



Research Status and Design Strategies of Culture-Based Porcelain Design

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Culture-based design is a creative activity with a deep national, historical and contemporary imprint. Today's world is an age of integration and open diversification, where new design and cultural concepts are constantly updated, but the national characteristics of design are gradually weakened. However, there is a lack of reviews on culture-based ceramic design from different perspectives. To this end, the author aims to analyze and review the relevant literature published in quality journals included by SCI-Expanded, SSCI, A&HCI, by searching from WOS database. The author reviews research on the principles, methods, values and processes of heritage and innovation in porcelains in order to achieve two main objectives. On the one hand, current literature on culture-based porcelain design is presented and analyzed so that researchers can draw on and optimize these theories and apply them to areas of interest in design. On the other hand, the author explores the literature on culture-based porcelain design in order to provide the direction for the better transmission and innovation of porcelains originating from different dynasties as well as types of porcelains. Accordingly, the author reports on the progress of research on culture-based ceramic design and provides a strategy for design and research by researchers.



Keywords: *culture, porcelain, principle, value, method, process.*

1. Introduction

Ceramic design belongs to the field of product design. Ceramic design based on culture contains the dissemination of cultural connotation, but also reflects the combination of artistic tradition and modernity of porcelains, specifically, it is a new form of product form to the public to disseminate cultural connotations and characteristics, inherit the essence of national culture, and at the same time, it focuses on people-oriented, pay attention to the multi-level needs of contemporary consumption (Wang, Dan, 2022). Design not only satisfies the material culture needed for human life, but also presents the spiritual world of human beings. Studying design from these two systems or levels, material culture to spiritual culture, belongs to the content of design culture (Li, Lixin, 2009). In elaborating the relationship between design and culture, Li, Yanzu (2020) points out that design is the product and signifier of culture. Design reflects culture and is also an innovative culture. From the perspective of the development of the whole human history, human needs and innovations are firstly expressed through design, and the results of design will inevitably reflect the progress of culture, the development of culture, and the expectations of culture. In other words, design is studied as a cultural phenomenon and interpreted from a cultural perspective. (Erik, Armayuda et al., 2018).

Ethnicity is a characteristic of different ethnic cultures, which belongs to the commonality of culture, and this commonality is reflected in the design with different cultural styles and connotations. Lu, Xiaohui (2022) suggests that in order to increase the attention of brand culture to satisfy people's pursuit of spirituality in this era, it is necessary to explore the value of national culture and help revitalize cultural products . In the context of the rapid development of the global cultural and creative industries, cultural creativity breaks the rigid design and production mode of traditional products from the market perspective, and becomes the key to improve the economic efficiency and competitiveness of traditional products, in which artificial intelligence technology is fully utilized in culture-based product design and product development (Xue, Li et al., 2021). However, the innovation of culture-based porcelains is not only embodied in the pursuit of "tools" or "technology" in the design process, but more importantly, through the embodiment of cultural characteristics in the design process, it stimulates the design thinking to carry out creative design and practice. Contemporary society's drive for a cultural economy is increasingly focused on integrating art into commerce (Hilary, Collins, 2019). Currently, ceramics on



the market are heavily commercial, lacking substance or even basic beauty. This stems from the fact that designers prioritize commercial value in the creation of their products. In addition, in the context of globalization, the trend of global cultural openness and integration is deepening, which promotes the innovation and development of individual design in the world. However, in the process of seeking compatibility through a certain degree of standardization, there is a danger of losing cultural identity and tradition, and important parts of culture are neglected and may be lost (Tsen, Shen et al., 2006). So cultural product design with cross-cultural nature needs to increase the respect for local culture (Peter Ardhiyanto et al., 2021). In the context of the new era, the need to inherit the excellent and advanced local culture as well as to stimulate the vitality of cultural innovation for the whole nation brings about the necessity and urgency of exploring the cultural value of design. The influence of the global postmodern multicultural atmosphere has brought about a reawakening of the local national culture and art, and the construction of a modern design culture system that conforms to the development path of design art has become particularly urgent (Leng, Lin, 2022).

In this context, in the field of ceramic design, scholars have carried out a series of innovative design research on culture-based porcelains. However, the current culture-based ceramic design is characterized by insufficient consideration of diversified market demands, insufficient excavation of national cultural elements, excessive influence of foreign cultures, and serious phenomena of speculation and imitation (Tian, Yuan, 2023). In order to study the role of culture in ceramic design and research trends, and to provide a strategy for the innovative design of ceramics based on culture, the author analyzes the literature published in the Web of Science (WOS) database and follows the relationship between design paradigms and design patterns summarized by Qiu, Chiahuan (2021) on the basis of Kuhn's paradigm theory as well as the relevant characteristics of Alexander's design patterns (Figure 1) to answer the following questions:

