

---

## **Research on folk plastic arts in interior decoration design based on big data under the environment of sustainable development**

---

**Dr.Satish Menon**

Professor School of Business Alliance University Bangalore

Email : [satish.menon@alliance.edu.in](mailto:satish.menon@alliance.edu.in)

---

**Abstract:** Research purpose: under the environment of modern big data technology, through the application and development of artificial intelligence, 3D modeling and other computer technologies; Bring the design field of our country from two-dimensional to three-dimensional development; By combining the traditional folk plastic arts and cultural background of our country and integrating national art into the current interior decoration design, even if the development of the design field has more innovative elements, it also provides a new channel for the inheritance and development of our folk culture and art; This paper will analyze and study the application of big data technology in indoor decoration and the integration of folk art modeling from the perspective of sustainable development, and understand the advantages of big data technology application and the impact of inheriting folk art. Through the overall effect of folk modeling art in interior decoration under sustainable development environment and ordinary environment, as well as its performance analysis and coupling under different technologies, it is statistically significant, It is obvious that the analysis and research in the environment of sustainable development is better than the previous ordinary environment. In the environment of sustainable development, interior decoration design based on big data. With the help of computer-aided integration of information technology, the combination of data and design breaks the inherent thinking mode of traditional design. Through the combination of network communication technology, As well as the virtual scene of VR technology, it can realize three-dimensional dynamic image, and can observe all corners of the space in an all-round way, so that people can have a clearer understanding of the decorative design style, computer technology, etc., and the full integration of folk plastic arts, the ideal effect of interior decoration design can be met to a great extent, making interior decoration show unique art, Help promote its development.

**Key words:** Sustainable development; Big data; Interior decoration design; Folk modeling; Culture and art ; Design elements

---

### **INTRODUCTION**

The concept of sustainable development originated from the world nature conservation outline published in 1980. The concept of sustainable development has been popularized and spread all over the world. Under the premise of limited world resources, based on world development and resource consumption, human civilization progress and scientific and technological research, how to ensure the sustainable use of resources on the road of development to meet current and future needs has been limited. In the process of world development in this environment, the concept of sustainable development has become popular in the development of human

civilization, the development of the world economy, the development of literature and art and other fields. Huang Jun (2021) the relief art contained in the interior design conforms to the elements of folk culture. With the improvement of people's aesthetic appreciation in house decoration, this plastic art containing folk culture and historical heritage is highly respected [1]. Wang Xiaowei (2020) found that by studying the application of folk culture in interior decoration design, taking design as inspiration, folk art aesthetics can be reflected in interior decorations, furniture, walls, etc., showing the unique folk culture inheritance in China [2]. Due to the changing style of decorative design, decorative design with Chinese folk characteristics is becoming more and more popular. These decorative designs borrow the expression of folk art, which is of great significance for inheritance. Tang Tian (2022) in the period of digital economy development, folk culture, as a national traditional culture development achievement, is an important embodiment of verifying national inheritance, an artistic expression of condensing life customs, and an important carrier for exploring the inheritance of folk culture [3]. Zhang Yangge (2022) folk culture, as an important expression of inheriting culture, is an important way to effectively inherit and publicize folk culture by loading folk culture into the design of housing decoration space in the development of the new era and disseminating and publicizing it through new media channels [4]. Sun Yan (2022) folk culture, as a kind of current economic industry, has certain value in both commercialization and market economy. Integrating folk events into decoration design also provides value for the development of digital economy [5]. Tao Siyan (2022) folk art has begun to take shape and value in the discipline field of our country. In line with the practice of digital economy, it plays a role in promoting the revitalization of rural areas and the development of cultural tourism, and it is also a way to inherit folk culture in our country [6]. Through the application of the research on the art of folk culture in design in this paper, Based on big data technology, intelligent terminals have developed rapidly and played a significant role in interior decoration. The continuous updating and wide application of virtual technology has provided new ideas for the design industry. we should take the road of sustainable development and live alone in the inheritance and development of culture and art, which is national, hierarchical and artistic. It is remembered and inherited by more people in economic development, cultural development and sustainable development. It also gives unique element shapes and creative originals in China's design field, providing more reference and research materials for the future design development industry.

