

Mechanisms and Pathways for Advancing Rural Revitalization: A Theoretically Grounded Analysis

Xiaoqing Wang

North China University of Science and Technology, Tangshan 063210, Hebei, China

Abstract: Rural revitalization represents both a critical strategy for addressing challenges related to agriculture, rural areas, and farmers, and the overarching objective of poverty alleviation efforts. In the contemporary context, various forms of digital technology are increasingly being integrated into rural development, thereby consolidating poverty alleviation outcomes and providing a robust technological foundation for rural revitalization. Within this process, digital technologies play a pivotal role in facilitating the realization of rural revitalization goals. Against this backdrop, this study focuses on digital technology as the central object of inquiry, with particular emphasis on examining the underlying mechanisms and implementation pathways through which digital technology empowers rural revitalization. Specifically, this paper develops a Cost-Benefit Optimization Model for cascade reservoirs to identify the most economically viable site selection schemes. Furthermore, the Simplified Triangle Method for Flood Routing is employed to estimate the maximum and minimum discharge capacity of each dam, thereby informing the formulation of differentiated management strategies tailored to specific months and locations for the Zambezi River Authority (ZRA).

Keywords: Digital Technology; Rural Revitalization; Agricultural and Rural Development.

1. INTRODUCTION

The emergence of digital technology provides a more convenient way for the development of various industries and fields. In promoting the village in the process of the revitalization of the goal, represented by big data and cloud computing, digital technology can not only for agriculture and rural areas provides a new way of agricultural development, it also attracts more capital city and into the rural development of processing industry, therefore, the digital technology can assign path is analyzed, and the mechanism of rural revitalization It can provide some ideas for promoting the development of rural economy. June 2015, a report by the Institute of Risk Management of South Africa included a warning that the Kariba dam is in jeopardy of collapsing. Kariba Dam, one of the largest reservoirs in the world, straddling the border between Zambia and Zimbabwe, nourishes and protects more than 31 billion people along the Zambezi River and supplies nearly half the nations' electricity with its number of 6,400 GWh. 2015, water levels at Kariba Dam dropped to 12% of the capacity. Its base eroded by water streams, which not jeopardize more than 3 billion people's lives, but reduce 40% energy generation in the area of South Africa [1]. To be more specific, levels fell to 477.25 meters above sea level from 482.83 meters a year earlier, causing a 49% hike in electricity prices [2]. In order to prevent the worsening of levels drop, protect people from dangerous, and recover or enhance its capacity of power generation, three options had been proposed: 1) Repairing the existing Kariba Dam, 2) Rebuilding the existing Kariba Dam, 3) Removing the Kariba Dam and replacing it with a series of ten to twenty smaller dams along the Zambezi River. The aim of first two options is to recover the capacity of dam, and the third one is raised by the purpose of larger energy generation and additional buffers even there is an extreme condition. IRMSA and the World Bank had given a budget of first two options, and the third one is estimated by cost-benefit optimization model of cascade reservoirs. According to the costs and benefits analysis as well as risks and opportunities analysis, the ability to fund- raising should be given the priority.

Our task is to provide a detailed analysis of Option 3). This new system of dams should have the same overall water management capabilities as the existing Kariba Dam. Our analysis supports a recommendation as to the number and placement of the new dams along the Zambezi River. What's more, we developed a strategy for modulating the water flow through our new multiple dam system that provides a reasonable balance between safety and costs. In addition to addressing known or predicted normal water cycles, we provided guidance for extreme water that explains and justifies the actions that should be taken to properly handle emergency water flow situations. Our recommended strategy includes information the locations and lengths of time that different areas of the Zambezi River should be exposed to the most detrimental effects of the extreme conditions.

2. DIGITAL TECHNOLOGY ENFORCES THE IMPORTANCE OF RURAL REVITALIZATION

Digital is the main goal of the current urban construction development, not only for the country's economic development will also be able to play a leading role effectively, is a can in a shorter period of time to obtain a higher effect of the development of technology, and the application of digital technology itself is a means of conform to the development of modern social development trend, the digital technology should play the role of a bridge, It plays an important role in promoting the docking development of urban and rural industries. the Party and the state have always attached great importance to the development of agriculture and rural areas. Numerous policies to promote rural revitalization and development planning have provided policy support for rural revitalization empowered by digital technology [1]. the application of digital technology can not only drive the industrial and economic development of rural areas, but also drive the revitalization of rural culture with the help of the Internet and information technology platform.

