Research on the Innovative Model of Integrating Smart Tourism and Agricultural E-commerce in Shiyan City Based on Digital Enablement

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Abstract. The development of agricultural e-commerce in Shiyan City is in the early exploration stage and has not yet formed a systematic path for e-commerce development. The characteristics of this stage are abundant resources and a large number of agricultural specialty products, but the infrastructure and service system for e-commerce development are not yet perfect. The study takes Shiyan City as the research object and explores the integration and innovation model of smart tourism and agricultural e-commerce based on digital empowerment. Through in-depth analysis of the connotation of digital empowerment and its application in smart tourism and agricultural e-commerce, a construction strategy and development path of integrated innovation mode are proposed, aiming to provide theoretical support and practical guidance for promoting the coordinated development of tourism and agricultural industries in Shiyan City.

Keywords: Digital empowerment; Shiyan City; Smart tourism; Agricultural e-commerce; Integrated innovation

1 INTRODUCTION

With the rapid development of information technology and the arrival of the digital age, digital empowerment has become an important means to promote innovative development in various industries. As an important city in Hubei Province, Shiyan City has abundant tourism and agricultural resources. The integration and development of smart tourism and agricultural e-commerce have broad prospects and huge potential. The integrated innovation model based on digital empowerment helps to enhance the competitiveness of tourism and agriculture industries in Shiyan City, and promotes sustainable development of the local economy.

2   THE CONNOTATION OF DIGITAL EMPOWERMENT AND ITS APPLICATION IN SMART TOURISM AND AGRICULTURAL E-COMMERCE

(1) The connotation of digital empowerment

Digital empowerment refers to empowering traditional industries or businesses with new capabilities through digital technology and tools, in order to enhance their efficiency, innovation, and market competitiveness. The core of digital empowerment lies in the collection, processing, and application of data, as well as the deep integration of digital technology. Through the comprehensive application of technologies such as big data, cloud computing, the Internet of Things, and artificial intelligence, digital empowerment can optimize business processes, innovate product services, enhance user experience, and promote industrial transformation, upgrading, and sustainable development.

(2) The application of digital empowerment in smart tourism

Smart tourism is a product of the deep integration of tourism industry and digital technology. The application of digital empowerment in smart tourism is mainly reflected in the following aspects:

Firstly, digital technology can enhance the intelligence level of tourism services. Through big data analysis, tourism enterprises can accurately grasp the needs of tourists and provide personalized tourism products and services. For example, based on historical data and behavioral analysis of tourists, tourism platforms can recommend tourism routes and hotels that are more in line with their interests and budget. Secondly, digital technology can optimize the allocation and utilization of tourism resources[1]. Through the application of Internet of Things technology, tourist attractions can achieve functions such as intelligent navigation, intelligent parking, and intelligent security, enhancing the tourist experience. At the same time, digital technology can also help tourism enterprises achieve precise marketing and customer relationship management, improve market share and customer satisfaction. In addition, digital empowerment has also promoted the innovative development of the tourism industry. Through the application of technologies such as virtual reality and augmented reality[2], tourists can enjoy a more immersive travel experience. According to statistics, tourism enterprises that use digital technology are superior to traditional tourism enterprises in terms of market growth rate and customer satisfaction.

(3) The application of digital empowerment in agricultural e-commerce

Agricultural e-commerce is a product of the combination of agriculture and e-commerce, in which digital empowerment plays an important role. One is that digital technology can broaden the sales channels of agricultural products. Through the construction and operation of e-commerce platforms, agricultural products can be sold directly to consumers, reducing intermediate links and costs. At the same time, e-commerce platforms can also provide rich marketing methods[3], such as coupons, group buying, etc., to attract more consumers to purchase agricultural products. Secondly, digital technology can enhance the added value of agricultural products. Through data analysis, agricultural e-commerce enterprises can understand consumer purchasing preferences

and changes in demand, and then adjust product structure and planting plans. For example, according to market demand, enterprises can launch high-end agricultural products such as organic vegetables and specialty fruits to improve their added value and market competitiveness. Thirdly, digital empowerment also promotes intelligent management of agricultural production. Through the application of Internet of Things technology, agricultural e-commerce enterprises can monitor the growth of crops, soil moisture and other data in real time, and achieve precise fertilization, irrigation and other operations. This can not only increase the yield and quality of agricultural products, but also reduce production costs and environmental pollution.

