

A Study on the Visual Translation of Xianju County's Image Based on Cultural Gene Decoding

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ABSTRACT

Objective: To address the homogenization of visual expression and the marginalization of deep-seated cultural genes in Xianju County, this study explores a systematic translation path for cultural genes into visual symbols. **Methods:** Based on cultural gene theory, a "screening-decoding-translation-evaluation" method chain was constructed. Core genes were screened using a dual-dimensional index of material and non-material aspects and a three-dimensional model of "recognition-exclusivity-activity." Semiotic theory was applied for visual transformation, and a questionnaire was used for empirical testing. **Results:** The constructed county-level visual identity system received positive feedback in terms of cultural recognizability, regional relevance, and application willingness, effectively enhancing public cultural identification. **Conclusion:** This research provides a replicable path for the revitalization of county-level cultural resources and the construction of a visual image, and has practical significance for promoting the transformation of cultural resources into brand assets.

KEYWORDS

Cultural Genes; Visual Translation; County Image; Symbolology; Xianju County.

1. INTRODUCTION

In the fields of design, landscape architecture and urban planning, "cultural genes" are defined as core cultural elements formed in the long-term practice of a specific regional group, maintained through intergenerational transmission, and carrying collective memory, values and identity[1]. The theory originates from Richard Dawkins' meme theory, which emphasizes the genetic evolution mechanism of cultural transmission[2]. Currently, transforming abstract cultural genes into a perceptible visual symbol system through design language has become a key path to activate regional cultural resources and break the dilemma of image homogenization[3]. Domestic and foreign studies have verified the positive value of the visualization of cultural genes for regional development from multiple dimensions: at the theoretical level, the cultural gene identification framework provides a methodological basis for cultural heritage protection and urban memory research; at the practical level, the visual symbol system has been proven to effectively enhance regional recognition and cultural identity. Semiotics provides a core analytical tool for the transformation of cultural connotation into visual form[4]. Through literature review, it was found that current research focuses on macro-level urban brand systems or micro-level unit practices, and pays insufficient attention to the meso-level scale of county-level cultural resources, which is both essential for policy implementation. As the core implementing unit of rural revitalization and the main battlefield for cultural and tourism integration, the county level can benefit from the visual image translation of

cultural genes, providing a reference for the construction of culture and rural image and the development of cultural tourism in similar counties.

This study selects Xianju County, Zhejiang Province as a typical case for in-depth exploration. As a typical mountainous county, Xianju County's current cultural tourism development reflects the challenges and opportunities of county-level cultural resource excavation and visual image shaping. According to the "14th Five-Year Plan for the Development of Culture and Tourism in Xianju County," the number of local scenic spots in Xianju County ranks among the top in the province, but apart from Shenxianju Scenic Area, there are generally problems of "single products and insufficient business formats," and the support of cultural tourism elements in urban areas is weak. The existing visual expression relies excessively on the natural landscape of Shenxianju, resulting in the marginalization of deep cultural genes, and a systematic visual translation is urgently needed to activate cultural resources. Based on this, this study explores and empirically verifies a method chain of "cultural gene screening and decoding - visual translation - evaluation and feedback" (see Figure 1) to explore the path for updating the cultural image of Xianju County.

