



Research on the Development Model of Shenyang Rural Smart Tourism Based on Tourism Preferences in the Context of 5G Applications

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Abstract. We use the innovation of “5G + tourism” as an entry point and integrate it into the “smart+” model of the countryside in order to use smart tourism as an opportunity and a link to address the needs of the strategy for rejuvenating the countryside. The project will analyze the future development trend of the new “5G + Tourism” industry in rural Shenyang, suggest a route for the development of the new industry and an innovative development model, and suggest a planning reference point for enhancing the top-level design of the countryside, innovating the marketing model, and creating a public service platform. It gives local villagers, new tourism organizations, and tourism firms theoretical direction and practical reference for engaging in novel activities of “rural smart tourism,” and it provides rural smart tourism fresh life.

Keywords: Application of 5G · Rural Smart Tourism · Preference for Travel · Mode of Development

1 Introduction

The “Document No. 1” of the Central Government has continued to emphasize the rural revitalization strategy in recent years. A number of pertinent policy recommendations were also put forth at the 2019 National Conference on 5G Applications. 5G applications are expanding into numerous fields in towns and villages thanks to favorable rules and chances for market expansion. Smart tourism is driving the change and modernization of the travel and tourism sector due to the close integration and development of IoT technology. For the towns and villages of Shenyang to expand in the future, the integration of 5G technology and the rural rejuvenation strategy is a necessity.

The General Office of the State Council proposed to construct 10,000 smart scenic places and smart tourism communities around the nation by 2020 in “Several Opinions

Source of the project: Project of the Liaoning Education Department’s Scientific Research Fund for 2020《Researching strategies for improving rural landscape and architecture in Shenyang, Liaoning Province, in the context of rural revitalization》, Project No: LJKX202001.

on Further Promoting Tourism Investment and Consumption” published in August 2015. The “Notice on Accelerating the Construction of Smart Scenic Spots” was released by the National Tourism Administration in April 2016 [1]. The Action Plan for Promoting the Quality and Upgrading of Rural Tourism Development (2018–2020) was jointly released by the Ministry of Culture and Tourism, the National Development and Reform Commission, and 13 other departments. It includes proposals to encourage the integrated development of “tourism + agriculture + internet,” promote collaboration between 1,000 important rural tourism villages and tourism e-commerce, modern logistics, and other related enterprises, and c. the special construction initiatives “back-up project” and “one village, one product.” Encourage and direct the development of intelligent rural tourism by fusing rural tourism with the Internet and other contemporary information technology [2]. The Ministry of Culture and Tourism proposed to speed up the promotion of digital, networked, intelligent as the characteristics of intelligent tourism, speed up the construction of intelligent scenic spots in January 2021 in order to “start a good bureau to promote the work of culture and tourism to open up a new situation work report.” Shenyang will utilize electronic information technologies, including the Internet of Things and cloud computing, to enhance rural tourism in the future. Information technology will permeate all facets of rural tourism activities through the smart collecting and analysis of tourism data [3]. Shenyang is urgently developing “5G + Tourism” to foster innovative rural tourism forms, boost rural tourism marketing and promotion, and create development momentum to raise the quality of rural tourism.

2 Situation of Shenyang’s Rural Smart Tourism Presently

The province issued “Guiding Opinions of the People’s Government of Liaoning Province on Promoting the Construction of Characteristic Townships” in 2016 and announced 100 provincial cultivation lists, 20 provincial characteristic townships, and 13 national characteristic small towns in response to the recent development boom in “rural revitalization,” “characteristic township,” “small town planning,” and “livable countryside construction.” The development of window top leisure tourism type township construction is one of the main tasks of the construction, according to the Implementation Plan for the Construction of Characteristic Townships in Shenyang City (2017–2020), which was published in 2017 by the General Office of the People’s Government of Shenyang City.

2.1 National Rural Tourist Development

With over 100 billion yuan in yearly tourism income and 400 million annual visitors, rural tourism in China now accounts for roughly a third of all travel there. A wide range of agricultural enterprises are represented by the more than 500 agricultural tourism demonstration sites that are currently located around the nation in 31 provinces, autonomous regions, and municipalities on the mainland. About 70% of urban inhabitants choose rural travel for their vacations during the three Golden Weeks each year, and rural tourism has emerged as a new area of expansion for the tourist sector.

Rural tourism exhibits significant relevance to tourist destinations, agricultural production harvesting activities, and traditional festivals in the domestic tourism sector.

Folklore tourism, which focuses on “staying in a farmhouse, eating farm meals, doing farm work, and enjoying farming,” and picking tourism, which focuses on harvesting various agricultural products and allows visitors to pick and taste fresh peaches, pears, apricots, and other fruits on their own, are the most frequently visited and returned to attractions.

2.2 Market Trends

In the past ten years, travel has become essential and there have been substantial changes in national tourism, particularly in terms of travel consumption and travel habits. Ten years ago, 19% of people did not even have time to travel, and 77% of people traveled for little more than 7 days annually. Today, 54% of people can plan trips lasting 7 to 10 days, while 15% can go on vacations lasting longer than a month.

2.3 The Tourism Industry’s Trends

The country’s tourism industry is expanding quickly, and beautiful areas have also demonstrated a new trend of diversification, progressively evolving into large-scale, varied, intelligent, and trendy (Table 1).

Table 1. Development Trends in the Tourism Industry Table.

The nation’s tourist sector is expanding quickly	A tourism law was passed	New developments in landscape
1. Developmental characteristics Government priorities are very high The macro environment kept getting better Increasingly diverse products are offered in the tourism sector Deepening industrial convergence.	1. Challenges The bar for opening tourism attractions is too high. Obligations for landscape safety that are precisely stated.	Large scale Multifunctionality Intelligent Fashionable
2. Making four strides forward First, new product developments Second, advances in culture Thirdly, industrial breakthroughs Fourth, market innovation.	2.Opportunity For scenic locations to survive, their quality must be improved Strengthen administration and supervisory duties to ensure the tourism industry grows healthily.	

2.4 Market Research on Tourism

- 1. The market’s demand is still booming.** With more than RMB 6 trillion in tourist earnings and 155 million outbound journeys, China’s domestic tourism air broke

4 billion trips in 2019. In terms of domestic travel, international travel, and combined spending on domestic and international travel, China ranked #1 in the world. According to data collected by the National Tourism Data Centre, 10.2% of all people working in China’s workforce are employed in the tourism industry.

