

Construction of an Evaluation Model of Traditional Culture Perception based on Geographic Environment Differences

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Abstract: - The influence of geography on traditional culture is very great, so there are big differences in the geography reflected by different cultural arts. The closedness and openness of the geographical environment directly affect the form and content of culture and art, and the same culture and art form different factions and styles due to geographical differences. Based on this, this paper takes the Teochew zither and the Hakka zither as examples to discuss the construction of the traditional culture perception evaluation model, in order to be able to provide certain references for the study of cultural diversity.

Key-Words: - geographic differences, Physical and geographical factors, guzheng; traditional culture, cultural perception, evaluation model.

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1 Introduction

Natural geographic factors have an inescapable influence on the development of ethnic music, [1]. The difference in geographical environment is also a key factor that leads to the division of the same kind of art into different factions. Based on this, this paper discusses the formation factors and cultural perception evaluation of the styles of Teochew zither and Hakka zither based on geographic differences, so as to provide certain references for the development of traditional cultural perception evaluation.

2 Factors for the Formation of Chaozhou Zither and Hakka Zither Styles based on Geographic Differences

2.1 Human Geographic Conditions

Chaozhou area was ruled by the Han people for nearly a hundred years during the Qin Dynasty, so a large number of Central Plains people migrated to this area, after that, due to a number of riots in different periods, Central Plains Han people also migrated to this area one after another. The local indigenous people, the Min-Yue ethnic group, and the Han Chinese from the Central Plains continued

to merge, forming the current residents of Chaozhou. The Hakka region was formed later than Chaozhou, but like the Chaozhou region, people from the Central Plains migrated to the Hakka region and gradually integrated with the natives to form the current residents, [2]. The difference is that most of the Central Plains Han Chinese in Chaozhou came from Shanxi "Qin", while most of the Central Plains Han Chinese in the Hakka region came from the Central China region, and the introduction of Han culture from different regions had a certain impact on the differences in musical styles. Therefore, in the zither music of the Chaozhou zither school and the Hakka zither school, the tuning, notation, and performance are all influenced by this special humanistic and geographical environment.

2.2 The Relationship between the Two Zing Schools and Regional Dialects

The Teochew dialect uses a lot of gliding sounds when speaking, and the tone of one word can be changed in many ways, which makes the Teochew dialect sound sweet, soft, and with gliding sounds, like music. The Teochew zither absorbs the characteristics of the dialect and, on the basis of the original music, adds techniques such as kneading and sliding, which makes the left hand kneading more rhythmic, such as singing and speaking, and

makes its music beautiful, smooth, distinctive, vivid and flexible, and also contains a wealth of feelings.

Hakka dialect is one of the most distinctive dialects in China, and its tones are two less than those of Teochew, mostly six tones, but at least three tones. The division of the tones is related to the clearness and turbidity of the vowels, the ancient flat clear vowels are read as yinping, and the turbid vowels are read as yangping, and the incoming tones are also divided into yin and yang according to the clearness and turbidity of the vowels, while the upper and lower tones are generally not divided into yin and yang. Due to the characteristics of this tone, the melody of Hakka zither music is also soft without a lack of robustness, and strong with some tenderness, [3].

3 Validation of the Mechanism of Action of the Theoretical Model of Traditional Cultural Perception

3.1 Research Methods

Structure Equation Modeling (SEM) can realize multivariate statistical analysis, which is used to analyze the internal connection of things and predict their future development, [4]. It usually includes factor analysis (also known as measurement modeling) and path analysis (also known as structural modeling), [5]. The structural relationship and mechanism of the perceptual model are verified through path analysis, and the results of path analysis can prove whether there is a relationship between the various layers of the perceptual model and the strength of the relationship.

Based on the assumption of the action mechanism of the aforementioned theoretical model of cultural perception, there should be an influence

relationship between the factors as shown in Figure 1:

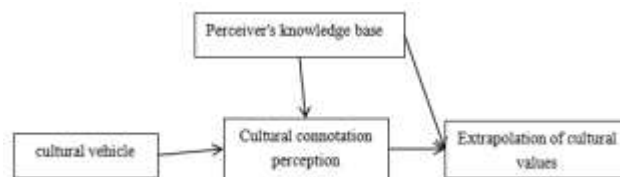


Fig. 1: Path relationship diagram of the cultural perception model

This paper carries out path analysis based on the above relationship, such as the existence of correlation and positive relationship between the factors, i.e., each path exists, indicating that the assumption of the action mechanism of the cultural perception model can be verified.

3.2 Research Data Sources

3.2.1 Selected Research Samples

The Teochew zither and the Hakka zither are rich in cultural connotations. Both have become intangible cultural heritages for protection and development, relying on rich historical and cultural resources, attracting many visitors to explore. Based on their resources and development conditions, they are selected as samples for the empirical study of cultural perception mechanism, [6].

