

Guangxi Miao Silver Jewelry Products Through Service Design Thinking

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[Abstract]

The unique silver ornaments of the Miao nationality in Guangxi, China reflect the specific characteristics of the times and cultural background. With the change of environment and the development of Internet economy, the protection and development policies of Miao silver jewelry are also changing. Service design is a new extension of the traditional design field in the post-industrial era, and it is an all-round realization of the design process. This study aims to solve the development mode of traditional Guangxi Miao silver jewelry craft in modern society, propose the strategic design of transformation from traditional product design mode to cultural service with the concept of service design, and explore the innovative strategy of traditional silver jewelry product design. Through case analysis, using the design thinking and methods in service design, starting from the service design process, construct the process of design stage of Miao silver jewelry products in Guangxi, and based on the characteristics of different stages, integrate KANO model and consumer satisfaction analysis method, finally review the process objectives and application process of service design stage, Construct the design process model of Miao silver jewelry product service based on design thinking from three levels of instinct layer, functional layer and

reflection layer, explore the conservation strategies of traditional silver jewelry techniques, enhance the social and cultural value of traditional silver jewelry, bring new opportunities for the design of traditional silver jewelry products, better promote the development of traditional culture.

Keywords: Service Design Thinking; Silver Jewelry Products; KANO

I Research background

The history of Chinese silver jewelry goes back more than 4,000 years. It is one of the intangible cultural heritages of China. It is an important symbol of a civilization's self-identification and a condensation of ethnic minority culture. It has great research value and far-reaching conservation significance. Unlike mechanized mass production, traditional silver via handmade, passed on the spirit and feelings of craftsmen, embodies the tools unique and unique, it has noble implicit silver luster, rich changes of decorative shape and patterns, and history gives it deep culture, in culture, tradition, religion, beliefs, folk, emotion, concept, symbol, and historical heritage meet a higher level of spiritual pursuit. Among the many silver jewelry products, the silver jewelry of the Miao nationality has the longest history.

Rong Shui Miao Autonomous County in Guangxi is one of the five Miao autonomous counties in China. Its silver jewelry has strong regional characteristics, profound national origin culture and artistic genes, which is an expression of the unique design aesthetics and value orientation of the Miao nationality, and shows the excellent characteristics of national artistic design^[1]. The exquisite silver ornament forging skills carry the past and present of the Miao people, interpret the ancestor worship and nature worship of the Miao people, and show the super imagination and creativity of the Miao people. Silversmiths get good economic income by processing and forging silver jewelry products. Forging and using silver jewelry is an important part of Miao life. Every nation in China will face profound changes in the context of globalization, social,

economic and cultural transformation. National culture will continue to converge with contemporary culture, forming a trend of diversified and homogenized development. In the process of modern development, the traditional silver jewelry forging technology lacks an ideal living environment, the consumer market is disconnected, lacks the sustainability of development, and the productive protection measures are ineffective, facing the problem of loss. At the same time, the Miao culture has been continuously influenced by foreign culture. The values and aesthetics of the Miao people have gradually changed, and the demand for Miao silver jewelry is not as good as before. In this cultural change, many traditional national cultures have changed, and some are disappearing. The traditional ethnic silver jewelry in the Chinese minority areas has been under constant promotion and fashion trend. The Chinese national silver jewelry needs profound theoretical thinking and practical research on how to survive and develop as an artistic expression.

In addition, most of the people who are the inheritors of the traditional handicraft of Miao silver jewelry are the elderly. With the death of the elderly people one after the other, only a few people understand the cultural connotation behind the traditional handicraft of the Miao silver jewelry. The living environment of the national silver jewelry technology is facing many problems as the cultural heritage passed down from generation to generation is rapidly disappearing. With the development of tourism in Guangxi, the demand for Miao silver jewelry is increasing. Miao silver jewelry is one of the characteristic tourist products in Guangxi. However, as the hand-forged Miao silver jewelry products have a long time, low output and high price, while the mechanized manufactured silver jewelry has a high output, low price and high efficiency, it is rapidly occupying the market. Under the trend of mechanized production, Guangxi silversmiths began to use molds to produce silver jewelry products. This led to the homogenization of Miao silver jewelry products and the gradual thinning of silver jewelry forging skills. The popular products are less attractive to tourists, which affects the desire

of tourists to buy Miao silver jewelry products, and greatly hinders the development of Miao silver jewelry in Guangxi.