## **1 BIG DATA TECHNOLOGY AND APPLICATION**

### **1.1 Development process of big data technology**

Big data is based on the development and use of computer technology. In the development process of the Internet, with the progress and development of science and technology, cutting-edge technologies such as big data processing and analysis, mobile development and software development, cloud computing; Based on the application of this big data technology, it is more suitable for business development and the development of national security, financial security, artificial intelligence technology and other fields. Since niuchangchun (2021) entered the 21st century, data analysis and application in various fields have shown an upward trend, and the development of big data technology has been popularized in various fields, promoting the strategic development mode of various industries [7]. After China released the action plan for promoting the development of big data in September 2015, it strategically deployed the opening and sharing of government data to promote

resource integration and improve governance capabilities; Increase the construction of big data infrastructure, support the scientific macro-control, and promote the convenience of commercial services; Promote industrial innovation and development, and help economic transformation.

## **1.2 Application of big data in interior decoration design technology**

The development of cloud computing and big data promotes the progress of modern science and technology. In the past interior decoration design, the model shaping drawing and two-dimensional model drawing that designers needed several days to build may now be completed in a very short time. For multi style and multi style decoration environment and style, Rendering and 3D drawing of various models based on big data and cloud space; Many furniture decoration brands have authorized the model construction drawings of the brand in well-known software, which can meet the decoration pre-sales experience of customers to a certain extent. By using virtual technology, you can also enjoy the effect of decoration in advance and get an immersive experience. This design mode also abides by the concept of sustainable development in the development strategy, from the waste and saving of resources to the cost saving of decoration materials; The human and material costs of design and manufacturing and the manufacturing costs of enterprises have been greatly reduced, which is in line with the strategic direction of sustainable economic development. Wang Tiantong (2021) with the improvement of young people's aesthetics and values, and the higher requirements of interior decoration design, the use of digital technology and other scientific and technological means can not only meet the diversification of young people's choices, but also experience the design of finished product effect models in advance [8]. Ji Mengyu (2021) with the rapid development of social economy, people pay more attention to artistry and comfort in the style of interior decoration; After the use of many technologies, the artistic image of interior decoration is more clear and intuitive, and the folk cultural elements integrated into China are more and more abundant [9]. People have higher and higher requirements for interior design. There are also higher requirements for the professional level of designers. No longer only pursue the beautification of simple environment, but also pursue the embodiment of their own unique personality and spiritual pursuit. Based on the era background of big data, interior design practitioners should not only adhere to the people-oriented design concept, but also provide new ideas for decoration design.

## **2 INTERIOR DECORATION DESIGN UNDER THE ENVIRONMENT OF SUSTAINABLE DEVELOPMENT**

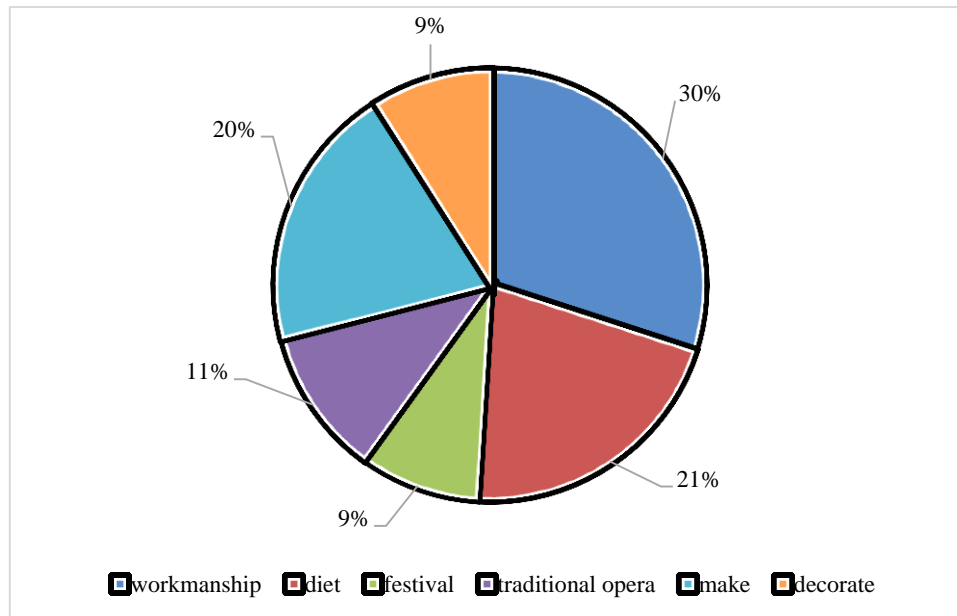
### **2.1 Significance and value of sustainable development**