2. **New trends in the travel industry.** Tourism items that promote a return to nature, health, and oneself have emerged as the future development trend on a global scale. Ecology, health, and leisure will overtake conventional tourist attractions and forms of entertainment as the primary drivers of tourism development (Fig. 1).

Cultural tourism in the ascendant	Eco-tourism continue to heat up	Rural tourism sudden emergence	Wisdom tourism become fashionable
<ul style="list-style-type: none"> ●The feasibility of expanding the source market is becoming more and more obvious, and cultural tourism will continue to increase. ●Cultural tourism will play a prominent role in the tourism system. ●Cultural tourism products tend to be personalized and diversified. 	<ul style="list-style-type: none"> ●The tourism experience is original and unique. ●Emphasis on the small scale of tourism, limited to affordability. ●Reinforcing the public participation of the tourist. ●It is a responsible tourism: a responsibility for the conservation of tourism resources and for the sustainable development of tourism. 	<p>Eight Rural Tourism Industries</p> <ul style="list-style-type: none"> ●Country Hotel ●International Post ●Hedgerow picking ●Ecological fishing villages ●Leisure Farm ●Mountain Home ●Wellness Lodge ●Ethnographic Court 	<ul style="list-style-type: none"> ●A new form of tourism that focuses on the visitor experience. ●Innovation in means: using technologies such as cloud computing and the Internet of Things. ●Areas of application: tourism experience, industrial development, administration, etc. ●Service groups: public, business, government, etc.

Fig. 1. Chart for New Trends.

3 Analysis of a Travel Preference Survey

3.1 Simple Visitor Survey

In order to more effectively direct the construction of the project site, a total of 3,000 research questionnaires were distributed via the internet, friends, and paper questionnaires. 2,668 valid questionnaires were returned, yielding an efficiency rate of 88.9%, and they focused on consumer preferences for tourism products and travel methods.

64% of respondents were tourists from Northeast and North China, which corresponds to the target markets for the project areas; 43% of respondents said they were most interested in visiting rural vacation complexes. Rural communities and well-known mountains piqued the curiosity of the second-largest group of tourists. The trip’s 2–5 day duration and focus on strengthening family ties show the growing appeal of short-haul family leisure and vacation travel (Figs. 2, 3, 4 and 5).

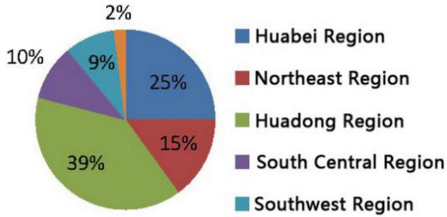


Fig. 2. Location Survey Figure.

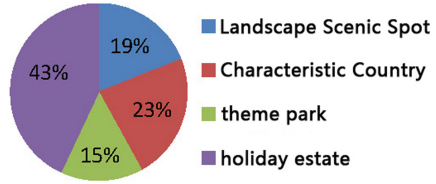


Fig. 3. Optional Outings.

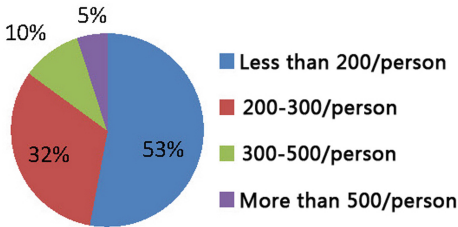


Fig. 4. Expenditures per person.

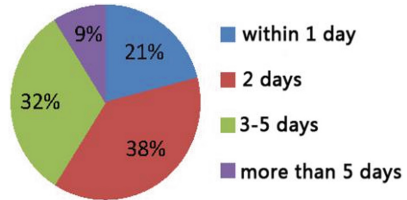


Fig. 5. Length of stay.

3.2 Travel Preferences and Tourism Consumption Survey

The era of the casual traveler has arrived as a result of the oversaturated tourism consumer market, with 43% of tour favorites choosing self-drive and 30%. Visitors preferred local specialties over cultural and artistic souvenirs by a margin of 43%, thus attention might be directed into developing tourism goods in the future. Customers expressed a high preference for flowery sceneries, waterfront views, old-world villages, and lush forests (Figs. 6, 7, 8 and 9).

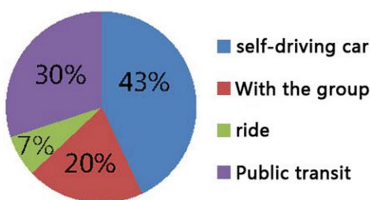


Fig. 6. Travel options.

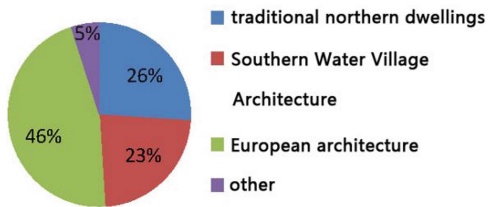


Fig. 7. Architectural style selection.

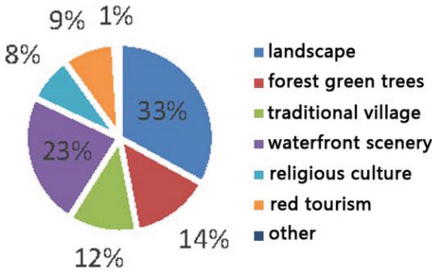


Fig. 8. Travel Preferences.

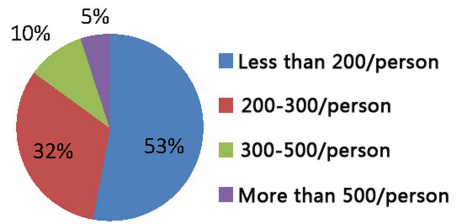


Fig. 9. Product selection for tourism.

3.3 Specific Market Analysis

Suitable to Families Market. A large consumer class that supports the family-friendly market and encourages parent-child entertainment, where parent-child entertainment tends to be more about fun and education than tourism per se, is the post-80s and post-90s generation, which is gradually entering the family stage and becoming a hot spot in the market for parent-child tours (Figs. 10, 11, 12 and 13).