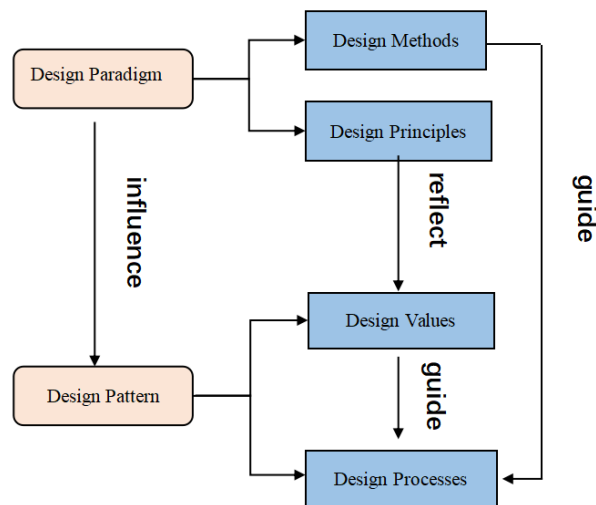


Figure 1 The relationship between design paradigms and design patterns

- I. What are the Design Principles of culture-based ceramic design?
- II. What are the Design Values of culture-based ceramic design?
- III. What are the Design Methods of culture-based ceramic design?
- IV. What are the Design Processes of culture-based ceramic design?

2. Literature Review

2.1 The Articles Selection Process

In order to efficiently obtain high quality relevant literature on the study of culture-based ceramic design in the last five years, the author refer to the guidelines of the PRISMA framework (Page MJ et al., 2020) to ensure the quality and transparency of the review process. The author chose the Web of Science (WOS) database, and to ensure the comprehensiveness of the data, the indexes were chosen from Science Citation Index Expanded (SCI-Expanded), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI). In addition, the author used the keywords “culture” and “product” in the search and finalized the search strategy as $TS=((\text{“cultural ceramic” OR “cultural Porcelain”}) OR (\text{“culture” AND “ceramic”}) OR (\text{“culture” AND “Porcelain”}))$. Literature was selected based on the following criteria:

- I. Full text is accessible .
- II. The type of literature is thesis and review articles.
- III. The content of the literature has a clear research question, research methodology and

conclusions.

IV. The literature was published from July 01, 2018 to July 01, 2023 .

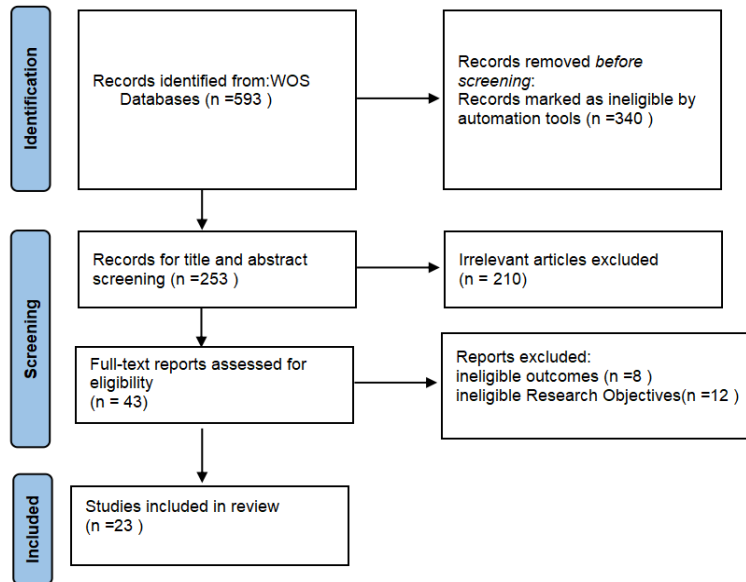


Figure 2 The Articles Selection Process

Based on the above criteria, 253 articles were retrieved. The author focused their research topics on culture-based ceramic design, but were not limited to specific types of ceramics. After iterative screening and evaluation of the titles, abstracts, and specifics of the literature, the author obtained 23 articles that meet the criteria and are well represented. An overview of all included articles is shown in Figure 2.

2.2 Data Analysis

Figure 3 shows that in the field of culture-based ceramic design in the past five years (2018.07.01-2023.07.01), the number of papers published in the time distribution shows an overall upward trend, especially in 2019 the number of related papers showed a relatively large increase, and the number of papers published shows a stable trend from 2019 to 2022, which are all above 110. However, based on the monthly average, the number of relevant papers published in 2023 is relatively lower, but there is a probability of an increase in the number of publications in the second half of 2023. Overall, the study has received attention from an increasing number of scholars.

