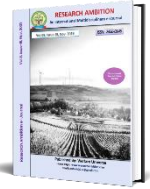




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## An Analytical Study on the Interface Design of Mobile Shopping Application Based on Regional Cultural Design Elements

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### KEYWORDS

Regional culture design elements; Mobile shopping application; Aesthetic design; Cultural dimension theory; Cultural adaptation theory; Semiotic theory

### ABSTRACT

*Regional cultural design elements are specific geographic cultures that are considered and integrated into the design of a product, service, or experience. These elements include values, beliefs, traditions, symbols, languages, aesthetic standards, and social habits. In mobile shopping application interface design, regional cultural elements can enhance the aesthetic feeling and enrich the design connotation. Designers should be based on the traditional Chinese regional culture background to create an interface aesthetic design that meets modern cultural needs, which is the key to attracting users to mobile shopping apps in the future.*

## 1.0 INTRODUCTION

### 1.1 Definition of Regional Cultural Design elements

Geo-cultural design elements are elements that consider and integrate elements of a particular geographic culture in the design of a product, service or experience. These elements cover values, beliefs, traditions, symbols, language, aesthetic standards, and social habits associated with a particular geographic or cultural context (Shang & Jiang, 2023; Xu, 2023). Geocultural design aims to make products or services more in line with the needs and preferences of specific cultural groups and to improve users' sense of identity and experience satisfaction. In different regional

cultures, people may have different aesthetic standards, values, and habits; therefore, considering these elements in the design process can enhance the attractiveness and acceptability of a product or service in a specific market. This design approach not only helps to improve user experience but also promotes mutual understanding and respect between cultures. For example, in language and typography, the use of geographically specific languages and scripts ensures that messages are accurately conveyed. In color and graphic design, combining the color connotations and graphic elements of the regional culture makes the design more culturally specific (Fu, 2019). Moreover, incorporate signs and symbols that have deep

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meaning in a specific culture to increase the cultural resonance of the product. Consider the social norms and habits of a specific geographic region to ensure that the design's social interactions are in line with cultural expectations. Respect and reflect the traditional values of the specific region to make the product more in line with local cultural perceptions. Overall, the geo-cultural design elements emphasize that in the context of globalization, the design process should fully consider and respect the diversity of different geographic cultures in order to serve better and meet the needs of different cultural groups.

## 1.2 Theoretical Connotation of Regional Cultural Design Elements

Cultural Dimensions Theory: Based on Hofstede's Cultural Dimensions Theory, it examines the influence of different cultural backgrounds on shopping application design, such as individualism and collectivism, uncertainty avoidance, etc. (Yang et al., 2022). Cultural Adaptation Theory focuses on how to adapt design to specific cultural requirements to ensure a pleasurable user experience in cross-cultural environments (Heim & Kohrt, 2019). Semiotics: The study of the meaning of cultural signs and symbols to understand the impact of symbols on design in different cultures to guide user perception and experience (Innis, 2023).

## 2.0 Regional Culture and Interface Design

### 2.1 The Value of Regional Cultural Elements in Mobile Shopping App Interface Design

Design must be centered around people. People's own spirit and cultural characteristics are closely related to the regional cultural atmosphere in which

they live. Art is created by people, and the position of designers in the field of design is quite important, and at the same time has a crucial role in the process of combining art design and regional culture (Guo & Yan, 2023). The use of regional cultural elements in art design is the value of modern design, which brings a broader and deeper space to the design world. While the artistic beauty and humanistic feelings within the culture need to express themselves in a cathartic manner, the mind in the real society is also calling for a more elegant and classical aesthetic and a more profound humanistic concern (Xiang & Jiang, 2023). Chinese culture, with the accumulation of Chinese civilization over thousands of years, is profound and profound, providing rich resources for interface design. Due to China's ethnic diversity, Chinese culture also brings together cultural symbols with multi-ethnic and multi-regional characteristics. Applying these cultural symbols to interface interaction design helps to form an interface image with Chinese cultural characteristics (Zhu, 2021). In addition, since the interactive interface is applied to the Internet, it can be widely disseminated in the form of new media through the Internet. The effective combination of regional cultural design elements and international fashion design trends can be easily accepted by the audience.