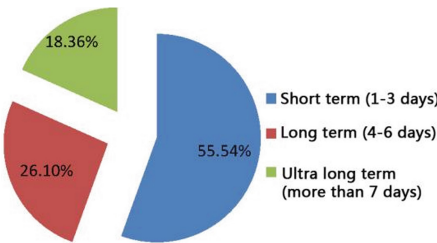


Fig. 10. Travel schedules for parents and children.

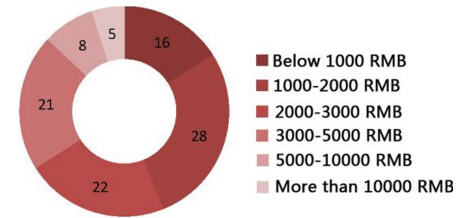


Fig. 11. An average breakdown of parent-child travel expenses.

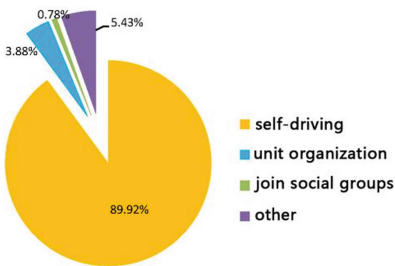


Fig. 12. Mode of travel.

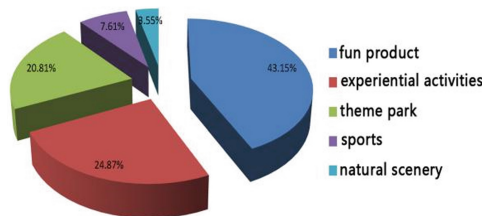


Fig. 13. Preference for travel.

Self-drive Excursions. The self-drive tourism industry has a bright future and tremendous possibilities. There will be 395 million vehicles in the nation by the end of 2021, including 302 million cars. There were 481 million drivers, more than 444 million.

3.4 Examining the Growth of Tourist Attractions

The greatest urban tourist cluster in Northeast China is located in Shenyang, which is also south of the Yangtze River Delta tourism circle and next to the Beijing-Tianjin-Hebei tourism circle. The proximity to Northeast Asia's substantial source tourism market is a location benefit. The city is quite densely inhabited, and overall tourism competitiveness is at a medium level. The city has both advantages and disadvantages in terms of tourism location because it is surrounded by numerous famous historical and cultural cities, famous tourist cities (Beijing, Tianjin, Dalian, Qingdao, Yantai, Qufu, Tai'an, Qinhuangdao, etc.), and a variety of typical regional cultural landscapes (Guandong culture, grassland culture, farming culture, Qilu culture, Yanzhao culture, maritime culture). The key cities of the tourism region drive Shenyang to become a new tourism growth hub, and the city (Table 2).

Table 2. Analyses of Shenyang's various tourism project kinds.

Tourism Projects	Type of project
Eco Park	A tourism farm including agricultural sightseeing, fruit and vegetable picking, flower watching, wild fishing, etc., based on the historic city, the coastline, and the wetland park.
Seaside View	"Shelling" and "Seaside fishing"
Leisure Farm	Farming, tourism, and fine processing
Experiential farmhouses in the new socialist countryside	Working in the fields, assisting farmers, and sharing meals with them
Natural golden fishing grounds	Seawater farming, high-tech agricultural demonstration sites, 10,000 mu of greenhouse veggies, and leisure resorts are all visited by tourists who can buy things there.
Beachfront Resorts	Landscapes with a beachfront, a rocky beach, windmills that generate electricity, and others

(continued)

Table 2. (continued)

Tourism Projects	Type of project	
Modern Ecological Agricultural Park	To build the greatest fruit trading and logistics hub and deep processing center for fruit in the northeast, a rural leisure resort and a new city of orchards are planned	
Eco-Picker Leisure Resort	Fruit tree farms as the foundation	
Small tourist towns	Innovative use of unique tourism offerings, backed by local folklore and religious history and culture	
Specialty Tourist Goods	Building cold rich apples and mixed grains in Liaozhong District's Niu Xin Tuo in accordance with the principles of the environment	
Other Fine Tourism Routes	Cultural Tour of Aisin Gioro Wine in BanLaShanZi Village, Faku County	Taste the Royal Wine Culture, Taste the Flavorful Food, and Old Northern Taste Wine Culture Tourism Area at Aisin Gioro Royal Museum
	Zhangyi Station Village ShengJing Stage Tour through History in the Tie Xi District	Picking apples and mushrooms at Sheng jing Station; shopping for specialty foods at the Old Town Station Visitor Center.
	A visit to the Sibe's house at Shen Bei New District's LaTa Lake Community	Welcome ceremony at the community's cultural center at Lata Lake (Xibe speciality village) fruit picking, the first national May 7 Cadre School, a farmhouse banquet (or a fish dinner at Lata Lake), and a visit to Seven Stars Wetland Park.
	Tong Jiayu and Wang Shi Lan Communities in Hunan District Take a Romantic Aegean Cruise	Aegean Resort Estate (Chapel, Lawn Wedding), Hiking, Kingsland Community Food Tasting, and Purchasing Organic Produce

Shenyang Tourism Bureau adheres to the working principle of “Benefiting the People, Promoting the Industry, and Good Governance” in order to carry out the

spirit of “Opinions of the General Office of the State Council on Further Promoting Tourism Investment and Consumption” and actively support the development of “Smart Shenyang” and the integration of regional tourism. The “One Card, One Network, One Center” smart tourism construction model has been put out by the Shenyang Tourism Bureau.

The implementation of unified management, united planning, unified construction, and unified standards. By creating the Shenyang Economic Zone Wisdom Tourism Project Construction Guidance Funds, concentrating on the establishment of the Shenyang Economic Zone Wisdom Tourism Service Management Center Project, increasing wisdom tourism technology research, building the information technology infrastructure, hiring personnel, and other work investments, for the formation of the Shenyang Economic Zone Wisdom Tourism Service Management Center, to promote the scientific or otherwise.

The Shenyang Palace Museum is now working on building information technology in a variety of areas, including collection administration, a mobile website, a public We Chat platform, a QR code guide, a digital exhibition hall, and team digital tour guides.