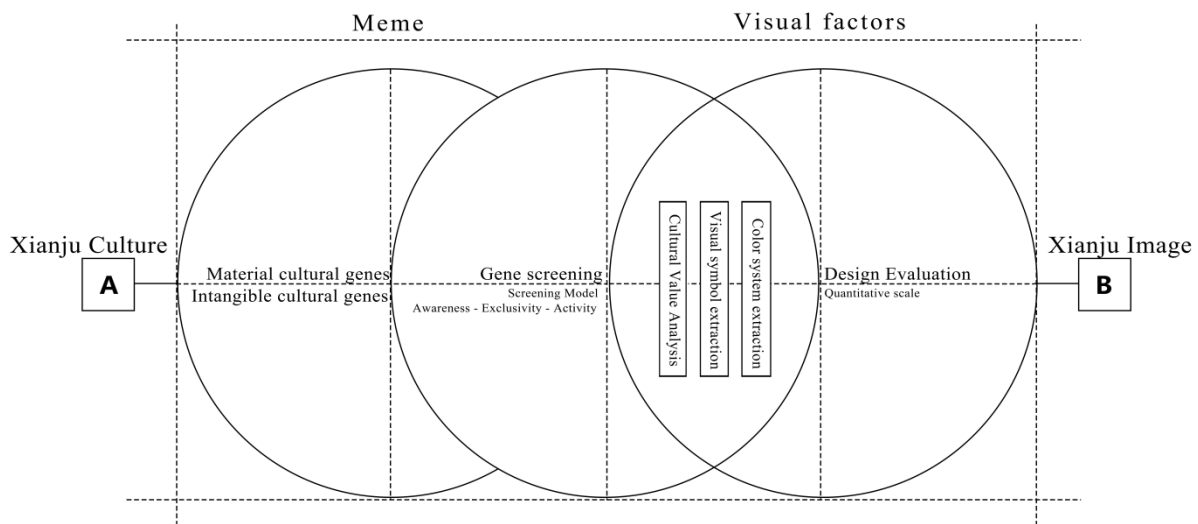


Figure 1. The image design process of Xianju

2. XIANJU CULTURAL GENE IDENTIFICATION

2.1. Extraction of cultural genes

This study employs a combination of historical research and documentary analysis to ensure the scientific rigor and representativeness of the extracted cultural genes. By consulting the *Guangxu Xianju County Gazetteer*, local chronicles, and relevant cultural classics of the Xianju area, and combining existing academic research on Xianju culture, this study traces the evolution and core symbols of Xianju's historical culture, analyzes the cultural connotations of different periods, and, with reference to folk legends and important historical events, extracts locally relevant cultural genes. It focuses on the symbolic meaning and practical value of traditional clothing, handicrafts, and food culture, systematically summarizing typical and valuable regional elements.

Based on the diagnosis of "homogenized business formats" in the planning, and excluding highly visualized natural images such as Shenxianju and Yong'an Creek, a two-tiered identification index system of material and intangible cultural genes is constructed based on the extracted cultural genes. Material cultural genes encompass four primary categories: traditional clothing, traditional cuisine, cultural architecture, and transportation. Intangible cultural genes encompass four primary categories: historical events, spiritual worship, intangible cultural heritage, and social consensus, with a total of

30 secondary categories extracted. This system provides a structured gene pool for subsequent three-dimensional screening models (see Table 1)[5-9].

Table 1(a). Specific Categories of Cultural Genes in Xianju County

Identify objects	Identification factors	First-level category	Secondary category
Xianju County Cultural Genes	Material cultural genes	Traditional clothing	Blue printed cotton shirt
		Traditional food	Nine Lions Pattern Short Jacket
			Xianju Eight Bowls
			Xianju Three Yellow Chicken Rice cake
		Cultural buildings	Xianju Topping Noodles
	Xianju Yangmei		
	Intangible cultural genes	Cultural buildings	Stone doorway
			The new house at Baiyanxia has a front gate.
			Gaoqian Ancient Residential Building Complex
		Transportation	Potan Dragon-shaped Ancient Street
Lin Yingqi Merit Archway ferry bamboo raft Cangling Ancient Road			
Historical events	Historical events	Legend of King Goujian of Yue	
		The Northern Song Dynasty bestowed upon it the name "Xianju".	
	Spiritual worship	Gelaohui Uprising the Eight Immortals Taoism Tianmu	
Intangible cultural heritage	Intangible cultural heritage	Needle-pierced boneless lantern	
		pebble inlay technique	
		Bench Dragon	
		Nine Lions Painting	
		Carp leaping over the dragon gate lantern dance	

Table 1(b). (continued) Specific Categories of Cultural Genes in Xianju County

Identify objects	Identification factors	First-level category	Secondary category
Xianju County Cultural Genes	Intangible cultural genes	social consensus	Speak up for someone When one attains enlightenment, even his chickens and dogs ascend to heaven. The sea changes into mulberry fields Boneless creation, breaking the deadlock with ingenuity

2.2. Screening of cultural genes

This study employed a questionnaire survey method, distributing online questionnaires via WeChat and other social media platforms from June 19th to July 1st, 2025. To ensure the effectiveness of the cultural gene screening, respondents primarily consisted of local residents and long-term residents of Xianju County. A total of 208 valid questionnaires were collected, with local residents accounting for 46.15%, long-term residents for 39.90%, and tourists for 13.94%. The majority of respondents were between 26 and 50 years old (61.05%), and the occupational structure was relatively diverse. The sample was representative and provided basic data for the three-dimensional core cultural gene screening model of "awareness-exclusivity-activity" presented later.

Based on the previously identified cultural gene categories of Xianju, a questionnaire titled "Xianju County Cultural Gene Awareness and Representativeness Evaluation Survey Questionnaire" was developed, consisting of 43 questions divided into three parts (see Table 2). The first part, consisting of 3 questions, covers basic information about the respondents, including age, whether they are local residents or long-term residents of Xianju, and occupation type, used to define the sample structure. The second part is a survey on the awareness of cultural genes, consisting of 30 questions. Items are set around 30 pre-selected cultural elements. The question is, "Have you heard of the following Xianju cultural elements?" A 5-point Likert scale (1 point "completely unaware" to 5 points "very familiar") is used. The average awareness score for each element is calculated, corresponding to the "awareness" dimension of the screening model. The third part is a survey on the representativeness and recognition of cultural genes, consisting of 10 questions. These are grouped by primary categories and assessed in multiple-choice format to evaluate the recognition of each element as a representative of Xianju's unique regional culture. For example, "Which of the following traditional garments best represents Xianju? (Multiple selections allowed)" The options are all secondary category elements under that category. The recognition rate is obtained by calculating the selection ratio of each element, identifying elements with both high regional exclusivity and cultural representativeness. These elements serve as core data for the "exclusivity" dimension of the screening model, used to eliminate cultural elements with "high awareness but lack of uniqueness" or "low recognition."

