

# Research On Tourism Signage Design from The Perspective of Regional Culture: Discussion on Inheritance and Innovation

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**Abstract:** *This study explores the inheritance and innovation in tourism signage system design from the perspective of regional culture. Under the background of globalisation, the presentation of local cultural characteristics in tourism is becoming more and more important, and tourism signage, as a bridge connecting local culture and tourists, assumes a unique cultural communication function. This study adopts the methods of literature review, case analysis and design practice to discuss the current trends and problems of tourism signage design in depth. By analysing successful tourism signage systems at home and abroad, the study proposes a signage design framework based on regional cultural characteristics, focusing on how to integrate local cultural elements and modern design language in the design process, thus enhancing the recognition and cultural connotation of the signage. The design of the logo should focus on refining the elements of local history, folklore and natural landscape, and express them through simple and modern visual symbols. On the basis of inheriting traditional culture, tourism logo design should follow the trend of the times and incorporate innovative thinking to create a logo system that is rich in local characteristics and has an international perspective. This kind of design can not only enhance the dissemination and attraction of local culture, but also bring greater economic benefits and cultural value to the tourism industry.*

**Keywords:** Regional Culture, Tourism Signage System, Semiotics, Cultural Inheritance, Design Innovation

## 1. Introduction

At present, many tourism identification systems have problems such as convergence and symbol unification, which lead to it difficult to effectively present regional cultural characteristics, and thus affect the cultural experience and cognition of tourists. Therefore, how to integrate regional culture into the tourism identification system, so that it cannot only meet the needs of modern tourism, but also highlight the cultural uniqueness, has become a key topic to be solved in the field of contemporary design.

### 1.1 Research Background

Driven by the wave of globalization, tourism has become an important industry to promote economic development, cultural exchange and regional image building. However, with the booming development of tourism, the tourism identification system has played an increasingly prominent role in guiding the tourists, optimizing the tour experience, and shaping the cultural

identity. As an important carrier of information transmission and visual recognition, the tourism identification system not only plays the basic function of guidance, but also plays a key role in promoting local cultural communication and enhancing the brand value of tourism destinations.

## **1.2 Study purpose and significance**

This study aims to explore how to optimize the design of the tourism identification system based on a regional cultural perspective to achieve a balance between cultural inheritance and innovation. On the one hand, this study hopes to analyze the core elements of different regional cultures in the design of tourism signs, so as to promote the continuation of cultural identity and historical memory. On the other hand, under the background of digital and intelligent technology, how to use modern design methods to innovate traditional cultural symbols, so as to improve the identifiability, interactivity and practicability of the tourism identification system. Through this research, it can not only promote the development of the design theory of the tourism identification system, but also provide practical guidance for local governments, tourism managers and design practitioners, and help the brand building and cultural communication of tourism destinations.

## **2. Regional Culture in Tourism Identity Systems**

The application of regional culture in tourism signage system is the core content of researching how to express the culture of a specific region through visual language in tourism industry. As an important representative of regional image, tourism signage is not only a visual symbol system, but also carries the transmission and recreation of culture. The uniqueness of regional culture plays a crucial role in tourism logo design, which can help tourist destinations establish a distinctive brand image and attract the attention and recognition of tourists. Through the excavation and innovation of local traditional culture, historical background, folk customs and natural resources, designers are able to skillfully integrate these elements into the signage system, which not only retains the essence of culture, but also has a sense of modernity and artistry. In addition, the design of the signage system also needs to pay attention to the balance between cultural continuity and innovation, avoiding too conservative or single presentation. In conclusion, the application of regional culture in tourism signage system is the product of the intersection of cultural heritage and modern design concepts, reflecting the close connection between cultural heritage and innovative development.

