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A Study on Image Extraction and Innovation Development of Clay Toys in the New Context

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***Abstract*-Clay Sculpture Toy is a kind of handicraft art form with the longest history and the widest spread among Chinese people. It shows people's joys and sorrows, their life and production which has strong regional characteristics and local flavor. But now, in the new context of the collision between traditional culture and market economy, how to develop and spread clay sculpture toys is facing difficulties. On the one hand, there is a certain gap between traditional folk art and modern mainstream aesthetics; on the other hand, how to innovate the development and dissemination of clay sculpture toys, such traditional handicrafts, in the context of traditional communication environment and modern interconnection of all things. In such a complex new context, it is very important for clay toys to innovate their own development points and communication means. Computer image technology has been broadly used in media and advertisement, engineering technology and other fields and achieved good results, but such advanced technology has almost never been applied in the traditional handicraft industry. Based on the previous studies on clay toys, this paper uses computer image technology to extract the images and patterns of traditional clay toy to find a new innovative path for the developing traditional handicrafts such as clay toys in the new context, this paper constructs an evaluation index system for the comprehensive development value of clay toys. Taking Fengxiang, Huishan and Xunxian as examples, this paper comprehensively evaluates the development value of clay toys by using FAHP and finds innovative ways suitable for clay toys according to the conclusions:1. Create innovative and high-quality IP image in combination with new context. 2. The mode of communication with new context. 3. Open innovation of decorative patterns and colors, strive to provide a new perspective and method for the development and innovation of clay toys.**

Keywords-Fuzzy analytic hierarchy process; Clay toy; Development value; Evaluation method

I. INTRODUCTION

A. Development history of clay toys

For clay toys, it has a very long history in our country and has a very important position in the field of traditional folk culture and art. From the Neolithic Age to modern society, clay sculpture has experienced thousands of years of history. From the myth of "Nu Wa Made Human Beings", clay sculptures have been closely linked to the origin of humans. In the beginning, it was mainly used as some practical utensils, but since the Neolithic Age, clay sculptures have gradually derived their decorative and color decorative functions to convey people's spiritual pursuits. In the pre-Qin period, the practicality of clay sculptures was further turned to artistic quality, laying a solid foundation for the development of clay sculptures for future generations. From the Qin and Han Dynasties to the Sui Dynasty, clay sculptures initially developed. In the Qin Dynasty, clay sculptures had already developed into an important variety of art. The "terracotta warriors and horses" represented the highest level of clay sculptures at that time. In the Wei, Jin and Southern and Northern Dynasties, clay sculptures opened up a new field for the creation of gods due to the integration of culture and the introduction of Buddhism. During the Tang and Song Dynasties, clay sculpture art reached its heyday. "Dunhuang Art", the masterpiece of this period, can be called a treasure of traditional clay sculpture in my country. Furthermore, in the Song Dynasty, merchants who used clay sculptures as a means of profit were developed, which greatly promoted the development of clay toys. At that time, clay sculptures had become an indispensable part of the citizens. During the Yuan, Ming and Qing Dynasties, clay sculptures developed further. Fortunately, the high degree of marketization of clay figurines has made clay figurines sell well throughout the country and have a profound impact. But it is worth noting that today, the development of clay toys is facing major problems. How to break the dilemma of survival, develop oneself, break through oneself, break through oneself, break away from one's native place, use one's traditional charm to move modern environment, how to transform one's inside story into modern resources becomes a problem that is worth deep investigation.

B. Development dilemma of clay toys

In today's world of highly developed information, technology is emerging in industries such as sculpture, design, communication and printing, while products such as clay toys, which to some extent remain in the handicraft category, are gradually shrinking, some are even in danger of disappearing. In addition, due to the free flow of humanism, the explosion of information, the vastly different lifestyles, and the different aesthetic tastes, clay toys no longer conform to the mainstream aesthetics of modern people and are no longer suitable for modern mainstream production methods, so gradually it became an artifact in need of protection. As for the clay toy industry itself, as an art developed from the folks, it departs from the public aesthetics, is disconnected from modern production, and is out of touch with information dissemination, and it has been unable to survive. As the clay toys are declining, the state has issued a series of policy guidelines, all sectors of society have actively participated, the academic circles have used foreign experience for reference, and non-governmental organizations have spontaneously established, the protection

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and development of the targeted solutions for this are explored from multiple angles and directions, thereby providing a solid theoretical basis for practice.