Table 2. Structure of the questionnaire for the evaluation of the perception and representation of cultural genes in Xianju County

Questionnaire module	Question types	Options	Dimension
Basic information of the interviewee	1. Age	Multiple choice and fill-in-the-blank	-
	2. Relationship with Xianju County		
	3. Occupation		
Have you heard of the following cultural elements of Xianju? (Likelihood Level 5 scoring system)	Second-level categories (see Table 1)	1 = Completely unfamiliar 5 = Very familiar	Awareness (score)
Which of the following traditional costumes best represents Xianju? (Multiple choice)	First-level categories (See Table 1)	Second-level categories (See Table 1)	Exclusivity (Recognition Rate)

In the process of screening cultural genes, this study constructed a three-dimensional progressive screening model of "awareness-exclusivity-activity" based on the aforementioned questionnaire data, aiming to avoid the "cognitive bias trap" caused by judging cultural value solely by popularity. The first stage is awareness screening. The average awareness score of each element is calculated based on the Likert 5-point scale scores, and the top 10 items with the highest awareness are selected into the initial screening pool (see Table 3) to ensure that the selected items have a certain breadth of public awareness and reduce the risk of direct visual translation of obscure cultural symbols.

Table 3. Xianju Awareness Top10 cultural genes

Ranking	Cultural genes	Average recognition score	category
1	Blue printed cotton shirt	3.63	Traditional clothing
2	bamboo raft	3.62	Transportation
3	Rice cake	3.62	Traditional food
4	Xianju Yangmei	3.57	Traditional food
5	The Northern Song Dynasty bestowed upon it the name "Xianju".	3.57	Historical events
6	Tianmu	3.58	Spiritual worship
7	Gaoqian Ancient Residential Building Complex	3.56	Cultural buildings
8	Needle-pierced boneless lantern	3.55	Intangible cultural heritage
9	Taoism	3.55	Spiritual worship
10	pebble inlay technique	3.54	Intangible cultural heritage

The second stage involved representative selection. Multiple-choice questions (Q34-Q43) were used to calculate the recognition rate of each element as a representative of Xianju culture, and a regional exclusivity criterion was introduced. For example, in the category of proverbs, "The sea changes into mulberry fields" (ranked 18th in recognition) ranked first with a 46.63% recognition rate due to its direct association with Xianju's unique geographical legends. "Blue printed cotton shirt" (ranked 1st in recognition) had a recognition rate of only 37.50% in the clothing category due to its commonality across many parts of southern Zhejiang and insufficient regional uniqueness; this was significantly lower than Xianju's unique "Nine Lions Pattern Short Jacket" (62.50%). This stage eliminated elements with recognition rates below 30% or those with significant cross-regional homogenization (such as "Rice cake" at 26.92%), revealing the core contradiction that "recognition rate \neq cultural representativeness" and emphasizing the crucial role of "representativeness" in the in-depth expression of culture.

Table 4. Final Xianju Core Culture Gene Screening Results

Cultural genes	awareness	Exclusive recognition rate	Living evidence	Comparison of elimination items
Nine Lions Pattern Short Jacket	3.49	Clothing category 62.5%	Essential attire for New Year's parades	Blue-printed cotton clothing: 37.5% representative approval rate
Xianju Yangmei	3.57	Food category 25%	National geographical indication products, with an annual output value exceeding 1 billion yuan.	Rice flour cake: 26.92% representative approval rate and no geographical indication.
The Northern Song Dynasty bestowed upon it the name "Xianju".	3.57	History category 58.17%	The county annals clearly record (1007).	-
Gaoqian Ancient Residential Building Complex	3.56	Construction category: 27.88%	There are 13 existing Ming and Qing dynasty buildings,	Potan Ancient Street: 22.12%

Needle-pierced boneless lantern	3.55	Intangible cultural heritage category: 41.83%	forming a vibrant residential community. National Intangible Cultural Heritage, Campus Heritage Base	representative approval rate Pebble inlay: 35.1% representative recognition rate, but lack of inheritance.
The sea changes into mulberry fields	3.46	Consensus group: 46.63%	The story originates from the geographical changes of Xianju (Ge Hong's "Biographies of Immortals").	Boneless creations: 21.63% representative

The third stage is the verification of its living nature. Building upon the "combination of historical research and document analysis" used in the initial cultural gene extraction, a further systematic review of core materials such as the "Guangxu Xianju County Annals," local historical documents, and intangible cultural heritage application texts was conducted. This comprehensive evaluation of the intangible cultural heritage attributes and current vitality of transmission of each element ensured that the final selected elements possess both historical continuity and contemporary relevance. Ultimately, six cultural genes that simultaneously met the criteria of high recognition, high regional exclusivity, and strong living transmission characteristics were identified as the core cultural genes of Xianju (see Table 4).