Sustainable development is a development strategy based on the protection of natural ecological environment, which fundamentally lies in the utilization and control of resources; It applies to the fields of nature, resources, economy, politics, society, science and technology, and takes the protection of modern human development as the basis, taking into account the life security of future generations and the premise of living and working in peace and contentment, and the sustainable use and maintenance of world resources; Since the 16th National Congress of the Communist Party of China in 2002, the "continuous enhancement of the ability of sustainable development" has been regarded as the development theory and strategy for the purpose of building a well-off society in an all-round way, To stimulate economic development as the condition, to improve and improve the quality of human

life as the goal. It is a new concept of development, morality and civilization. In the field of art, with the development of science and technology, the application of some folk culture in decoration design has also begun to emerge; Using 3DMAX technology to realize virtual model shaping, in the virtual building model, you can directly add the required folk modeling to create a decorative modeling in line with Chinese classical flavor; It is also a new attempt and direction for the economic development of enterprises; We should also explore new ways of transmission and innovative ways of cultural inheritance.

## **2.2 Development and inheritance of folk plastic arts under the environment of sustainable development**

The classification of folk culture is characterized by diversity. Traditional folk cultural elements, such as China's 24 solar terms, Lantern Festival, lantern riddle guessing, dragon boat racing, stilts walking, eating dumplings on New Year's Eve, Mid Autumn Festival moon viewing, etc., belong to traditional folk culture. With the development of the times and the changes of the world economic market, the inheritance and development of folk culture have gradually changed from art forms to marketization, and many folk cultures in the market have been substantially transformed into trading goods, such as lanterns at the Lantern Festival, decorations in the form of Lantern Festival, clothing commodities accompanied by stilts, etc.; The development of folk tourism in Yanglan (2022) is also one of the development forms of folk culture. Most of the commodities and specialties in the scenic area take the characteristics of local folk customs as the main commodity elements [10]. To transform folk art into market-oriented development, on the one hand, the commodity market, driven by the Internet, ignores the regionality and spatiality, spreads more widely and has more audiences; On the other hand, with the folk modeling elements attached to the goods, they also play a positive role in the dissemination and publicity of culture, promoting social and economic development while also promoting folk culture; In the era of digital economy, with the prosperity of the Internet, the development of commercial market has diversified characteristics. In the field of film and television, movies and TV dramas often add a lot of ancient mythological elements and folk art characteristics of China's historical dynasties. For example, the Baolian lantern is a story that describes myths and legends, in which the Buddhist concepts and religious regulations belong to the mythological elements of folk customs. The lotus shape and lotus heart of the Baolian lantern belong to a kind of folk art shape, which indirectly drives the development of market economy, and the decorations and commodities with folk custom as the background drive economic development. Others, such as Tang poetry and Song Ci, tea Baidao, national costumes, folk cakes, shadow puppets, Huangmei Opera, sugar man, etc., are also the products of China's folk culture; From the development of folk art to promote social and economic development, and let folk culture enter thousands of households in the form of commodities, it is also a new way to promote cultural inheritance.



**Figure 1** folk art elements

**Figure 1** shows that there are many kinds of folk art. With the development of time, folk customs and habits form folk cultural elements with the accumulation and precipitation of time. It mainly includes oral literature and art, dance, folk music and drama such as rap, as well as various plastic art forms such as painting, sculpture and sculpture, which form non practical skills that can be appreciated as culture. Folk custom, that is, folk customs, refers to the inherited life bit by bit culture created by the people of a nation or country. It comes from the needs of social groups, and continues to form, expand and evolve in specific nations, times and, serving the daily life of the people.