Digital technology can effectively integrate with rural culture and expand the influence of rural culture in the application of digital technology. While tapping the potential of rural culture, rural culture can also provide inspiration for building characteristic brands of rural development. In the process of development, farmers can also gradually change their way of thinking, thus laying a good ideological foundation for promoting the development of rural areas.

2.1 Connotation Analysis of High Quality in Wushu Culture Industry

The Central Economic Work Conference held at the end of December 2017 pointed out that "Socialism with Chinese characteristics has entered a new era, and So has China's economic development. The basic feature is that China's economy has shifted from a stage of rapid growth to a stage of high-quality development." On September 2, 2019, the General Office of the State Council issued the Outline for Building a Strong Sports Country, which makes it clear that the sports industry will become the pillar industry of China's national economy by 2035. From the perspective of practice, the connotation of high-quality development of the sports industry should be clarified in order to promote its high-quality development. The report of the 19th CPC National Congress pointed out that high-quality development means the economic development of providing high-quality products and services to the whole society in a sustainable and fair way of efficient and cost-effective production. In the specific economic form is a high quality, high efficiency, high stability of the supply system. About martial arts culture industry development of high quality connotation is to point to in under the guidance of new development concept, realize high-level wushu culture industrial structure, efficiency, optimization and organic unification, to maximize the value of it is the martial arts culture industry effectiveness, adequacy, coordination, innovative, persistent, share and stability of integrated, is factors of production input is low, the resource allocation efficiency high, resources and environment of low cost and good economic and social benefits of the latter[3]. Therefore, the high-quality development of wushu culture industry is based on supply-side structural reform, systematization and unity, and expansion and quality improvement.

2.2 The Era Mission and Opportunity of the Development of Wushu Culture Industry

In 2017, General Office of the CPC Central Committee and General Office of the State Council issued the Opinions on Implementing the Project of Inheriting and Developing China's Fine Traditional Culture, which pointed out that we should vigorously develop traditional culture, build a strong socialist culture country, enhance the country's cultural soft power, and realize the Chinese dream of the great rejuvenation of the Chinese nation[4]. In his many speeches, General Secretary Xi Jinping has emphasized that "the exploration and interpretation of the rich philosophical thoughts of China's fine traditional culture will provide useful inspirations for people to understand and transform the world, and enable the fine traditional culture of China to benefit mankind together with the fine cultures of other countries." In the face of the strong dissemination and monopoly of western sports culture, under the background of the construction of sports power, wushu has the responsibility to build the national image on the national position, inherit and carry forward the excellent traditional Chinese culture, and enhance the international competitiveness of Chinese culture [5]. To define the development of Chinese martial arts culture industry in the context of the great project of building a "sports power" should also undertake the mission of The Times. Chinese people consciously issued the call of "sports power", can hear the martial arts phoenix nirvana, after the resounding response. Just as Lao Tzu said, "A tree that is embraced is born in a millimeter. A nine-storied tower, rising from the earth; A journey of a thousand miles begins with the first step."

2.3 The Advantageous Conditions for the High-Quality Development of Chinese Wushu Culture Industry

In today's cultural world, China's 5000 years of continuous civilization and its rich martial arts cultural heritage and distinctive martial arts customs and culture have more economic development value, and this cultural element with Chinese characteristics has enhanced the international competitiveness of China's sports culture industry. China's "One Belt And One Road" initiative, martial arts as a pioneering sports culture is becoming international, tai chi, wing chun and other kung fu are more and more popular with foreign friends. Since the 17th National Congress of the CPC, the CPC Central Committee and the State Council have attached great importance to the development of cultural industry. In 2014, the General Office of the State Council issued the Guiding Opinions on Accelerating the Development of Sports Culture Industry, indicating that the development of sports industry has been elevated to the level of national strategy. Relevant policies and opinions have been issued successively, providing support and guarantee for the development of sports events such as wushu. With the change of the public's concept of sports and the development trend of sports globalization, the improvement of per capita income level promotes the transformation of sports consumption market. Wushu consumption has changed from sports clothing and equipment to wushu events, wushu tourism, film and television appreciation and other diversified consumption trends, showing the transformation from physical consumption to spiritual consumption[6]. The market is determined by the size of the consumption population. China has a population of 1.4 billion, and overseas Chinese compatriots and other countries love Chinese martial arts enthusiasts, pregnant with a huge potential consumer group. Wushu, as the name card of China's Oriental sports, has gone to the world. No matter it is martial arts training, cultural exchange meeting, film and television and other media are in full swing, which adds new potential to the development of wushu culture industry. As China's national strength increases and its status in the world improves, the profound martial arts culture will be more attractive both at home and abroad, and the development prospect of the industry will be very broad.

