networking and Information Technology (ICNIT)*, pp. 415–419, Manila, Philippines, June 2010.
- [21] M. A. Sweeney and D. Skiba, "Combining telecommunications and interactive multimedia health information on the electronic superhighway," *Medinfo. Medinfo*, vol. 8, no. 2, pp. 1524–1527, 1995.
- [22] J. Wang, D. E. H. Tigelaar, and W. Admiraal, "Connecting rural schools to quality education: rural teachers' use of digital educational resources," *Computers in Human Behavior*, vol. 101, pp. 68–76, 2019.
- [23] S. Zink, H. Hahn, J. Rudnick, J. Snell, and D. Forslund, "Rural telemedicine project in northern," in *Proceedings Pacific Medical Technology Symposium-PACMEDTek. Transcending Time, Distance and Structural Barriers*, pp. 119–124, Honolulu, HI, USA, August 1998.
- [24] H. Joo, "The effectiveness of a multimedia electronic textbook for elementary school students," *Multimedia-Assisted Language Learning*, vol. 12, no. 1, pp. 9–33, 2009.