With the development of the Internet and the service industry, there has been a change in users' consumption concepts. They are no longer satisfied with the traditional consumption mode of products. They pay more attention to the experience and value of services. Service design has become a new design trend. It observes and explains the needs and behaviors of stakeholders in the design process, and guides and quality controls the user experience process. This study from the service design process, based on the design thinking construction of the Guangdong silver product design process, and based on the analysis of different stages, merge the Kano model and consumer satisfaction analysis method to improve, the final service design process objectives and application process, establish the silver service design process model based on design thinking.

II The development status of Miao silver ornaments in Guangxi

The silver jewelry industry has encountered a development bottleneck, according to the 2023 China Silver Jeweler Industry Report. According to the research statistics of China Treasure Association Fund, the size of China's silver jewelry market in 2023 will be about 6.5-billion-yuan, accounting for only 0.9% of the total domestic jewelry market, far lower than gold, diamonds, jade, colored gemstones, pearls and other categories.^[2] The customers of Guangxi Miao silver jewelry are mainly ethnic minorities and tourists in surrounding provinces and cities. Most of the products are machine-made and hand-cut and polished. The styles are mainly large head ornaments and neck ornaments, while the modern ornaments are relatively few. The market objects are mostly individual workshops. According to the statistics of the website of Liuzhou Municipal People's Government of Guangxi, there are more than 100 local silver jewelry processing enterprises, among which 93 are self-employed, 14 inheritors of Miao silver jewelry forging skills, 2 county-level inheritors and 12 municipal inheritors, and continue to train skilled craftsmen through

professional skills competitions. In silver is the basis of minority consumer culture, silver industry has initially formed local brand effect, part of the retail formats set consumption and cultural experience, but recently affected by the tourism slowdown, including relatively good development, enterprise development degree of cluster through the Internet sales to some extent offset the decline of offline market, but overall, such forms still face the regional development bottleneck. The details are as follows:

i Facing the challenge of inheritance, Miao silver jewelry skills in Guangxi, China

The Miao nationality has a long history and deep cultural heritage in Guangxi as one of China's ethnic minorities. As an important part of traditional dress and ornaments, Miao silver ornaments carry the historical memory and cultural spirit of the Miao people. In the local area, some traditional craftsmen pass on the skills of Miao silver ornament making to future generations through oral instruction. Carving, polishing, inlaying and marquetry are all part of the craft of making Miao silver ornaments. The exquisite skills and meticulous carving of the craftsmen are evident in every piece of silver jewelry. These techniques not only make Miao silver ornaments have unique artistic value. They also reflect the vitality of craftsmanship in the modern industrial age. However, the traditional craft of Miao silverware in Guangxi is in danger of disappearing under the influence of modernization and urbanization. The younger generation's interest in traditional handicrafts has gradually waned. This has led to difficulties in passing on traditional skills.

ii The design of Guangxi Miao silver jewelry products is homogeneous and lagged.

Guangxi Miao silver jewelry products have some problems of homogeneity and lag. Homogeneity means that the products look similar and lack individual characteristics. In Guangxi Miao region, many silver jewelry products have similar design style and technology. Therefore, it is difficult to find unique and personalized works. The lack of innovative thinking of designers

and the lack of inherited production technology may be the reason for this. In terms of market demand and consumer preferences, lag refers to the slow response speed of Guangxi Miao silver jewelry products. With the development of the times and the change of consumers' aesthetic concepts, the market demand for silver jewelry products has also changed, and the pursuit of personalization, strong fashion sense, creative and other characteristics has become the mainstream trend. However, in some regions, the silver jewelry industry still maintains the traditional design style and process technology and has not been in line with the market demand in a timely manner.