3.5 A Study of the Variables Influencing the Dynamics of Rural Tourist Growth

We suggest the key elements that influence the growth of rural tourism through information technology and consumer demand, building on the excellent and well-known county wisdom tourism development model. The new tourism operation is focused on the needs of visitors and realizes intelligent tourism services, marketing, and management through the highly systematic integration and deep level activation of tourism information. It is supported by a new generation of information technology, such as the Internet of Things, cloud computing, and 5G+.

3.6 Issues with Rural Wisdom Tourism in Shenyang

Inadequate Management Strategies and a Lack of Logical, Scientific Planning. The majority of rural tourism in Shenyang is based on the city’s picturesque mountain scenery, but it also has issues with poor rural infrastructure assistance, annoying traffic in specific areas, and poor environmental hygiene. Additionally, the use of technology and sophisticated marketing strategies is absent at rural tourist destinations, which makes it challenging to draw visitors over the long run and weakens the tourism attraction.

Serious Homogenous Competition, Comparable Development Initiatives, and Low Repurchase Rates. The development of rural intelligent tourism projects is urgently needed because Shenyang’s rural tourism products are singular, homogeneous competition is severe, picking more than dozens of projects makes rural tourism development projects less distinctive and of lower quality, and the absence of intelligent technology means that tourists won’t visit the same type of tourist destinations for repeated consumption.

Poor Marketing and Advertising, Little Knowledge About Tourism. The majority of tourism businesses don’t have a marketing strategy for rural travel, lacking scientific

packaging and planning, while government organizations invest little in rural travel marketing and promotion, lacking sensible and efficient demonstration and promotion.

There are numerous market and development potential in the future for rural intelligent tourism, which may be summed up as follows. At the present, it has become one of the hotspots and mainstream forms of rural tourist (Table 3).

Table 3. A SWOT analysis of Shenyang's rural smart tourism industry

Influencing factors	Swot analysis and strategy		Strategies
Internal elements	Advantage S		① Resource advantages ② Regional advantages ③ Advantages of urban infrastructure ④ Advantages of information technology infrastructure ⑤ Brand advantages
	Disadvantage W		① Clearly a low season for tourism and inadequate resources ② The hardware and information resources of the current information service platform are underutilized ③ Tourism businesses only apply information to a limited extent
External environment	Opportunity O		① The Liaoning Coastal Economic Belt Strategy offers Shenyang's tourism industry limitless business potential ② Self-driving tours and high-speed rail increase the effectiveness of tourist travel ③ The vast tourism environment is boiling with limitless prospects ④ The internet travel services business is growing quickly
	Challenge T		① Cities compete fiercely with one another ② The growth of regional tourism e-commerce is being stifled by large platforms
Strategic response	Strategies	SO Strategy	① Thoroughly encourage the speed of intelligent tourism construction in order to standardize management as the foundation and raise the caliber of tourism services ② Resources coordinated by the government and used in tandem to create clever tourist projects

(continued)

Table 3. (continued)

Influencing factors	Swot analysis and strategy	Strategies
	WO Strategy	<ul style="list-style-type: none"> ① Update hardware and software products, support business training, and enhance the use of smart tourism ② Create unique tourism initiatives, deeply integrate smart tourism, and raise the city’s brand recognition
	ST Strategy	<ul style="list-style-type: none"> ① Make use of beneficial resources and progressively encourage the development of intelligent tourism ② Make it a point to set the example and develop your skills to power clever applications across the tourism sector
	WT Strategy	<ul style="list-style-type: none"> ① Development of the tourism business that is traditionally driven by smart tourism ② The growth of specialized intelligent rural tourism, which will aid the rural rehabilitation plan by establishing the lovely “one village, one product” pattern

4 Study on the Concepts and Strategies for Developing Rural Smart Tourism

4.1 Models for Smart Tourism Development to Study

In addition to these crucial components of smart tourism development, it is suggested that information technology, market demand, tourism resources, corporate and governmental behavior, regional environment, human resources, and geographic conditions serve as the main drivers of county smart tourism development (Table 4).

4.2 Summaries and Recommendations for Creating a “Rural Smart Tourism” Model

Big Field Agriculture-Focused 5G+ Field Agriculture Tour. Develop various thematic leisure activities with various characteristics, such as agricultural tours, forestry and fruit tours, flower tours, fishery tours, and pastoral tours to meet the psychological needs of tourists to experience agriculture and get back to nature. Integrate 5G+ into the idyllic rural landscape, agricultural production activities, and special agricultural products activities (Fig. 14).

Through clever techniques, tourists are better able to comprehend and experience agriculture through viewing agricultural production operations, tasting and purchasing organic food, learning about agricultural technologies, and participating in other

Table 4. Models for county-level smart tourism development.

Typical model	a summary of development concepts	Important motivators	
Wuyuan Model	① Active market activity; ② Adept at seizing chances; ③ Diverse tourism resources; strong economic foundation; chemical development; village-based tourism promotion; ④ Accentuate the development of connections between business operations and regional environments	① Resources for Travel; ② Business operations	The economy Regional environment
Taining Model	① Initiative in spite of the unfavorable surroundings; ② Government agencies first becoming active; ③ Developing a brand through tourism image promotion; ④ Restructuring of the industrial sector	① Resources for Travel; ② Government action	Conditions of location The economy Human Resources
Luanchuan Model	① A strong tourism county is always the development strategy and objective, led by a party and the government; ② Proactive industrial development that is focused on the market	① Resources for Travel; ② Government action	The economy Conditions of location
The Chun'an Model	① Government-led, unified leadership in development, management, and administration; integrated resources; mechanisms incentives; ② Model of a future development area with Qiandao Lake as the growth pole	① Resources for Travel; ② Government action ③ The economy ④ Conditions of location	Business operations
Shenyang Model	① Government-led, united leadership in development, management, and administration; integrated resources; mechanisms to promote; ② Model for the arrangement of future developments using Shenfu and Hunan as new growth poles	① Resources for Travel; ② Conditions of location	Business operations



Fig. 14. Charming agritourism

tourism-related activities. The agricultural science and technology tour also concentrates on contemporary agricultural science and technology parks and is designed to allow visitors to observe the parks' high-tech agricultural varieties, facility agriculture, and ecological agriculture in greenhouses in order to better understand contemporary agriculture. Visitors are exposed to actual agricultural production, farming culture, and a unique vernacular through taking part in agricultural production activities, eating, sleeping, and working with farmers.