### **2.1 Definition and characteristics of regional culture**

Regional culture is a unique cultural system formed by the combination of local social history, natural environment and ethnic customs in a specific geographical region, covering elements such as language, architecture, art, folk customs, religious belief and food culture. These cultural elements not only reflect the local history, but also shape the cultural identity of the regional society. The core features of a regional culture include:

Uniqueness, Due to the historical evolution, geographical conditions and ethnic composition differences, different regions form unique cultural symbols and expressions, such as the colors of Tibetan architecture and the spatial layout of Suzhou gardens. Inheritance, Regional culture is passed down from generation to generation, and its core values, customs and artistic styles are continued through symbols, languages and rituals. Adaptability, although regional culture is impacted by modernization and globalization, it can be integrated with the needs of contemporary society through creative transformation and innovative development.

In the design of the tourism logo system, regional culture can not only enhance the recognition of the logo, but also improve the cultural experience of tourists, and become the carrier of cultural communication. Therefore, how to scientifically integrate the regional cultural elements into the identification system is a key problem in the design.

## **2.2 Extraction and application of regional cultural symbols**

The expression of regional culture depends on a unique symbol system, whose forms include words, patterns, colors, shapes and sounds. In the design of tourism signs, the key to enhance the cultural value is to extract the symbolic symbols from the regional culture and apply them reasonably. The extraction and application of symbols usually includes the following steps:

Identification and classification of cultural symbols: first of all, it is necessary to carry out a systematic study on regional culture and identify its core symbol system. Representative symbols were extracted through fieldwork, historical literature analysis, and interviews. For example, traditional Chinese garden design can use for reference symbols such as black bricks and black tiles and missing Windows, and cultural elements such as clothing patterns and language can be combined in ethnic minority areas.

Symbolism and visual translation of symbols: The application of cultural symbols in tourism signs should retain the symbolic meaning, and conform to the law of modern visual communication. For example, the guide system of the Forbidden City in Beijing uses red walls and yellow tiles and combines traditional elements such as auspicious clouds and dragon and phoenix to convey the royal cultural atmosphere. The design should ensure the readability, simplicity and universality of the symbols to ensure the effective communication between cross-cultural tourists.

Modern design and function optimization of symbols: Traditional symbols should be innovated in combination with modern design technology, such as using parametric design or AR technology to enhance the interactive experience. Symbol design should also meet the easy identification, readability and environmental adaptability to ensure its effectiveness in different scenarios.

### **Case analysis: successful regional culture identification system design**

Kyoto: Kyoto's tourism logo design combines Japanese Chinese characters, Ukiyo-e patterns and the colors of the Edo period. Through modern design optimization, it not only reflects the cultural heritage, but also conforms to the reading habits of international tourists.

Barcelona: Barcelona's travel sign system incorporates the curve elements in the Gaudi building, giving the guide system a high degree of cultural consistency and enhancing the visual memory points of tourists.

## **3. Symbolic perspective in signage design**

The semiotic perspective in logo design emphasises the relationship between symbols, images and meaning. Semiotic analysis reveals the cultural messages and symbolic meanings conveyed by interpreting the shapes, colours, patterns and other elements in a logo. Through semiotic theory, designers transform abstract cultural concepts into concrete visual elements to help viewers understand and create emotional resonance in a short period of time. In tourism logo design, the semiotic perspective is particularly important, because it can ensure that the

logo not only has recognition, but also can deeply reflect the regional cultural characteristics, enhance the cultural connotation and recognition of the brand.

### **3.1 Semiotics and Design**

Semiotics as the study of symbols and their meaning construction, provides a theoretical framework for understanding and optimizing the identification system. The core of semiotics is to analyze how symbols convey information through the relationship between the form and the meaning it carries. As one of the founders of semiotics, Ferdinand de Saussure defines semiotics as the study of the relationship between "energy" (signifier) and "meaning" (signified), that is, the interconnection between the form (ability) of symbols and the concept or meaning (meaning) represented by symbols. In his opinion, the meaning of symbols is not directly determined by the symbol itself, but through the contrast and difference between symbols and other symbols. Therefore, the design of the symbol system should not only pay attention to the expression form of the symbol itself, but also consider its symbolic process in the culture and context.

