

Research on the Impact of VR Technology Application on Red Tourism in Jiangxi Province

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Jiangxi Province is rich in red tourism resources. However, its current situation in the development of red culture and the combination of tourism and VR technology is not optimistic. This paper takes the subsequent development of Jiangxi red tourism as the research object and looks through the historical background of Jiangxi red resources to analyze the current situation of the Jiangxi red tourism. In the meantime, it explores and investigates the current situation of the development of VR technology in Jiangxi, the degree of the combination between theory with practice and the possibility of VR technology application. On this basis, it studies how to reasonably apply VR technology to promote the sustainable development of red tourism in Jiangxi, how to pull the economic growth of Jiangxi, and how to achieve a win-win scenario for the modern economy and traditional culture of Jiangxi.

Keywords: red tourism in Jiangxi Province, VR technology, Nanchang Uprising Memorial Hall

Introduction

Red resources are not only a carrier for inheriting the red spirit, but also an important asset for promoting local industrial development and realizing rural revitalization. In recent years, with the continuous expansion of red tourism resources nationwide, red tourism has continued to heat up. In order to better play the role of red tourism in promoting urban development, stimulating consumption iteration, and realizing rural revitalization, the Ministry of Culture and Tourism of China and the National Administration of Cultural Heritage of China have issued a series of policy documents, making clear deployments for red resources and leading economic and industrial development. Among them, the “Fourteenth Five-Year Plan” issued by the Ministry of Culture and Tourism of China clearly proposes to improve the red tourism product system, promote the integrated development of red tourism, focus on promoting tourism for the people, and play a tourism-driven role.

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VR as a representative technology of the new revolution has a broad future in the tourism industry. 2021 March 4, the National Administration of Cultural Heritage of China issued a notice: All localities are required to expand online communication channels, encouraged to use “cloud exhibitions” and panoramic VR, and made full use of revolutionary heritage resources and martyrs memorial facilities to serve the Party history learning and education. On March 13, 2021, the 14th Five-Year Plan of National Economic and Social Development of the People’s Republic of China and Outline of Vision 2035 was officially announced, in which the virtual reality and augmented reality industries were listed as key industries in the digital economy in the chapter of “Building Digital China” to enter the national planning layout. This indicates that VR will become a key technology to drive the development of the digital economy and industrial transformation and upgrading, which will profoundly change people’s way of life and bring new opportunities for the development of the red travel industry.

As a heroic city bearing rich red resources, Nanchang firmly grasps the opportunity of digital technology development, makes full use of red resources, and takes red tourism industry as a new growth point for the city’s economic development is an important issue nowadays. Therefore, it is of great practical significance to study how the combination of VR technology and the red tourism industry can help the economic development for China’s red tourism industry at present. The project group has conducted an example study on the red resources of the Nanchang Uprising, and its results will help enrich the theoretical research on the integration of red resources in China.

A Review of the Current Status of Domestic and International Research

VR Technology Research Status Review

Related research in VR in China started late, and the overall time span was not long. Since Chen Qian proposed the prospect of virtual reality in 1992, many scholars have been attracted to study the content about VR. Until today, China’s academic research on VR is getting better and better. By searching “the current situation of virtual reality research” in the CNKI, there are 163 academic journals, among which there are nine articles about the current situation and development trend. The earliest one is “The Current Situation and Development Trend of Virtual Reality Technology” published by Wenyan Yu in 2008. It can be seen that although China’s research on VR started late, its future development is expected to be good, especially since the country officially included VR virtual reality technology in China’s “Strategic Emerging Industries Key Products and Services Guidance Catalogue (2016 Edition)” in 2016. In addition, there have been many studies on the application of VR technology in specific venues in recent years (Jin & Wu, 2019; Qu, 2019; Zong, 2020), which shows that China’s research on VR related aspects still has great potential for development, especially in tourism and other related fields.