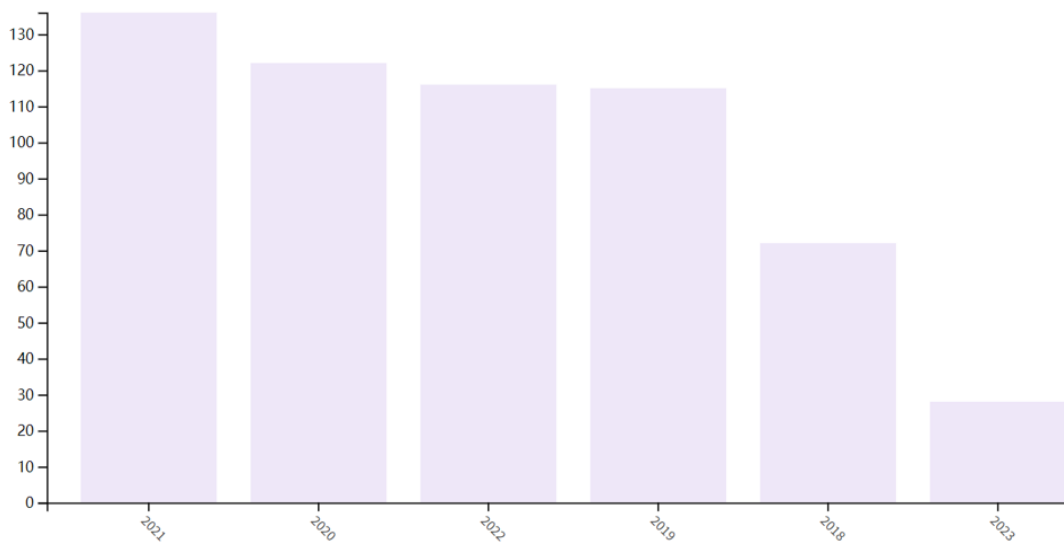


Figure 3 Distribution of publications over time (2018.07.01-2023.07.01, from WOS)

The 23 articles analyzed by the authors originated from 59 authors from 42 institutions in 20 countries, and they were published in a total of 18 journals, citing 1,514 documents from 1,116 journals. In order to analyze the contribution of the authors in the literature on culture-based ceramic design, the author analyzed the co-citations of the authors of the 23 articles. The results of the analysis (Figure 4) exhibit the largest group of web links, which consists of six authors for the linked item. The number of citations per author is 6 and the strength of the link is 5.

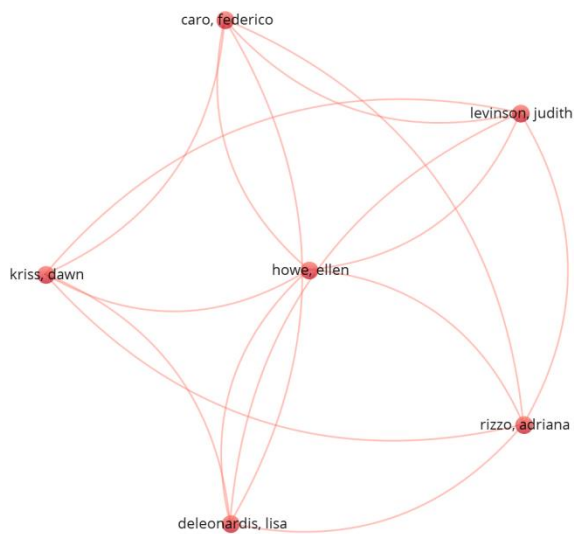


Figure 4 Co-citation of authors

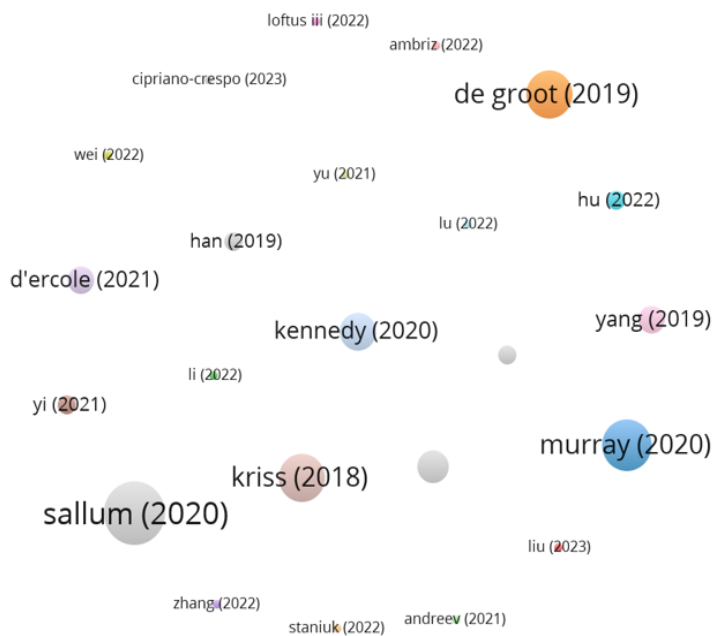


Figure 5 The citation of the article

In the analysis of article citations (Figure 5), the paper "an archaeology of colonialism and



the persistence of women potters' practices in brazil: from tupiniquim to paulistaware", published in international journal of historical archaeology by Sallum et al. has the highest number of citations, with 11.