### 2.2 The role of regional culture design elements

- a. Regional culture enhances the aesthetic feeling in the visual aspect of interface design.

Regional culture design elements can

contribute to users' aesthetic experience in many aspects. Whether in the choice of colors and graphics or the use of signs and symbols. The unique colors and graphic elements of a regional culture can enhance the attractiveness of an interface design and make it more in line with the aesthetic preferences of the locals (Tang & Lee, 2023). Integrating meaningful signs and symbols from a specific culture not only conveys deep cultural connotations but also enhances the aesthetic-emotional connection of users to the design.

- b. Regional culture can enrich the connotation of interface design.

Regional culture design can give more cultural connotations to the interface by skillfully utilizing the symbols of the local culture so as to make it more profound and meaningful. Incorporating stories and traditions from the local culture can make the interface design more prosperous and more engaging, attracting users to learn more about the product or service. Considering the social norms and habits of the local culture, the interface design can be more in line with the social expectations of the local users and enhance the users' sense of participation and experience satisfaction. In these ways, regional cultural design elements can profoundly influence users at the visual and perceptual levels (Bodker, 2021), which not only improves the aesthetic feeling of the interface but also

enriches the connotation of the design, makes it easier for users to establish emotional connections, and strengthens their sense of identification with the product or service. This has a positive effect on increasing user retention, user engagement and brand loyalty.

### **3.0 Current Situation and Outlook of China's Mobile Shopping Application Interface Design Field**

China's e-commerce has entered a mature development stage with clear business models. At the same time, various e-commerce platforms have laid out the mobile terminal, and mobile shopping, as one of the important applications in the field of mobile Internet, has become a powerful force in the rise of the e-commerce market. Analyzing the current situation of mobile shopping and grasping the development trend of mobile shopping provides a direction for the innovation of e-commerce enterprises and traditional enterprises' mobile layout. Many shopping applications use personalized recommendation algorithms to customize content for users based on their historical purchase records and browsing behavior. This requires a clever design (Wright & McCarthy, 2022) to balance the accuracy of recommendations and the protection of user privacy. In addition, in China, there are rich cultural differences across different geographic regions, and Yang et al.'s (2022) study also suggests that the design of shopping apps needs to take these differences into account to enhance users' emotional resonance and experience through geo-cultural elements. And user

experience is the key to the success of shopping apps. Simple and intuitive interfaces, efficient navigation, smooth interactions, and fast loading speeds are decisive elements for user retention and satisfaction (Xiang & Jiang, 2023). More and more users are demanding sustainable and eco-friendly products. Shopping apps can emphasize sustainability through interface design and promotional campaigns to increase users' trust in the brand (Xiang & Jiang, 2023). In the future, the design of China's mobile shopping apps will focus more on personalized user experience, increased cultural innovation, cultural integration and social interaction to meet evolving user needs.

#### **4.0 Major problems in the interface design of mobile shopping applications based on regional culture**

##### **4.1 Monotonous form and lack of features**

The existing interface design of mobile shopping applications has not explored the depth of regional culture enough, the spiritual connotation of regional culture cannot be comprehensively explained (Xu, 2023), the themes presented are vague, and the interface design level lacks in-depth insights into regional culture. This situation makes it difficult for the interface design of mobile shopping apps to give full play to its proper value and function, and fails to accurately convey the connotations of regional culture and enhance the market competitiveness of mobile shopping apps (Guo & Yan, 2023). And it is easy to affect the uniqueness of the brand in brand image shaping. In addition, because the interface design ideas and methods of mobile shopping apps are limited to

traditional forms, it is difficult for designers to present cultural ideas, concepts, and essences fully and completely through the innovation and optimization of "value elements", which in turn affects the quality and efficiency of the interface design of mobile shopping apps.