While our country is interested in conducting in-depth research on VR technology, other countries have not stopped their research on VR technology. The United States, the birthplace of VR technology, has made many advances in VR technology research and has conducted extensive research in cognition, user interface, backend hardware and software. Leif P. Berg and Judy M. Vance (2017) pointed out that there are great challenges in VR technology, 3D modeling and convenient data model conversion process, geometric modeling environment and modeling realistic physics existing in the virtual world simulation, and that efficient collision detection and perceived power feedback and performance, ergonomic VR headsets, and other technologies still

need to be improved. Following the United States, countries around the world have also pulled back the curtain on VR technology.

The Current Situation of Red Tourism Research in China

Research themed on red tourism is emerging in recent years. According to incomplete statistics, there are 2,879 related journal papers and 318 dissertations on the official website of CNKI. And most of these papers have a direct or indirect relation with Jiangxi Province, the Jinggang Mountain in particular. The research on Jinggang Mountain Red Culture accounts for a large proportion of the research, in which Li Shengfang (2019) analyzed the current situation of red tourism in Jiangxi and initially proposed a few thoughts on VR technology combined with red tourism based on the research. It can be concluded that red tourism research gradually becomes attractive to scholars and there will be more and more excellent papers on red tourism research.

The design and development of tourism products are a crucial part of promoting red tourism and research. Zhao Yue and Zhao Yi (2008) deem that it's very essential to respond to the new needs of tourists for tourism products in the era of experience economy, and use a series of experience elements to develop red tourism products in depth. Lin Chao (2008) upholds that red tourism development scenic spots should develop red-themed tourism products in conjunction with the special humanities and historical background of the scenic spot while building the overall brand image, so that visitors can receive revolutionary history education and meet their diverse experience needs at the same time.

The studies on the development of red tourism mainly cover the research on the problems and countermeasures of red tourism, the SWOT analysis of developing red tourism, and the development mode of red tourism. The existing papers discuss the sustainable development of red tourism on the basis of the analysis of the problems existing in its development and exploitation as well as elaborate in detail the three major problems that should be paid attention to in developing red tourism: insisting on the development of red tourism resources in a broad sense, developing the self-financed source market, and avoiding blind development without regard to reality. Based on the preliminary research, four development modes of red tourism are finally summarized: "red + green" mode, "boutique + publicity" mode, "brand + innovation" mode, and "private + government-assisted" mode. This paper will focus on "VR + red tourism" to broaden the research scope of VR and red tourism.

Research Overview

According to the above findings, the public have reported strong interest in the emerging VR technology as well as red tourism, both of which have shown a positive trend and a bright future. But it is undeniable that VR technology is still in the exploration stage in many fields, and its development is still constrained by many factors. The red tourism industry is an industry that is rising with the development of tourism in China. In the process of development, there are problems such as advolution of development forms and difficulty in arousing tourist' interest and getting their spiritual resonance. So how to solve these problems is the key to promote the development of red tourism.

Using the public's love for VR technology to promote the development of red tourism is already a development trend in the new era. Combining red tourism and VR technology can solve the shortcomings of red tourism in sightseeing mode and other aspects, and also bring the advantages of VR in technology into perfect play to help the development of tourism industry in Jiangxi Province.

Analysis of the Current Situation of Red Tourism in Jiangxi Province

Strengths of Jiangxi Province Red Tourism Development

Jiangxi Province is known as the “cradle of the red”, as the inheritance and development of red revolutionary culture, as a province excellent for patriotic education. In terms of the development of red tourism, Jiangxi holds distinct resource strengths.

As an important birthplace of China’s red revolutionary culture, Jiangxi has an extremely glorious revolutionary history and red medals. There are 14 national patriotic education demonstration bases and 79 provincial patriotic education demonstration bases here. The cradle of the Chinese Revolution is located in Jinggangshan City, Jiangxi Province; the cradle of the Chinese Soviet Republic is located in Ruijin, Jiangxi Province; the cradle of the People’s Army is located in Nanchang, Jiangxi Province; the cradle of the Chinese Workers’ Movement is located in Anyuan, Jiangxi Province; the starting point of the 25,000-Mile Long March is also located in Jiangxi Province.

