

Research on the Design of Cultural and Creative Products in Historical and Cultural Towns from the Perspective of Cultural Genes

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Abstract: *Historical and Cultural Towns are carriers of traditional culture and dwelling feelings because of their relatively complete traditional architectural style and unique site selection pattern, and have outstanding historical details and heritage values. Through the text analysis method under the network context, the cultural gene elements and dimensions of Yaowan ancient town are identified. It is found that the cultural genes of Yaowan ancient town can be divided into six dimensions: landscape genes, production genes, life genes, art genes, historical humanities genes and ideology genes, and further subdivided into 16 elements. Finally, combined with the research results, some suggestions are put forward for the development of cultural and creative products in Yaowan ancient town, so as to protect the characteristic elements of the ancient town, continue the cultural genes of the ancient town, balance the development of rural construction and rebuild the vitality of the ancient town.*

Keywords: Famous historical and cultural towns; Cultural gene; Cultural and creative product.

1. INTRODUCTION

The Tenth Five-Year Plan for Cultural Development points out that, Culture is the soul of a country and a nation, and it is also the soul of national governance. Under the background of cultural heritage protection, as an important part of China's cultural heritage, historical and cultural towns have returned to the social field of vision because of their traditional architectural style, excellent architectural art, unique folk customs and primitive spatial forms. With the increasing concern of the international community and the government of China for the protection of cultural heritage, "cultural innovation+" has become an important way to cultivate local characteristic industries, shape historical and cultural characteristics, and enhance people's cultural identity and pride.

However, at present, the perspective of domestic research on wenchuang focuses on horizontal research, that is, it focuses on the significance and influence of "wenchuang+", and expounds the concept and examples of its function around individual wenchuang, but less on its vertical deep excavation operation; In practice, most of them focus on the design of cultural creation in museums, but less on the creation of cultural creation in famous historical and cultural towns. The cultural connotation of famous historical and cultural towns is not fully explored, and the local customs and customs are not fully displayed, which makes the products "sold at a low price" or "stranded" [1], which has a certain negative impact on the local economic and cultural development and the improvement of residents' happiness in life. Therefore, the importance of cultural innovation in famous historical and cultural towns still needs to be improved. Based on this, this paper extracts cultural genes and designs cultural products of Yaowan ancient town, which is an innovative way to combine traditional culture with modern design, which can highlight the historical and cultural characteristics and spiritual core of the ancient town and provide new ideas for the protection and inheritance of famous historical and cultural towns.

2. RESEARCH PROCESS

2.1 Extraction process of cultural genes in famous historical and cultural towns

Abstractly analyze and extract cultural elements from the population of historical and cultural towns to realize the reverse translation process, and then extract cultural genes from cultural elements according to the principle of gene recognition to realize the reverse translation process. The specific steps are as follows:

First, it is necessary to collect the cultural elements of famous historical and cultural towns and identify the cultural element population, including architectural style, traditional craft, folk culture, historical events and so on, and then sort out the collected cultural elements from the function, principle and structure.

Second, gene recognition. Through the transcription of the cultural elements of historical and cultural towns, the cultural genes are extracted. These cultural genes are the uniqueness and charm of famous historical and cultural towns, and they are also important materials and inspiration sources for the design of cultural and creative products.

2.2 Visualization method of cultural genes in famous historical and cultural towns

This paper will learn from the cultural gene visualization method of famous historical and cultural towns put forward by Li Yong [2]. Using the framework of "cultural form-cultural elements-cultural decomposition-cultural gene carrier", the cultural gene pedigree of famous historical and cultural towns is constructed to realize the visualization of cultural gene structure. Using ontology construction technology, knowledge mining, knowledge association and knowledge visualization of cultural genes in famous historical and cultural towns are carried out.