5G+ Folk Customs Tourism Mode. Through rural customs and folk culture as the focus of tourism attraction, fully highlight the characteristics of farming culture, vernacular culture and folk culture, develop farming demonstrations, folk skills, seasonal folklore, festivals, folk songs and dances and other tourism activities to increase the cultural connotation of rural tourism. Through the application of 5G technology the farming culture tour, folk culture tour, vernacular culture tour ethnic culture tour are taken as the key development direction.

5G+ Folk Tourist Mode with Customs. Develop farming demonstrations, folk skills, seasonal folklore, festivals, folk songs and dances, as well as other tourism events to completely showcase the peculiarities of farming culture, vernacular culture, and folk culture. This will improve the cultural connotation of rural tourism. The agrarian culture tour, folk culture tour, vernacular culture tour, and ethnic culture tour are taken as the main development path through the application of 5G technology.

Use local folklore to develop farmhouses with a folklore theme, local agricultural production and farming life to develop agricultural tourism farmhouses, local old villages and houses to develop residential-style farmhouses, etc. to draw tourists to the area to visit, unwind, and engage in farming activities (Fig. 15).

Tourism Village Township Model with 5G. By creating tours of old homes and mansions, creating tours of ethnically distinct villages, creating tours of old townhouse structures, homes, streets, shops, and gardens, and creating tours of modern rural architecture, residential courtyards, street patterns, village greenery, and commercial and industrial operations.

5G+ Model for Leisure and Vacation Travel. Numerous leisure and recreational facilities have been built to offer visitors rest, entertainment, catering, and fitness services. These facilities rely on the natural beauty of the countryside, the comfortable



Fig. 15. Agritourism

and refreshing climate, the unique geothermal hot springs, the environmentally friendly and ecological green space, combined with the surrounding idyllic landscape and folk culture.

Leisure tourism is made available to guests by creating leisure resorts, leisure farms, and country hotels to complement the nearby natural and humanistic settings.

Model for 5G+ Science Tourism Education. Provide visitors with tourism activities to help them understand agricultural history, learn agricultural techniques, and broaden their knowledge of agriculture by using agricultural tourism parks, agricultural science and technology ecological parks, agricultural product exhibition halls, agricultural expositions, or museums. Through the development of agricultural science and technology education facilities, agricultural sightseeing and leisure parks, educational agricultural bases for kids, and agricultural expositions, as well as through agricultural sightseeing, participation and experience activities, and DIY educational activities using cutting-edge agricultural facilities, efficient agricultural production methods, and high-quality agricultural products. Allowing elementary and secondary school students to engage in extracurricular agricultural pursuits and obtain instruction in agricultural technology (Fig. 16).

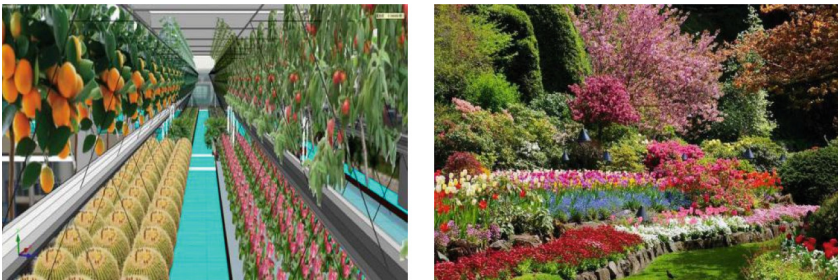


Fig. 16. Experience with science tour

To enhance the tourist experience, it is also feasible to use local agricultural methods, agricultural goods, and agricultural culture for displays.

Back to Nature Tourism Model with 5G. Tourism activities like mountain watching, scenery appreciation, mountain climbing, forest bathing, skiing, and water skiing have been developed using the stunning natural landscape of the countryside, exotic mountains, green forests, and serene lakes to allow visitors to appreciate nature, get close to nature, and return to nature.

5 Advice for Making Decisions

5.1 Targeting

Build Shenyang into a key rural Liaoning Province core city, a golden rural wisdom tourism corridor in Northeast China, integrate it into the Bohai Sea tourism complex, develop the most rural wisdom tourism in Liaoning Province, establish a highly powerful rural wisdom tourism brand in Northeast Asia, and develop a rural wisdom tourism model demonstration area in Liaoning Province.

5.2 Ideas for Development

Establish a “5G+Tourism” system, pool resources, take the lead in the market, and establish a community with a unique wisdom tourism area (Fig. 17).

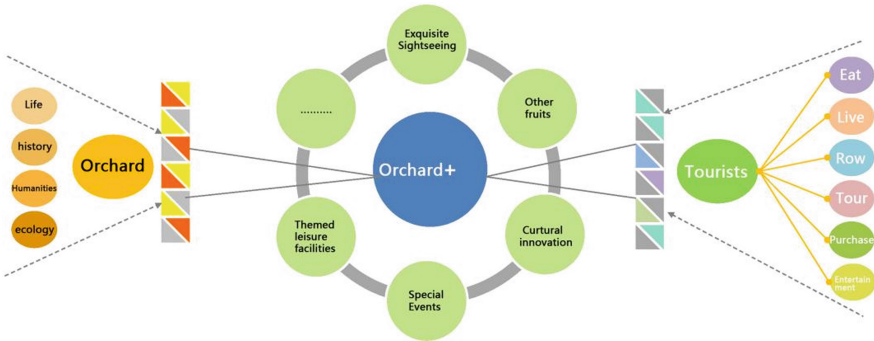


Fig. 17. Development ideas

5.3 Development Tools

5G+ Polarized Items for Sightseeing. Existing rural agricultural demonstration areas’ landscapes to create high-end agricultural sightseeing destinations, fruit picking parks, etc.

Varied Holiday Goods for 5G+. To build varied 5G+ holiday products, rely on high-quality ecological tourist resources, enhance the variety of tourism products, add more holiday features, and implement special activities.

Incorporating 5G+ Tourist Components. The tourism sector should be improved, a holiday mood should be created for rural tourism, the resort’s unique features should be highlighted, and a main attraction should be developed.

Innovative 5G+ Cultural Expression. The rural project site’s basic resources will be imaginatively developed to build a leisure and wisdom resort of ecology+ and cultural creation+, incorporating elements of IP and cultural creation+.