These pieces subsided in the long history have left a large number of red resources and cultural relics for Jiangxi Province, which have been polished by time and successfully endowed Jiangxi Province with unique and special red resource endowments. These rich red cultural resources ensure its important position in the history of Chinese red culture and lay an invincibly solid foundation for the development of red tourism in Jiangxi Province.

Weaknesses of Jiangxi Province Red Tourism Development

Jiangxi, as a major red resource province, is rich in its red resources. However, among the top 20 most popular red scenic spots in the country in 2020, Jiangxi has only one on the list, and it ranks low. From this, it can be inferred that there are obvious shortcomings in the development of red tourism in Jiangxi Province. The main aspects are as follows.

Red tourism in Jiangxi Province does not go deep into the cultural and spiritual dimension and lacks an immersive experience. Most red scenic spots in Jiangxi Province do not have a high utilization rate of red resources. Most of the red tourism services only stay at the level of cultural relics display and guide explanation. These external services are not able to stimulate the tourists’ inner sense of identity and pride in red culture. Thus, it can be seen that red tourism in Jiangxi Province stays at the level of objects and does not go deeper. The spirit of Jinggang Mountain is the spiritual portrayal of the old generation of Chinese communists’ hard work and is an inexhaustible source of nourishing the construction of China in the new era. However, the excellent red culture Jinggangshan spirit had not been deeply developed in the red tourism in Jiangxi Province where it originated. Excellent red culture and red spirit are not utilized to the greatest extent in red tourism, and the nourishing effect of red culture is difficult to play to the greatest extent. Tourists coming to Gan for red tourism lack immersion experience.

Red tourism in Jiangxi Province is a serious homogenization phenomenon. Although Jiangxi Province has rich red tourism resources, the phenomenon of homogenization of red tourism is serious. Many red scenic spots have the same display style and single display form. Few red scenic spots in Jiangxi Province are able to explore unique selling points based on their own stories and characteristics to create a unique tour experience for tourists. Tourists get the same experience from each red tourist attraction, thus creating the psychology of “touring one as of ten”. Thus, the homogenization of red tourism has seriously hindered the positive and healthy development of red tourism in Jiangxi Province.

Jiangxi Province's red tourism resources integration is not high, each for their own. There are a large number of red tourism resources in the province of Jiangxi, but most of them are far away from each other. There is less connection and interaction among the red tourism attractions. The attractions tend to stand alone and fight alone and do not join together to play a cluster role. The platform linkage of the red tourism attractions in Jiangxi Province is not high, and the red tourism fails to “twist into a rope and make efforts in one place”, which greatly cuts the development vitality of red tourism in Jiangxi Province.

The supporting infrastructure of red tourism scenic spots in Jiangxi Province is relatively backward. In general, Jiangxi Province is not a developed economic province. Therefore, the infrastructure of red tourism in Jiangxi Province is also relatively backward. Taking the Jinggang Mountain Scenic Area in Jiangxi Province as an example, the display of the scenic area is limited to the Jinggang Mountain Monument and the mountain itself and is not aided by the use of technology such as VR technology. A small number of red cultural relics are also poorly protected in Jiangxi Province. Therefore, the relative backwardness of supporting facilities in red tourism scenic spots is also one of the shortcomings in the development of red tourism in Jiangxi Province.

Opportunities of Jiangxi Province Red Tourism Development

Jiangxi Province has policy advantages in developing red tourism.

From the central to the local level, the future development trend of red tourism is regarded as an extremely important political, economic, and cultural project to promote national prosperity, improve national cultural confidence, and consolidate national unity, and as a top priority in the work of the government, it is imperative to build a new situation of all time -round, multi-level, and broad field of red tourism.

At the same time, government policy support is also a necessary condition for the development of red tourism in Jiangxi Province. The national tourism development outline formulated by the National Tourism Administration fully reflects the central government's attitude of attaching importance to and supporting the development of red tourism in Jiangxi, and even in order to support the development of red tourism in Jiangxi, the central government has specifically issued policies such as “Implementation Opinions on Supporting the Development of Tourism Industry in Former Central Soviet Regions such as Gannan” to point out the direction for its development. At the same time, the Jiangxi provincial government also actively responded to the central government's call, sending a team of experts to specifically study the future development of red tourism planning, planning and launching a series of red tourism boutique routes, and in recent years, it has seized the opportunity to successfully hold a number of tourism activities on various holidays to promote the development of red tourism in Jiangxi to the greatest extent.