2.3 Concepts Expressed in The Literature

2.3.1 Design Principles

Culture is the soft power and cornerstone of a country. The innovative design of products based on culture should rely on unique cultural attributes and reflect the cultural value of products through the dissemination, inheritance and regeneration of culture. Ceramics is an intangible form based on deep historical and cultural heritage, and strengthening the protection and inheritance of ceramic culture is of great significance for the protection of cultural diversity. With the growing international trend, the tradition, diversity, sustainability, functionality and other factors in culture have an important impact on product design. Scholars have researched from different perspectives and provided design concepts for the Design Philosophy of culture-based ceramic design. First of all, due to the influence of natural geography and social environment, different ethnic groups have various modes of survival, which makes the design of ceramics to reflect the cultural individuality of the society as well as the synergistic effect of cultures (Zhang, Yun et al., 2022; Andreev, Konstantin Mikhailovich et al., 2021; D'ercole, Giulia, 2021; Kennedy, Melissa a et al., 2020; De Groot, BG, 2019). In the study of Chinese ceramic design, scholars have pointed out that ceramic design presents the splendid cultural characteristics of China for thousands of years (Hu, Xiaobing, 2022; Lu, Yongqing, 2022), and at the same time is influenced by Western culture, which is diversified in design shapes and methods (Hu, Xiaobing, 2022; Yang, Su-chiu, 2019). That is, the design of culture-based ceramics should reflect the unity of individualization and diversity. Secondly, ceramic design meets the needs of people's spiritual world through the presentation of traditional culture (Hu, Xiaobing, 2022), specifically, ceramic design presents folk activities such as national rituals, beliefs, and worship (Ambriz, Mauricio Garduno, 2022; Lu, Yongqing, 2022; Rafel Fontanals, Nuria et al., 2018) as well as landscape themes such as human beings, animals, and so on (D'ercole, Giulia, 2021) and reflects the traditional ideological concepts of the nation and cultural symbolism (Hu, Xiaobing, 2022; Lu, Yongqing, 2022).



2.3.2 Design Values

Creative design is different from ordinary products, which carries the important mission of inheriting and developing culture (Jin Leilei, 2023). The author centers on the regional traditional culture, as well as cross-cultural aspects, to sort out the design value embodied in ceramic design. The inheritance and innovation of porcelains not only reflects its own material value, but also helps to spread the national traditional culture, thus inducing cultural resonance between users and products (Liu,Qian, 2023; Wei,Zhang et al., 2022; Han, Rong et al., 2019). Different races have ceramic cultures that are unique to them (De Groot, BG, 2019) and the interaction of communities of different races and cultures promotes cross-cultural development based on traditional culture.Zhang, Yun et al. (2022) analyzed and illustrated that Song celadon has an exotic flavor, with motifs and cobalt materials that could have come from the Middle East and were influenced by foreign Andreev, Konstantin Mikhailovich et al. (2021) illustrate a certain interaction between Eastern and Western pottery production by analyzing the cultural similarities of porcelain. Different peoples brought about innovation in local porcelains by copying and combining different cultural attributes. (De Groot, BG, 2019).Wei,Zhang et al. (2022) used the method of data simulation to construct a model of the mechanical properties of ceramic process to realize the traditional culture of porcelain to keep pace with the times and sustainability.

2.3.3 Design Methods

From the literature, it can be found that in the context of the new media era, the expression of contemporary cultural and artistic products is also constantly innovated, and the application of digital interactive technology in product design is favored by researchers and promotes the resonance of design elements with the audience (Zhang, Zhuoran et al., 2022). The scientific cultural information contained in porcelains is the foundation of ceramic innovation, through which the traditional creative connotation and modern design concepts are dovetailed to realize the inheritance and innovation of traditional culture. Big data and data science drive the inheritance and innovation of ceramic design (Han, Rong et al., 2019). Yi, Ji hyun (2021) develops intelligent cultural lenses, which is a classification system of visual elements of ceramics and an application developed by AI technology, i.e., combining AI technology with cultural heritage, with the aim of giving the user a new perspective to explore the cultural artifacts intuitively.Yu, Xuelian et al. (2021) proposed to realize the restoration, protection, development and inheritance of ancient ceramic crafts through VR technology.Lu, Yongqing (2022) combined with actual cases, elaborated that



digital image processing technology promotes the development of ceramic art design, brings a new visual experience for the appearance design of porcelains and analyzes the application of this technology in the styling design of ceramic products. Liu, Qian (2023) used image classification technology to extract and analyze three features of Yaozhou kiln ceramics, namely, shape, type of decoration and inscription. Hu, Xiaobing et al. (2022) based on the composition of the design of the fusion of ceramic paintings and traditional cultural elements, used 3D modeling tools such as 3DSMAX, and combined with the VRML visual editor to establish a VRML model of the method to realize the virtual display of ceramic products, and the improvement of user experience.

2.3.4 Design Processes

Scholars' research on the design process focuses on, design orientation, technology application, product design and presentation. Han, Rong et al. (2019) proposed three main steps in their study of introducing data science into the modern design and recreation of ceramics. Firstly, in-depth discussion of the theory of digital technology in the application of ceramics design was conducted. Secondly, investigating and analyzing the new demands of consumers for ceramics in the new era through experimental research and analysis. Finally, the finished product is presented. Lu, Yongqing (2022), in the study of digital image processing for styling design of ceramic products, makes a more in-depth study on the design process of ceramic appearance. He focuses on the public survey of ceramic appearance elements to lay the foundation for ceramic design orientation and design implementation. Secondly, he analyzes the theory of the application of image processing in the design of ceramic products, and develops the design and analysis of other appearance elements around the shape. Finally, he presents his work.

In the new era, cultural and creative industries have experienced rapid development, and the development of culture-based products has become a new favorite. (Nie et al., 2019). In order to popularize the innovative design of culture-based ceramics, researchers need to analyze the cultural formation mechanism behind the design form, and only with a better understanding of people's sensory perceptions and cultural values can we move product design into a new quality paradigm as well as make the product have added value (Marzano, 2000). At the same time, with the prevalence of cultural interactions around the world, the development of cultural and creative products that are characterized by "commonality and integration" will become a trend in the future (Hsieh, Ying-Yi et al., 2022).