Nowadays, the research on clay toys in academia has been more comprehensive and profound. Therefore, how to link these theories with practice and form a set of specific models is of great significance to the development of clay toys themselves, and helps the clay toys industry to get out of the dilemma that the development of clay toys can not be in line with the times with theoretical support and resources. At present, FAHP analysis method is one of the more widely used methods in the field of resource development among many research methods, this is because FAHP analysis method is complete in theory, rigorous in structure, and can be combined by qualitative analysis and quantitative evaluation when making decision, and the decision-making scheme made by FAHP analysis is convenient and easy to understand. In particular, in the field of tourism resource development, the application of this method has been quite mature, providing theoretical support and guidance for tourism development in many places, but it is rarely used as a cultural resource that belongs to the category of resource development. The development value research in the field of clay toys is even negligible. The development of value evaluation in cultural fields such as clay toys is itself a more complicated decision-making problem. Referring to the qualitative research of most scholars in the field of culture, this paper tries to discuss the planning of development model based on it, starting from the cultural development model, and starting from the three aspects of producers, products and consumers, to construct a scientific evaluation index system of development value, and then, through the combination of qualitative and Quantitative analysis methods, to refine the factors of development value at various levels and their weight, and to explore the logical relations among the factors with higher value, and through FAHP analysis to judge the degree of regional clay toy comprehensive development value, and try to solve the root of the development of clay toy in today's environment, thereby providing a new perspective and ideas for related research.

II. Research Method

A. Analysis of development value elements

Inheritance value factors in comprehensive development.

From the perspective of the producer, as a traditional craftsman or heir, how to spread the inheritance value of clay toys has become a top priority. First of all, the production process is the key to making clay toys. Through field research, it is found that most of the clay toys are artistically created in the form of family workshops, with clear division of labor and clear processes. The production process is roughly based on first using the local soil, then turning it into a mold, and finally applying decorative lines and painted patterns. However, due to the different soil characteristics and other factors in different regions, this set of processes has developed unique production methods in each region. Therefore, the production process can be called a special embodiment of regional culture. In addition, when making clay toys, artisans should conform to the mainstream values of the modern market and resonate with the consumers, no matter the choice of the theme or the transmission of the implied meaning of the content, so the spiritual connotation is especially important. Finally, after such a long development process, the clay toys in a region must become an indispensable cultural heritage of the region. This is the root of the region, and it is also the colorful display of various regions, then the cultural implication can be said to be the existence of a regional soul. Therefore, this paper holds that the inheritance value of clay toys is mainly embodied in three aspects: the making process, the spiritual connotation and the cultural implication.

From the point of view of the product itself, it is necessary to find a point of high development value which is in line with the modern mainstream aesthetic and values in the modern environment for further development. At present, the study of clay toys is mainly from the modeling, decoration, color three aspects for the foothold. Drawing on the perspectives and partial results of previous studies, this article regards the self-value factors of clay toys as composed of these three major points, and further refines and screens them. Finally, the following aspects are selected. First, as a traditional folk art, clay toys can naturally be put into the design field for exploration. In terms of modeling, clay toys are a three-dimensional form, and each region naturally has its own unique geometric modeling and appearance characteristics, gradually forming unique modeling features in various regions. As for a sculptural artwork, the composition relationship is an extremely important point of the overall aesthetics. In terms of ornamentation, spiritual worship varies greatly from place to place due to differences in regional environment, culture and history, and the choice of ornamentation is also different. Therefore, there is far-reaching research value in the meaning of ornament matching and patterns. In terms of color, due to the differences in natural geography, folk life, and aesthetic tastes in various regions, clay toys in each region have their own unique set of content in terms of coloring techniques, color matching, and color connotation. Under the joint combination of these three aspects, the diversity of clay toys in the market has been further enriched and strengthened, and the corresponding development value has also increased accordingly. It can be seen that, in the analysis of the modeling level, this paper mainly focuses on the two aspects of modeling characteristics and composition relationship; for the analysis of the pattern, it mainly starts from the two aspects of pattern matching and pattern meaning; for the analysis of the color level, it mainly starts from three aspects: color technique, color matching and color connotation.