The low level of development of the Miao silver jewelry industry in Guangxi and the limited level of education of the relevant professionals may be related to these problems. To solve these problems, it is necessary to strengthen the professional training of practitioners and improve the technical innovation ability, encourage designers to pay attention to innovating and individualizing the design, and actively integrate with the market demand. In addition, an effective way to solve these problems is to strengthen integration with other regions or international standards, and to learn from the advanced design concepts and technologies of other regions.

iii China Guangxi Miao silver jewelry products face huge competition in modern market

With the opening of the global market and the impact of modernization, Guangxi Miao silverware faces fierce market competition. Competition for handicrafts in other regional and international markets has intensified. Modern design and mass production of products also challenge traditional handicrafts. Guangxi Miao Silver Jewelry must constantly innovate design, improve product uniqueness and quality, and seek differentiated market positioning and promotion methods to remain competitive in the market.

III The concept of Service Design Thinking

i Service design background

Since the 1990s, service design has had many years of research and practice in European and American countries. The

development of the industry is relatively mature. In 1982, Shostack G. Lynn proposed "service design" in the Harvard Enterprise Review paper on how to design a service, introducing services into the design category^[3]. Also in 1991, Erhof Michael (Michael Erlhoff) and Burgt Marg (Birgit Mager) of the Cologne International Institute of Design (KISD) began to introduce service design into design education. They committed themselves to related teaching practices and research. Activities and Organized Services" is the core content of the curriculum system for the interactive graduate degree in design that was launched by Carnegie Mellon University in 1992. In 1994, the British Standards Institute published the world's first guideline on the management of service design (BS7000-3 1994). The latest version is BS7000-3 2008. The concept of "Product Service System (PSS)" advocated by the design field in the late 20th century has many similarities with the concept of "goods to service" advocated by IBM, which reflects the concept of the product life cycle. The difference is that IBM initially proposed the concept of service to provide differentiated value-added services for the ever-increasing industrial goods, while the "product service system" holds out the hope of effectively reducing the use of material resources and improving environmental benefits from the perspective of environmental sustainability^[4]. Service design, which focuses on user experience and Internet business innovation, is a more popular topic in the field of design in recent years, which fully reflects the characteristics of design participating in social life with new ideas and methods in the new historical period, economic mode and technical conditions.

ii Service design research status

(i) International status

In the world, the concept of service design is clear and lacking. Russell et al. define service design in terms of products and services and propose four unique services to distinguish products and services: uncertainty, non-separation, non-uniformity and non-sustainability^[5]. Sampson defines the service design by using phenomenological methods to remove the service process. He believes that "the service cannot be

separated from the relevant resources of the users". Service design is defined as "the design of the interaction process between the service providing goods and the customer"^[6]. At the same time, it has greatly promoted the development and maturity of service design with the continuous overlap and integration of design thinking and service marketing concept, especially the introduction of human-centered and sustainable development design principles.

In terms of methodological research, Professor Levitt of Harvard Business School summarized the successful experience of some excellent companies in the 1970s, starting from customer needs, studying the needs of users, identifying the core problems in the service process, looking for design opportunities to carry out service design and help users solve problems.

(ii) Domestic status

China has gradually attached importance to the development of the service economy in recent years. In terms of concept cognition, Luo Shijian and other scholars have explored the essence of service design and analyzed the instinctive layer, behavioral layer and reflection layer in emotional design. Scholars took the course of design innovation and design method as an example. They listed the design process of IDEO, Live work and other companies, and analyzed and summarized the relevant characteristics.^[7] It is also a part of scholars to explore service design methods and tools, such as Zhang Wenyu, based on service contact of traditional silver art service mode design, proposed to consumers, artisans, designers and network platform as the core role map and motivation matrix, build goods, process, resource management and cultural heritage four levels of traditional silver craft product development strategy and silver skill product service mode, expand the traditional silver skill social service function, establish multi-role connection service network, promote the development of traditional silver skill.^[8]

IV. Research content and ideas

i Research content

The development of silver jewelry provides a material and

economic foundation due to China's deep history and culture of silver jewelry, huge population base, diversified ethnic characteristics and the upgrading of various forms of consumption. The research scope of this project is to analyze the characteristics of Miao silver jewelry for Guangxi Miao silver jewelry products, use the service design method to deeply understand the needs of intangible heirs, consumers and designers for modern silver jewelry, analyze the participants of the service design system from the perspective of service, explore the modern design ideas of Guangxi Miao silver jewelry, and design the silver jewelry products that meet the demands of the modern market.