5.4 Planning Ideas

See Fig. 18.

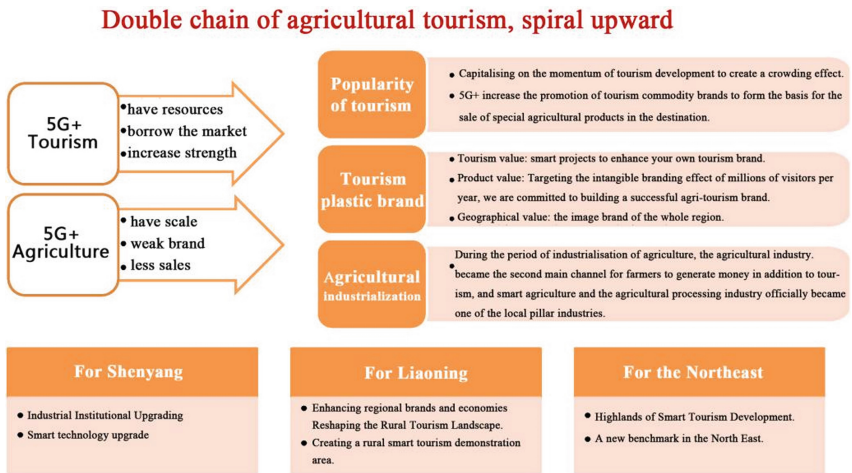


Fig. 18. Planning Ideas

5.5 Overarching Planning and Orientation Goals

It will completely integrate tourism resources, special planting resources, etc., close the 5G+ rural wisdom tourism market gap in Shenyang and even the entire Liaoning Province, and open up rural wisdom tourism quality, refinement, and branding operations with fashionable fields, exquisite landscape, sharing economy, and cultural creativity development concept, creating the first rural wisdom tourism model city in the Liaoning Province (Fig. 19).

Position in the Market. Core market: Tianjin, Beijing, and Hebei regions primarily offer 5G + agricultural leisure, 5G + rural tourist, and 5G + urban suburban parent-child vacation products. Shenyang serves as the center of the 300 km radiation area of urban inhabitants.

Opportunity Market: Products in the 5G+ parent-child vacation category and 5G+ cultural tourism category are primarily sold in Tianjin, Beijing, and Hebei.

The first rural smart tourism model city in Liaoning Province

Create "5G+ Rural Creative Experience Demonstration Site", "5G+ Leisure Agriculture Vacation Base", "5G+ Parent-Child Vacation Base", "5G+ Popular Science Education Base"

- **Build a provincial-level rural tourism demonstration area in 3 years**
- Build a new benchmark for rural smart tourism experience in North-east China in 5 years**

Fig. 19. General guidelines

Objectives of the Planning. Create the first “rural smart tourism” pilot city in Liaoning Province as well as a “5G + countryside creative experience demonstration site,” “5G + leisure agriculture holiday base,” “5G + parent-child holiday base,” and “5G + science education base” to set a new standard for rural smart tourism experiences in the northeast.

5.6 Countermeasures that Are Advised

Focus Your Efforts on the Movement and Re-collection of Components for the Growth of Rural “SMART TOURism.” The favorable resources and high-end components of rural development are successfully allocated based on the resource advantages of Shenyang’s distinctive small (city) towns, which merge industry, research and development, culture, and tourism [8]. To establish a high level of integration and the best possible blending of external resources and local development components in rural areas, avoid homogeneous competition, produce a distinctive rural boutique tour, and collectively increase the industry’s competitiveness.

Fostering the Modernization and Growth of Rural Smart Tourism as Well as the Digital ECONOMY’s Development, and Accomplishing the Natural Fusion of One, Two, and Three Businesses. It successfully encourages the growth of the rural tourist business chain through the strategic allocation of components including rural nature, folk culture, and historical assets. The organic integration of one, two, and three industries can be accomplished in rural areas by utilizing the new industry of “5G+,” which will enhance farmer income, promote rural development and industrial structure modernization, and address the three rural challenges.

Preservation of Historical Heritage and Creation of Original Rural Features. The development of the original natural qualities of the countryside while maintaining the historical lineage of the characteristic township, balancing the two, integrating the spatial environment, and defining the characteristic space. The town’s current development needs are satisfied while also maintaining its small-town charm and giving the locals something to remember.

Expanding Channels, Creating Intelligent Experience Shops for Agritourism Commodities, and Turning Agricultural Products into Tourism Products. A single agricultural product is given a new connotation through the preferential selection and recommendation of various e-commerce platforms, realizing the conversion of tourism destination goods, becoming a significant carrier for the combination of agriculture and tourism, and expanding the channels for local farmers to increase their income [7]. In Jiande, Zhejiang, the “Fruit and Vegetable Paradise” served as inspiration for the establishment of the smart experience shop and marketing online shop for agricultural tourist goods.

5.7 “5G” Background to Support Innovation in “Smart Tourism”

Enhancing the Technical Base and Implementing the Technical Benefits of “SMART TOURISM.” The platform integrates data center, data management, product management, customer relationship management, distribution management, consumption verification, customer management and product booking, navigation guide, and other practical functional systems through the mobile internet and service cloud platform. The platform then develops intelligent mobile terminal APP applications for tourism management departments, rural tourism enterprises, and various tourists. To enable “smart tourism” technology and support the growth of the entire rural regeneration process, the “5G+” system will be promoted.

Experience Upgrade: Using 5G and VR to Create a New Tourism Model. An example of the new immersive tourism concept of 5G + VR, taken from the picturesque area of Xiongan New Area-Baiyangdian. Future immersive experiences in Shenyang will be made possible by the integration of 5G and VR technology. Remote VR cameras will be placed in remote, scenic areas, collecting 360-degree images of the surroundings before being sent to a cloud server for processing over the 5G network and being pushed to client-side devices [7]. Visitors can experience immersive scenery viewing using VR glasses powered by the 5G network or watch 360-degree views on a TV, making for a more relaxing, secure, and intelligent travel experience.

Building a Rural Smart Service Demonstration Area for Service Upgrade. Smart services will play a significant role in the future rural landscape of Shenyang. The creation of a rural intelligent Service demonstration area, the use of “one card”, self-service navigation through mobile phone APP, two-dimensional code tour guides, multimedia information queries, real-time security monitoring, and dynamic traffic analysis; the realization of intelligent ordering, intelligent service, intelligent leisure, and intelligent management; and the one-stop customization of the best itinerary.