3. MECHANISM AND PATH ANALYSIS OF DIGITAL TECHNOLOGY ENABLING RURAL REVITALIZATION

In recent years, with the implementation of the rural revitalization strategy, various regions have achieved certain results in the process of assisting rural revitalization with digital technology. However, it is also necessary to realize that our country's agriculture is based on a wide range of rural areas, and there are certain differences in the economic development of different rural areas, and many rural areas still have many difficulties and deficiencies in the process of development [2]. When analyzing the mechanism and path of digital technology enabling rural revitalization, we can mainly start from the following aspects:

3.1 Ecosystem within the Martial Arts Culture Industry

The ontology industry of Wushu, the department that produces or serves with its own characteristics, basically belongs to intangible non-entity products, such as professional league, performance industry, training industry, etc. Wushu related industries, that is, the departments that take wushu as important resources for production or service, are basically tangible physical products, such as wushu supplies, equipment, wushu clothing, etc. Wushu extension industry is basically an intangible product, namely the extension and criss-crossing industrial network of several industrial chains, such as Wushu tourism, Wushu film and television entertainment, Wushu news, Wushu brokerage, Wushu insurance, wushu finance, etc. Wushu fringe industry refers to the department that provides comprehensive services in order to better give play to the benefits of wushu ontology industry, such as providing accommodation, food, accommodation and souvenirs for wushu audiences to enjoy wushu performances and competitions. Wushu culture industry is an organic whole composed of core industry, related industry and peripheral industry. The development of the core industry is the leader of the whole wushu culture industry and can drive the development of related industry and peripheral industry. For example, martial arts professional league is the core industry of martial arts, and professionalism is a sign to measure the degree of industrialization. It involves athletes, clubs, advertisements, media, market operations, agents and so on, and constitutes the industrial chain of martial arts competitions. Wushu professional league can not only bring high ticket revenue, but also bring high advertising revenue, copyright fees, broadcasting fees and other indirect business opportunities, such as driving the development of catering, accommodation, finance and other services (Figure 1). Therefore, the wushu ontology industry can drive the development of its related industries and form an extended industrial ecological chain with the wushu ontology industry as the core. For example, the integration of wushu and tourism, wushu leisure tourism project, refers to the feeling brought by tourists through participating in wushu sports or experiencing wushu activities in the process of tourism, and is the penetration and enhancement of tourism industry and tourism activities by experience mode[8]. The wushu culture industry is a system composed of multi-level and

multi-type industries. Various elements in the industrial system interact with each other. The core industry and the extended industry drive other industries, and the related industries feed back the wushu ontology industry and promote its perfect development. From the correlation analysis of wushu industry, the degree of correlation between wushu culture industry and other industries represents its ecological correlation effect, that is, whether the development of wushu culture industry can drive the development of many other industrial sectors. According to this principle, the ontology industry in wushu industry has the characteristics of leading industry. The development of wushu culture industry must be carried out in the wushu industry chain. The driving force of the development of wushu industry lies not in other places, but in wushu itself. Therefore, the development of wushu industry should rely on the development of ontological industrial resources to promote the all-round development of wushu related industries and form a huge ecological chain of wushu industry.

3.2 Build a diversified collaborative mechanism

Rural revitalization is not a single industrial and economic development, but a comprehensive revitalization and development from political, economic, cultural, ecological and other perspectives. In this process, through the establishment of multiple collaborative mechanisms, digital technology is used to realize the work of multiple departments, to provide a more sound guarantee mechanism for rural revitalization. To be specific, it is necessary to carry out scientific overall planning and layout of rural areas, integrate digital technology into daily work and development planning of rural revitalization, and provide more scientific guidance for rural revitalization work by formulating a set of construction standards more in line with the actual situation of rural areas. Secondly, the introduction of preferential policies in all aspects to promote the important role of digital technology in all aspects of rural revitalization, and constantly promote the construction and development of rural digitization. Third, in the process of promoting rural revitalization, give full play to the leading role of party organizations, establish a management information platform for grassroots Party organizations, actively understand and absorb the masses' opinions and suggestions on development and governance, and promote the construction and development of digitalization.