### **2.3 Folk plastic art elements in interior decoration design under big data technology in the environment of sustainable development**

In today's society, people's quality of life is constantly improving, and their pursuit of spiritual life is also constantly improving. Housing is the basic need of people's life. There are various aesthetic needs of different styles in the decoration and Since China put forward the strategy of sustainable development, with the progress of science and technology in various fields, the concept of sustainability has been added while considering technology and efficiency. In interior decoration design, the products designed by designers should not only meet the needs of users, but also have a certain degree of appreciation; In the general environment of the decoration market, how to attract more buyers and how to achieve maximum efficiency in production are all aspects that need to be considered. Based on the use of big data technology, it can process complex and diverse data graphics and realize virtual technology design and modeling, which greatly simplifies the difficulty of design and conforms to the concept of sustainable development. Users can visit the finished products at the time of design, avoiding the waste of Finance and materials. In the design, the design and production of decorations are carried out by building the creativity of folk modeling, and the innovation is also carried out in the traditional design style. The indoor decorations can not only meet the user's life experience, but also drive the development and dissemination of folk culture. In home life, through the placement and design of soft decoration goods, users can bring different styles of life experience, realize style transformation according to spiritual needs in a fixed living environment,

and create a warm home environment. Folk culture is folk culture. In the development history of a country, the cultural inheritance of a nation is the product of the whole history and the external expression of a nation's spiritual outlook, living standards and values. In the decoration design, by making this externally expressed folk culture into a living environment in the form of art, building a residential house also opens up a new design point for interior design, which can also greatly meet the spiritual needs of users in the case of the combination of the two. When creating interior decoration, we also need to consider the combination of practicality and appreciation. Through the transformation of different folk elements, the planning of various household products also requires various design schemes, which to a certain extent also brings new innovative ideas and changes to the development of the design field. In the external international environment, the folk elements of design will also show the unique folk culture of our country, It plays a good bearing role in the development and inheritance of culture.

### 3. COMPREHENSIVE ANALYSIS AND RESEARCH ON FOLK PLASTIC ARTS IN INTERIOR DECORATION DESIGN

#### 3.1 Analysis of the overall effect of folk plastic arts in interior decoration design under different environments

With the rapid development of interior design and decoration, most people pursue fashion, style and light luxury in the interior decoration design of public places and ordinary families. More and more design elements gradually appear, among which the addition of folk art reflects the national characteristics in the interior decoration design and has a unique aesthetic form and cultural connotation, Based on the observation and analysis of the application of folk plastic arts in interior decoration design, according to the analysis of various data of folk elements of interior decoration under two different environments, the following **Table 1** is obtained:

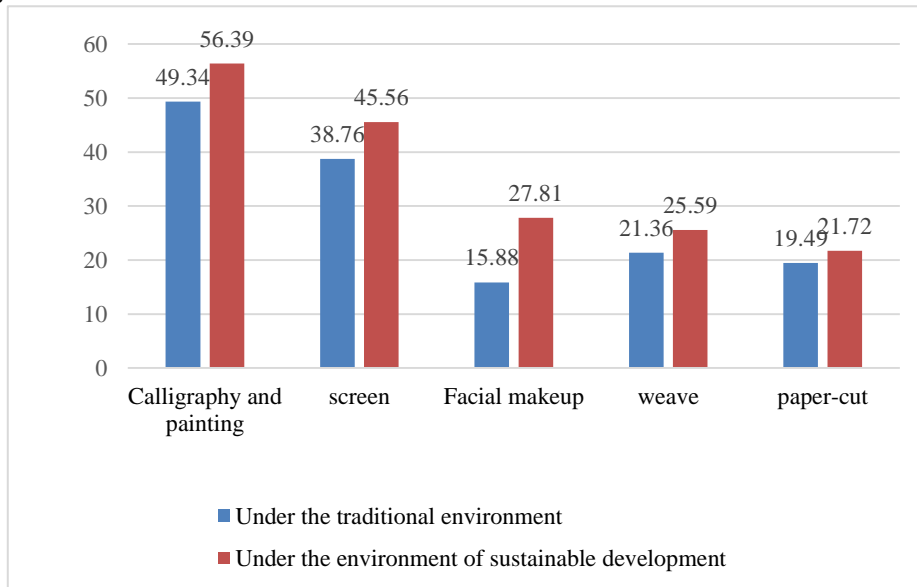
**Table 1** Analysis of the overall effect of folk plastic arts in interior decoration design under different environments

Grouping	Calligraphy and painting	Screen	Facial makeup	Weave	Paper-cut
Under the traditional environment	49.34	38.76	15.88	21.36	19.49
Under the environment of sustainable development	56.39	45.56	27.81	25.59	21.72

In **Table 1**, through the above table, the overall effect data of folk plastic arts in interior design under different environments can be clearly seen that the sustainable development environment has a greater impact on folk plastic arts in decoration design. Innovative design concepts plus excellent national elements can effectively

improve the grade and application efficiency of interior decoration design.