The six selected Xianju cultural genes cover both material and intangible aspects, forming the basic prototype of the Xianju cultural gene pool. The material aspect includes: the "Nine Lions Pattern Short Jacket" which carries folk narratives; "Xianju Yangmei" which embodies local ecological wisdom; and "Gaoqian Ancient Residence" which contains clan ethics and architectural heritage value[10-11]. The intangible aspect includes: the "Needle-Pierced Boneless Lantern" which showcases exquisite craftsmanship and aesthetic spirit; the "Northern Song Dynasty Bestowal of a Name" which marks the origin of Xianju's establishment; and the proverb "Canghai Sangtian" (meaning the vicissitudes of life), symbolizing geographical changes, which together construct the temporal and spatial coordinates of Xianju culture. These six cultural genes possess irreplaceable regional characteristics, and their inheritance and continuity are ensured through contemporary living practices. The multi-dimensional screening model, composed of "recognition , exclusivity , and living nature," breaks through the limitations of a single evaluation of traditional cultural resources, making the screening results more comprehensive and objective, and aligning with the principle of emphasizing regional uniqueness and living inheritance in the selection of intangible cultural heritage projects.

The visual identity design of this study is based on the six core cultural genes selected , and its expressive effect is evaluated through a public questionnaire after the design is completed , so as to form a complete closed loop of "cultural decoding - design translation - evaluation feedback " .

3. ANALYSIS OF THE CULTURAL GENE VALUE OF XIANJU

Before visually translating cultural genes, it is necessary to systematically sort out their historical background and cultural connotations and clarify the value orientation they carry. Four value dimensions, namely historical identity, spiritual symbolism, ecological wisdom and technical aesthetics, are introduced to analyze the six core cultural genes. The aim is to build a clear cultural semantic framework and provide solid theoretical support for subsequent visual translation ^[12] .

This study uses Saussurean semiotics as its analytical foundation to avoid superficial and formalistic representation of cultural images. Saussure divided linguistic signs into two levels: "signifier" and

"signified." The "signifier" refers to perceptible forms, such as words, images, and colors; the "signified" represents the concepts, cultural meanings, and social cognitions carried by the sign. Cultural genes possess both "signifier" and "signified." Value analysis focuses on decoding their "signified," establishing a transformation path from cultural semantics to visual semantics, and providing a basis for the visual construction at the "signifier" level in the next chapter (see Table 5).

Table 5(a). Analysis of the value dimensions of Xianju's core cultural genes




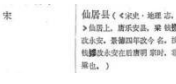


Cultural gene type	Core genes	sample	Value Dimension	Visual cues inspire
Material cultural genes	Nine Lions Pattern Short Jacket		Artistic Aesthetics	The color scheme can extract festive visual elements such as lion dance red and golden yellow.

Table 5(b). (continued) Analysis of the value dimensions of Xianju's core cultural genes

Cultural gene type	Core genes	sample	Value Dimension	Visual cues inspire
Intangible cultural genes	Xianju Yangmei		Ecological wisdom	The color scheme can refer to the main color of bayberry red to create a visual impression rich in ecological imagery and regional characteristics.
	Gaoqian Ancient Residential Building Complex		Historical identity	The outline of the gable wall can be extracted as a graphic element.
	The Northern Song Dynasty bestowed upon it the name "Xianju".		Historical identity	The font style can express the solemnity and historical feel of bestowing a name.
	Needle-pierced boneless lantern		Artistic Aesthetics	The graphic composition can be explored to depict perforations and flexible boundaries, showcasing the characteristics of a "boneless" structure.
	The sea changes into mulberry fields		Spiritual symbol	The curved shape, representing the unity of "mountain, water, and field," symbolizes the changing times and spaces.

3.1. Historical identity

The “name bestowed by the Northern Song Dynasty” and the “ancient residences of Gaoqian” are important carriers of the historical identity of Xianju. In the fourth year of Jingde (1007), Emperor Zhenzong bestowed the name “Xianju” upon the county, establishing the sacred image and regional identity of “the abode of immortals”. Its official endorsement endowed the county culture with sacredness and legitimacy. As a living sample of traditional settlements, the ancient residences of Gaoqian, with their “hui”-shaped courtyards and horse-head walls, not only organize clan order but also reflect the adaptation to the mountainous environment[10]. These two, in the dual dimensions of time and space, laid the historical tone of Xianju culture.