Every inch of land is soaked with red Jiangxi, like a revolutionary museum without walls, showing its collection to the general public, allowing the glory and sweat of history to reappear in front of everyone's eyes and recapture that great revolutionary history.

Research shows that in 2020, the market size of China's domestic VR industry will be about 12.84 billion yuan, which has always maintained a growth rate higher than 100% since 2016. Nowadays, the VR industry is in an accelerated development stage, the technology tends to be mature, the volume of capital investment is large, and the VR industry is developing rapidly. Looking ahead, the large VR market scale has taken shape, the market space is vast, and the country supports and encourages Jiangxi as a new industrial base to vigorously develop the VR industry, so Jiangxi has a good geographical advantage as a new VR industry base.

In recent years, the red tourism culture industry has been gradually developed, and by 2021, China has basically established a red scenic spot management system with Chinese characteristics, with the “National Red Tourism Classic Scenic Spot” as the core. Among the tourism industry, red tourism has emerged in recent years and has the potential for development. The country attaches importance to the development of traditional red culture and vigorously promotes it through the way of tourism loved by contemporary youth, and the country’s attention to this industry is also a great opportunity for the development of red tourism. Red tourism has also gradually become a major driving force for economic development in Jiangxi Province, becoming a new development engine for the city, such as the Jinggang Mountain scenic spot in Jiangxi Province, which has gradually become a popular attraction for study. Red tourism popular attractions since 2021 are as follows.

Table 1

Top Five Popular Locations for Red Tourism in 2021

Ranking	City	Province	Popular scenic spots
1	Xiangtan	Hunan	Mao Zedong Memorial Hall
2	Ji’an	Jiangxi	Jinggang Mountain Revolutionary Museum
3	Zhongshan	Guangdong	Sun Yat-sen’s Former Residence Memorial Hall
4	Yan’an	Shaanxi	Yan’an Revolutionary Memorial Hall
5	Dandong	Liaoning	Anti-U.S. Assistance Memorial Hall

Source: Public information compilation.

At the time of the epidemic, there are significant shortcomings in the traditional mode of operation of the tourism industry. The epidemic has hindered the development of many industries, so there is an urgent need to explore a new path of development. In tourism, the traditional offline tour mode is time-consuming and labor-intensive, how can you experience cultural monuments and natural scenery without leaving home? This requires the support of emerging technologies, VR’s virtual reality, can help users immerse themselves in the scenery as much as possible; in addition, there are panels with explanatory functions, which can realize the natural and cultural scenery without leaving home, and to draw knowledge.

The new “Red + VR” model is the use of modern science and technology to promote the development of traditional red culture, a combination of the past and the future means to explore through a combination of online and offline, in the recent epidemic flood stage, to better promote the development of people’s spiritual civilization; you can imagine that the prospects of the relevant areas will be limitless.

Threats of Jiangxi Province Red Tourism Development

On the one hand, the development of the VR industry in Jiangxi Province has good prospects, but there are still breakthroughs to be made in related technology, and updated technology is needed to achieve a more immersive tour experience. In Jiangxi Province, the use of VR technology in red culture is still at a relatively

basic stage, and from the project team's field research, at present, there is only one VR machine in the Nanchang 8th Anniversary Memorial Hall, and it belongs to the local government input, which is obviously not enough in terms of VR and red tourism promotion.

On the other hand, VR technology requires a large amount of investment, the survival and development of related small and medium-sized enterprises are more difficult, and the government also needs to implement policies and take more external methods to support the development of small and medium-sized enterprises, so as to better promote the development of related industries. Especially affected by today's epidemic, which is both a major opportunity and a major challenge, the impact of the epidemic makes it impossible for visitors to visit offline, giving full play to the role of VR technology in time and space to promote the development of red tourism is crucial. But technical breakthroughs make it difficult for small and medium-sized enterprises to survive, which again emphasizes the importance of relevant government policies and financial support, which requires a good institutional environment. The development of this aspect requires joint cooperation and mutual support between enterprises and the government.