Ding, E. (2016) pointed out that Pierce further deepened the theory of semiotics, and that he had an important influence on the classification of symbols. Pierce divides the symbols into three categories: image symbols (Icon), indicators (Index), and symbols (Symbol). Image symbols are the connection between morphological similarity and the object, for example, a landscape is visually reminiscent of the natural landscape; the symbol has some direct physical connection with the object, such as smoke indicating fire; the symbol relies more on the agreed cultural background to give meaning, for example, pigeons symbolizing peace. This classification provides a theoretical basis for the use of symbols in the tourism sign system, and helps designers to choose the appropriate symbol type according to different functions and cultural backgrounds.

In the design of tourism identification system, the application of symbolic theory is mainly reflected in the following aspects:

The primary function of the identification system is information transmission, and its design needs to conform to the law of human visual cognition. According to Gestalt psychology (Gestalt Psychology), people tend to integrate the graphics and follow the principles of proximity (Proximity), similarity (Similarity), closure (Closure) and continuity (Continuity) (Can, H., 2006). According to this theory, the design of tourism signs needs to make the symbols simple and logical through clear symbol construction and the rational layout of visual elements, so as to ensure that tourists can quickly and accurately understand its meaning. For example, the overall readability and cognitive efficiency of the identification system are improved, either by clustering the identification of the relevant information by using the similarity principle, or by placing the indicator symbols of the same category together through the proximity principle.

In addition, the design of the identification system should also take into account the multi-level visual interpretation, which should not only make the symbol themselves easy to identify, but also be multi-dimensional expression according to the different levels and complexity of the logo content. Especially when the amount of information is large, designers should adopt a hierarchical way to guide tourists to obtain information step by step through the hierarchical sense of visual design, so as to avoid information overload and cognitive conflicts.

The meaning of symbols often depends on the cultural background, and different cultural groups may have different interpretations of the same symbol (Sigdel, S., 2018). This phenomenon is particularly important in the design of travel signs, because the audience of travel signs is often diverse, covering different cultural backgrounds and language habits. For example, in traditional Chinese culture, red often symbolizes good luck, happiness and good luck, while in some western countries, red may have a warning or dangerous meaning. Therefore, when designing travel signs in a cross-cultural context, designers need to fully consider the cultural context of the target audience to ensure the universality and comprehension of the symbols.

The tourist sign system usually contains two categories of indicator information (such as direction guidance, functional area division) and symbolic information (such as cultural signs and introduction of historical sites). The former pays attention to the directness and functionality of information, and emphasizes the intuitiveness, readability and navigation of symbols; the latter involves cultural connotation and emotional transmission, and symbols need deeper expression and interpretation. In the design process, how to balance the function of these two types of symbols has become an important issue that designers need to solve.

Indicative symbols are usually designed in simple and intuitive forms, such as using arrow symbols to guide the direction, or marking functional areas with clear text. Such symbols are mainly dependent on the form of image symbols and indicator symbols to ensure the rapid and accurate transmission of specific information. However, symbolic symbols rely more on cultural symbols, such as artistic manifestations of local characteristics or symbolic symbols of historical relics. For example, in Kyoto, Japan, tourist signs use modern and simple fonts to enhance readability and functionality, while signs in cultural attractions use traditional calligraphy fonts or symbols related to cultural background to enhance historical atmosphere and cultural appeal.

This combination of intuitiveness and symbolism not only ensures the practicality of the identification system, but also provides visitors with a deep cultural experience, enables them to perceive the unique cultural and historical context of the destination through visual symbols. Designers need to flexibly use different types of symbols to make the logo practical and impress visitors in aesthetic and cultural transmission.