3.2.2 Data Processing and Analysis

Using the path analysis of SPSS software, based on the path relationship of the cultural perception model of Figure 1, the relevant data are inputted, and the results of the path analysis are obtained as shown in Table 1 and Table 2.

Table 1. Summary of regression coefficients of Chaozhou zither cultural perception model Grid

$X \rightarrow Y$	Unstandardized path coefficients	SE	$z(CR)$	P	Standardized path factor
Cultural vehicle→Cultural Connotation	0.227	0.090	2.527	0.012	0.167
Cultural Connotation→Cultural Value	0.134	0.051	2.615	0.009	0.178
Knowledge base→Cultural Connotation	0.262	0.084	3.123	0.002	0.207
Knowledge base→Cultural Value	0.138	0.065	2.112	0.035	0.144

Remarks: → indicates path influence relationship

Table 2. Summary table of regression coefficients of Hakka zither culture perception model

$X \rightarrow Y$	Unstandardized path coefficients	SE	$z(CR)$	p	Standardized path factor
Cultural vehicle→Cultural Connotation	0.272	0.098	2.769	0.006	0.196
Cultural Connotation→Cultural Value	0.177	0.065	2.708	0.007	0.195
Knowledge base→Cultural Connotation	0.175	0.056	3.117	0.002	0.220
Knowledge base→Cultural Value	0.154	0.052	2.963	0.003	0.213

Remarks: → indicates the path effect relationship

3.3 Conclusion of Empirical Research

The results of the study show that there are three levels in the review texts, namely, cultural carrier feeling, cultural connotation perception, and cultural value deduction, and the content elements assumed in each level are reflected in the review texts. So far, the theoretical assumptions of the theoretical model on content elements and structural levels have been validated.

The study of the two samples of Teochew zither and Hakka zither shows that there is a significant influence relationship between the structural levels of perception and the four factors of personal-related knowledge reserve, thus verifying that the theoretical assumptions of the theoretical model on the mechanism of action are valid.

4 The Construction of Evaluation Model of Traditional Culture Perception--Taking Chaozhou Zither as an Example

4.1 Evaluation of Content Elements

4.1.1 Coverage

(1) Definition and formula

Coverage refers to the ratio of the number of content elements perceived in the three levels of cultural carrier sensation, cultural carrier perception, and

cultural value deduction to the number of content elements at each level in the theoretical model after the perceiver has perceived traditional culture, [7]. Its calculation formula is as follows:

$$\text{degree of coverage } (C) = \frac{\text{Perceived number of content elements } (N)}{\text{Theoretical value of the number of content elements } (N_{\max})} \quad (1)$$

(2) Rating Criteria and Meaning of Indicators

This paper refers to the five-point rating scale and categorizes the coverage of content elements of traditional culture perception into five grades: high, relatively high, medium, relatively low, and low. The indicators reflect the subject being evaluated, the diversity and richness of the content elements of its culture that can be perceived, and the higher the evaluation level, the higher the level of diversity and richness of its perceived elements. Details are shown in Table 3.

The number of content elements of Chaozhou zither culture perception is 42 in total, the theoretical maximum value is 48, and the coverage rate is 87.5%, which indicates that the diversity and richness of the cultural perception information provided to tourists in the development of Chaozhou zither culture is at a high level. The coverage rate of the level of "culture carrier feeling" is 86.11%.

Table 3. Coverage of content elements perceived by Teochew zither culture

Level	(N)	(N_{\max})	(C)
Feelings of cultural carriers	31	36	86.11%
Cultural connotation perception	4	5	80%
Cultural value deduction	7	7	100%
Total	42	48	87.5%

4.1.2 Frequency of Perception

Frequency of perception (F) refers to the number of times the content elements of traditional culture perception are perceived in a certain sample of tourists' perceptions, which reflects the active degree of perception of each content element, [8]. The higher the perceived frequency of a content element, the more active the content element can be perceived. The three levels of the perception model, can be divided into the frequency of perception of content elements of cultural carriers, the frequency of perception of content elements of cultural connotation, and the frequency of perception of content elements of cultural value.

There is a big difference in the perceived frequency of the content elements of Chaozhou zither culture perception. At the cultural carrier perception level, the perception frequency of zither is exceptionally prominent, totaling 268 times, accounting for 26.99% of the total perception frequency of the cultural carrier perception level, and other content elements with high perception frequency also include cultural atmosphere (14.80%), and the former residence of celebrities (4.23%), which is above the average of 3.03% in the frequency ratio. At the level of cultural connotation perception, vernacular culture is the cultural connotation element with the highest frequency of perception. At the level of cultural value deduction, artistic value, and ecological value were perceived with the highest frequency, while educational value, spiritual value, and research value were perceived with the lowest frequency.