From the perspective of consumers, consumer preferences are particularly important for traditional folk crafts such as clay toys. Most of the consumption behavior is based on the needs of consumers. The early appearance of clay toys is due to the people's worship of totems, gods, and the desire for reproduction and reproduction. In the subsequent living habits and social production, clay sculpture toys were used as spiritual sustenance and daily necessities. At this time, clay sculpture toys are the combination of people's material needs and spiritual needs. In modern society, changes in mainstream aesthetics and traditional worship concepts have made it difficult for clay toys to survive in the modern context. Merely material needs and spiritual needs can no longer meet the pursuit of modern people.

As a result, the demand for clay toys should be further turned to the level of artistic needs. Generally, it is difficult for clay toys to meet the above three requirements in a modern environment. Clay toys have not yet been able to meet the needs of life and spiritual needs, as well as meet the aesthetic requirements of contemporary mainstream. Based on the above analysis of modern values, first of all, from the perspective of clay toys as daily necessities, the geographical environment and cultural pursuit determine the morphological characteristics of clay toys. In the north, they are mostly clay toys, hanging pieces, and standing people; in the south, they are mostly dolls, festive and auspicious class. In modern times, everything is interconnected, and the traditional cultural output and influence are severely suppressed, which directly leads to a substantial reduction in the material needs of clay toys in the modern context. It can be seen that the factor of influence is the key point in determining modern value. Secondly, from the perspective of clay sculpture toys as works of art, it shows the joys, sorrows, sorrows, and production of the people, and also has a strong spiritual worship and rustic flavor, which is in line with the spiritual pursuit and aesthetic taste of the old people. In the modern context, how to arouse and adapt to the spiritual resonance and aesthetic needs of modern consumers is the most important thing. Finally, due to differences in regions, folk customs, and cultures, the spread of clay toys is limited, and the recognition and resonance of the sources of clay toys are also different in different regions. From the perspective of historical development, the spread of clay toys has also been changing, and the factor of spread is not unimportant. Therefore, in the modern environment, as a product, clay toys must evaluate their market influence, and the factor of spreading is an important measurement index.

B. Index system construction

Based on the above analysis, the comprehensive development value evaluation index system of clay sculpture toys has been established, as shown in Table (1):

TABLE I. EVALUATION INDEX SYSTEM OF COMPREHENSIVE DEVELOPMENT VALUE OF CLAY TOYS

Target layer U	Guidelines level U_i	Specific indexs U_{ij}
Evaluation on the comprehensive development value of clay toys	Inheritance value U_1	Production process U_{11} Spiritual connotation U_{12} Cultural implication U_{13}
	Self-worth U_2	Modeling features U_{21} Composition relationship U_{22} Pattern with U_{23} Pattern meaning U_{24} Ink and color technique U_{25} Color matching U_{26} Color connotation U_{27}
	Modern Value U_3	Influence U_{31} Aesthetic needs U_{32} Transmission range U_{33}

III. PROCEDURE

A. Establishment of index system weight

1. Construct a judgment matrix

According to the established comprehensive value evaluation index system, it is divided into U, Ui, Uij from top to bottom. Starting from the Ui layer, the judgment matrix B=(bij)n×n is constructed through pairwise comparison by consulting experts. Among them, bij represents the relative importance of bi to bj for B. The evaluation standard adopts the 1-9 ratio scale method proposed by Saaty (see Table (2)).