### **3.2 Semantic propagation of symbols**

Symbol is not only the carrier of information transmission, but also the carrier of cultural significance. In the design of the travel sign system, the semantic transmission of symbols is crucial, because it directly affects the tourists' cognition, understanding and experience of the tourist destination. The semantic propagation of symbols can be analyzed by three processes: encoding (Encoding), passing (Transmission) and decoding (Decoding). The coding of symbols refers to the process in which the designer transforms information into symbols according to the needs of cultural background and situation; transmission is the dissemination of symbols on different media and carriers; and decoding is the information carried by the audience according to their cultural background, experience and cognitive ability. In the design of tourism signs, various types of symbols convey rich regional cultural connotations to the tourists through different forms of communication, and then affect the tourists' cognition and emotional response to the destination (BingFeng, M., & Padil, M., 2024).



### **3.2.1 Cultural transmission of image symbols**

Image symbol (Iconic Signs) is a symbol that connects with the indicated object through morphological similarity. In the tourism identification system, the advantage of image symbols lies in their intuitiveness and easy to understand, which can quickly trigger the association of tourists to specific objects or concepts. Through image symbols, designers can convey complex cultural connotations to visitors through simple, easily recognizable visual elements. In addition, image symbols can be closely combined with regional culture through visual metaphor, presenting specific cultural symbols. For example, traditional Japanese cherry blossom patterns are often used to identify the characteristics of Japanese culture, and this image symbol can quickly arouse tourists' association of the Japanese cherry blossoms in the spring, thus deepening their cognition and emotional identity of the destination culture.

### **3.2.2 Functional Guide Indicating the Symbol**

Indicating symbols (Indexical Signs) are often associated to a certain physical or functional attribute. In the tourism identification system, the indicator symbols are mainly used to provide tourists' behavior guidance, orientation and functional distinction, to help tourists to effectively navigate in the destination. The indicator symbols are usually designed with high efficiency and clarity, aiming to reduce the cognitive burden of tourists and ensure the accuracy and timeliness of information communication.

### **3.2.3 The cultural construction of symbolic symbols**

Symbolism (Symbolic Signs) relies on social and cultural conventions and background, and is a symbol to understand its meaning through cultural conventions. Unlike image symbols and indicator symbols, the meaning of symbols is not intuitively visible, but needs to be decoded through learning, the accumulation of cultural background and the influence of social environment. Therefore, the use of symbols is particularly important in the tourism sign system, because it can shape the cultural atmosphere of the destination and show the unique history and traditional culture of the place. Taking the guide logo of the Imperial Palace Museum in Beijing as an example, the designers used traditional Chinese cultural symbols, such as auspicious clouds and dragon patterns, to convey strong symbols of royal culture. These symbols are not only decorative patterns, but also convey a deep cultural significance to the tourists, so that the tourists can feel the dignity and holiness of the ancient Chinese imperial palace during the tour. The cultural construction of the symbols not only enhances the cultural depth of the tourism experience, but also helps the tourists to better understand and feel the historical context and cultural essence of the destination.

### **3.2.4 Multimodal propagation and the validity of the sign**

The semantic communication effect of symbols is not only limited to the type and design form of symbols, but also closely related to the communication medium and context of symbols and the cognitive level of the audience. The research shows that the communication effect of symbols is closely related to its communication environment and the cultural background of the audience. Therefore, multimodal propagation (Multimodal Communication) shows a more significant advantage in the travel identification system. Multimodal transmission refers to the transmission of information through different sensory pathways by combining various symbols such as text, image, color and sound.

## **3.3 Travel logo optimization strategy from the perspective of semiotics**

From the perspective of semiotics, the tourism identification system is not only a tool for information transmission, but also an important carrier of regional cultural expression. Therefore, when optimizing tourism signs, including cultural connotation, visual

communication effect and interactive experience. The following will discuss the key strategies of tourism logo optimization by combining the theoretical framework of semiotics.