4.1.3 Quality Comprehensive Evaluation

(1) Definition and method

The quality of perception refers to the evaluation of the degree of the perceiver's affirmation, approval, positive attitude, and inclination towards the content elements of traditional settlement culture perception, [9]. Perception quality evaluation is based on the principle of Positive comprehensive evaluation (PCE), which systematically and comprehensively evaluates the perceived content elements of traditional culture, so as to quantitatively judge the perceiver's overall evaluation of the perceived content elements of the Hakka zither and the Teochew zither.

(2) Establishment of indicator system

The hierarchical analysis method (AHP) is used to construct the index system for comprehensive evaluation of perception quality.

(3) Determine the weight of indicators

In the above evaluation of perceived frequency, the perceived frequency of perceived content elements under each indicator has been obtained F . Counting the perceived frequency of the i th indicator as F_i , its weight W_i is:

$$W_i = F_i / \sum_{i=1}^n F_i \quad (2)$$

The indicator weight set is:

$$W = \{W_1, W_2, \dots, W_n\} \quad (3)$$

(4) Evaluation Synthesis

Evaluation synthesis uses the weighted composite index method to determine the positive comprehensive evaluation value, namely

$$P = \sum_{i=1}^n W_i P_i \quad (4)$$

P is the comprehensive evaluation value; W_i is the weight of the i th indicator; P_i is the i th indicator value; n is the total number of indicators.

According to the formula, the data obtained from the questionnaire survey is used to calculate the comprehensive evaluation, which is calculated according to the five-point scale, and the evaluation score of the cultural carrier feeling is 3.499, the evaluation score of the cultural connotation perception is 3.508, and the evaluation score of the cultural value deduction is 3.713, and the comprehensive evaluation score is 3.573, which is at the medium level.

4.2 Evaluation of Structural Relationship

4.2.1 Degree of Coupling Coordination

This study introduces the coupling coordination degree index to measure the degree of benign coupling of the interaction between the three levels of traditional cultural perception, including the coupling coordination degree D_c of coverage, the coupling coordination degree D_f of perception frequency, and the coupling coordination degree D_p of comprehensive quality evaluation, with the following calculation formula:

$$C_c(C_s, C_c, C_d) = 3 \times \left[\frac{C_s C_c C_d}{(C_s + C_c + C_d)^3} \right]^{\frac{1}{3}}$$

$$T_c = 1/3(C_s + C_c + C_d) \quad (5)$$

$$D_c = \sqrt{C_c \times T_c}$$

The degree of coverage of content elements at the three levels of cultural carrier feeling C_s , cultural connotation perception C_c and cultural value deduction C_d , respectively.

$$C_f(F_s, F_c, F_d) = 3 \times \left[\frac{F_s F_c F_d}{(F_s + F_c + F_d)^3} \right]^{\frac{1}{3}}$$

$$T_f = 1/3(F_s + F_c + F_d) \quad (6)$$

$$D_f = \sqrt{C_f \times T_f}$$

The average frequency of perception of the content elements at the three levels of cultural carrier feeling F_s , cultural connotation perception F_c and cultural value deduction F_d , respectively. As the coupling coordination degree formula requires that the value of each item is between (0,1], it is necessary to convert the frequency of perception to 1-point data, and then substitute it into the formula for calculation.

$$C_p(P_s, P_c, P_d) = 3 \times \left[\frac{P_s P_c P_d}{(P_s + P_c + P_d)^3} \right]^{\frac{1}{3}}$$

$$T_p = 1/3(P_s + P_c + P_d)$$

$$D_p = \sqrt{C_p \times T_p} \quad (7)$$

As indicated above.

The coverage and quality evaluation coordination of the three levels of sensation, perception, and deduction are at the level of quality coordination, and the frequency of perception is at the level of good coordination, mainly because the frequency of perception at the level of perception is too low. The evaluation results of Chaozhou Zheng's cultural perception structure are shown in Table 4.

4.2.2 Structure Level Coefficient

(1) Definition and formula

Drawing on the index of industrial structure hierarchy coefficient 3, the formula for the structural hierarchy index of traditional cultural perception is constructed:

$$W = \sum_{i=1}^n \sum_{j=1}^n F_p(j) \quad (8)$$

$F_p(j)$ is the ratio of the average perception frequency of the content elements at the three levels of cultural carrier feeling, cultural connotation perception, and cultural value deduction to the total perception frequency, [10].

(2) Evaluation Criteria and Meaning of Indicators

As shown in Table 5. When the structure of cultural perception is in the low or medium-low level, the reasons can be analyzed with the data and adjusted and optimized in the development planning and design.