In order to better compare the overall effect of folk plastic arts in interior decoration design under different environments, visualize the data in **Table 1** and draw **Figure 2**:



**Figure 2** visual diagram of the overall effect of folk plastic arts in interior decoration design under different environments

In **Figure 2**, it shows the visualization of the overall effect of folk plastic arts in interior decoration design under different environments. It can clearly see the huge gap between the sustainable development environment and the traditional environment. From this, it can be seen that the overall effect of adding folk plastic arts in interior design is better. The results show that the development of folk plastic arts in interior decoration design can be better driven under the environment of sustainable development.

### 3.2 Research on folk plastic arts in interior decoration design under different technologies

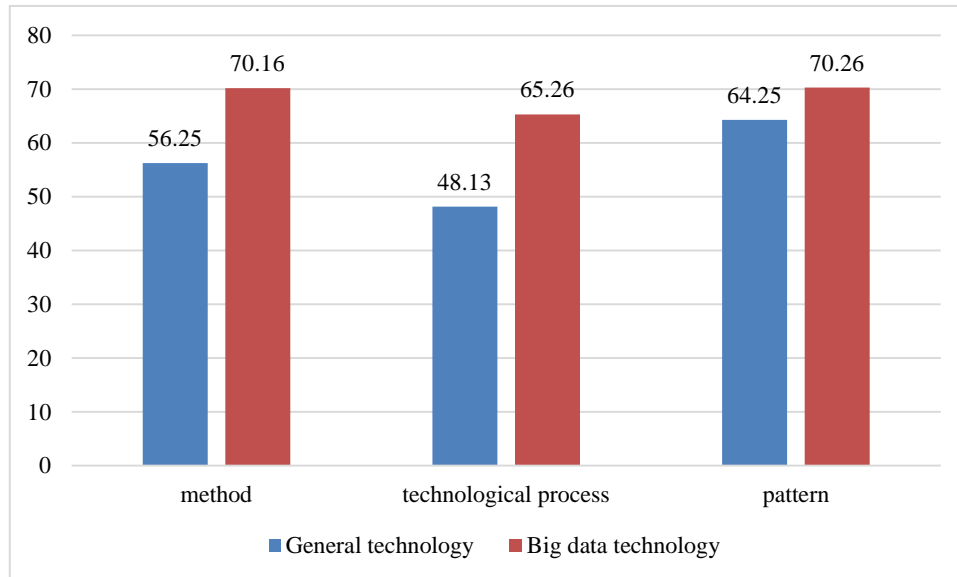
In the context of socio-economic and scientific development, people also have more requirements for the details of their living environment. The higher people's living standard, the more diversified the interior decoration style. In order to meet people's attention to quality and characteristics, however, designers will use aesthetics to improve their level. Although China's design level continues to rise, the development of the times is too fast to meet popular needs, Now, according to the analysis and research of folk plastic arts in interior decoration design under two different technologies, the following **Table 2** is obtained:

**Table 2** Research on folk plastic arts in interior decoration design under different technologies

Grouping	Method	Technological process	Pattern
General technology	56.25	48.13	64.25
Big data technology	70.16	65.26	70.26

**Table 2** shows the comprehensive performance data of folk plastic arts in interior decoration design under different technologies. In each performance, it can be seen that big data technology is significantly better than traditional network technology, which shows that using big data technology, information technology is integrated into intelligent interior decoration design. By combining network communication technology and computer technology, the ideal effect of interior decoration design can be met to a great extent.

In order to better evaluate and compare the folk sculpture art in interior decoration, the visualization is carried out according to the data in **Table 2**, and **Figure 3** is obtained:



**Figure 3** visualization of folk plastic arts in interior decoration design under different technologies

**Figure 3** shows the evaluation visualization of folk art in decoration design. It is very clear that the use of big data technology can well drive the development of interior decoration, so as to more effectively solve the problems of current design. It not only improves the traditional living environment, technically improves the intellectualization of household appliances, improves the indoor safety performance, and thus promotes the intelligent development of interior decoration design, It provides a great experience for people's daily living environment.