### **3.3.1 Improve the readability and versatility of the symbols**

The core goal of travel signs is to ensure the accurate transmission of information, which depends on the legibility and versatility of the symbols. From the perspective of semiotics, the transmission effect of symbols is closely related to the cognitive ability and cultural background of the audience. The logo design should follow the law of visual cognition, and optimize the clarity and identifiability of symbols. In a multilingual environment, the versatility of symbols is particularly important. The design should adopt internationally universal symbols such as arrows and character silhouette, and avoid complex or local symbols to ensure cross-cultural understanding.

### **3.3.2 Strengthen the visual expression of cultural symbols**

The tourism identification system not only serves the information transmission, but also carries the dissemination of regional culture. The design should extract the representative elements from the local culture, and combine with the modern design language, so that the symbols can not only reflect the characteristics of the traditional culture, but also conform to the modern aesthetic trend. For example, the common auspicious clouds, dragon patterns and classical architectural elements found in Chinese tourism logo design, these cultural symbols can quickly arouse tourists' association with the regional culture and enhance the cultural identity of the destination. Design should be a deep understanding of local history, religion and customs, to ensure the cultural accuracy of symbols, and avoid misinterpretation or misunderstanding.

### **3.3.3 Optimize the interactive experience of symbols**

With the development of technology, the traditional static tourist logo has been difficult to meet the needs of tourists. Optimization from the perspective of semiotics should strengthen the combination with modern technology, especially the application of augmented reality (AR) and two-dimensional code (QR Code). Through AR technology, visitors can scan their logos through their mobile phones or smart glasses to obtain richer cultural information, such as historical stories and video displays, thus enhancing interactivity and immersion. Combined with QR codes, visitors can also easily access relevant websites or social media to get more information about destinations. In addition, the integration of tactile and sound elements can further enrich the full sensory experience of tourists, especially for children and elderly tourists, to enhance their interactive and cultural experience.

## **4. Integration of traditional culture with modern tourism symbols**

The combination of traditional culture and modern tourism signage aims at integrating local characteristic cultural elements with modern aesthetic demands through innovative design. Symbols, patterns, colours and other elements of traditional culture can provide a deep cultural heritage for the logo design, while modern design concepts give it a simple and fashionable visual expression. This combination not only helps to inherit and promote local culture, but also enhances the attractiveness and recognition of tourism signs, strengthens the emotional identity and cultural experience of tourists, and thus highlights the unique cultural charm of the place in the context of globalisation.

#### **4.1 Balance between cultural inheritance and innovation**

In the process of constructing the modern tourism identification system, how to balance the inheritance of traditional cultural elements with the needs of modern design has become a key problem to be solved urgently. The tourism identification system is not only an important part of the cultural image of the destination, but also a communication tool carrying regional culture. It should have the representative of regional culture, and assume the function of cultural communication and identity construction. At the same time, with the progress of science and technology and the change of tourists' needs, the modern tourism identification system must also adapt to the aesthetic habits and information acquisition methods of contemporary tourists, so as to improve the readability, functionality and interaction of guides. Therefore, how to find a reasonable balance between the inheritance of traditional culture and the needs of modern design is a challenge that designers must face when building a modern tourism logo system. The realization of this balance needs to be deeply discussed from the following aspects.

##### **4.1.1 Moderate innovation of cultural symbols**

Traditional cultural symbols are important carriers of regional culture, but in practical application, the direct reuse of traditional symbols often leads to the stereotype of design form, which makes them lack of innovation and attraction; and excessive innovation may weaken the cultural recognition of symbols, and even lead to cultural misreading. Therefore, the design process should follow the principle of "progressive innovation" principle. Specifically, designers should make visual optimization on the basis of retaining the basic form and symbolic significance of traditional cultural symbols and combining with modern design methods. For example, while maintaining the traditional calligraphy style, we can optimize the structure and lines of the font, enhance the readability and modernity of the font, and avoid the traditional font being difficult to understand or too cumbersome. In addition, in the design of graphic symbols, modern elements can also be added, such as simplified graphics and more modern composition, so that traditional elements have more modern and visual impact while losing their cultural foundation.