3. EXTRACTION OF CULTURAL GENES FROM FAMOUS HISTORICAL AND CULTURAL TOWNS

3.1 Collection and extraction of cultural elements

In this paper, in the process of collecting examples of cultural gene elements in Yaowan famous historical and cultural town, The network text data of famous historical and cultural towns in Yaowan were captured by establishing a model in Python language, and examples of cultural elements of famous historical and cultural towns were collected, and a total of 14,917 pieces of relevant information were obtained. Use Python Jieba library to segment the collected text content of cultural elements, and extract keywords based on TF-IDF algorithm (see Table 1). According to the extracted keywords, the cultural elements of famous historical and cultural towns include environmental features (water towns, canals, antiques, etc.), architectural culture (halls, shops, etc.), industrial and commercial culture (shops, soy sauce gardens), catering culture (mung beans, soju, etc.) and traffic culture (docks).

Table 1: Summary table of high-frequency words of text elements in Yaowan ancient town ($N \geq 100$)

high-frequency word	frequency	high-frequency word	frequency	high-frequency word	frequency	high-frequency word	frequency	high-frequency word	frequency
scenic site	173	luoma lake	30	cheap	22	exploitation	16	slowly	13
entrance ticket	92	time	30	style	22	business breath	16	shop	13
place	90	interesting	29	hour	22	Xinyi	16	Pizhou	13
characteristic	89	suggestion	29	child	21	aroma	16	Shanxi	13
scenic spot	84	be with old world character	29	commercialization	21	happy	16	courtyard	12
history	75	Jiangnan	29	get in	21	delicious	16	town	12
worth a look	61	local	28	be located	20	friend	16	Suqian	12
scenery	57	travel	28	guildhall	20	traffic	15	weather	12
be worth	56	fit	28	visitor	19	business	15	evening	12
canal	46	stroll around	27	experience	19	not big	15	scale	12
whistle-stop	45	free	26	ctrip	19	stop	14	post office	12
build	44	overall good	26	sauce and pickle shop	19	shop	14	health	12
convenient	44	mung bean	25	speciality	17	prosperous	14	explain	12
culture	43	dock	24	entirety	17	patina	14	spirit	12
snack	40	Xuzhou	24	feeling	17	leisure	14	Shanghai	12
grand canal	37	scenery	24	taste	17	north	14	museum	12
amuse oneself	35	high price-performance ratio	23	vist	16	be not worth	14	street	11
northern Suzhou	33	environment	23	region of rivers and lakes	16	visit	13	pretty	11
charge	33	few	22	xinyi city	16	many years	13	mood	11

3.2 Construction of cultural element population

In order to further clarify the population distribution of cultural elements in the famous historical and cultural towns in Yaowan, the number of topics in the document was determined according to the degree of confusion, and the LDA model was created by using gensim library to generate the degree of confusion curve. Combined with the

visualization results of confusion, the number of inflection points is in the range of 6 ~ 8.5, and the best number of topics is determined to be 7 by visualizing the topics through pyLDAvis library. The collected element examples are classified into morphological and functional examples, so as to complete the element population construction. Because the examples of morphological elements have internal recessive characteristics and the examples of functional elements have obvious external dominant characteristics, the cultural element populations of historical and cultural towns are divided into two populations: internal recessive cultural population and external dominant cultural population. Combined with each group of keywords, the cultural element dimension of Yaowan historical and cultural town is divided into 7 cultural element groups and 16 cultural element identification indexes. Among them, the dominant cultural genes include four ethnic groups: landscape culture gene, life culture gene, production culture gene and art culture gene. Endodominant cultural genes include belief culture gene, national spirit gene, folk culture gene and landscape culture gene.