Creating an Interactive and Shared Platform for Tourism Information Through Sharing and Upgrading. The largest benefit of smart tourism is that cloud platforms are better able to address issues with information integration, sharing, interaction, and exchange. The “one-click release” of product information and marketing information from rural tourism enterprises to the OTA platform is made possible by integrating GDS (Global Distribution System) in the rural intelligent tourism service cloud platform. As a

result, tourists can learn about the products and promotion information of the enterprises through the APP for the first time. Through the app, users may learn about the businesses' offerings and promotions.

Building a “5G + Smart Scenic Area” is the ultimate goal. Smart services, a number of new technologies to improve the quality of life Smart services, a number of new technologies to improve the quality of life.

China Mobile is currently in charge of completing 5G coverage in the Baiyangdian beautiful area and has established 30 base stations in the 5G scale networking and application demonstration project in Xiong'an [6]. To further capitalize on the benefits of 5G in smart tourism with the high speed, wide bandwidth, and low latency features of the 5G network, Shenyang's special townships and villages will be developed using 5G scale networking and demonstration project base stations.

Developing a Tourism Brand in Shenyang and Organizing a Rural Smart Tourism Fair. The ecological management of Wolong Lake, the Pu River, and the Hun River will be improved, together with the enhancement of the tourism and leisure environment and the upgrading of the tourism infrastructure in order to promote the image of the northern city.

Innovative Funding and Investment Strategies as well as Market-Based Promotion of the Operation of Small (City) Towns with Unique Characteristics.

Multiple funding channels. Deepen the reform of the investment and financing system of the typical town, mobilize all parties to raise construction funds through various channels and forms, realize the virtuous cycle of the town's construction inputs and outputs, implement market-oriented and industrialized operation techniques for the town's water supply, sewage treatment, and trash treatment, and design distinct financing models and debt servicing mechanisms for various project types. In order to encourage social capital to invest in and run urban public facilities, the government should also rationalize the pricing structure for municipal goods and services, relax access restrictions, enhance oversight, and create opportunities for businesses to enter the concessions market through PPPs and other means.

Releasing the money-channeling multiplier effect. The government, state-owned enterprises, and some private businesses are in charge of front-end capital investment, which is primarily used for town planning and design, infrastructure upkeep and improvement, habitat transformation, industrial projects that are still in the planning stage, and other areas. Increase the pace of the infrastructure construction that is typically driven by industrial expansion in small (city) towns.

Promotion of New Media Marketing in the Travel and Tourism Industry. Make full use of e-commerce trade, travel resources, and new media in the travel and tourism industry. Industry in Shenyang is actively planning for the future to improve tourism knowledge new media, strengthen marketing, and promote new media.

5.8 Strategies for “Rural Smart Tourism” in Shenyang

Building a “INTELLigent Tourist Shenyang Model” Through Scientific Study and Planning. “Working to create and form a public service platform for intelligent tourism in Shenyang Economic Zone with perfect functions, convenience and practicality, and standardized operation” work idea, “investing in the construction of industry management, enterprise operation, and three information systems; piloting the construction of intelligent travel agencies, intelligent scenic spots, intelligent catering, intelligent hotels, and intelligent shopping malls; A long-term development plan has been created, and the project has been chosen as the focal point of the Shenyang smart tourist construction project.

Increase the Quality of Top-Level Design and Create Standards for Smart Tourism Building. A full-factor tourism wisdom construction standard system has been developed to control the construction of tourism wisdom in Shenyang in terms of construction standards, data interfaces, system construction, and other factors through the ten major aspects of tourism scenic spots, tourism accommodations, tourism transportation, tourism shopping, tourism catering, tourism countryside, tourism leisure and entertainment, etc. In order to achieve the objectives of “interconnection of government and enterprises, integration of enterprises, saving resources, and balanced development,” the government has increased the construction of tourism wisdom infrastructure. This is done in order to support the balanced and orderly development of the city’s tourism wisdom work.

Smart Tourism Cards are Being Issued by Innovative Application Carriers for the Shenyang Economic Zone. The Shenyang Tourism Bureau, along with the appropriate units, jointly founded and issued the Juyou-Smart Service Card, which has the service functions of data collection, fixed subsidy, and flash pass, in order to fulfill the work requirements of the General Office of the State Council’s “Several Opinions on Further Promoting Tourism Investment and Consumption” to issue real-name national tourism cards and to realize the innovation of tourism wisdom application carriers.

Create a Smart Mobile Client for Tourism Based on Real-World Requirements. The tourism route marketing system, tourism ticket marketing system, tourism visa submission system, room booking system, catering booking system, and tour guide booking system are created to penetrate the tourism industry chain, realize one-stop and convenient online consumption, and promote the effective docking of tourism products from the perspective of meeting the needs of tourists, travel-related businesses, and industry supervision work. We will comprehensively promote the pilot construction of smart scenic spots, smart hotels, smart restaurants, and smart shopping malls, promote industrial integration, and strengthen the connectivity of information platforms of tourism through the development of enterprise resource management (ERP) systems, customer resource management (CRM) systems, interactive information distribution systems (CMS systems), and navigation guide tour guide systems, among others. We will achieve the automation of tourist information collecting, classification, processing, and release by creating tourism information management systems, tourism business approval systems, tourism consumer complaint systems, remote training systems for tour guides, etc.

Innovative Marketing Strategy to Enhance Wisdom Tourism’s WeChat Public Platform We innovate to develop a new tourism wisdom marketing system that combines the features of scenic location promotion, quality improvement, and ticket distribution by creating the public WeChat platforms of Jiu Yuan and the Shenyang Tourism Bureau. Formation of tourism-related businesses, evaluation of tourism knowledge services, creative marketing by Moss, and enhancement of the WeChat public platform.

5.9 The Rural Smart Tourism Strategy in Shenyang’s Liaozhong District

The offshore oasis and Pearl Lake were designated as the “primary tourism development direction” in the higher planning guidelines for water resources in Liaozhong District.

Development Proposals.

Proposal 1: Waterway Development.Proposal. It is conceivable to expand waterway tourism in the Liao River basin adequately and reconstruct the old ManDuHu ferry crossing to produce amphibious tourist, according to a previous estimate of the Liao River’s yearly runoff.