Substitute the percentage of the average perception frequency of the three levels of cultural carrier feeling, cultural connotation perception, and cultural value deduction into the calculation. The average perception frequency share of the three levels is 0.4357, 0.2553, and 0.3090 respectively, and the structure level coefficient is 1.8733, which is at the advanced level.

4.2.3 Path Analysis

Based on the cultural perception hierarchical influence relationship model, path analysis was conducted in SPSS software, and the analysis results shown in Table 6 were obtained.

As can be seen from the above table, among the influences of cultural carrier and cultural connotation, the number of UN-standardized path coefficients is 0.268 and the number of Standardized path factors is 0.193 > 0, so it means that the path from cultural carrier to cultural connotation is significant at the level of 0.01, where $z=2.667$, $p = 0.008$ and $p < 0.01$, which indicates that cultural carrier will have a negative impact on culture. Among the influences of cultural connotation and cultural value, the values of Unstandardized path coefficients and Standardized path factor are 0.175 and 0.182 > 0, which means that the path from cultural connotation to cultural value has obvious significance at the level of 0.05, where $z=2.508$, $p = 0.012$ and $p < 0.05$, which indicates that cultural connotation has a significant positive influence on cultural value.

4.3 Analysis of Evaluation Results

The evaluation results of the above indicators are analyzed. From the evaluation results of the coverage index, it can be seen that the perceivable cultural content elements provided by the current Chaozhou zither have a certain degree of diversity, and can bring rich perceived content elements to the perceiving group.

Table 4. Evaluation results of perceptual structure coordination of Chaozhou zither culture

	sensory	Perception	deduce	Coupling C	Harmonization index T	Harmonization index P
Coverage	0.8611	0.8000	1	0.9956	0.8870	0.939
Frequency of perception	1	0.5859	0.7094	0.9754	0.7651	0.8639
Quality Evaluation	0.9424	0.9448	1	0.9996	0.9624	0.9808

Table 5. Structure level grading criteria

Structural hierarchy factor W	[1,1.25)	[1.25,1.5)	[1.5,1.75)	[1.75,2]
Structural hierarchy level	Low level	Medium-low level	mid-to-high level	advanced

Table 6. Model regression coefficient summary grid

$X \rightarrow Y$	Unstandardized path coefficients	SE	$z(CR)$	P	Standardized path factor
cultural vehicle→Cultural Connotation	0.268	0.100	2.667	0.008	0.193
Cultural Connotation→Cultural Value	0.175	0.070	2.508	0.012	0.182

From the evaluation of the three indicators of structural relationship, it can be seen that the cultural perception structure of the Chaozhou zither is complete, and the role of the mechanism is played more fully, indicating that in the culture of the Chaozhou zither, the cultural carrier can basically express the cultural connotation, and the cultural connotation has a high cultural value, [11].

In addition to the above relatively advantageous evaluation results, there are also some problems in the cultural perception of the Chaozhou zither. According to the evaluation results, the coverage, frequency of perception, and comprehensive evaluation of the perceptual level of cultural connotation are lower than that of cultural carrier feeling and cultural value deduction, indicating that the effect of perception from the cultural connotation is poorer in comparison with that of the cultural carrier, [12]. The frequency and quality of perception of the cultural connotations of the Chaozhou zither culture are relatively low, indicating that the excavation of the cultural connotations is not deep enough, [13]. On the other hand, the frequency and quality of perception of the perceivers of the cultural value of the Chaozhou zither are relatively high, indicating that the cultural connotation of the Chaozhou zither has a high historical and cultural value, and as long as the perceivers can reach the perception of the cultural connotation, the degree of recognition of its value is very high. Therefore, the key to planning and development lies in clarifying the cultural connotation of the Chaozhou zither, determining its cultural theme, and improving the cultural

perceptibility and readability of the Chaozhou zither by strengthening the relationship between cultural carriers and the representation of cultural connotation.

5 Conclusion

Taking Chaozhou guzheng as an example, this paper further analyzes the public's cognition of Chaozhou guzheng culture, and further discusses the evaluation of traditional culture perception under geographical differences. Chaozhou guzheng provides a certain diversity of perceptual cultural content elements, which can bring rich perceptual content elements to perceptual groups. The results show that the culture of Chaozhou guzheng can express its cultural connotation, the cultural content elements are relatively rich, and the cultural carrier can express its cultural values, but its perception of cultural connotation is relatively low. Therefore, in the later spread of Chaozhou guzheng, the key to planning and development lies in clarifying the cultural connotation of Chaozhou guzheng and determining its cultural theme, so as to improve its cultural cognition and readability.

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