In terms of the needs of tourists and users, some studies show that the audience of red tourism has a wide age difference, ranging from the youth group who are receiving education to the middle-aged and above group who have relevant knowledge and sentiment. In the current fast-paced work and life, tourism is a good way to relax, but how to make people choose red tourism more often is a problem that needs to be studied. Expanding the audience group is crucial for the future development of red tourism and needs to be brought to our attention.

The technical aspects of the machine need a breakthrough, government support and investment needs to be increased, the development of the VR industry road requires high costs, the general business dare not easily involved, the need to expand the propaganda development and other issues are major problems that the VR industry is facing today, so to VR to drive the development of red tourism in Jiangxi, the need for long-term considerations and clear planning, step by step to gradually solve such problems.

VR Technology to Promote the Development of Red Tourism in Jiangxi Province—Taking Nanchang Uprising Memorial Hall as an Example

Basic Information of Nanchang Uprising Memorial Hall

Nanchang Uprising Memorial Hall was built in 1956, formerly known as the "Jiangxi Grand Hotel", which the uprising army contracted as a meeting place; the venue has a rich historical and cultural heritage. Nowadays, Nanchang Uprising Memorial Hall is widely known as a major landmark in Nanchang, and the venue is open to the public for free. Whether it is Nanchang citizens or foreign tourists, Nanchang Uprising Memorial Hall is an extremely popular tourist attraction and is also one of the demonstration bases of patriotic education and propaganda bases of red culture in Jiangxi Province.

The Nanchang Uprising Memorial Hall promotes the red revolutionary culture through various forms, such as opening moral lecture halls, setting up pioneering posts for party members, organizing activities related to learning from Lei Feng, etc. These activities greatly mobilize the enthusiasm of citizens and visitors, and are favorable measures to promote the red culture. Externally, the museum often cooperates with schools to carry out educational activities such as "Care for Little Red Army Children", "Remember the Revolutionary Martyrs and Always Follow the Party", and "Little Voices Spread the Soul of the Army", in order to better enrich the historical knowledge and promote the patriotic spirit of the school and university students.

Nanchang Uprising Memorial Hall in many places uses VR technology; there is currently only one VR machine, for the government to put propaganda. The VR machine is equipped with a pair of VR glasses, with a number of scenes, the scenery, and landscape of Nanchang, as well as the venue tour of the region. But in the use of experience, clarity needs to be improved, and the number of scenes is more limited. From the point of view of the frequency of use, most of the passing tourists will want to experience it because of their own interest, after all, the number of machines is limited, want to experience the tourists sometimes needs to wait, but the waiting time will not be too long, so there has been no long queues. Online, the official website of Nanchang Uprising Memorial Hall, has a VR panoramic tour of the venue, which is in line with the offline venue's field settings, allowing visitors to "cloud tour" without leaving home. In addition, to the use of science and technology, the venue is also equipped with interactive screens; on the large screen there is a display of relevant historical events, the display in the form of graphics or video, and visitors can click on the relevant historical facts they want to know. On the occasion of the 100th Anniversary of the Founding of the Communist Party of China, the venue also has a quiz system for the centennial of the Party, which is also placed on a small screen and plays a great role in promoting the knowledge of the Party.

In recent years, Nanchang Uprising Memorial Hall launched 5G red tourism demonstration area, which is the first "5G + VR" red tourism demonstration model in Jiangxi Province, through the combination of a high-speed network of 5G and new technology VR, to achieve online "cloud tour" more immersive. Online it also launches the relevant live interactive activities, and tourists have in-depth communication, harvesting a large number of "fans". This shows that the integration of science and technology with red culture is a goal we have gradually pursued in recent years.