Table 2: Distribution Table of Cultural Elements in Yaowan Historical and Cultural Towns

Cultural element population	Cultural element group	Identification index
Explicit culture	Landscape culture gene	Environmental features
		Architectural culture
	Life culture gene	Settlement culture
		Traffic culture
		Catering culture
		Fishery culture
	Production culture gene	Farming culture
		Merchant culture
		Language culture
	Art and culture gene	Writing culture
Implicit culture	Belief culture gene	Religious culture
		Folk belief
	National spirit gene	National character
		National values
	Folk culture gene	Traditional skill
		Traditional art

4. CONCEPTION OF CULTURAL AND CREATIVE PRODUCTS IN FAMOUS HISTORICAL AND CULTURAL TOWNS

At this stage, domestic cultural and creative products are homogenized, low-end and spread [3]. Zhang Geyu, a scholar, took Yunjin Wenchuang products as an example, and put forward an innovative strategy of triple integration of technical sense, artistic sense and cultural added value [4], and confirmed that this strategy has enhanced the brand value of Yunjin Wenchuang products. With the help of this strategy, this paper conceives and designs the cultural and creative products of Yaowan historical and cultural town.

First, give Wenchuang products a sense of technology. The research on the design of cultural and creative products in historical and cultural towns from the perspective of cultural genes needs to integrate cultural genes into the creativity and design of products in order to realize the cultural innovation and differentiation of products. This can not only promote the protection and development of famous historical and cultural towns, but also promote the innovation and development of cultural and creative industries.

Secondly, enhance the artistic sense of Wenchuang products. In the design of cultural and creative products, it is necessary to identify 16 cultural elements and express them creatively and artistically by designing symbolic and representative patterns, colors and shapes, so as to accurately express the cultural characteristics and connotations of the famous historical and cultural town of Yaowan.

Finally, emphasize cultural added value. Liu Weishang scholar [5] proposed that the design of cultural and creative products should have emotional needs, and should pay attention to the innovation of design techniques, and transform traditional cultural elements into modern visual images. At the same time, it is also necessary to consider the practicality and functionality of the products. Wenchuang products should be able to meet the daily use needs of tourists, and the practicality of emotional functions, materials and techniques can be considered when designing, so as to attract consumers' attention and purchase.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Research conclusion

The research on the design of cultural and creative products in historical and cultural towns from the perspective of cultural genes mainly explores the unique cultural elements and genes of historical and cultural towns from the perspective of cultural genes, and integrates these elements and genes into the design of cultural and creative products, so as to realize the cultural innovation and differentiation of products. Through text analysis, this paper divides the cultural element population of famous historical and cultural towns into two groups: internal recessive cultural population and external dominant cultural population, and further divides the cultural element dimension of famous historical and cultural towns in Yaowan into 7 cultural element groups and 16 cultural element identification indexes. Among them, the dominant cultural genes include four ethnic groups: landscape culture gene, life culture gene, production culture gene and art culture gene. Endodominant cultural genes include belief culture gene, national spirit gene, folk culture gene and landscape culture gene.

5.2 Research suggestion

Excavating regional cultural characteristics: Each famous historical and cultural town has its own unique cultural background and story. Dig deep into the regional characteristics and cultural genes of the ancient town, and integrate these elements into the cultural and creative products, so that the products have a unique regional logo and show their unique cultural charm. At the same time, pay attention to the combination of tradition and modernity, while retaining historical and cultural elements, it should also be combined with modern aesthetic and functional needs, so that cultural and creative products can not only have historical background, but also meet the needs of the modern market.

Strengthen brand building: Establish the cultural and creative brand of the ancient town scenic spot, and enhance the brand's recognition and attraction through a unified visual identification system. At the same time, brand promotion and marketing activities such as Wenchuang Design Competition and Creative Market can be held to attract more designers and creative talents to participate and improve the popularity and market competitiveness of Wenchuang products.

Focus on user experience: In the process of product design, we should fully consider the user experience, conduct regular market research, understand the target audience and characteristics of famous historical and cultural towns, as well as the needs and preferences of tourists, including the use mode, touch and visual experience of products, so as to optimize and improve Wenchuang products, enhance the overall quality of products, and improve the market competitiveness and brand value of products.

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