TABLE II. 1-9 RATIO SCALING METHOD

Scaling	Meaning
1	B_i and B_j are equally important
3	B_i is slightly more important than B_j
5	B_i is obviously more important than B_j
7	B_i is significantly more important than B_j
9	B_i is extremely important than B_j
Reciprocal	$B_{ji}=1/B_{ij}$
2,4,6,8	The importance is between the above odd numbers

2. Calculate index weight value

① Calculate the product Pi of the elements in the i^{th} row of the judgment matrix.

$$P_i = \prod_{j=1}^{n} b_{ij} \tag{1}$$

② Calculate the nth root of Pi Dni.

$$Dn_i = \sqrt[n]{P_i} \tag{2}$$

③ Weight calculation, normalize the vector Dni, and calculate the weight value.

$$W_i = {Dn_i}\Big/{\sum_{i=1}^{n} Dn_i} \tag{3}$$

④ Consistency test

The consistency index CI of the judgment matrix, wherein, λmax is the largest characteristic root of the judgment matrix.

$$CI = \frac{\lambda max - n}{n-1} \tag{4}$$

⑤ Random consensus ratio calculation

When CR<0.1, the judgment matrix is considered to have satisfactory consistency, otherwise the judgment matrix should be adjusted.

$$CR = \frac{CI}{RI} \tag{5}$$

Wherein, RI is the average random consistency index, which can be found in Table (3).

TABLE III. RI AVERAGE RANDOM CONSISTENCY INDEX

Matrix order n	1	2	3	4	5	6	7	8	9	10	11
RI	0	0	0.52	0.89	1.12	1.26	1.36	1.41	1.46	1.49	1.52

B. Construct FAHP fuzzy matrix

1. Define the main factor layer index set as Uk={U1, U2,…, Uk}, define the sub-factor layer index set Uki={Uk1, Uk2,…, Ukn};

2. Define the comment set as V={v1, v2,..., vm}. Wherein, vj(j=1, 2,...,m) represents the comments at all levels from high to low. In this paper, m=5. For the evaluation of the comprehensive development value of woodblock New Year pictures, the comment level is 1. good (v1); 2. good (v2); 3. general (v3); 4. poor (v4); 5. poor (v5); Then the comment set of the level set established by the evaluation is V=(v1, v2,v3,v4,v5).

3. Establish a fuzzy judgment matrix

$$R_k = \begin{bmatrix} r_{k11} & \cdots & r_{k15} \\ \vdots & \ddots & \vdots \\ r_{kn1} & \cdots & r_{kn5} \end{bmatrix} \quad (6)$$

Wherein, rkij(i=1,2,...,n;j=1,2,3,4,5;k=1,2,3) represents the degree of membership of the i-th sub-factor index Uki to the j-th level comment vj in the k-th main factor, that is, the rate at which the sub-evaluation factor Uki gets vj (j=1,2,3,4,5) comments. The value of rkij can be determined as follows. Statistically sorting out the evaluation results of experts, we got vi1 v1 comments, vi2 v2 comments, ..., vi5 v5 comments for the indicator Uki.

C. Comprehensive evaluation calculation

1. First-level comprehensive evaluation calculation

The fuzzy evaluation matrix Rk of the sub-factor layer index Uki belonging to different main factor layers is respectively made fuzzy calculation, and the membership degree of the main factor Uk to the j-th level comment vj is obtained.

$$B_k = A_K * R_K = (a_{k1} \quad a_{k2} \cdots \quad a_{kn}) \begin{bmatrix} r_{k11} & \cdots & r_{k15} \\ \vdots & \ddots & \vdots \\ r_{kn1} & \cdots & r_{kn5} \end{bmatrix} = (b_{k1} \quad b_{k2} \quad b_{k3} \quad b_{k4} \quad b_{k5}) \quad (7)$$

Synthesize the membership degree of each main factor layer to the comment set V, and obtain the fuzzy comprehensive evaluation matrix R.

$$R = \begin{bmatrix} b_{11} & \cdots & b_{15} \\ \vdots & \ddots & \vdots \\ b_{31} & \cdots & b_{35} \end{bmatrix} \quad (8)$$

2. Second-level comprehensive evaluation calculation

The main factor weight vector A=(a1, a2, a3), according to the fuzzy mathematical evaluation model, the second comprehensive evaluation operation is performed on R, and the membership vector of the target layer index U to the comment set V is obtained.

$$B = A * R = (a_1 \quad a_2 \quad a_3) \begin{bmatrix} b_{11} & \cdots & b_{15} \\ \vdots & \ddots & \vdots \\ b_{31} & \cdots & b_{35} \end{bmatrix} = (b_1 \quad b_2 \quad b_3 \quad b_4 \quad b_5) \quad (9)$$

Normalize B to get B=(b1,b2,b3,b4,b5).

