Study on the Digitalization of Shaoxing's Cultural Heritage and Rural Visual Branding

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Abstract: *With the rapid development of digital technology, digitizing cultural heritage has become an important strategy for protecting and promoting traditional culture. As a famous historical and cultural city, Shaoxing faces many challenges in integrating the digitization of cultural heritage with the shaping of rural brands. This study explores the impact of the digitization of cultural heritage on the visual brand of Shaoxing's rural areas by constructing a systematic theoretical framework, using a mixed research method, and combining local government statistical data, tourism industry reports, and case studies. The study uses multiple regression and thematic analyses to quantitatively evaluate how digital technology can enhance brand recognition and tourist engagement and promote rural economic sustainability. The results show that the digital branding strategy significantly improves rural areas' brand awareness and economic benefits and provides an important reference for future policies and practices.*

Keywords: *Shaoxing cultural heritage, Digitization, Rural visual branding*

1. Introduction

The digitization of cultural heritage has become an important tool for protecting and promoting traditional culture in modern society. Choosing Shaoxing as the research object is of key significance. Shaoxing has a long history. As a region with a profound historical and cultural heritage in China, it is like a cultural treasure house, containing many intangible and material cultural heritages with rich varieties. From the perspective of material cultural heritage, Shaoxing's ancient bridges are unique. As one of the oldest existing urban bridges in the country, the Eight-Character Bridge has a clever layout and a peculiar structure, which can be regarded as a model of ancient bridge architecture; the well-preserved Ming and Qing Dynasty buildings in Anchang Ancient Town, such as the Master's House and the Money House, carry Shaoxing's unique business culture and master's culture.

Regarding intangible cultural heritage, Shaoxing's rice wine brewing skills have a long history, from selecting raw materials to brewing. It contains rich traditional wisdom, and the brewed rice wine has a unique flavor. Yue Opera is the second-largest opera in China, famous for its beautiful singing and delicate performance style, showing the artistic charm of Shaoxing. These cultural heritages are not only the treasures of Shaoxing but also an important part of the traditional culture of the Chinese nation.

However, regarding rural brand building, Shaoxing's rural areas still face problems such as low brand awareness, insufficient cultural communication, and insufficient economic benefits. Research on the digitization of cultural heritage and rural brand building still lacks the problem of insufficient integration of theory and practice. It is necessary to explore the specific path of digital tools to enhance rural brand awareness and promote economic growth [1].

In this study, the mixed research method is combined with local government statistics, tourism reports and expert interviews, and the multiple regression model and theme analysis method are used to analyze the mechanism of digital technology in the construction of Shaoxing rural brand visual image, and systematically evaluate the promotion effect of digital platforms such as virtual exhibition augmented reality social media on cultural identity and economic sustainability.

2. Literature Review

2.1 Digitalization of Cultural Heritage and Rural Brand Building

As a key development direction of cultural protection and communication in recent years, digitalization of cultural heritage covers three-dimensional modeling, virtual reality, augmented reality and big data analysis. Gu L and Zeng Y X(2024) confirmed that this technology not only improves the availability of cultural resources but also promotes the globalization of cultural communication [2]. Ranjan A and Chaturvedi P(2022) emphasized that digitalization can realize the sustainable development of cultural heritage and activate the local economy in areas with weak infrastructure [3], and Lian Y and Xie J(2024) explored the case of Japanese villages using virtual tourism technology to promote the spread of heritage [4]. Compared with Evens T and Hautkeete L(2011)[5], Conti L(2025) demonstrated the linkage effect of cultural digitalization on rural tourism upgrading and economic growth of cultural enterprises[6].

2.2 Rural Visual Branding

Rural branding is an important strategy to enhance the influence of local culture, attract tourists and stimulate economic growth. Brunner M P(2025) pointed out that a strong visual brand image can shape the unique cultural identity of rural areas and strengthen the competitive advantage in the market[7]. Li J, Xu T and Gu X(2023) found that digital means such as social media marketing and interactive virtual experience can effectively enhance brand appeal and user participation[8].