In terms of research theory, it focuses on the research on the application of service design process and design methodology, analyses the application process of the double diamond model, including the concept, stage goals and application, etc., integrates the general process of silver jewelry design, proposes a clearer and more explicit service design process model of Miao silver jewelry, enriches the service design related research, and helps the silver jewelry products to use the knowledge of service design for the innovative application and enhance the product value.

In terms of practical research, based on the service design process model, it is applied in stages, focusing on studying the consumer demand for Miao silver jewelry, collecting and classifying the user demand through field research and questionnaires, constructing the KANO model, classifying the characteristics that affect the consumer's satisfaction in buying silver jewelry into different quality elements, clarifying the importance ranking of the influencing factors for the design of silver jewelry products, and clarifying the user demand information and elements, and clarification of user demand information and elements of Miao silver jewelry product design, clear design positioning, design conception, and based on the emotional hierarchy theory to analyze the relevant concepts to extract the design prototype feature information to make the prototype, according to the Likert scale test to conduct user testing and assess the feasibility of the design prototype,

integrate the above research process, and finally complete the Miao silver jewelry product and service design process model, which can be used to guide the relevant design practice.

ii Research ideas

(i) Service Design Process

Shostack first proposed service design in 1984 and outlined the basic service design process as insight collection, research, workshops, service blueprint, service proposal development, concept sketching and presentation, experience prototyping, testing and delivery^[9]. With the development of service design, the current international academic discussion on the service design process methodology flow is mainly based on the Double Diamond Model created by the UK Design Council in 2005, which is still used today, and this process is the overall structure of today's design thinking.

As shown in Figure 4.1, the Double Diamond Model is essentially divided into two stages and a four-step process. The first stage is the analysis process, including the pre-exploration and definition stage, which identifies the target group and relevant demand information through pre-research and exploration, and conducts dispersive thinking to explore the nature of the problem, summarizes the relevant issues of dispersive thinking, and focuses on solving the problems. The second stage is the strategy process, which focuses on the design process and production stage, through which we think out-of-the-box, conceptualize design concepts, prototype and test, iterate, eliminate inappropriate solutions and retain feasible design concepts to complete the service design process and improve user experience.^[10]

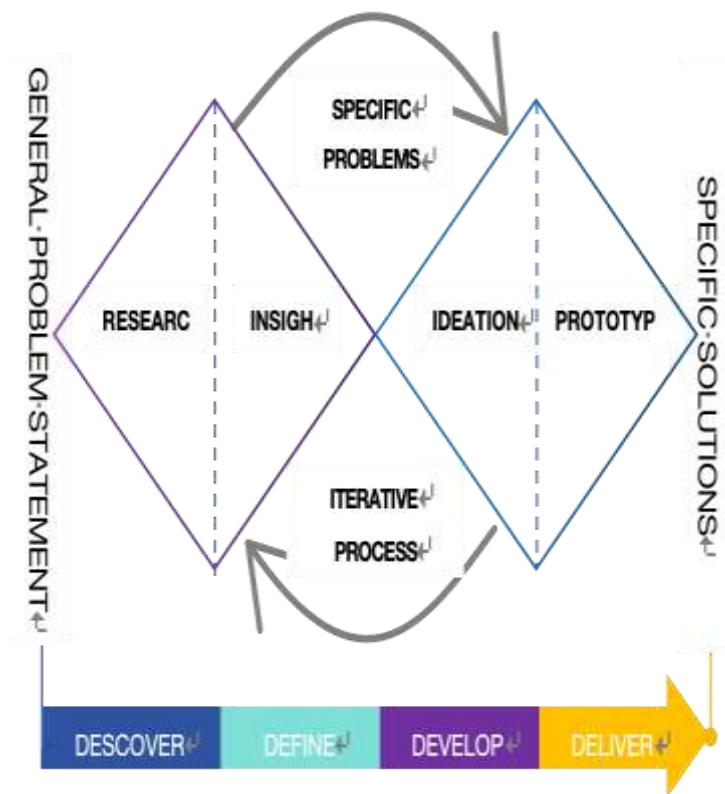


Figure 4.1 Service Design Double Diamond Model Flowchart

(ii) Thinking process based on the double diamond model

The design process embodies the whole process from the beginning of the design task to its execution, the process of researching and analyzing the background of the problem and the user demand information in the pre-design stage, the innovative design concepts for the specific problem based on the user demand, and the testing and iteration to achieve the final solution to satisfy the user demand. Combined with the most representative and accepted five-stage model of design thinking in design thinking related fields, the service design process of Guangxi Miao silver jewelry products is constructed, and appropriate methods are applied to each stage for research and analysis, so as to construct a perfect service process for Guangxi Miao silver jewelry product design and solve the existing problems of traditional silver jewelry products.