Strategies for Applying VR Technology to the Nanchang Uprising Memorial Hall

VR video support, preview scenic views. Using VR technology to produce themed videos with the background of red revolutionary culture stories, select some typical realistic tourism landscapes of Nanchang Uprising Memorial Hall, according to the official real historical records, dig deep into its corresponding red culture stories and red culture connotations through the examination of historical information, produce tourism propaganda videos with full content and good quality, and release them to the official website of Nanchang Uprising Memorial Hall. The public can easily break the limitation of time and space without leaving home and travel through time and space to revisit those glorious years. Through VR videos, visitors can preview the scenic spots in advance, thus attracting more people to Nanchang to explore the memorial hall and enjoy a complete tour.

VR panoramic display to improve the sense of immersion of visitors. VR panoramic display is different from the traditional display of cultural relics in the pavilion; it is based on panoramic images taken from real scenes, through web3D development and VR virtual reality technology to build a real tourist landscape, to achieve the effect of historical reproduction and scene restoration, and with animation and voice for cultural interpretation. VR panoramic display uses VR technology to create a powerful visual sensing effect, to give travelers a different virtual reality immersion, so that visitors are as close to being in the scene as possible; for example, in the era of beacon fire, the thundering raw and vibrating sense of shell bombardment can be more clearly displayed. Secondly, it gives the choice of the tour process to visitors, who can freely choose the tour content and tour route for interactive experience according to their own interests and preferences, while visitors can get a fantastic experience in the panoramic mode, both on the ground and look up at the scenery.

Launch VR products to improve user experience and deepen national identity during the journey.

As opposed to simply visiting the memorial hall, a combination of tour and entertainment may be a better way to keep visitors' interest in a tour. Nanchang Uprising Memorial Hall can purchase VR panoramic display machine, VR glasses, real-world simulators, and other VR technology products adding variety to the tourists' tour, while a new type of VR products can be used to assist tourists to visit, creating a powerful visual sensing effect, bringing a strong sense of virtual reality immersion to travelers, greatly mobilizing the visitors' sense of sight, hearing, smell, touch in many ways. The tour is designed to immerse visitors in the gunfire, the rush, and the bloodshed of Nanchang Uprising. Visitors can enjoy the scenery and learn about the red culture, deepen their real experience of the red history and the scenario, deepen their memory of the revolutionary predecessors and the hard history of the revolution through the reproduction of the historical scenes, and strengthen their sense of identification with the red culture and their pride in the great cause of the Chinese nation and the rich culture of the Chinese nation.

Improve scenic infrastructure construction, supporting the use of VR scenes. Although the application of the results of VR technology has its unique advantages, there are also shortcomings. In particular, its main role in the visual senses of visitors, as opposed to the visual enjoyment, visitors in the auditory and tactile senses will require the use of other facilities in the museum, so that visitors have a better tour experience. Therefore, Nanchang Uprising Memorial Hall in the improvement of infrastructure construction needs cannot be ignored. In the museum, stereo audio and alternative models of various exhibits are added, and simultaneous audio is played while visitors enter the VR virtual world, and visitors are allowed to touch the models within their control and without destroying the alternative models of exhibits to increase their sense of touring experience.

Improve safety and security measures to ensure personal safety. Safety is the first priority. Due to the gap between the VR virtual world and the real world, when experiencing the VR panoramic or other VR applications, visitors are likely to bump or fall. At this time it is necessary to improve the related safety protection measures in Nanchang Uprising Memorial Hall, including strengthening the training of security personnel and increasing the number of inspection personnel in the museum within the limits of acceptable costs. Take all possible and acceptable measures to ensure the personal safety of visitors.

The Expected Effect of Applying VR Technology to the Nanchang City August 1st Uprising Memorial Hall

Through field research, the group fully collected a series of issues that will have an impact on the expected effect of VR + red culture, including the public's awareness and acceptance of VR, the existing shortcomings of scenic spots, and audience demand. In addition, members of the group conducted variable correlation analysis on the collected information using SPSS26.0 to provide data support for the expected effect of VR acting on red culture, and the conclusions obtained provide an in-depth indication that the combination of VR and red culture will help pull the economic development.