### 3.3 Analysis on the coupling degree of folk plastic arts in interior decoration design under different environments

Due to the continuous development of economy and society, artistic elements are added to many decorations, which drives the value of people's decorative design development. This also makes the folk plastic art in interior decoration design grow rapidly. Then, the elements of folk art are various. In order to show the perfect effect, only in the environment can they show their unique expressiveness, Based on the analysis of the coupling degree of folk plastic arts in interior decoration design in two different environments, the following **Table 3** is obtained:

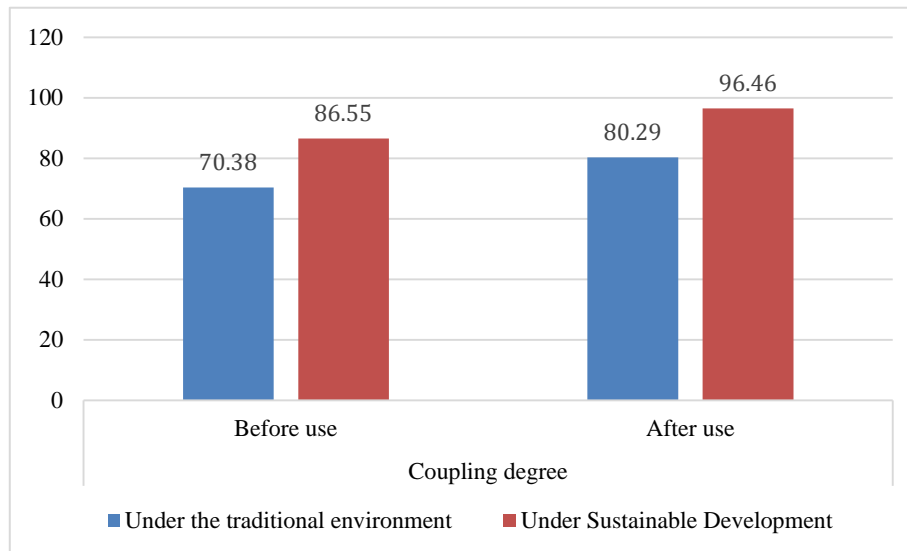


**Table 3** Analysis on the coupling degree of folk plastic arts in interior decoration design under different environments

Grouping	Coupling degree	
	Before use	After use
Under the traditional environment	70.38	80.29
Under Sustainable Development	86.55	96.46
t	7.362	7.086
p	0.042	0.039

**Table 3** shows the comparison of the coupling data of folk plastic arts in interior decoration design. It is obvious that the coupling data results under sustainable development are better than those in ordinary environment, and the coupling data of the two different algorithms are  $t < 10$ ,  $p < 0.05$ , which is statistically significant.

In order to better compare the coupling degree of folk plastic arts in interior decoration design under different environments, we visualize the data in **Table 3** and get **Figure 4**



**Figure 4** visualization of the coupling degree of folk plastic arts in interior decoration design under different environments

As shown in **Figure 4**, it shows the visualization of the coupling degree data of folk plastic arts in interior decoration design under different environments. It is very intuitive to see that the coupling degree under sustainable development is better, and the mutual integration effect of coupling degrees is also better, which is conducive to the development of folk plastic Arts in interior decoration design.

#### 4 DISCUSSION

With the continuous development of the times and the improvement of people's living standards, the living environment is also gradually changing towards high requirements. Ordinary interior design can no longer meet the current pace of people's life. In this regard, Yu Shiwei (2020) pointed out that under the background of the great rejuvenation of the Chinese nation, the essence of folk culture should be used in life to promote its development, and the elements of folk culture should be combined in interior decoration design, It has driven the development and inheritance of folk

culture [11]. The application of folk culture can see the shadow of folk elements in life decoration and add color to its environment. Gao Qi (2021) pointed out that in view of the gradual emergence of the problems of ecological environment destruction and resource shortage, people are deeply aware of the importance of ecological environmental protection and sustainable development. For the field of interior design, space layout design, scientific use of environmental protection materials, recycling of waste, To promote the sustainable development of China's interior design industry [12].Jia Lili (2019)Traditional culture has a strong cultural connotation. The application of traditional elements in interior decoration will highlight its profound heritage, which is widely used in contemporary interior design and promote national inheritance [13]. Based on the concept of folk plastic art in interior decoration, combined with the innovation direction and the problems existing in the current decoration design, and adding artistic features and practicality to the modern design of interior decoration, interior designers can better carry out decoration design to meet the requirements of non cohabiting residents for interior decoration.