3. Evaluation results

B=(b1,b2,b3,b4,b5); where b1,b2,b3,b4,b5 represent U's membership degree for comments v1, v2, v3, v4, v5, respectively. After consulting experts, a weight value fj (j=1,2,3,4,5) is set for each level of reviews vj (j=1,2,3,4,5) to reflect the importance of the level of reviews Degree of sex. Based on this, the weighted average value (denoted as W) of each component bj in B can be obtained as the final evaluation result. Which is:

$$W = B * F^T = (b_1 \quad b_2 \quad b_3 \quad b_4 \quad b_5)(f_1 \quad f_2 \quad f_3 \quad f_4 \quad f_5)^T \quad (10)$$

The final evaluation result is measured by W, and W is a weighted average value, which represents the final evaluation value of the comprehensive development value of clay toys in a certain area, the results show that the better the comprehensive performance of the clay toys in this area, the higher the comprehensive development value of the clay toys in this area.

IV. CONCLUSIONS

Based on the above evaluation model and specific evaluation steps, clay toys in three representative areas of Fengxiang, Huishan, and Xun County were selected for comprehensive value evaluation, and based on the results of the model, the final reference opinion was proposed.

A. Calculate indicator weight

By consulting 8 experts who are engaged in the clay toy industry or the field of clay toy research, the 1-9 scale method is used to compare the index layers at all levels, and according to the steps of the aforementioned analytic hierarchy process, the characteristic value, weight, and consistency test are obtained. The comprehensive weight of the primary index U is A=(a1, a2, a3)=(0.2941, 0.5882, 0.1176); the comprehensive weight of the secondary evaluation index is A1=(0.6521, 0.1304, 0.2174); A2=(0.0410, 0.0812, 0.2550, 0.3293, 0.1110, 0.0629, 0.1196); A3 = (0.2103, 0.0955, 0.6942).

B. Construct fuzzy relation matrix

10 industry experts were invited to score the boy woodcut New Year pictures in the three regions based on three factors: traditional value, self value, market value, and secondary indicators, and perform probability statistics to obtain a fuzzy comprehensive evaluation matrix, as shown in Table (4), Table (5) and Table (6).

TABLE IV. FENGXIANG FUZZY COMPREHENSIVE EVALUATION MATRIX

Guidelines level U_i	Specific indexs U_{ii}	Membership matrix				
		good	better	average	bad	worse
Inheritance value U_1	Production process U_{11}	0.4	0.6	0	0	0
	Spiritual connotation U_{12}	0.7	0.2	0.1	0	0
	Cultural implication U_{13}	0.6	0.1	0.2	0.1	0
Self-worth U_2	Modeling features U_{21}	0.3	0.5	0.2	0	0
	Composition relationship U_{22}	0.2	0.6	0.1	0.1	0
	Pattern with U_{23}	0.4	0.5	0	0.1	0
	Pattern meaning U_{24}	0.5	0.2	0.2	0.1	0
	Ink and color technique U_{25}	0.3	0.6	0.1	0	0
	Color matching U_{26}	0.2	0.4	0.2	0.2	0
	Color connotation U_{27}	0.5	0.3	0.2	0	0
Modern Value U_3	Influence U_{31}	0.4	0.2	0.2	0.2	0
	Aesthetic needs U_{32}	0.3	0.5	0.1	0.1	0
	Transmission range U_{33}	0.2	0.4	0.3	0.1	0