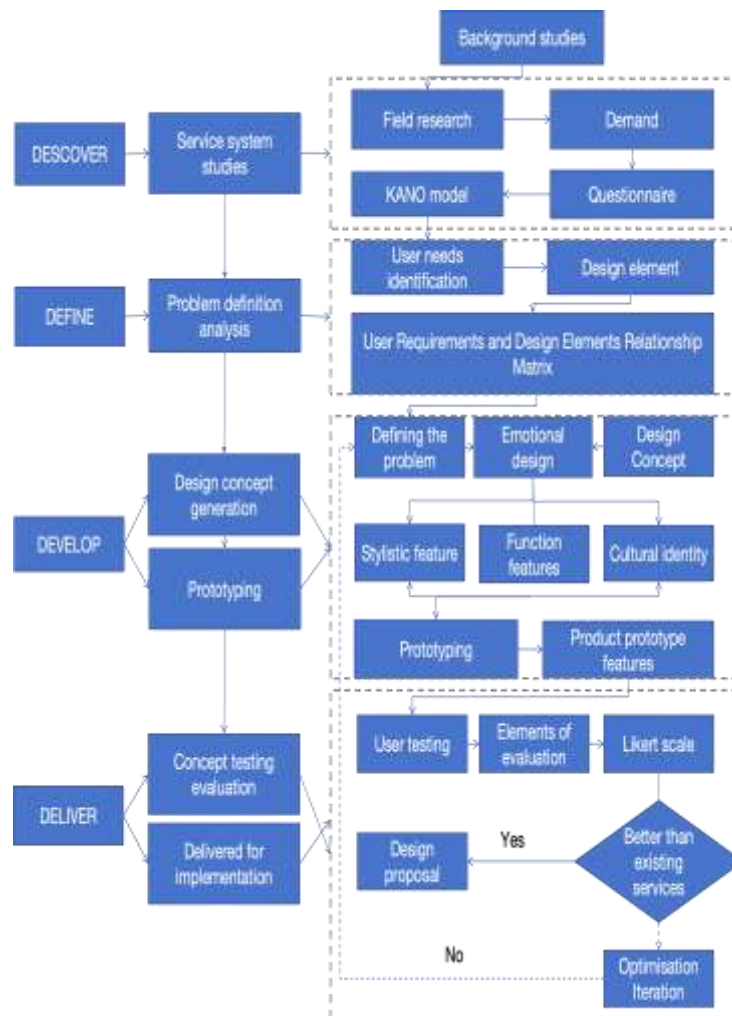


Figure 4.2 Flowchart of product service design based on double diamond model

V. Guangxi Miao silver jewelry product design practice

i Elements of consumer demand for Hmong silver jewelry products

In order to understand the real situation of silversmiths and silver jewelry, relevant factual materials were objectively mobile photographed, examined, collated and analyzed through field visits to Rong Shui Miao Autonomous County and San Jiang Dong Autonomous County in Guangxi. Secondly, the quantitative analysis was carried out through questionnaire research, mainly for silver jewelry consumers over 18 years old, online questionnaire distribution and statistics, to find out the elements of consumer demand for silver jewelry products. The Japanese scholar Norimaki Kano developed the KANO model to facilitate the classification of product quality features and

determine their priority, which has been widely accepted and applied.^[11] The KANO model classifies quality attributes into five categories based on customers' different emotional responses to the presence/absence of quality elements in products/services: Attractive Quality Elements, One-Dimensional Quality Elements, Essential Quality Elements, Indifferent Quality Elements and Inverse Quality Elements.^[12] The specific classification is shown in Table 5-1, the degree of influence of different quality elements on customer satisfaction is different and the priority ranking is: M (Mandatory) > O (One dimensional) > A (Attractive) > A (Attractive) > I (Indifferent). Adopting appropriate strategies can effectively improve the efficiency of quality improvement and increase the level of customer satisfaction according to the classification results of quality elements and the characteristics of different types of quality elements.^[13]