3.2. Spiritual symbol

The idiom "the sea changes into mulberry fields" originates from a dialogue between Magu and Wang Yuan in the "Biographies of Immortals." As a cultural symbol of landform change and natural philosophy, it reflects the Xianju people's understanding of the power of nature and the evolution of life. It is condensed into the spiritual core of "change-resilience-flow of time and space," strengthening cultural reflection on the relationship between humans and the land.

3.3. Ecological wisdom

"Xianju Yangmei System", as a representative of agricultural cultural heritage, demonstrates the wisdom of mountain ecological cycle and resource optimization through the "plum-tea-chicken-bee" composite system[11]. And through contemporary industrial benefits and festival activities, it realizes the transformation of ecological knowledge into cultural capital and local brand.

3.4. Artistic Aesthetics

The needle-punched boneless lantern and the nine-lion pattern short jacket represent the aesthetic height and spiritual expression of Xianju's intangible cultural heritage. The lantern achieves three-dimensional molding of paper through the "boneless" structure, showcasing the ingenuity of flexible structure and the innovative integration of light and shadow aesthetics[13]; the nine-lion pattern short jacket, as a festive costume, integrates performance, symbolism and ritual, and its pattern and color language convey a deep reliance on auspiciousness, blessings and community feelings[14].

4. TRANSLATION, EXPRESSION, AND EVALUATION OF XIANJU CULTURAL GENES

The county image system, as an adaptive extension of the corporate identity system (CIS) theory at the regional scale, consists of three core modules: Mind Identity Design (MI), Behavioral Identity Design (BI), and Visual Identity Design (VI). This paper focuses on visual identity design, which is usually divided into three levels: basic element design, application element design, and public viewpoint element design[15]. Basic element design is the core of visual identity design, including basic visual elements such as city logo, standard font, standard color, and derivative graphics[15]. These basic elements refine and standardize the core symbols of the county brand, ensuring the consistency and recognizability of the county image on various media.

This article focuses on the design of the basic elements of the visual identity system of Xianju County, transforming unique cultural genes into a perceptible visual language. Under Saussure's "signifier" and "signified" paradigm, it not only preserves the morphological characteristics of the carrier, but also selects Gaoqian ancient dwellings, needle-pierced boneless lanterns and "the vicissitudes of life" as the core pattern sources based on their cultural connotations (see Table 6).

Table 6(a). Extraction of Cultural Symbol Elements of Xianju














Extracting gene targets	picture	Symbol extraction process	Schematic diagram
Gaoqian Ancient Residential Building Complex			

Table 6(b). (continued) Extraction of Cultural Symbol Elements of Xianju

Extracting gene targets	picture	Symbol extraction process	Schematic diagram	Extracting gene targets	picture
Needle-pierced boneless lantern					
The sea changes into mulberry fields					

4.1. Logo Design

As a national-level historical and cultural protection village, Gaoqian Ancient Residence's iconic architectural feature—the horse-head wall (fire-resistant wall) —is a highly recognizable regional architectural element and became the primary visual source for the logo design. The design extracts the outline of the "horse-head wall," using simplification and geometric techniques to reconstruct the beauty of the regional structure. The "boneless" structure and flexible three-dimensional frame of the needle-pierced boneless lantern are abstracted into a rounded polygonal outline, forming a cohesive and protective overall envelope, symbolizing the craftsmanship spirit of "softness within strength." "The vicissitudes of life" are translated into a three-in-one graphic symbol of "mountain-water -field," with three sets of undulating curves representing mountains, watercourses, and field ridges, combined with the main colors of bayberry red and lion dance red (see Table 7) to form a complete cultural image. The logo effect is shown in Figure 2.










Figure 2. Xianju Logo design display

4.2. Color System Design

In extracting the color symbols of Xianju's cultural landscape genes, the design software Photoshop was used to extract colors from the figurative elements of Xianju County's cultural landscape genes and mark them as RGB color mode (see Table 5). The main colors extracted were those that occupied a large proportion of the main elements in the images: the Nine Lions costume, Xianju bayberries, and the ancient dwellings of Gaoqian. The Nine Lions costume as a highly recognizable intangible cultural heritage performance in Xianju, features traditional short jackets with bright colors. This paper extracted two sets of colors: lion dance colors (RGB: 179, 54, 39) and golden yellow (RGB: 218, 173, 76), corresponding to "festive-enthusiastic" and "auspicious-noble," respectively, strengthening the cultural expression of "vitality" and "celebration." Xianju bayberries, as a national geographical indication product, are a highly representative ecological agricultural product in the dissemination of Xianju culture. The peel color of Xianju bayberries forms bayberry red (RGB: 104,