3.3 Improve information facilities

Information facilities are an important prerequisite for the development of rural areas with the help of digital technology. the perfection of information facilities construction can meet the current needs of rural people to apply the network, so that farmers can improve the effect of digital technology in helping rural revitalization on the basis of constantly improving information literacy and level. Specifically, in order to improve the construction of information facilities, we need to attach importance to the construction of digital platforms. Digital platform is an important way to provide network services and resource sharing for rural people, which plays an important role in creating new forms of public services in rural areas. Secondly, in the process of promoting rural development, the digitalization of rural public resources and cultural resources should be constantly promoted, in the form of establishing databases, so that rural people can enjoy public resources and cultural resources, so as to better improve the cultural literacy and level of rural people. Third, starting from the county, township and village levels, through the construction of digital linkage mechanism, to meet the requirements of communication and flow between cities and villages in information, commerce, logistics and other aspects, so as to provide more convenient ways to promote the integrated development of urban and rural areas.

3.4 Pay attention to cultural inheritance and protection

Unique culture not only to the development of rural areas, the revitalization of brands characteristics plays an important role, but also to constantly improve in the process of the development of the country the cultural confidence of the masses, at the same time in the inheritance and protection of the foundations of village culture, also can through digital technology to promote rural cultural transformation toward a more modern, So that rural culture can better adapt to the development trend of modern society, and then effectively protect and inherit rural culture. To be specific, on the one hand, the modernization of rural culture can be achieved through new media. With the help of diversified media information platforms, rural culture can be presented to the public on the Internet in a form more consistent with modern media, and the popularity of rural culture can be continuously expanded depending on the network environment. On the other hand, from the perspective of folk arts, handicrafts, festivals and other INTANGIBLE cultural heritage projects owned by rural culture, we can strengthen the publicity of these intangible cultural heritage projects through innovative design, so as to lay a cultural foundation for rural revitalization and digital construction and development.

3.5 Promote industrial prosperity across the board

Industrial prosperity can effectively drive rural economic development. In essence, industrial economy is the most effective way to help rural revitalization. To achieve the strategic goal of rural revitalization, we also need to promote industrial prosperity in an all-round way. To be specific, on the one hand, it is necessary to select industries with market competitiveness that are in line with the actual situation of rural areas based on the differences of superior resources in different rural areas. On the other hand also need to attach importance to digital enterprise in promoting rural industry leading role in the development of economy, to a certain preferential policies to attract encourage digital enterprise sinking to the country, let between rural industry and digital enterprise can achieve a variety of ways of connectivity, in order to promote the development of rural industry economy, boost rural revitalization.

4. EXISTING PROBLEMS IN THE HIGH-QUALITY DEVELOPMENT OF WUSHU CULTURE INDUSTRY

4.1 The Internal Ecosystem of the Development of Wushu Culture Industry

Professionalism is an important symbol of the development of martial arts culture industry. Although competitions such as Wulin Congress, Wulin Wind, Kunlun Resolution and other competitions have been formed in the competition and performance market of professional martial arts in China, there is still a big gap in scale compared with professional football and basketball. At present, the social resources of professional martial arts are insufficient, the market development is not high, and the association and operation level between industries are low, so that the departments involved and the products used by each other are limited in the process of industrial operation at the core level[10]. Wushu training market is the cornerstone of wushu culture industry. In China, wushu training in Henan, Shandong, Hubei and other places with wushu traditions is in a good state of development, but more local Wushu training in China is in a sluggish state. The Development Plan of Wushu Industry proposes to promote the deep integration of wushu and tourism and encourage the development of wushu related tourism products. As an important part of the sports industry, wushu tourism can be integrated into tourism and enrich the tourism product system to meet people's growing needs for a better life. For example, shaolin wushu culture tourism in Henan province, Taiji culture tourism in Hubei Province, etc., and "Northwest Wushu style" in Lanzhou city are integrated with various resources to form an ecological industrial chain and realize the coordinated development of Wushu, culture and tourism. From the perspective of tourism development, the tourism market will move from sightseeing tour to experience tour mode. In the state of experience economy, people pay more attention to their own real feelings, which brings development potential to the integration of martial arts and tourism. However, at present, the integration of wushu and tourism is not sophisticated enough and the lack of experience is the problem we are facing. The development of the integration of wushu and tourism is still being explored[11]. Wushu culture industry contains a lot of content and has great market potential, but it has high requirements for specialization. Through the investigation, it is found that the structure of wushu cultural products in China is not coordinated, showing the characteristics of simplification. Moreover, the development of the derivative industry chain of the ontology industry is relatively weak, and the development intensity is not enough. From the perspective of the value chain of the industry, Wushu in China is still concentrated in the manufacturing process with low added value and low scientific and technological content[12], lack of brand effect, lack of pioneering and innovative spirit and predictability of products and markets.