3. Finding Of The Current Study

I. Through the analysis of the current literature, ceramic design reflects the traditional, diversified, sustainable, functional and emotional characteristics of culture. These characteristics correspond to the three levels of design culture: material layer, behavioral layer, and mental layer. Baudrillard (2019) defined three levels of product characteristics by structuring the three levels of culture and integrating culture into products. (i) Material Design: refers to the transformation of the shape, texture, and totem deng representations of artifacts into product appearance. (ii) Mid-physical design: it refers to the agreed-upon behavioral stereotypes; (iii) Metaphysical design transformation: it refers to the psychologically intrinsic dimension of design. The author extracted from the literature that the innovative design of culture-based products needs to extract the cultural elements from the physical layer, behavioral layer, and mental layer of the design culture, which provides a principle for the innovation of culture-based ceramic design.

II. The author analyzes the relevant literature to sort out the design values embodied in ceramic design from two aspects: traditional culture and cross-culture. Differences in climatic conditions give people living in different regions different preferences and habits, which in turn form distinctive regional cultures (Zhu Zhengwa, 2021). At the same time, culture can be viewed as the learning accumulated by a particular group of people throughout their history. The historical traces of people's lives, society and culture in a certain environment need to be reflected in the final presented form of the design (JinHyo, Joseph, Yun, 2020). In addition, John W. Berry (1992) proposed cultural adaptation, suggesting two dimensions of consideration: on the one hand, the tendency to maintain traditional culture and identity; on the other hand, the tendency to communicate with other ethnocultural groups. It is a universal law that design culture must adapt to its environment. The adaptability of design culture to the environment is mainly reflected in its adaptation to the development of the internal environment and its integration with the external environment. The author distilled from the literature the value of culture-based ceramic design, which embodies three aspects of culture: regional, historical, and adaptive, providing a requirement and direction for the design process.

III. Porcelain design should keep pace with the times, and its innovation needs to realize the contemporary expression of the pursuit of national culture as well as the current technological technology, through the application of the relevant procedures of digital technology to the field of ceramic design, that is, to realize the time-saving, and at the



same time to improve the consumer's sense of experience (Zhang, Jingwen; Liu, Shiguang; Fan, Jiahui; Huang, Jiawei; Pei, Min, 2020). Jiawei; Pei, Min, 2020). Currently, the literature on design approaches for culture-based porcelains focuses on user acceptance behaviors, as well as new technology-driven aspects. This brings a new era of vitality to the innovation of ceramic design.

Scholars have studied the ceramic design process mainly focusing on, from design positioning, technology application, product design and display. The demand for cultural products belongs to the highest level of self-realization (Maslow A., 2012), and in the information processing process between product characteristics and consumer demand, the higher the fit between the two, the higher the acceptance of the product received by consumers. In the environment of rapid development of science and technology, innovation should not only be reflected in the design concept, but also to realize the contemporary expression of the pursuit of national culture as well as the current technology, the product can be solved by computer simulation of the modern expression of traditional cultural elements of the design, that is, to retain its traditional style and modernity, but also save time. (Zhang, Jingwen et al., 2020). The current literature on the subject suggests instructions for the design process of contemporary ceramics focusing on the needs of the consumer as well as the specific application of technology.

4. strategies for innovative design of culture-based porcelain

Based on the above research and analysis of the existing literature, the author identifies the shortcomings of the current research and develops a framework for culture-based innovative design strategies for porcelain from four aspects.

4.1 Gaps in current research on innovative design of culture-based porcelain (Figure 6)

I. Culture can be divided into four levels, i.e. material culture, institutional culture, behavioral culture, and mental culture (Zhang, Dainian e al., 2021), and design, as a cultural form, also conforms to and has these four levels of culture. The formation and development of design culture and people's way of life are inextricably linked, life is the core factor and root of design culture, and the main line of the development history of human society is the history of design culture development. (Zong, Licheng et al., 2021). The institutional level of all cultures, i.e., the material level, the institutional level, the



behavioral level, and the mentality level all reflect the way of life of human beings in certain environments and are constantly innovated to meet the survival needs of human beings, in order to achieve the progress and development of human society. The institutional level of design culture refers to various social norms in design activities, and the current literature on culture-based ceramic design lacks research on the institutional level. Design is an innovative activity carried out in a certain political context, which represents the cultural consciousness of the people who dominate the current political environment. Yang, Yujie (2023) discusses that enameled porcelain, as a product of cultural and technological exchanges between China and the West during the Qing Dynasty, is a typical representative of the imperial manufacturing of the palace. The research and development production of enameled porcelain began with the emperor's personal will, and its production and production location centered around the imperial power. The emperor, as the direct conductor of the production of painted enamel works, determined the technical development, stylistic characteristics and direction of palace painted enamel production in different periods. The art of enameled porcelain in the Qing Dynasty interprets the perception of beauty, elegant taste, and the strong national power of the dominant court at that time, which influenced the design of the creation. It is an unshakeable symbol of the Qing imperial family during the period when centralization of power reached its peak in ancient China and carries with it the untold secrets of the Qing dynasty's deep palace (Huang, Xi, 2022). In contemporary times, creative design is no longer constrained by the ideology of the ruling class, but ceramics contain the institutional culture of a certain political context, which needs to be inherited and innovated in today's social system.