52, 59), possessing both distinct regional characteristics and natural affinity, making it suitable for public sectors such as cultural and creative industries and agricultural tourism brands . The ancient residential complex in Gaoqian is predominantly gray and white, reflecting the dignified aesthetics of Hui-style architecture. The gray and white color scheme, with a dark gray-brown (RGB: 107, 102, 92) extracted from the walls and roof tiles , conveys a sense of history and cultural depth, suitable for sophisticated settings such as document templates and cultural and creative packaging. The main colors are bayberry red and lion dance colors, with golden yellow and dark gray-brown as secondary colors, forming the core color system of the county's image.

Table 7. Extraction of Color Symbols in Xianju

Extracting gene targets	picture	Color symbol extraction	R value	G value	B value
Nine Lions Pattern Short Jacket			179	54	39
			218	173	76
Xianju Yangmei			104	52	59
Extracting gene targets	picture	Color symbol extraction	R value	G value	B value
Gaoqian Ancient Residential Building Complex			107	102	92

4.3. Standard Font Design

The selection of the standard font is centered on the cultural gene of "Xianju bestowed with the name by the Northern Song Dynasty," starting from its historical context. The Chinese standard font uses the KaiTi style , echoing the cultural significance of Emperor Zhenzong of the Northern Song Dynasty bestowing the name . KaiTi is a model of standardized Chinese character writing, originating in the Eastern Han Dynasty and flourishing in the Tang and Song Dynasties. Its " upright and balanced, yet strong and vigorous " brushstrokes conform to the dignified temperament of official writing, aligning with Xianju's elegant positioning as a historical and cultural city. KaiTi is widely inherited in the calligraphy tradition, concretely linking with the style of Zhao Heng's edict, strengthening the visual logic of historical inheritance and cultural origin. The selection of the English standard font considered the harmony between Chinese and Western styles and compatibility with international communication. The Garamond font was ultimately chosen, originating from the 16th-century European printing system. Its design style is elegant, with light strokes and harmonious proportions, and it is widely used in classic books, art publications, and academic journals. The cultural depth and scholarly atmosphere of the Garamond typeface create a "cultural dialogue" with the Eastern aesthetics of Chinese regular script. This not only achieves a unified style that blends East and West in terms of visual semantics, but also enhances the cultural taste and professionalism of the city's international image (see Figure 3).

English fonts:
Garamond Regular



Figure 3. Design of standard characters in Xianju



Figure 4. Derivative Graphic design

4.4. Derivative graphic design

The dissemination of county image needs to be systematically constructed across media and scenarios. As auxiliary graphics derived from logo design and color design, derivative graphics can serve as a core supplement to the visual identity system. By extending and interpreting the main logo, the integrity and adaptability of the brand can be strengthened, and a unified and culturally appealing county brand image can be jointly created. [16]

This derivative graphic is an extension of Xianju's iconic logo, incorporating the secondary colors of golden yellow and dark gray-brown (see Figure 4). It aims to create a visually unified and culturally consistent visual system for the county's image. The graphic continues the natural landscape texture symbolized by the "changing landscape" in the logo, using flowing mountain shapes and layered terrain patterns as its main visual language to further reinforce the imagery of the symbiosis between mountains and water and the evolution of the landform within the regional culture. The overall graphic has a horizontally expansive form, with rhythmic and melodic lines that echo the continuous mountain ranges and gentle waterways of Xianju, possessing both visual recognizability and extensibility.

4.5. Evaluation of translation effectiveness

This study conducted an online questionnaire evaluation after the design phase was completed. The questionnaire was distributed through social media platforms such as WeChat and expanded the sample through friend sharing. Respondents were not limited to local residents of Xianju, but covered the public of different ages and professional backgrounds to examine the design effectiveness and acceptance of the Xianju cultural gene visual identity system. A total of 136 valid samples were collected, of which 20.59% were local residents of Xianju and 16.18% were design-related practitioners, indicating a relatively representative sample. The questionnaire evaluated six dimensions: overall visual aesthetics, expression of regional culture, logo recognizability, color impression, font association, and willingness to use in practice. The results show that the system has a high overall acceptance rate: the logo's "aesthetics" score averaged 3.33 (out of 5), and its "reflection of local characteristics" score averaged 3.57; 80.15% of respondents could identify the horse-head wall of the Gaoqian ancient residence from the logo, and more than half could identify the needle-pierced boneless lantern and the "sea change" imagery; in terms of color, the recognition rates for the nine lions' clothing and the ancient residence's color scheme were 63.24% and 59.56% respectively, and a certain percentage could also recognize the colors related to bayberries; regarding standard fonts, the cultural association score for the "Xianju" regular script was 3.10, and the coordination score for the English font was 3.46, with the Chinese and English combinations achieving a basic visual balance. In terms of application, the overall acceptance rate for scenarios such as cultural

tourism promotion, city signage, and souvenirs averaged 3.29, with more than half of the respondents indicating "willing/very willing," showing that the system has certain conversion potential and promotional value.