In addition, Yang Q(2017) emphasized that the tripartite cooperation between government enterprises and communities needs to be deeply combined with local culture to achieve long-term brand development [9]. Kunpeng L(2023) confirmed that the digital marketing strategy of social media and short video platform in rural areas of China can significantly increase brand exposure and tourist participation rate[10].

2.3 Research gaps and contributions

With the development of digital technology, rural tourism is increasingly dependent on online communication and virtual experience. Seila F, Selim G and Newisar M (2025) revealed that AR and VR technology can create an immersive cultural experience for tourists, and promote them to form a profound cultural cognition before visiting the field. Although the current research confirms the application value of technology, it does not systematically explain how digital tools can enhance the core competitiveness of rural brands through visual image reconstruction and cultural narrative innovation, which constitutes the breakthrough direction of this study[11]. Zhu Y. (2024) found that digital means help enhance the tourist experience and increase tourists' awareness and loyalty to rural brands[12].

In addition, Lin and Li (2021) proposed that smart tourism is becoming an important trend in the development of global rural tourism[13]. AI technology and big data analysis are increasingly used in rural brand management, enabling brands to formulate precise marketing strategies based on tourist behavior data.

3. Research methods

3.1 Data Source and Sample Selection

The data of this study mainly comes from the following aspects: first, the statistical data of documents from 2018 to 2023, covering the number of tourists, digital investment, brand awareness, and other indicators; Second, the data of the tourism industry, which are taken from "In-depth Market Analysis and Investment Strategy Research Report of Rural Tourism Industry in Zhejiang, China Province in 2025" [14] and related market research reports; The third is in-depth interview data, including forum designers, brand managers and local related personnel, in order to understand the impact of digitalization on brand building. This study selects 20 villages in Shaoxing as samples, 10 of which have implemented e-commerce digitalization measures, and the other 10 have not adopted digitalization strategies. We can deeply explore related issues by comparing and analyzing the brand development of these sample villages.

3.2 Data analysis methods

This study uses various scientific and rigorous data analysis methods to deeply explore the influence of the digitalization of cultural heritage on Shaoxing's rural visual brand.

Descriptive statistical analysis is used to sort out the data characteristics of different sample villages regarding brand awareness, the number of tourists, and economic growth. By calculating the concentration trend, dispersion degree, and distribution characteristics, the basic situation of each variable is presented intuitively, which provides a data basis for subsequent analysis.

Regression analysis, as the core quantitative means, constructs a multiple regression model. Digital investment, social media interaction, and AR/VR application are independent variables, and brand development indicators such as brand awareness, tourist participation, and economic income growth are dependent variables. Use professional software to accurately calculate the fitting, evaluate the influence degree and direction of independent variables on brand development through regression coefficient, and strictly carry out significance tests to ensure that the model is effective and reliable and avoid the contingency of conclusions.

Thematic analysis is based on in-depth interview data. In-depth interviews collected the opinions and experiences of forum designers, brand managers, and local related personnel, which contained the profound influence of digital strategy on rural brand building. In the analysis, the interview content is transcribed word by word. Then, the text data is classified and summarized using coding technology. The representative theme concepts are refined, and the key influencing factors, action mechanisms, and potential development trends are excavated. It provides qualitative support for the research, complements the quantitative analysis, and comprehensively reveals the complex relationship between the digitalization of cultural heritage and the branding of rural vision.