##### **4.1.2 The integration of traditional and modern design elements**

The application of traditional cultural elements should not be isolated from the overall design, but should be combined with the modern design concept to form an organic design whole. In terms of color collocation, the representative color of regional culture, such as the traditional color of the nation or the color of local characteristics, can be used as the keynote of the design to show the profound heritage of the culture. However, in terms of layout and icon design, the modern flat design style can be adopted to meet the needs of information dissemination in the digital age. For example, flat design can improve the simplicity and clarity of graphic identification, and facilitate the rapid transmission on various information carriers. The integration of color and font should pay attention to the harmonious aesthetic feeling of color, and take into account the differences in the cognition of color under different cultural backgrounds, so as to avoid the limitations of a single cultural symbol.

In addition, the design should take into account the diversified aesthetic needs of modern people, combine with the diversity of visual language, and expand the expression forms of traditional cultural elements. For example, the use of modern digital technology to deal with the expression of traditional elements not only retains the essence of culture, but also meets the requirements of modern society for the immediacy and convenience of information transmission.



### **4.1.3 Multimodal information interaction design**

Modern tourism identification system should not be limited to traditional visual communication, but should combine multi-modal interaction technology to improve the overall cultural experience of tourists. For example, by combining augmented reality (AR) technology, tourists can quickly obtain dynamic information such as the historical and cultural background and folk activities of the scenic spot by scanning the signs, breaking the single visual limitation and providing a more immersive and interactive cultural interpretation (Hall, 1980). This multi-modal interaction design not only meets the needs of modern tourists for information immediacy and diversification, but also deepens tourists' understanding and recognition of regional culture through innovative interactive ways (Yu, Xiafei, 2018).

In addition, the voice navigation system is also an effective way of multimodal information transmission. Through the audio tour, tourists can listen to the experts' explanation and cultural interpretation while visiting the scenic spots. This method is especially suitable for tourists with different language backgrounds, making the cultural communication more extensive and accurate.

### **4.1.4 Typical case analysis: Jingzhou Ancient City**

Modern tourism identification system should not be limited to traditional visual communication, but should combine multi-modal interaction technology to improve the overall cultural experience of tourists. For example, by combining augmented reality (AR) technology, tourists can quickly obtain dynamic information such as the historical and cultural background and folk activities of the scenic spot by scanning the signs, breaking the single visual limitation and providing a more immersive and interactive cultural interpretation (Hall, 1980). This multi-modal interaction design not only meets the needs of modern tourists for information immediacy and diversification, but also deepens tourists' understanding and recognition of regional culture through innovative interactive ways. In order to further explore how to balance cultural heritage with modern innovation, the following paper analyzes the design strategies of the tourism identification system through typical case.

The tourism sign system of Jingzhou ancient city pays more attention to the integration of tradition and modernity. In the design, the ancient city of Jingzhou adopts a minimalist design style and integrates traditional Chu cultural elements, such as totem, dragon pattern, etc. However, these traditional elements are not simply reused, but innovated through the form of modern graphic symbols, so that it conveys cultural information in line with the modern aesthetic trend. In terms of typesetting and composition, the logo system of Jingzhou ancient City adopts the modern flat design to make the information clearer and easier to understand. At the same time, the ancient city of Jingzhou also combines the voice navigation system, so that tourists can hear the detailed explanation of the history of the scenic spots through headphones, improving the interactive experience and cultural identity of tourists.

### **4.2 Example analysis: Jingzhou Ancient City tourism sign system**

The design of the tourism signage system for the ancient city of Jingzhou integrates rich historical and cultural elements with modern visual language, fully demonstrating the unique charm of Jingzhou as a historical city. The signage system is based on the cultural symbols of the ancient city and uses traditional patterns and colours, such as red and gold, to symbolize the historical accumulation and brilliance of Jingzhou. The design incorporates elements of Chu culture and ancient architecture so that visitors can visually feel the strong regional characteristics and historical atmosphere. The success of the system lies in the organic

combination of traditional culture and modern design, which enhances the recognition and cultural depth of the tourist signs.