Figure 5.1 KANO model classification of quality elements						
Product demand		Negative problem				
Thinking about the question	Meters	Lik e	Desira ble	Not matt er	Accepta nce	Disli ke
	Like	Q	A	A	A	O
	Desirabl e	R	I	I	I	M
	Not matter	R	I	I	I	M
	Accepta nce	R	I	I	I	M
	Dislike	R	R	R	R	Q

The following formula is used to calculate the sample size.

$$n = (Z^2 * p * q) / E^2$$

where n is the desired sample size; Z is the value of Z at the confidence level (the value of Z at the 95% confidence level is generally assumed to be 1.96); p is the expected total proportion of the population in the study; q = 1 - p; and E is the desired sampling error.

When using the KANO model for surveys, p is usually set to 0.5. This is because the KANO model focuses on whether product characteristics meet or exceed consumer expectations. The minimum required sample size n can be estimated by substituting the total proportion p , the value of Z corresponding to the confidence level and the desired sampling error E into the formula. According to the feasibility of the study, the sampling error E is controlled within 10% and by substituting it into the formula, the sample size for the research on consumer demand for silver jewelry products is calculated to be 100.

160 questionnaires were distributed online and offline. 160 questionnaires were valid, with a response rate of 100%. Descriptive statistical analysis of the collected KANO questionnaire data can be concluded as follows: The age group of 18~25 years old accounts for the highest proportion of 48.75%, followed by the age group of 31~40 years old accounting for 33.13%. Based on the analysis of the above data, the survey sample is mainly 18~25 years old, and 31~40 years old women accounted for a higher proportion. This is since this topic is mainly used in the electronic questionnaire for questionnaire distribution and collection, the audience is mainly young and middle-aged people, so the age distribution will be affected by this. In terms of educational level, the highest number of respondents were undergraduates (65.63%), followed by postgraduates and above (20.63%). The level of understanding of the Hmong culture is 71.25% for those who have a general understanding and 26.25% for those who do not know the Hmong culture. Most people have some understanding of Hmong culture. However, the proportion of people with in-depth understanding is small. Therefore, to improve people's knowledge and understanding of Hmong culture, it may be necessary to strengthen propaganda and promotion of Hmong culture. Among the respondents, 40% had bought Miao silver jewelry, 42.5% had not bought it, and 17.5% said they wanted to buy it but had not yet done so. The number of people who have bought Miao silver jewelry is slightly higher than the number of people who have not bought

it, but there is still a significant proportion of people who say they intend to buy it.

According to the product characteristics of Miao silver jewelry, 15 topics were designed to understand the product shape, product material, product technology, product design, product function and product quality.

Figure 5.2 Guangxi Miao Silver Jewelry Product Demand Research Data

Function	KANO Attribute	Better coefficient	Worse coefficient
If you buy/want to buy the Guangxi Miao silver craft fine	One-dimensional	77.93%	-66.9%
Good after-sales warranty service	One-dimensional	71.72%	-46.21%
Guangxi Miao silver jewelry is comfortable to wear	One-dimensional	70.71%	-60.71%
Guangxi Miao silver jewelry with Miao cultural symbols	Attractive	69.44%	-20.14%
Guangxi Miao silver jewelry fusion of multi-ethnic elements	Attractive	68.09%	-11.35%
Guangxi Miao silver jewelry have Miao silver jewelry technology	Attractive	67.35%	-14.29%

experience clothing			
Customized service when you buy Hmong silver jewelry products	Attractive	67.13%	-11.19%
Hmong silver jewelry product storytelling	Attractive	65.07%	-14.38%
Easy access to detailed information on Hmong silver jewelry products	Attractive	61.81%	-13.89%
You can learn about the production process	Attractive	60%	-8.97%
Guangxi Miao silver jewelry material is pure silver	Indifferent	55.26%	-11.4%
Guangxi Miao silver jewelry is beautifully packaged	Indifferent	40.56%	-17.48%
Guangxi Miao silver jewelry is expensive	Indifferent	4.88%	0%
Wearing a single style	Reverse	7.69%	-1.54%