5. APPLICATION EXTENSION DESIGN

To ensure the systematic implementation of the Xianju County image design and effectively promote the dissemination of the regional brand image, the application and extension of the visual identity system must be considered. The application extension design aims to extend the established core visual elements, such as the logo, standard font, color system, and auxiliary graphics, to diverse application scenarios. This will not only strengthen the unified management of the county's image in external communication and internal activities and enrich its visual expressiveness, but also enhance the integrity and communicative power of the "Xianju" brand image through standardized material design (see Figure 5).

5.1. System Design of Commemorative Items

Souvenirs are an important vehicle for shaping Xianju's external tourism image, expanding its cultural influence, attracting tourists, and extending brand memory. They can be used as government gifts, prizes for cultural and tourism activities, and sold in the tourism market. The design process takes core cultural genes as its starting point, transforming them into intuitive visual symbolic elements: using the outline of the horse-head wall of the "Gaoqian Ancient Residence" as a visual signifier, carrying the meaning of its historical architectural heritage and clan cultural memory; combining the symbolic elements of the Xianju County logo and the streamlined pattern of the "sea changes into mulberry fields" imagery, these are applied to various souvenir carriers such as T-shirts, canvas bags, and badges. Through the abstract refinement of graphic elements and modern design interpretation, a cultural and creative product system that combines practicality, commemorative value, and Xianju folk customs has been developed. Each souvenir becomes a flowing visual symbol system, permeating the symbolic characteristics of Xianju's cultural genes into everyday items: the wearer or holder acts as a medium for cultural dissemination, allowing abstract cultural genes to be perceived and spread through concrete objects, strengthening the public's cognition and emotional connection to Xianju culture.