##### **4.2 Lack of cultural identity in the interface design of mobile shopping applications under pan-regionalization**

Regional culture is the soul of a nation, a country and a region, and plays an important role in promoting regional development. Because regional culture is the value orientation and ideological norms formed by the people in social production and life, and carries strong national emotions, regional cultural design elements can easily stimulate consumers' emotions and influence their thoughts and behaviors (Shang & Jiang, 2023). However, in the interface design of mobile shopping apps, few people can inspire emotions and get empathy from the interface, which weakens the value function of regional culture in the interface design of mobile shopping apps and is not conducive to the modernization of interface design (Bodker, 2021). Therefore, in design practice, designers must incorporate humanistic feelings, so that the design has the additional function of moving, infecting and attracting people.

##### **4.3 Failure to effectively stimulate consumers' emotional resonance with regional culture**

The phenomenon of design homogenization is serious, and the interface design of mobile shopping applications generally suffers from the problems of similarity and homogenization

(Bodker, 2021). Especially in regions that are geographically close or have similar cultural genes and cultural resources, there is a certain homogenization of the interface design of mobile shopping applications (Zhu, 2021). For example, in the development of interface design in two regions with the same cultural genes, both regions are keen on food culture and architectural culture, and are prone to design identical or similar cultural and creative products, which not only creates competitive pressure on products, but also makes consumers “aesthetically fatigued”, thus restricting the healthy development of the interface design of mobile shopping apps. In order to solve this problem, it is necessary to create a new interface design for mobile shopping apps. Therefore, in order to solve this problem, it is necessary to deeply explore the differences of culture, so that the application of cultural elements in the interface design is more targeted.

#### **4.4 Lack of Aesthetic Functionality Leads to Lower Added Value of Interface Design**

The value of the interface design of mobile shopping apps depends on consumers' recognition of the aesthetic function, which is usually expressed in the practical value and emotional value of cultural and creative products. The practical function of the interface design of mobile shopping apps has a certain gap compared with that of daily consumer products, and if the aesthetic value of the interface design of mobile shopping apps cannot be enhanced in terms of emotional value, then mobile shopping apps will easily be eliminated from the market (Tang & Li, 2023). At

present, the market still does not pay enough attention to the aesthetics of mobile shopping application interface design, especially the combination of the cultural connotation of mobile shopping application interface design and the practical value of the product (Shang & Jiang, 2023). This requires mobile shopping application interface designers to combine aesthetics and practical value skillfully on the basis of regional culture, so as to increase the aesthetic added value of interface design.

#### **4.5 Lack of Cultural Symbol Communication in Innovative Mode**

Symbol is the most effective communication element in regional characteristic culture, and mobile shopping application interface design can enhance the cultural connotation of scenic spots and the cultural added value of cultural and creative products through the application of cultural symbols (Tang & Li, 2023). Most of the mobile shopping application interface designs have not yet effectively extracted and created cultural symbols, but simply copied and transferred cultural symbols, which is too simple and crude (Xiang & Jiang, 2023). Consumers can see the cultural symbols everywhere in the interface of mobile shopping applications. The content of these cultural symbols is not different from each other, and they are all the same, only that the shopping applications of different development platforms have changed, so the straightforward interface design of mobile shopping applications can neither effectively enhance the cultural connotation of the applications, disseminate the regional cultural

elements, nor stimulate the secondary creation of cultural symbols for dissemination, and even more so, it cannot drive the consumers to consume for a second time (Guo & Yan, 2023). The design of the application can neither effectively enhance the cultural connotation of the application, nor stimulate the secondary creation and dissemination of cultural symbols, nor drive consumers to secondary consumption (Guo & Yan, 2023).