3   CONSTRUCTION OF AN INNOVATIVE MODEL FOR THE INTEGRATION OF SMART TOURISM AND AGRICULTURAL E-COMMERCE BASED ON DIGITAL EMPOWERMENT

(1) Pattern construction strategy

①**Technology integration strategy:** Through the deep integration of technologies such as big data, cloud computing, and the Internet of Things, achieve seamless integration of smart tourism and agricultural e-commerce at the technical level. According to statistics, the global big data market will exceed 360 billion US dollars in 2026. According to IDC data, the global big data market size will achieve a compound growth rate of about 10.4% in five years from 2020 to 2024. It is expected that the global big data market size will be about 298.3 billion US dollars in 2024, and it is expected to maintain high-speed growth in the coming years. In the field of smart tourism, big data analysis can help tourism enterprises accurately grasp the needs of tourists, improve service quality and user experience. Meanwhile, the widespread application of cloud computing makes the storage and processing of tourism information more efficient and secure. In the field of agricultural e-commerce, the application of Internet of Things technology makes it possible to trace and intelligently manage agricultural products, improving the quality and safety of agricultural products. According to the survey, the research using the "Internet plus" strategy found that the earnings per share of commercial circulation enterprises implementing this strategy increased by 39.22%, and the return on assets increased by 37.14%

②**Business integration strategy:** organically combine tourism business with agricultural e-commerce business, jointly develop new products and markets, achieve resource sharing and complementary advantages. According to relevant data, the combination of agriculture and tourism has created significant economic benefits. For example, tourism products such as farmhouses are deeply loved by tourists, which not only drives the development of rural economy but also enriches the tourism market. At the same time, the sale of agricultural products as tourist souvenirs or characteristic gifts has also expanded the sales channels of agricultural products.

③**Market integration strategy:** Through digital marketing methods, effectively connect the market demand of smart tourism and agricultural e-commerce, and improve

market competitiveness. Digital marketing has become an important means of modern marketing[4], with efficiency and accuracy far exceeding traditional marketing methods. According to market research institutions, the return on investment (ROI) of digital marketing is generally higher than that of traditional marketing methods. Through search engine optimization, social media marketing, and other means, enterprises can better understand market demand and develop more accurate marketing strategies. In addition, digital marketing can also reduce marketing costs and improve marketing efficiency. According to a survey, enterprises that adopt digital marketing methods have significantly improved their brand awareness and market share.
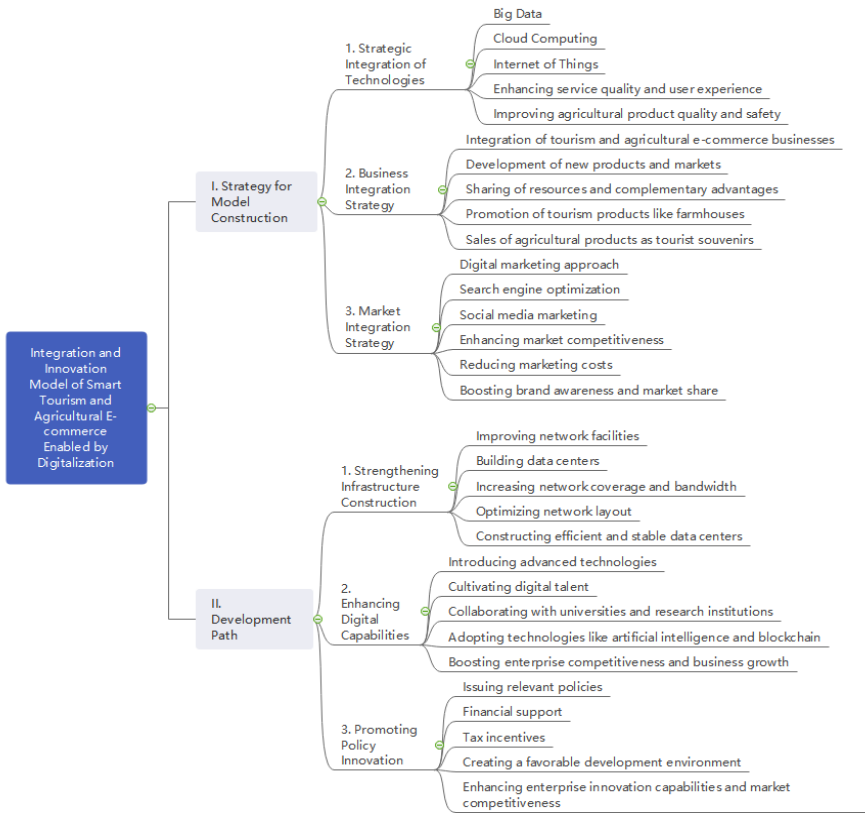
Fig. 1. Integration and Innovation Model of Smart Tourism and Agricultural E-commerce Enabled by Digitalization