#### **4.2.1 Ancient City of Jingzhou: the combination of traditional Chu cultural elements and modern information transmission**

The ancient city of Jingzhou is an important carrier of Chu culture. The design of its tourism sign system, while retaining the historical and cultural characteristics, pays attention to the information readability and the optimization of tourist experience. Innovations of its identification system include:

##### **Extraction and application of chu cultural symbols**

Typical symbols of Chu culture are integrated into the marking system, such as bronze ware decoration, seal script font and Chu ci elements, which make them have a strong cultural recognition in the visual form. The unique color system of Chu culture, such as vermilion and green, is adopted to maintain the authenticity of the history and culture and enhance the overall aesthetic feeling of the logo system.

##### **Information design that meets the needs of modern tourists**

The modern information hierarchy structure is adopted to optimize the guide system, so that tourists can quickly find the destination, such as through the color coding of different functional areas, to improve the intuition of the guide system. Add multilingual support, including Chinese, English and Japanese, to enable international visitors to successfully understand the content of the logo and enhance the breadth of cultural communication.

##### **The construction of an intelligent guided tour experience**

Combining digital screen and mobile applications, providing real-time navigation, historical and cultural introduction and other services to enhance the interactive experience of tourists). Through augmented reality (AR) and holographic projection technology, visitors can experience the historical scenes of Chu culture on the logo system, such as the reappearance of the ancient battlefield and the explanation of historical figures, so as to further enhance the depth of cultural communication.

## **5. Challenges and trends in regional tourism identity system design**

The design of regional tourism signage systems faces the challenges of cultural diversity, diversified tourist needs, technological innovation and sustainability. Future trends include the enhancement of digitalisation, personalisation, intelligence and multi-sensory interaction, as well as the gradual application of sustainable design concepts to meet the interactive needs of tourists and environmental requirements.

### **5.1 Design challenges**

Under the background of parallel development of globalization and localization, the design of regional tourism identification system faces many challenges. The rapid development of tourism and the diversification of tourists make the design of the logo system more complex. Designers should not only meet the basic functional requirements of information transmission, but also integrate into the regional cultural characteristics, and adapt to the needs of different tourists.

### **5.1.1 Integration of regional cultural diversity and signage system**

Globalization promotes cultural exchange, but it also brings about a diversity in cultural expression. The uniqueness of regional culture requires designers to have a cross-cultural understanding, both respecting the local culture and integrating it into the logo system. The logo should not only convey the basic information, but also reflect the regional characteristics in the visual, language, symbol and other aspects, so as to enhance the cultural experience of tourists. At the same time, the logo needs to be universal to adapt to tourists from different cultural backgrounds and find a balance between local characteristics and global versatility.

### **5.1.2 Diversity and interactivity requirements of modern tourists' demands**

Modern tourists have diverse needs, and the traditional static logo can no longer meet their information acquisition needs. Differences in age, nationality and interest lead to tourists' different expectations of information display and interaction mode. Designers need to incorporate augmented reality (AR), virtual reality (VR), voice guides and other Tours to enable visitors to enhance engagement and immersion through interaction. For example, AR technology can provide real-time cultural interpretation of scenic spots and enhance tourists' cultural identity.

### **5.1.3 Integration of sustainability design concept**

Environmental protection and sustainable development have become important issues in the design field. The design of the travel identification system should pay attention to the environmental impact, especially in terms of material selection, production process and system maintenance. Using environmentally friendly designs such as recyclable materials and low-carbon footprint materials not only helps to reduce resource waste, but also reduces operating costs. Although the digital identification system needs a high initial investment, it can reduce the use of paper materials in the long term and meet the requirements of sustainable development.