II. The current literature lacks an analysis of Cultural integrity in ceramics. Designing culture is the process of placing design ideas into the cultural context of a certain era, and creating by analyzing and generalizing the characteristics of the culture. Creativity is not necessarily gained by standing in the front of the times. We need to look far enough ahead. Only when we are able to walk comfortably between the two can we be truly creative. (HARAKENYA, 2006). Design is based on the present and serves the present life, but design is the result of the interaction of various internal and external factors with the background of the whole culture (Wang, Lingling et al., 2021). The progress of society has brought different cultural values and ways of thinking to design. In the design process, we should take the whole culture as the background, so that we can "know where we come from and know where we are going", and we can integrate the past and the present (Yu, Suihuai et al., 2022). At present, there exists the phenomenon of over-inheriting or over-innovating the design culture, which means that the culture-based design does not



fully consider the overall regularity of the culture and appropriately deal with the relationship between the ancient and the contemporary. In contemporary times, there are two major trends in the ceramic industry in Jingdezhen, China. On the one hand, part of the ceramic industry has set off a wave of revival of the ancient ceramic art, and the ceramic revival is based on the reproduction and imitation of the ancient classic ware, and it also tries to revive the ancient wood-fired technique. Revival towards the inheritance of traditional crafts, the propaganda of traditional culture is of great significance, but with the modern aesthetic culture has produced a disconnect. Under the support of Li Tieying, the Enamelware Research Center of China Arts and Crafts Association was established in Jingdezhen. However, driven by economic interests, a group of experts began to study and copy the traditional manufacturing process of enameled porcelain, which led to the Kangxi, Yongzheng and Qianlong works of "high imitation period". Taking Xiong Jianjun as an example, he strictly follows the principle of "antiquity" and strives to achieve a high degree of unity between ancient and original porcelain. In addition, these imitations followed the "high-end" ceramic product line, which was expensive (Liu, Yu, 2021). Specifically, the concept of antiquity has led to an increase in the price of enameled porcelain to an audience of high consumers for collecting purposes. A smaller audience for enameled porcelain is not conducive to the sustainable development of enameled porcelain. On the other hand, under the influence of the innovation trend, innovative designs based on resemblance and with innovation as the soul have been set off, mainly characterized by the use of contemporary themes as the mother, for example, some contemporary designs focus on the contemporary aesthetic function, applying geometric forms to the innovative design of contemporary enameled porcelain (Zhou, Yuan, 2020). In addition, there are some innovations from small workshops in the market. However, their designs are based on the integration, borrowing and recombination of patterns from a pattern perspective. These designs seek to achieve innovation by leading with modern aesthetic culture, but ignore the cultural inheritance, which brings about a vicious circle of stylistic convergence and a lack of designs rooted in traditional culture. Contemporary design based on culture needs to realize the inheritance and innovation of design culture by borrowing from the past and learning from the present, applying the essence of the culture of the previous generation to the present or the future, taking traditional culture as the foundation, design as the leading role, and modern aesthetics as the lead. To summarize, design value for culture-based porcelains needs to incorporate research on the cultural integrity.

III. Through the current analysis of relevant literature found that the ceramic design field focuses on consumer experience and cultural dissemination needs, specific design methods



are mainly focused on the application of science and technology research. This lack of specific methods for the refinement of cultural symbols of research, making ceramic design homogenization phenomenon is serious, ceramic design has lost the traditional style and modern forms of beauty expression. In addition from the designer's emotional and operational needs, the lack of based on the use of modern design concepts and modern forms of design expression. Designers should diversify their thinking, express diversified national cultural elements, and integrate these national cultural elements in products by innovating the sample of products to improve the consumer's experience. Combined with diversified artistic design means, they can give the products personalized and diversified cultural connotations to strengthen the brand awareness of the products and realize the combination of traditional culture with the elements and demands of the new era. (Tian Yuan, 2023). In general, the field of ceramic design needs to develop a specific, operable and efficient innovative design methodology from the perspectives of semiotics, narratology, product semantics, user acceptance behavior, and the drive of the new era through the refinement and reconstruction of cultural genes, the extension of cultural connotations and contextual resonance, and the application of new-age cultural fusion innovations and technological drive.

IV. Culture is the result of environmental pressures. The dynamic perspective defines adaptive culture as an attribute of culture through which it changes and responds to environmental conditions (Antonio J. Verdu-JoverLirios et al., 2018) . Design culture reflects the social and cultural landscape of any given time and space (Robin, Lee, 2020). By adapting to the internal environment, design culture maintains its inclination and identification with traditional culture, while, with globalization, the cultural field and national culture are undergoing certain changes and updates. The adaptation of design culture to integrate with the external environment needs to have a tendency to communicate with other national cultural groups, mainly in the world environment of multicultural coexistence. The current literature on design positioning in the design process mainly focuses on the positioning of consumer demand, but according to the requirements of cultural adaptation, in different cultural cultivation and different cultural environments, the author would like to formulate an innovative program for products to echo with culture, environment, and consumers, i.e., a program based on the positioning of product styles in order to realize the diversity and uniqueness of ceramic innovation design based on culture.