(2) Development path

①**Strengthen infrastructure construction:** Improve network facilities, data centers, and other infrastructure construction to provide strong support for the integration and innovation of smart tourism and agricultural e-commerce. According to the data of the National Bureau of Statistics, in recent years, China has invested heavily in the construction of Internet infrastructure, and the network coverage and bandwidth have

been significantly improved. However, there are still some areas with issues such as incomplete network coverage and unstable signals. Therefore, the government and enterprises should continue to increase investment, optimize network layout, and improve network quality. In addition, the construction of data centers is also crucial. Shiyan City should seize the opportunity to build an efficient and stable data center, providing data support for the development of smart tourism and agricultural e-commerce.

②**Enhancing digital capabilities:** By introducing advanced technologies and cultivating digital talents, we aim to enhance the digital capabilities of Shiyan City in the fields of smart tourism and agricultural e-commerce[5]. According to data released by the Ministry of Human Resources and Social Security, the demand for digital talents in China has continued to grow in recent years, but the supply is still insufficient. Therefore, Shiyan City should strengthen cooperation with universities and research institutions to jointly cultivate digital talents. At the same time, we actively introduce advanced digital technologies from both domestic and international sources, such as artificial intelligence and blockchain, to promote their application in the fields of smart tourism and agricultural e-commerce. According to the survey, enterprises with advanced digital technology generally have strong market competitiveness and faster business development speed.

③**Promote policy innovation:** Introduce relevant policies to encourage and support the `integration` and innovation of smart tourism and agricultural e-commerce, and create a good development environment. In recent years, the Chinese government has attached great importance to the development of smart tourism and agricultural e-commerce, and has introduced a series of supportive policies. For example, providing financial support and tax incentives for smart tourism and agricultural e-commerce projects. The implementation of these policies provides strong guarantees for the integration and innovation of smart tourism and agricultural e-commerce. According to statistics, enterprises that benefit from policy support have significantly improved their innovation capabilities and market competitiveness. In the future, the government should continue to increase policy support and promote the integration and innovation of smart tourism and agricultural e-commerce to achieve greater results. As described in Figure 1.

4   THE PRACTICAL APPLICATION AND EFFECTIVENESS EVALUATION OF THE INTEGRATED INNOVATION MODEL IN SHIYAN CITY

(1) Practical application

When implementing the integrated innovation model, Shiyan City can select several representative smart tourism and agricultural e-commerce projects as pilot projects. Through on-site research, understand the current situation, resource conditions, and development needs of the project to ensure that the selected project is representative and suitable for the application of integrated innovation models.

In specific practice, smart tourism projects can be organically combined with agricultural e-commerce projects to achieve resource sharing and complementary advantages[6]. For example, using characteristic agricultural products from tourist attractions as sales products on e-commerce platforms, attracting more tourists and consumers through a combination of online promotion and offline experience. Meanwhile, utilizing big data to analyze the needs and behaviors of tourists and consumers, providing precise market positioning and marketing strategies for tourism and agricultural e-commerce projects.

In addition, Shiyan City can strengthen cooperation with universities, research institutions, etc., introduce advanced digital technologies and talents, and improve the implementation effect of integrated innovation models. By organizing training courses, seminars and other activities, we aim to enhance the digital literacy and skill level of tourism and agricultural e-commerce practitioners, providing strong support for the promotion and optimization of the model.

(2) Effect evaluation

Evaluation model

In order to comprehensively evaluate the practical effectiveness of the integrated innovation model in Shiyan City, the following evaluation model can be constructed:

① Economic Benefit Evaluation: By comparing and analyzing the changes in economic indicators such as tourism revenue, agricultural product sales, and enterprise profits before and after the implementation of the integrated innovation model, evaluate the contribution of the model to local economic development.

② Social benefit evaluation: Through questionnaire surveys, interviews, and other methods, collect feedback from relevant stakeholders such as tourists, consumers, and enterprises, and evaluate the social benefits of the model in improving service quality, meeting consumer needs, and promoting employment.