4. Research results and discussion

4.1 Statistical analysis results

In order to show the process of data analysis more clearly, we draw a trend chart of rural brand awareness changing with time (see Figure 1). In order to visually show the changing trend of rural brand awareness with time, a trend chart of rural brand awareness is drawn (see Figure 1). In Figure 1, the abscissa represents time (2018-2023), and the ordinate represents brand awareness (%). Village A represents the village that has been digitized, and Village B represents the village that has not been digitized.
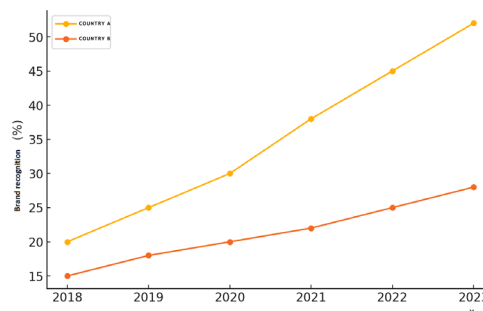

Figure 1. Changing trend of rural brand awareness

As can be seen from Figure 1, the growth rate of brand awareness in country A (which has been digitized) is faster than that in country B (which has not been digitized). It shows that digital investment positively affects the promotion of rural brand awareness. In order to further quantify the impact of digitalization of cultural heritage on brand building, we construct the following regression model: brand awareness $= \beta 0 + \beta 1*$ digital investment. The results of regression analysis are shown in Table 1 below:

Table 1:Regression model of the influence of digitalization of cultural heritage on brand building.

variable	Regression coefficient (βeta)	standard error	T value	P value
Constant term (βeta_0)	16.4509	1.544	10.652	0.000
Digital Investment (βeta_1)	0.1504	0.015	10.136	0.000

The regression analysis results are as follows: brand awareness =16.45+0.1504×digital investment. Data analysis shows that digital investment has a significant positive impact on promoting rural brand awareness ($p<0.001$, adjusted R^2 =0.911). Different digital strategies significantly impact the promotion of rural brand awareness, tourists' cultural identity, and their participation. The specific data are shown in the following table2:

Table 2: The influence of different digital strategies on the promotion of rural brand awareness, cultural identity and participation of tourists.

Digital Strategy	Brand Awareness Increase (%)	Visitor Cultural Identification Score	Visitor Engagement Increase (%)
Social Media Engagement	35	7.8	40
AR/VR Cultural Experiences	45	8.5	50
Online Heritage Exhibitions	50	9	60
AI-Powered Tourism Recommendations	30	7.2	35

From the brand awareness perspective, online heritage exhibitions lead by 50% and AR/VR cultural experience by 45%. Regarding tourists' cultural identity score, online heritage exhibition performed best, with a score of 9.0, an AR/VR cultural experience score of 8.5, and social media interaction and artificial intelligence travel recommendation scores of 7.8 and 7.2, respectively. The growth trend of tourists' participation is consistent with the promotion of brand awareness. Among them, online heritage exhibitions promote tourists' participation by 60% and AR/VR cultural experience by 50%. The interview results show that the digital strategy of rural brands enhances brand awareness and tourists' cultural identity and participation.

4.2 Policy and practical suggestions

In order to further promote the digital construction of rural brands, the government should increase financial support and encourage rural areas to invest in digital cultural experience projects, such as AR/VR, to enhance the immersive experience of tourists. In addition, digital marketing methods should be strengthened, and social media platforms should be fully used to enhance the exposure of rural brands to gain attention from a wider audience. At the same time, it is suggested that a digital culture Expo be established so tourists can browse cultural heritage information online before visiting and improve the offline access rate. In order to enhance the overall effect of rural brands, we should also promote the integration of rural brands, integrate regional resources, form a unified brand matrix, and enhance the overall influence. Finally, the government, cultural institutions, and scientific and technological enterprises should strengthen cross-departmental cooperation to promote the development of rural digital brands jointly and ensure that digital technology can more effectively promote the sustainable development of rural brands.

5. Conclusion

This study combines quantitative and qualitative methods to discuss the influence of the digitalization of cultural heritage on rural brand building. Digitalization of cultural heritage can effectively enhance brand awareness, enhance tourist experience, and promote rural economic growth. Future research can further expand data samples, analyze long-term trends, and explore the specific role of different digital technologies in rural brand building.

To sum up, digitalizing cultural heritage is an important way to enhance the value of rural brands. The government, enterprises, and communities should work together to promote the deep application of digital technology in rural brand building and realize the coordinated development of rural cultural

protection and economic growth.

Acknowledgements

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