4.2 The External Ecosystem of Wushu Cultural Industry Development

In recent years, the government has given policy support to the sports industry, and also pointed out the direction for the positioning and development of wushu industry. From the perspective of China's specific national conditions and the development status of wushu culture industry, it is still in its infancy on the whole. The related industries of Wushu culture and the extended industries of Wushu culture industry have a good development trend, but the development of wushu culture ontology industry is still in development. The market is the foundation of the industry. At present, China's national income is unbalanced, sports consumption shows the difference between urban and rural areas and the difference between the East and the West, which restrict the overall development of wushu industrialization. With the steady progress of China's economic construction, people's concept of sports consumption has also undergone a positive change, driving market demand, and initially laid a support system for the development of sports culture industry. However, the implementation of policies is not ideal in the process of operation, government policies have not been improved, policy implementation and other support systems need to be strengthened. Since China's entry into WTO, the increase of international exchanges has led to the soaking of

strong foreign sports culture, which will seize the market of China's sports industry and compete for the cake of wushu industry[13]. With the development of China's wushu industry, international exchanges will be more and more frequent, and Wushu promotion will be undertaken, which requires high-end wushu compound talents who not only understand the international rules, but also have research on the market. The lack of compound practitioners with martial arts background in the development of wushu culture industry hinders its nationalization to some extent.

5. CONCLUSION

To sum up, digital technology can provide a greater boost to the realization of the development goal of rural revitalization. To make digital technology in promoting economic development of rural industry play a more important role, not only need on the basis of digital technology, build multivariate coordination mechanism, to perfect rural existing information infrastructure construction, also need to be able to from the perspective of protection and inheritance rural culture, in full to the value of rural cultural resources and at the same time, We will give full play to the role of industrial prosperity in driving rural economic development.

REFERENCES

- [1] Yang Zhiping. the internal logic and realistic choice of digital empowerment for rural industry revitalization [J]. Journal of Hubei University of Economics (Humanities and Social Sciences edition), 202, 19(03):32-36.
- [2] Kong Suyan. Path selection of rural revitalization empowered by digital technology [J]. Cooperative Economics and Science and Technology, 2021, (22):30- 32.
- [3] Ding Shihua. Journal of Hubei University of Arts and Sciences. Digital culture governance empowers rural culture revitalization [J]. 2020(04).
- [4] Markowitz, Harry M:Portfolio Selection. The Journal of Finance, Vol.7 (1952) No.1,p. 77-91.
- [5] Sharpe, William F. Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. The Journal of Finance, Vol.19(1964) No.3,p. 425-442.
- [6] Ross, Stephen A:The Arbitrage Theory of Capital Asset Pricing,Journal of Economic Theory, Vol.13(1976) No.5,p. 341-360.
- [7] Fama, Eugene F. and Kenneth R. French:Common Risk Factors in the Returns on Stocks and Bonds. Journal of Financial Economics, Vol.33 (1993) No.1,p.3-56.
- [8] Jegadeesh, Narasimhan and Sheridan Titman: Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency. The Journal of Finance, Vol.48 (1993) No.1,p. 65-91.
- [9] Carhart, Mark M:On Persistence in Mutual Fund Performance, The Journal of Finance, Vol.52 (1997) No.1,p.57-82.
- [10] Fama, Eugene F. and Kenneth R. French.:A Five-Factor Asset Pricing Model,Journal of Financial Economics, Vol.116 (2015) No.1,p.1-22.
- [11] Fama, Eugene F. and Kenneth R. French:Dissecting Anomalies with a Five-factor Model, Review of Financial Studies, Vol.29 (2016) No.1,p.69-103.
- [12] Fama, Eugene F. and Kenneth R. French:Choosing Factors,Journal of Financial Economics, Vol.128(2018) No.1,p.234-252.
- [13] Baker.M,Wurgler.J:Investor Sentiment and the Cross-Section of Stock Returns,The Journal of Finance, Vol.61(2006) No.4,p.1647-1680.
- [14] Famaef, French.K.R: Common risk factors in the returns on stocks and bonds, Journal of Financial Economics, Vol.33 (1993) No.1,p.3-56.
- [15] Ma Qiang:Margin trading, stock index and investor sentiment,Accounting monthly, Vol.11 (2006) No.4,p.124-128.