### **5.1.4 Challenges of Technology and innovation**

The application of technology has promoted the innovation of tourism identification system, especially the popularization of smart phones, AR, VR and other technologies. However, how to rationally select and apply new technologies, which can not only improve the efficiency of information transmission, but also lose the cultural connotation, is an important topic of design. For example, using big data and artificial intelligence, the identification system can provide personalized recommendations according to tourists' interests, location and other factors, so as to improve the tourist experience. However, over-reliance on technology may also lead tourists to ignore the interaction of traditional culture, so how to balance the combination of technology and culture is a challenge for designers.

## **5.2 Development trend**

With the progress of science and technology and the change of tourist demand, the design of tourism identification system is developing in the direction of digitalization, intelligence and interaction.

### **5.2.1 Promotion of digitalization and intelligence**

Digital technology promotes the tourism identification system from static form to dynamic and interactive digital scheme. The application of emerging technologies such as QR code, AR navigation and VR guide improves the sense of participation and immersion. Digital signs can update the information in real time to optimize the tourist experience, for example, to adjust the tour route according to the weather or the flow of people.

### **5.2.2 Personalization and adaptive identification system**

With the development of big data and artificial intelligence, identification systems began to provide personalized services based on tourists' preferences, behavior and location. The system can identify the needs of tourists, push customized tourism information and recommendations, and improve the overall experience of tourists. Intelligent voice navigation, multi-language translation and other functions can also effectively overcome the language barrier and enhance the interactivity.

### **5.2.3 Progressive application of sustainable design concept**

Environmental protection and sustainability have become the mainstream trend of the tourism industry, and the design of the tourism identification system is gradually integrated into the principle of sustainability. Adopt recycled materials, low-carbon materials and modular design to reduce resource waste and production costs. At the same time, the digital identification system reduces paper consumption, reduces carbon emissions, and improves the environmental performance of the system.

### **5.2.4 Comprehensive experience and multisensory interaction**

The modern logo system pursues a comprehensive tourist experience and enhances the sense of participation through multi-sensory interaction. In addition to visual information, it also pays attention to the integration of hearing, touch and other senses. Through the voice tour, smell device and other technologies, enhance the emotional connection of tourists, and create an immersive visiting experience.

## **6. Conclusion**

Based on the perspective of regional culture, this study systematically discusses the design theory and practice of tourism logo system, and analyzes the challenges and future development trend of current tourism logo design. Research shows that in the construction process of tourism identification system, reasonable integration of regional cultural symbols can not only contribute to the inheritance and promotion of local culture, but also enhance the cultural identity of tourists and improve the depth and quality of their tourism experience. As an important medium for the information transmission of tourist destinations, the signage system not only needs to meet the basic guiding function, but also should play a greater role in visual expression, information interaction and cultural communication, so as to realize the collaborative optimization of cultural communication and tourism service.

At the same time, the research points out that the development of tourism identification system in the future should further deepen the integration of traditional cultural elements and modern design concepts. In this process, it is necessary to fully consider the readability, ease of use of the identification system and the coordination with the local environment, and avoid the mechanical stacking of rigid symbols. Instead, innovative design means should be adopted to make the traditional cultural symbols glow with new vitality in the contemporary context. Moreover, the rapid development of digital technology provides new possibilities for the diversification and personalization of travel identification systems. Future logo design should actively introduce augmented reality (AR), virtual reality (VR), artificial intelligence (AI) and other technologies, so that the logo system can have a higher level of interactivity and intelligence, so as to meet the personalized needs of different tourists and improve the accessibility and convenience of tourism information.

To sum up, the design of tourism identification system should seek a balance between regional cultural expression, modern design method and digital technology application to promote the optimization of tourism experience and the dissemination of cultural value. Future research can further focus on the design mode of tourist logo and tourist experience evaluation system under different cultural backgrounds, so as to promote the development of the tourism logo system to the direction of more humanized, intelligent and cultural, so as to better serve the development needs of the global tourism industry.

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