Proposal II: Development suggestions for land transportation. To make it a popular tourist route and draw tourists, cooperative development of land and water transport will be fostered along with the development of water transportation.

Recommendation 3: A plan to increase traffic from virtual tourism. Some people may be able to take a journey around the globe without ever leaving their homes thanks to modern virtual display technologies. To pique viewers’ interest, virtual tourism development can provide picturesque appreciation pathways along the Liao River (Figs. 20 and 21).

Development of Tourism.

Resources for travelers. The Liao and Jin ruins, Pearl Lake, the offshore oasis, and the ancient tomb complex were chosen as the “primary tourism growth direction” by the district’s top planning of its tourism resources.

Water tourism is growing, especially in the Pearl Lake picturesque area, in Liaozhong District. Numerous ancient burial sites are scattered throughout the town of Tsiyutuo, and they, along with the excellent planning, are mostly used to create museums and other old cultural tourist initiatives. According to some planning research, the old city of Manduhu will primarily become a destination for folklore tourism. The Liaozhong District’s rural experience tourist hub is situated in Liuzhang Township, reflecting the district’s interpretation of its superior (Fig. 22).

Archival Materials. There are still some Liao and Jin sites in Liaozhong District that are useful for development. According to historical documents, the clan dates back to the early Qing Dynasty and was descended from Tabai, the sixth son of Nurhaci, the Qing Dynasty’s great progenitor. For a moment, Manchu culture predominated. Due to the abundance of historical and cultural resources and the current presence of numerous

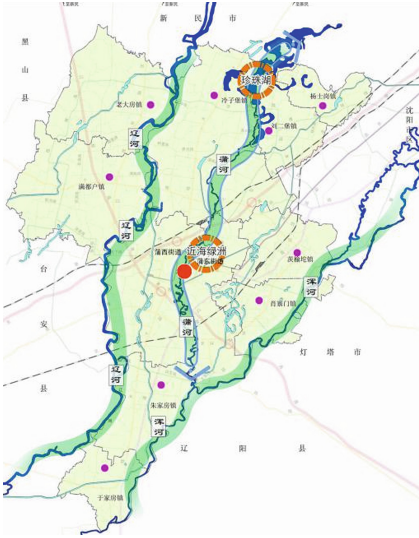


Fig. 20. Liaozhong District's Tourism Development

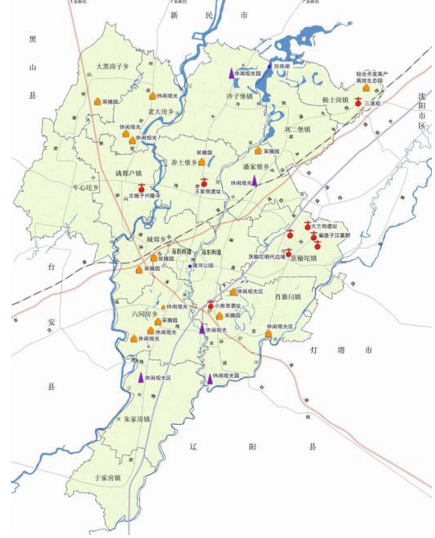


Fig. 21. Resources for Tourism are Distributed in Liaozhong



Fig. 22. Diagram of the development

ethnic groups, including the Han, Manchu, Mongolian, Hui, and Xibe, many different ethnic cultures can be produced and preserved.

Greater historical excavation opportunities could result from the expansion of the Liao and Jin sites and the construction of support structures surrounding them to create a circle for historical and cultural teaching.

Conclusion.

Utilizing the natural waterway, we will create a network of water ecological tourism, creating special wetland tourism in the spring and fall, special water tourism that incorporates 5G and folklore in the summer, and special ice tourism in the winter. A large-scale live interactive performance will be choreographed by renowned screenwriters on an outdoor stage that will be set up in the Liaohe wetland circle in accordance with the current natural scenery. With the help of high-tech virtual reality, a number of interactive

historical and cultural VR experience projects have been created, allowing visitors to experience the natural beauty while getting a glimpse into the past of Manduhu Town.

Many interactive historical and cultural VR experience projects have been developed with the use of high-tech virtual reality, allowing tourists to take in the natural beauty while learning about the history of Manduhu Town.

6 Conclusions and Novel Elements

6.1 Innovation in Development Model: New Business Model Based on “5G + Tourism” and “VR + Internet of Things + Big Data”

We have created a development model for offline experiences and online sales using IoT technology and big data thinking, using innovative tourism products from Shenyang’s unique towns and villages, including non-traditional heritage, calligraphy and painting, handicrafts, flower shops, cafes, and personalized agricultural products. [7]. The business has created the technological benefits of “smart tourism,” built a new tourism model based on 5G + VR, created a rural smart services demonstration area, created a platform for the exchange of tourism-related information, and created a “5G + smart scenic site.” Discover a new route for the quick expansion of rural smart tourism in Shenyang and develop into a new growth hub and pole for the city.

6.2 Innovation in Research Value: Multi-value Enhancement

Utilizing historical heritage, folk culture, architectural forms, and natural environments for their humanistic, aesthetic, environmental, and economic merits. The usage function and utilization value of the countryside are improved through functional compounding. Infusing new life into the growth of intelligent tourism in the countryside, the continuation of the cultural fabric and the creation of the original ecological style of the countryside will be accomplished.

6.3 Innovation in the Field of Study

Farmers can use the Internet, the Internet of Things, and other technologies to fully exploit the benefits of “5G” in rural tourism before, during, and after the tour by using the topic of “5G + Tourism,” which has the depth of application of Internet of Things technology and is a smart greenway information system for rural intelligent tourism. In order to achieve a high level of integration between online and offline, to create a closed loop of service experience, to form a tourism data ecological chain, and ultimately to support the development of a beautiful economy, the system is designed to fully play to the advantages of “5G” in rural tourism before, during, and after the tour.

Providing wise management, wise service, wise marketing, wise operation, and wise experience for rural tourism in all aspects, “5G + Tourist” will lead the new trend of rural tourism development in Shenyang in the future, opening up a new road of “5G + Tourism” development in Shenyang. Additionally, it will support the modernization and development of rural intelligent tourism.

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