Item	Viewpoints	Analysis	Gap
Design Principles	traditionality	behavioral, mental, and material layers	1. Institutional layer 2. Generalization and summary of specific design principles from the design culture layers
	plurality		
	sustainability	behavioral, mental, and material layers	
	functionality	behavioral, mental, and material layers	
Design Values	traditional culture	cultural regionality, cultural historicity	1. Cultural integrity 2. From the design of cultural characteristics, the generalization and summary of specific design value.
	cross-cultural	cultural adaptability	
Design Methods	digital interactive technology	user acceptance behavior, technology-driven	1. Gene refining and reconstruction 2. Extending cultural connotation 3. Cultural integration 4. Research on culture-based, specific, operable and efficient innovation design methods.
	design positioning	consumer demand - technology development and application - design of works - presentation of results	1. Guidance on design value and design methodology 2. Product style positioning research
technical application			
product design			

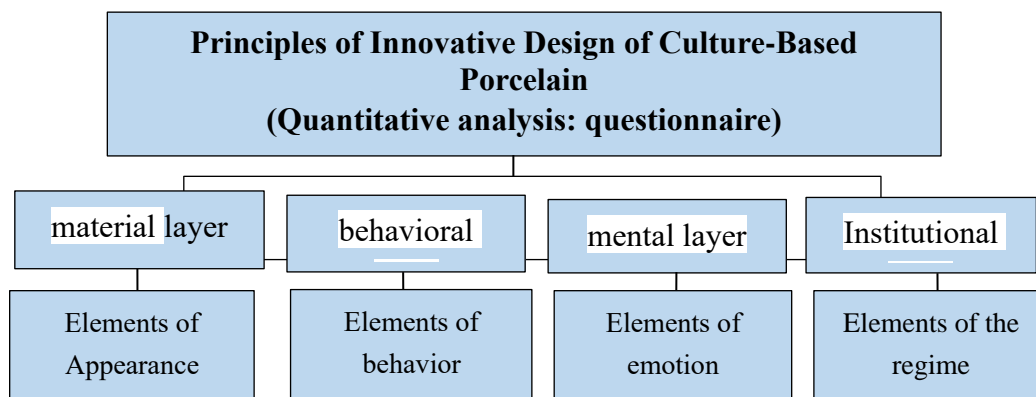
Figure 6 The current research on innovative design of culture-based porcelain

4.2 A Framework For A Strategy Of Innovative Design Of Culture-based Porcelain

Based on the above analysis of the research on the current literature, the author developed a strategy for innovative design of culture-based porcelain in four aspects.

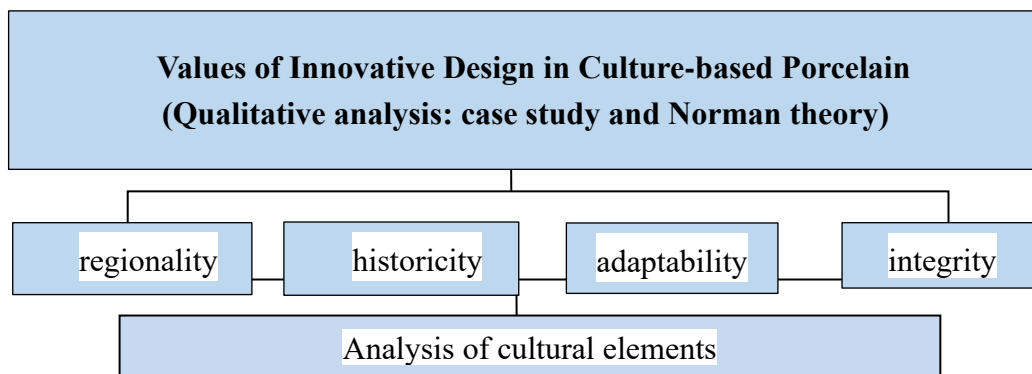
I. Using quantitative analysis methods, questionnaires will be created from four aspects of the design culture: behavioral, mental, material and institutional layers, in order to clarify the weighting of ceramic design elements, as well as to outline and summarize specific design principles from the design culture level. (Table 1)

Table 1 A framework for the strategy of design principles



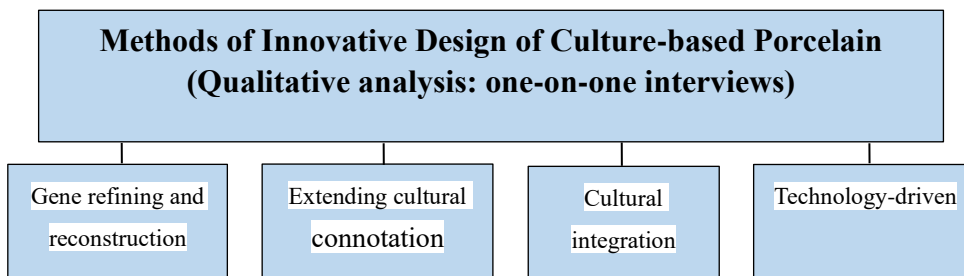
II. Adopting a qualitative analysis method, the aesthetic and cultural characteristics of porcelains are studied using case studies and Norman theory. On this basis, the design value is generalized and summarized in terms of the cultural regionality, the cultural historicity, the cultural adaptability and cultural integrity, and the ceramic design elements are analyzed and refined from the characteristics of culture. (Table 2)