## 5 SUMMARY

Social development cannot be separated from strategy. Since the sustainable development strategy was put forward in China, this strategic model has been deeply rooted in the fundamental position of people's development; In this environment, through the market-oriented transformation and development of folk culture, we have also tried to innovate the market economy, which has brought new development directions and achievements to the development of the digital economy era. It has not only cultivated people's artistic thoughts, but also provided spiritual value in life, Through this historical design style, echoing with the sense of modernity, the overall thick artistic image is incisively and vividly interpreted. Although it is a little old-fashioned, it fully reflects the unique elements of national culture, and opened up a new way to inherit China's folk culture; In interior decoration design, we can not only integrate folk elements, but also integrate folk culture elements in other design fields, which provides more research directions and inheritance directions for China's innovative model in the field of art development, and can also show China's cultural heritage in more fields. Through the research of this paper, it is found that the artistic vision of modern residential life is unique, with distinct style and regional characteristics; The application of traditional folk art modeling in interior design is not necessarily suitable for most residents. Especially for the interior design in the field of international development, most of them pursue more gorgeous and aesthetic design styles and artistic symbols; This puts forward higher requirements and prospects for the design and development of interior decoration in China; On the development road of interior design, we not only need to pursue innovation and change by using science and technology, but also need to constantly explore the market prospect and national development direction; While integrating folk art, it is also necessary to constantly innovate to create a design style that meets the needs of the wider population.

## REFERENCE

- [1] Huang Jun Analysis on the application of relief art in indoor space [j] Ceramics, 2021 (06): 54-57
- [2] Wang Xiaowei. Application of folk art design decoration in indoor and outdoor environment [J]. Architectural structure, 2020,50 (20): 155-156
- [3] Tang Tian, Zhong Lei The value appeal of folk art in contemporary cultural and

- creative products [j] *Art and design (Theory)*, 2022,2 (06): 99-101
- [4] Zhang Yangge Research on the dissemination and preservation of folk art in the new media environment [j] *Art research*, 2022 (02): 141-143
- [5] Sun Yan, pan Lusheng Pluralistic existence in events -- the existing situation of contemporary folk art from the perspective of event theory [j] *Shandong Social Sciences*, 2022 (04): 176-183
- [6] Tao Siyan On the theoretical research of Chinese folk art [j] *National art research*, 2022,35 (01): 77-84
- [7] Niu Changchun, Wang Fuchao Evolution and development of big data technology [j] *Computer knowledge and technology*, 2021,17 (05): 36-37
- [8] Wang Tiantong, Qiao zhuoxiao, Zhu Yi Research on the new market of Internet + collective residential facility decoration [j] *Technological innovation and application*, 2021,11 (29): 51-53+56
- [9] Ji Mengyu An analysis of the functionality and artistry of interior design [j] *China building decoration*, 2021 (04): 182-183
- [10] Yang Lan, Yang Lihong, he Yanni A summary of folk tourism research in China [j] *Journal of Heilongjiang Ecological Engineering Vocational College*, 2022,35 (04): 35-37+44
- [11] Yu Shiwei The significance of the application of Northeast Folk Culture in the decoration design of contemporary furnishings [j] *Theoretical observation*, 2020 (04): 126-128
- [12] Gao Qi, guyanbin Analysis of the concept of sustainable development in interior design [j] *Art and design (Theory)*, 2021,2 (10): 55-57
- [13] Guofu Qu, Xin Feng, Yifan Wang, Quanling Du, Xiaowei Ma, Qin Li, Yunhong Wang, Wen Liu. "Study on Preparation of Elastic Silica Aerogel Based on SEM Analysis", *Wireless Communications and Mobile Computing*, 2022 (08) 16-22
- [14] Jia Lili Integration of traditional Chinese art elements and contemporary interior decoration design [j] *Intelligence*, 2019 (06): 197