③ Technical effect evaluation: Evaluate the effectiveness of the integrated innovation model in technology application, including the popularity of digital technology, data analysis, and improvement of application capabilities.

④ Sustainability assessment: Evaluate the sustainability and scalability of integrated innovation models, including their stability, replicability, and long-term development potential.

Feasibility analysis plan

In order to ensure the smooth implementation and effective evaluation of the integrated innovation model in Shiyan City, feasibility analysis is needed. The following is a feasible analysis plan:

① Resource condition analysis: Evaluate the resource conditions of Shiyan City in the fields of smart tourism and agricultural e-commerce, including the construction of infrastructure such as network facilities and data centers, as well as the richness and distinctive advantages of tourism and agricultural resources.

② Market demand analysis: Through market research and data analysis, understand the needs and preferences of tourists and consumers for smart tourism and agricultural e-commerce, as well as market competition, and provide market basis for the implementation of the model.

③ Technical feasibility analysis: Evaluate the application of existing digital technologies in Shiyan City, including technological maturity, availability, and integrability, to ensure the technical feasibility of the integrated innovation model.

④ Policy environment analysis: Analyze the policy support and preferential measures in the fields of smart tourism and agricultural e-commerce in Shiyan City, as well as the constraints and requirements of relevant laws and regulations, to provide policy guarantees for the implementation of the model.

5   CONCLUSION

Through the in-depth implementation of the integrated innovation model in the field of smart tourism and agricultural e-commerce in Shiyan City, we have found that this model has achieved significant results in improving service quality, promoting agricultural product sales[7], and promoting local economic development. The specific cases in practical applications demonstrate the strong potential and broad prospects of the integration of smart tourism and agricultural e-commerce.

In terms of economic benefits, the integrated innovation model has effectively promoted the growth of tourism revenue and agricultural product sales, driven the development of related enterprises, and injected new vitality into the local economy. In terms of social benefits, by improving service quality and meeting consumer needs, this model enhances the satisfaction of tourists and consumers, promotes employment and social stability. In terms of technological effectiveness, the widespread application of digital technology has improved data processing capabilities and analytical levels, providing strong support for the development of smart tourism and agricultural e-commerce.

Looking into the future, the project still needs attention
1. Impact assessment on local communities:

The integration of smart tourism and agricultural e-commerce has had a profound impact on the local community in Shiyan City. In terms of employment, this model provides more employment opportunities for local residents, especially in the fields of tourism services and agricultural e-commerce. With the expansion of business, the related industrial chain has also been developed, further promoting employment growth. In terms of skill development, the integration model has promoted the popularization and improvement of digital skills, enabling residents to adapt to the work requirements in the new technological environment and improving the overall quality of the labor force.

2. Challenges and solutions to data privacy and security:

When implementing integrated innovation models, data privacy and security issues become key challenges. The personal information and transaction data of tourists and consumers need to be effectively protected. The solution includes strengthening data encryption technology, establishing strict data access permission management systems, and conducting regular security audits and risk assessments. In addition, strengthen the improvement and enforcement of relevant laws and regulations to provide legal protection for data security.

3. Interaction with local stakeholders:

In the process of developing and implementing integrated innovation models, local stakeholders such as farmers, tourism operators, and consumers are included. By organizing symposiums, training activities, and other means, enhance their understanding of the model and willingness to participate. At the same time, establish a feedback mechanism to timely collect and handle the opinions and suggestions of stakeholders, ensuring that the model is more in line with the local actual situation and needs.

4. Measurement of success:

In order to measure the success and effectiveness of the integrated innovation model, a series of specific measurement standards and indicators will be adopted. Including economic indicators such as the growth rate of tourism revenue, the growth rate of agricultural product sales, and the increase in employment rate; Social indicators such as tourist satisfaction and consumer satisfaction; And technical indicators such as data processing ability and digital technology application level. By regularly evaluating and analyzing these indicators, we can comprehensively understand the implementation effect of the model and provide reference for further optimization.

5. Scalability and replicability in other regions:

Considering the unique characteristics of Shiyan City, its integration model of smart tourism and agricultural e-commerce has certain scalability and replicability in other areas with similar potential. These regions can learn from the successful experience and technological means of Shiyan City based on their actual situation and resource endowment, and combine local characteristics and cultural elements to create a fusion model with local characteristics. At the same time, strengthen regional exchanges and cooperation, and jointly promote the deep integration and development of smart tourism and agricultural e-commerce.

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