Table 2 A framework for the strategy of design values



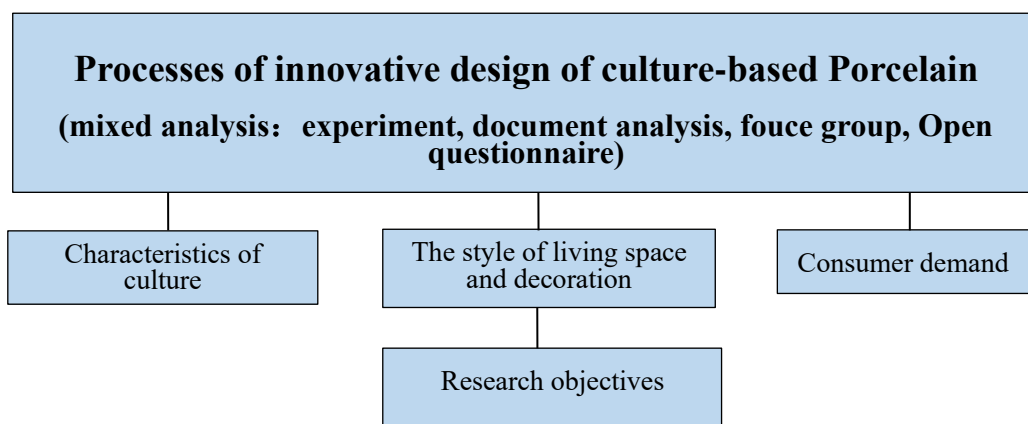
III. The qualitative analysis method is used to explore the innovative methods of porcelains through one-on-one interviews. On the one hand, the modern design concepts of modern products are analyzed; on the other hand, the design methods of porcelain are explored on the basis of modern design concepts in terms of the extraction of elements, the satisfaction of functions, and the expression of cultural meanings. (Table 3)

Table 3 A framework for the strategy of design methods



IV. Finally, a quantitative research method is adopted to formulate a questionnaire on the design needs of different types of users for porcelain and analyze the questionnaire by using the KANO model. On this basis, according to the requirements of cultural value embodiment and the optimized design method, the design process that harmonizes porcelains with culture, environment and consumers is explored. Next, 3D Studio Max and Adobe Illustrator are utilized to present different styles of porcelain works. (Table 4)

Table 4 A framework for the strategy of design processes



5. Conclusion

Design is an expression and part of culture. Design is the expression and part of culture, which is based on culture and forms ideas and creativity under the participation and influence of culture. The real value of design lies in the cultural status quo style and connotation it embodies. For enterprises, the highest "realm" of selling products is to sell ideas and culture, and the highest "realm" of enterprise competition is not capital competition, management competition, or market competition, but cultural competition. That is, culture is the biggest value target of design (Yu, Suihuai et al., 2022). In contemporary times, creative design is no longer bound by the ideology of the ruling class, but appears in public life as a consumer product. As a result, human society is demanding more and more knowledge, culture and services, which means that people's pursuit of vessels is not only limited to their use value, but also the cultural value they contain. Currently, researchers are more concerned about whether there is a "cultural product economy" in design (Pierre, Bourdieu, 2015). Culture is defined as learned and shared beliefs, meanings and symbols, and learned and shared behaviors (MAD, Agyemang,



2020). A review of research on culture-based innovative design of porcelains shows that culture is currently embodied in a number of elements, including folklore activities, landscape expression, cultural symbolism, traditional thought and other aspects. In addition, in the environment of increasingly frequent cultural exchanges around the world, culture also embodies cross-cultural diversity. The power of design confidence comes from the confidence in culture. Culture is the spiritual connotation of design, which requires the study of design to start from the study of culture, and put forward specific design principles from the four aspects of design culture: the behavioral layer, the mentality layer, the material layer, and the institutional layer. However, in the current market, the embodiment of traditional culture in the design field generally stays at the formal level (Li Yanzu, 2020). It is mainly manifested in the design works in the embodiment of culture is relatively superficial, in which the works in the culture of the elements of the pile phenomenon is serious, many design works tend to be more and more homogenized. The value of design should be based on grasping the regional, historical, holistic and adaptive nature of the culture of a nation or a country, and developing a generalization of culture. With the rapid development of the world's knowledge and technology, the close relationship between science and technology and culture, in the field of ceramic design, many scholars have introduced digital technology into ceramic design, but the innovation of the products of culture is not only embodied in the design process of the pursuit of "tools" or "technology", but also more importantly through the embodiment of the cultural characteristics of the design process, to stimulate the design thinking for creative design and practice. The innovative design method of culture-based products is, firstly, to strengthen the characteristics of cultural symbols through direct reference or integration and transformation. Secondly, by integrating and reorganizing the visible and invisible elements, the spiritual connotation of regional culture is deeply excavated, and finally, the visualization of the product is realized through the application of digital technology. Then, under the guidance of the design value and optimized design method, a design process that integrates culture, environment and consumers is formulated, so as to present the porcelain with a global, national and contemporary character.

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