## **5.0 Mobile shopping application interface design and development strategies that incorporate regional characteristics and culture**

### **5.1 Cultural element appropriation method**

Emphasizing the integration of regional culture, symbols carry rich national cultural elements and possess the function of cultural transmission and identification. Designers should refine the representative, symbolic and unique cultural symbols from the rich materials of regional culture, and select the cultural elements that best represent and fit the local cultural ideas (Bodker, 2021). Cultural symbols can be spiritual symbols or physical forms (HSU et al., 2014). However, no matter which kind of cultural symbols are explored and utilized, it requires designers to deeply understand the local cultural connotation. It is necessary to identify the cultural kernel from traditional Chinese cultural images, mountain songs and operas, and even the IP of ancient legends, to explore the expression forms and mechanisms of different regional cultural ideas from traditional Chinese customs and habits and ancestral cultures, and finally to select the most valuable cultural elements from deep feelings and

understanding (Amershi et al., 2019; Zhu, 2021). In the application of cultural elements, designers should never put together or copy, otherwise they will deviate from the original intention of cultural and creative design, and it is difficult to design products that represent local culture. The symbolic parts of regional cultural elements should be extracted, and through abstract design, specific regional cultural elements should be reshaped, collaged, deconstructed, and finally combined into a brand-new symbol system (Bodker, 2021). For example, designers can symbolize and concretize the representative classic elements of the regional culture, so that the specific shape can be abstracted and the local cultural connotation can be fully interpreted. In the refining of texture and pattern, designers can select the patterns and patterns of local costumes, buildings or furniture with regional characteristics and apply them to the interface design, so that the interface design of mobile shopping apps can have more regional colors (Xu, 2023). In short, through designers' selection of elements that best represent the uniqueness of local culture, and the use of abstraction, collage, deconstruction and other methods, regional culture is applied to the interface design of mobile shopping apps, so as to circumvent the problems of superficiality and formalization of the design of cultural and creative products, and to improve the effectiveness of the design of the mobile interface apps.

### **5.2 Stimulate the emotional value of regional culture**

The method of humanistic emotional resonance



mainly refers to a method that relies on human psychology to extract “key elements” and then designs the mobile shopping application interface from the perspective of “emotional engineering”. This design method requires specific imagery and scenarios to stimulate consumers’ “emotional memory”. For example, the design of the “Tea Ceremony” Small Can Tea App has chosen the imagery of non-heritage bearers, which implies “realizing the philosophy of life and feeling the cultural environment”, in order to evoke the memories of the public and trigger their resonance (Du, 2020). In the specific design, designers should start from the local scene and select typical symbolic elements to construct the emotional mood. For example, in the selection of northeastern elements, elements such as “red and green flowers”, “harvest”, “dragon totem”, etc. should be chosen, so as to fully mobilize the nostalgia of travelers and make the interface design become a “reminiscence of nostalgia” (Du, 2020). This will fully mobilize the nostalgia of travelers and make the interface design a carrier of “remembering nostalgia”. Moreover, this kind of mood creation can bring interface design closer to the psychological distance between consumers and make branding more “humanistic” (Zhu, 2021). In the creation of mood, designers must choose representative and unique folk activities, festivals or life situations to outline the picture, and make the cultural atmosphere “humanistic” through “deconstruction”, “reorganization”, “deformation” and so on. By “deconstructing”, “reorganizing”, “deforming”, etc., the cultural atmosphere can be

made “distinctive” (Zhang et al., 2019). For example, designers can choose the Chinese New Year as a carrier of “emotional resonance”, and through the integration of firecrackers, fireworks, Spring Festival couplets, ancient buildings and other elements, create a joyful festive atmosphere to mobilize consumers’ emotions (Tang & Li, 2023). In addition, designers can also combine the characteristics of the times to enrich the form of “mobile shopping interface design” to make it more competitive in the market (Sun, 2020). For example, the use of regional cultural symbols with “nostalgia elements” can make people who are far away from home feel homesick. For example, design symbols representing family reunion, humanistic symbols, and regional symbols. Mobile shopping interface design is more “humanistic”, “artistic” and “regional”. In design practice, designers should deeply analyze the uniqueness of regional cultures and clarify the core meaning of regional cultures, so as to attract consumers to pay attention to and buy the products in differentiated design and improve the market competitiveness of mobile shopping applications.