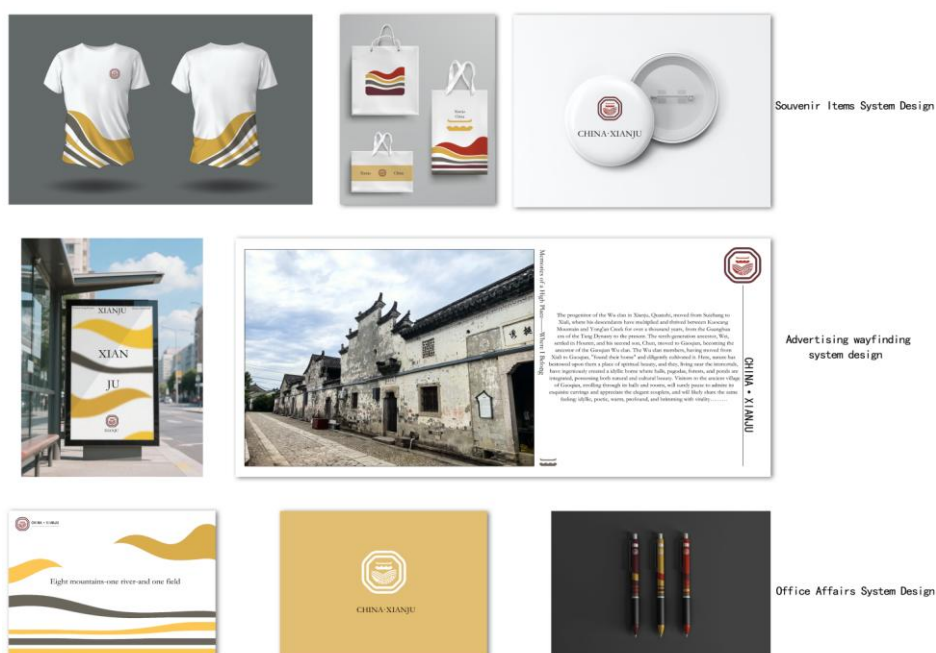


Figure 5. Application Expansion Design of Xianju County

5.2. Advertising way finding system design

The signage system design focuses on accurately conveying the core visual image in public spaces, enhancing the regional cultural atmosphere through multi-layered symbolic applications. The outdoor billboard design uses a streamlined auxiliary graphic reminiscent of "the changing times" as a background, employing symbolic metaphors to create a sense of temporal and spatial depth reflecting the evolution of Xianju's landscape. The Xianju logo is prominently displayed at the center of the page, serving as the core symbol that embodies multiple cultural elements, coupled with the core slogan "Named by the Northern Song Dynasty, Abode of Immortals" to reinforce information delivery. The graphic background, logo, and text slogan are organically combined to form a richly illustrated composite symbol system: containing both metaphorical visual expression and straightforward textual explanation. The postcard design uses the Gaoqian Ancient Residence as an example: the image selects the most representative image of the ancient architectural complex as a visual element for immediate recognition; it is supplemented with decorative patterns extracted from the architectural gable walls, serving as symbolic symbols to enrich the page's layers, and includes the exclusive slogan of the Gaoqian Ancient Residence to highlight its cultural significance. Whether it's outdoor signage or postcards, both types of promotional media interpret Xianju's cultural genes through a unified visual language: the former strengthens brand awareness with macro-level scenes, while the latter continues cultural memory with micro-level media. The two complement each other, expanding the communication dimensions of the visual symbol system.

5.3. Office Affairs System Design

The office administration system design focuses on standardized visual output in daily office scenarios, integrating cultural symbols into everyday office supplies to ensure that internal communication reflects regional cultural characteristics. The PPT presentation template uses the abstract texture of "the sea changing into mulberry fields" as a background pattern, employing repetition and rhythm of graphic textures to create a profound and rich cultural heritage, making it the background signifier in the visual symbol system, implicitly representing the cultural significance of Xianju's historical changes and natural environment. The Xianju logo is embedded in the header, ensuring a unified brand identity on every page; it is accompanied by the title text "Eight Mountains, One River, One Field," revealing Xianju's regional ecological characteristics and cultural background. Through the dual mapping of image textures and text slogans, the PPT template conveys a unified and culturally rich brand image while presenting information. The office pen design uses two brand standard colors, "Yangmei Red" and "Lion Dance Red," to coat the pen body. The pen body is printed with the Xianju logo and partial texture patterns extracted from the imagery of "the sea changing into mulberry fields," making it a condensed carrier of cultural symbols. Throughout the entire office administration system, from large-scale PowerPoint presentations to compact writing pens, a unified design standard and symbol system are followed. All elements echo each other and maintain a consistent style, demonstrating the high adaptability and extensibility of core cultural genes in everyday scenarios. This not only meets the functional needs of daily applications but also achieves a complete transformation of cultural genes from symbol extraction to multi-scenario integration, further highlighting the practical value and dissemination potential of the visual identity system.

6. CONCLUSION AND OUTLOOK

This study adopts a phased approach, following a three-stage path of "cultural gene identification – visual translation – application expansion," to construct the theoretical foundation and practical framework for the visual identity design of Xianju County. Through systematic screening and decoding, six core cultural genes were extracted, including the Northern Song Dynasty's bestowal of the name, the vicissitudes of life, Xianju bayberries, the ancient dwellings of Gaoqian, the nine-lion motif short jacket, and the needle-pierced boneless lantern. These cultural genes collectively

constitute the core symbolic system of Xianju's cultural image, highlighting its unique regional characteristics, cultural continuity, and dissemination potential.

a holistic visual identity system was constructed, comprising a logo, standard typeface, color scheme, and derivative graphics. The logo's outline is based on the horse-head wall of the ancient dwellings of Gaoqian, incorporating the structure of a boneless lantern and the imagery of "the vicissitudes of life," forming a simple yet symbolic graphic. The standard typeface, based on the historical fact of the Northern Song Dynasty's bestowal of the name, uses a regular script font to enhance the sense of historical weight. The colors are extracted from bayberries, a short jacket with a nine-lion motif, and ancient dwellings, highlighting regional color memories; the derivative graphics evolve from logo elements, strengthening the system's unity and extensibility. The overall visual identity system achieves a balance between stylistic language and cultural expression, presenting high recognizability and strong cultural relevance.

In terms of application expansion, this study extends the visual identity system to three major systems: souvenirs, promotional signage, and office supplies, achieving a complete transformation of cultural genes from symbols to multiple scenarios. The unified expression and flexible extension of the visual system on different carriers have been verified, demonstrating good adaptability and dissemination power. It also provides a model for the systematic promotion and scenario-based deepening of county brand image, highlighting the closed-loop value of this study from theory to practice.

Meanwhile, the "cultural gene decoding- visual system construction" approach proposed in this study has reference value for the development of cultural visuals in other counties or villages. In-depth exploration of local cultural resources and their translation into visual symbols can help create a differentiated and non-homogeneous regional cultural image, and promote cultural brand building, rural revitalization, and the improvement of public space quality.

It should be noted that this study still has certain limitations. The media adaptability of the visual system needs further testing; future studies could expand the survey sample and strengthen professional evaluation and user feedback to continuously optimize the system's expressiveness and adaptability. Meanwhile, with changes in the cultural environment and the evolution of regional culture, the visual identity system of Xianju also needs to be dynamically updated to maintain its cultural vibrancy and sustainable dissemination in line with the times.

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