TABLE V. HUISHAN FUZZY COMPREHENSIVE EVALUATION MATRIX

Guidelines level U_i	Specific indexs U_{ii}	Membership matrix				
		good	better	average	bad	worse
Inheritance value U_1	Production process U_{11}	0.6	0.3	0.1	0	0
	Spiritual connotation U_{12}	0.8	0.2	0	0	0
	Cultural implication U_{13}	0.5	0.4	0.1	0	0
Self-worth U_2	Modeling features U_{21}	0.5	0.5	0	0	0
	Composition relationship U_{22}	0.3	0.5	0.2	0	0
	Pattern with U_{23}	0.2	0.6	0.1	0.1	0
	Pattern meaning U_{24}	0.4	0.4	0.2	0	0
	Ink and color technique U_{25}	0.5	0.4	0.1	0	0
	Color matching U_{26}	0.4	0.4	0.2	0	0
	Color connotation U_{27}	0.3	0.5	0.1	0.1	0
Modern Value U_3	Influence U_{31}	0.5	0.4	0.1	0	0
	Aesthetic needs U_{32}	0.4	0.5	0.1	0	0
	Transmission range U_{33}	0.6	0.2	0.2	0	0

TABLE VI. FUZZY COMPREHENSIVE EVALUATION MATRIX OF XUN COUNTY

Guidelines level U_i	Specific indexs U_{ii}	Membership matrix				
		good	better	average	bad	worse
Inheritance value U_1	Production process U_{11}	0.5	0.4	0.1	0	0
	Spiritual connotation U_{12}	0.4	0.6	0	0	0
	Cultural implication U_{13}	0.3	0.5	0.2	0	0
Self-worth U_2	Modeling features U_{21}	0.4	0.5	0.1	0	0
	Composition relationship U_{22}	0.3	0.3	0.3	0.1	0
	Pattern with U_{23}	0.3	0.4	0.3	0	0
	Pattern meaning U_{24}	0.4	0.2	0.4	0	0
	Ink and color technique U_{25}	0.4	0.4	0.2	0	0
	Color matching U_{26}	0.2	0.6	0.2	0	0
	Color connotation U_{27}	0.3	0.7	0	0	0
Modern Value U_3	Influence U_{31}	0.4	0.4	0.2	0	0
	Aesthetic needs U_{32}	0.3	0.4	0.3	0	0
	Transmission range U_{33}	0.2	0.3	0.2	0.2	0.1

C. *Fuzzy comprehensive evaluation calculation*

According to the foregoing fuzzy evaluation matrix calculation process, through two comprehensive evaluation calculations, the final weighted average of the three regions can be obtained separately.

Clay toys in Fengxiang area

First-level comprehensive evaluation calculation

B1=A1*R1={0.6037,0.2508,0.1122,0.0333,0}

B2=A2*R2={0.3976,0.4054,0.1173,0.0796,0}

B3=A3*R3={0.2706,0.3550,0.2456,0.1289,0}

Second level comprehensive evaluation calculation

B=A*R={0.4938,0.3110,0.1341,0.0611,0}

Weighted average

W=B*FT=0.09876661

Clay toys in Huishan area

First-level comprehensive evaluation calculation

B1=A1*R1={0.6582,0.2875,0.0543,0,0}

B2=A2*R2={0.3351,0.4855,0.1364,0.0429,0}

B3=A3*R3={0.5456,0.2961,0.1583,0,0}

Second level comprehensive evaluation calculation

B=A*R={0.5486,0.3455,0.0937,0.0123,0}

W=B*FT=0.10971592

Clay Toys in Xun County

First-level comprehensive evaluation calculation

B1=A1*R1={0.3878,0.5247,0.0875,0,0}

B2=A2*R2={0.3382,0.3859,0.2698,0.0060,0}

B3=A3*R3={0.2705,0.3417,0.2128,0.1167,0.0583}

Second level comprehensive evaluation calculation

B=A*R={0.3556,0.4570,0.1588,0.0195,0.0089}

Weighted average

W=B*FT=0.07113683

D. *Conclusion and analysis*

Based on the above weighted average of the comparative analysis of the three regions, it can be seen that the clay toys in Huishan area have the highest comprehensive development value, followed by Fengxiang area, while Xun County area lags behind the above two areas by a large margin, indicating that in the modern context, the market recognizes the clay toys in Fengxiang and Huishan areas. However, the final data this time has a certain deviation from the current theory of the protection and development of clay toys in academia, which is because that based on the geographical environment, cultural differences are advocated. At present, the main measures taken in the academic circle are to propose their own development strategies for each region, and strive to create a situation of common development and blossoming. However, based on this research is a perspective on the value of clay toy resource development, it aims to clarify which regions of the clay toy are suitable for modern market development. Through the above screening methods, it provides theoretical support for the development process of clay toys.