### **5.3 Cultural integration design” strategy to improve user aesthetic experience**

In the interface design, choose colors and graphic elements that meet the aesthetics of the local culture to ensure that the overall interface design not only meets the user's taste, but also has a sense of aesthetics. Combine the layout and typography habits of the local culture to ensure that the layout of text and images is more in line with the reading and visual habits of users. Use region-specific

kinetic elements to improve the user's interactive perception of the interface (Shang & Jiang,2023) and enhance the user experience. Use symbols of regional culture to design the logo and icon of the application to make it more representative and improve users' perception of the brand. Use symbols of local culture in product display to convey cultural information through product pictures and descriptions to increase the attractiveness of the product. Create promotional activities based on local culture (Xu,2023), incorporating cultural elements into promotional materials such as advertisements and discount coupons to increase user participation. Incorporate stories of local culture into the interface design to increase the depth and attractiveness of the product by introducing the cultural story behind the product or brand. As shown in Figures 1, 2, and 3

**Figure 1.** Leshan Giant Buddha food shopping APP interface design

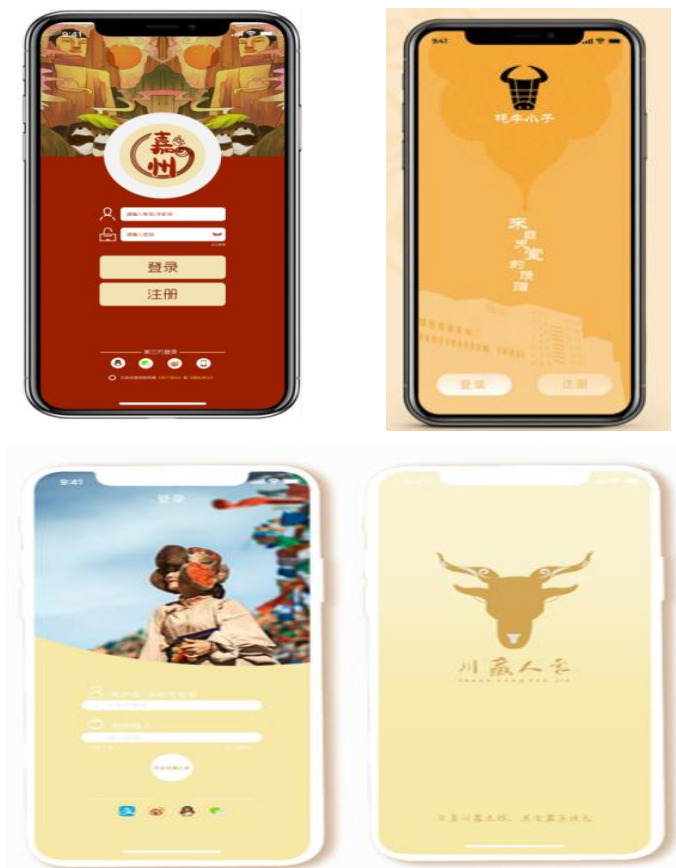
**Figure 2.** Interface design of plateau yak meat art shopping APP

**Figure 3.** Tibetan agricultural specialty products sales APP interface design

The mobile shopping application interface design introduces cultural experience functions, such as virtual fitting rooms or previews of cultural activities, so that users can feel the charm of local culture while shopping. The above strategies help to make mobile shopping apps closer to users' cultural perceptions and increase their emotional investment in the apps, thus enhancing the shopping experience and user loyalty. During the design process, the team should collaborate with local professionals, cultural consultants, etc. (Guo & Yan, 2023) to ensure a more accurate and in-depth understanding and application of regional culture.

### 6.0 Conclusion

In order to revitalize all historical and cultural resources, there is a problem of reinterpretation and innovation in today's social context, experiencing a nirvana, which in the design world is the integration of traditional cultural resources by using scientific design concepts and the comprehensive development of industrialization. Regional culture is the sum of material civilization and spiritual civilization created by human beings, and the same cultural memories are most likely to produce empathy. The more national, the more global. How designers can create interface designs that meet the needs of modern culture based on





deep cultural backgrounds is the key to attracting users to mobile shopping apps in the future.

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