Pearson correlation coefficient analysis (Pearson correlation coefficient). The three variables selected were: the number of VR experiences, the willingness to consume VR + red travel, and the willingness to experience VR + red travel (referred to as the number of experiences, willingness to consume, and willingness to experience). The Pearson correlation coefficient analysis was done, and the results of the analysis are shown in the following table.

Table 2

Correlation Analysis

Variables	Pearson coefficient		
	Number of experiences	Willingness to consume	Willingness to experience
Number of experiences	1	-0.340	-0.079
Willingness to consume	0.340	1	0.224
Willingness to experience	0.478	0.224	1

According to Table 2, the p-value shows that all three variables have a significant effect on Y. That is, people with VR have a higher willingness to consume and experience red tourism culture integrated with VR technology. This indicates that the addition of VR will make the current situation of red tourism in Jiangxi Province improved. The data in Variable 1 are generally less than 0, indicating that Variable 1 is negatively correlated with Y, indicating that there is still a huge space for the growth of consumption of VR technology fused in red tourism culture.

Linear regression analysis. SPSS 26.0 was used to first conduct the model summary and generate the data tables required for the research, and then produce the analysis of variance (ANOVA) tables accordingly, and the results of the analysis are presented in the following table.

Table 3

Summary of Linear Regression Analysis Models

Models	R	R-side	Adjusted R-side	Standard estimation error
1	0.489	0.239	0.228	0.315

As shown in Table 3, in the model summary the R-squared is 0.228 and the significance in the ANOVA table is less than 0.01, indicating that the model is overall significant. And among all the independent variables, at least one of them has an effect on Y.

Table 4

Table of Linear Regression Coefficients

Variables	B	Standard error	Beta	t	Significance
1	-0.079	0.058	-0.086	-1.369	0.173
2	0.069	0.080	0.059	0.866	0.388
3	0.524	0.073	0.455	7.147	0.000

As shown in Table 4, the data in the row where Variable 1 is located are generally negative, and Variables 2 and 3 are positive, which shows that Variable 1 presents a significant negative impact on improving the current situation of red tourism in Jiangxi Province. In addition to Variable 1, the remaining two variables show a significant positive impact on improving the current situation of red tourism in Jiangxi Province. Among them, the p-value of Variable 3 is less than 0.01, showing a significance at the 0.01 level.

In summary, the data results show that VR fusion with red culture will improve the development of the red tourism industry in Jiangxi Province. Therefore, the integration of VR technology with Nanchang Eighth Anniversary Memorial Hall as a pilot and radiation to the surrounding areas will effectively make up for the existing shortcomings of the red tourism industry, innovate the tour, improve the quality of mass tourism through interactive experiences, and increase the attractiveness of Jiangxi Province to tourists. This new tour

experience will also promote consumption iteration and increase the public's willingness and frequency of consumption of red culture.

In today's diversified knowledge acquisition channels, the traditional lectures become more passive, so that more people take the initiative to understand, love, and carry forward the spirit of August 1 which needs a new way of communication, and the construction of VR virtual scenes, unique immersion experience to fully meet this demand, to achieve the purpose of experiential education. While increasing the interest of the tour, it also increases the probability of revisiting. Such education and fun enrich the content of red tourism activities and improve people's attention and understanding of red culture, and the revenue generated from it will continue to reinvent and promote the development of the virtuous cycle of the red tourism industry, thus boosting the city's economic development.

Conclusion

The development of red tourism does not only require efforts in the development of red culture but also the reasonable use of VR technology to promote the development of tourism in Jiangxi, to boost the economic growth of Jiangxi while spreading the red revolutionary story across time and space, rich in eternal charm and contemporary value, to achieve a win-win scenario for the modern economy of Jiangxi and traditional culture. "VR + red tourism" as a new era has not been fully tapped out of the industry and will become a key object of future development; Jiangxi as a large red tourism province should seize this development opportunity, the use of advanced VR technology to promote the development of tourism so that Jiangxi has become a large province of tourism in the new era.

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