Judging from the evaluation grades of different regions, Huishan area's inheritance value, self value and modern value have the highest sum of the evaluation grades of "good". If the two evaluation levels of "good" and "good" are summed up, it can be found that Huishan still ranks first, which proves that the clay toys in Huishan are more in line with the modern market in the modern context, the development value is more stable. In the Fengxiang area, it can be found that there are large deviations in the data. Some think that it is "good" and some think that it is "bad", showing an unstable trend. Therefore, although the comprehensive evaluation of Fengxiang area is second only to Huishan area, in the modern market, polarization may occur. Therefore, the development of clay toys in Fengxiang area should take this into consideration. In the Xun County area, the data showed the phenomenon of equal evaluation. The inheritance value and its own value tend to be consistent in the two evaluations of "good" and "better"; The modern value also tends to be consistent in the four evaluations of "good", "better", "average", "bad" and "worse". The reason for this situation, I think, on the one hand, it can be proved that the representative clay toys in Xun County are not enough to affect the public, and the public lacks understanding of the clay toys in Xun County, which makes it impossible to have the same level of cognition between the two, thus presenting the phenomenon of "equal evaluation".

Judging from the overall data, the inheritance value and self-value of the three regions all have a high evaluation level. Among them, the biggest fluctuation of data lies in the modern value. The evaluation of this area generally shows poor phenomena in the three regions, and the Xun County area also contains "poor" evaluations. It can be seen that the weakest factor in the overall development of clay toys is modern value. In other words, from a market perspective, in today's increasingly fierce competition in the modern market, the top priority is to increase the recognition of modern value.

The most effective way to improve recognition is innovation. In the new context, the innovation method has changed from closed innovation to open innovation which means that all kinds of creativity can only come from inside, while the open innovation in the new context emphasizes resource sharing, turning competition into cooperation and confrontation into tolerance. This open innovation method in the new context can consciously integrate producers' capabilities and resources with externally acquired resources, find market opportunities through various channels. Therefore, we can start from the following three aspects. 1. create an innovative and high-quality IP image with the new context. The creation of IP image is by no means equivalent to the IP image of fashion, but rooted in traditional folk art, growing in a new context, creating an IP image that conforms to the development characteristics of clay sculpture toys, which can be enjoyed by more young people and spread more widely. 2. Leverage the new context of communication. In the new context, the convenience and efficiency of information dissemination and social interaction can further expand the breadth and depth of clay sculpture toys, let more people contact and understand clay sculpture toys. 3. Open and innovative decorative patterns and colors. I used the computer image technology to extract the complex traditional pattern, and the image decomposition technology was used to decompose and simplify the complex images, and then they were applied to the new context. Then with the image extraction technology, I integrated the modern excellent design elements into the creative process of clay toys, and then innovated the color setting techniques. With the computer image analysis technology, I analyzed, extract and summarized the traditional clay toys' colors of different regions and cultures, and combined with the modern fashion trend color, I try to find a way that both meets the modern aesthetic needs and will not lose the traditional characteristics of clay toys themselves. It is the best development and innovation for clay sculpture toys that can make more people accept clay sculpture toys, then gradually form purchase behavior.

There are many types of clay toys and obvious regional characteristics. Therefore, Using the new technology of image extraction.the development value of clay toys is a complicated systematic project. In this article, through the analysis of the influencing factors related to the comprehensive development of clay toys, the comprehensive development value evaluation index of clay toys is established, FAHP determines the comprehensive weight and is used, and then the comprehensive development value of clay toys in different regions is evaluated through FAHP, in order to provide theoretical support for the development of intangible cultural heritage such as clay sculpture toys through this evaluation model, and to give certain practical guidance in the face of the complex modern market, so as to better realize the promotion and regeneration of traditional culture.

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