Better coefficient = [attractiveness (A) + expectancy (O)]
[attractiveness (A) + expectancy (O) + need (M) + indifference

(I)] [attractiveness (A) + expectancy (O) + need (M) + indifference (I)] * (-1)

Worse coefficient = [Expectation (O) + Significance (M)]
[Attractiveness (A) + Expectation (O) + Significance (M) + Indifference (I)] * (-1)

Essential demand means that user satisfaction is not affected, but satisfaction decreases significantly, according to the KANO attribute. The expectation requirement refers to the function that users are very eager for, if user satisfaction will increase, and vice versa. Charm demand means that what is provided will surprise users. If it is not provided, user satisfaction will not be affected. No differential need means: Providing or not providing will have no effect. Reverse requirements: the provision will lead to a decrease in user satisfaction.

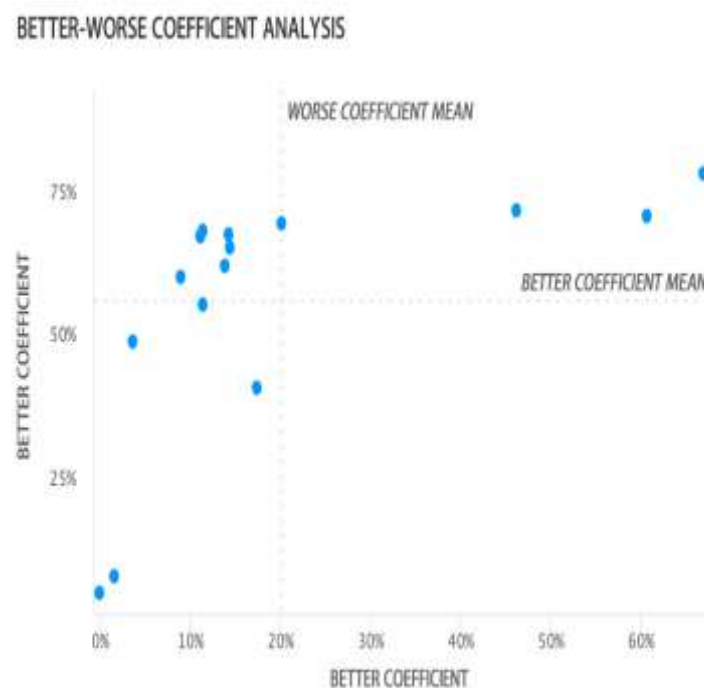


Figure 5.3 Better-Worse coefficient analysis

Conclude the analysis:

According to the given data table, the following conclusions can be drawn:

Consumers most need and care about the exquisite craftsmanship of Guangxi Miao silver jewelry, wearing comfort and good after-sales guarantee. For the cultural connotation of

Miao silver jewelry products, ethnic integration, handicraft experience and other services can make consumers feel surprised and liked, but it is not the core demand. Consumers do not care about the material, packaging and price of the product. Relevant design decisions can be based on these results.

ii Service Design Prototyping

Based on the previous design concepts and guided by the affective hierarchy theory, emotional needs at different levels are mapped into corresponding prototype features, i.e. emotional needs at relevant levels are analyzed from the instinctive, behavioral and reflective levels, and the corresponding prototype features are abstracted. Then, the relationship between prototype features and design concepts is established, i.e. relevant design concepts are analyzed from the perspective of prototype features, and designers are guided to visually display relevant product or service content through prototype tools. This helps users to understand relevant design concepts more clearly and intuitively, so that different forms of prototypes can be used alternately according to different levels of emotional needs in the follow-up testing process. To obtain comprehensive and accurate information about the user feedback. Based on the analysis of affective hierarchy theory and prototyping process, in affective hierarchy theory, the instinctive layer pays attention to sensory feelings brought by external manifestations of things such as shape, color, material and texture, and includes specific sensory features that can be extracted as prototype modelling features. The behavioral layer focuses on the behavioral actions performed to perform a specific function in the human-computer interaction process, including the structure, function and operation mode of related products and services, and extracts the functional features of the prototype and guides the designer to create relevant functional prototypes accordingly. The reflective layer pays more attention to the emotional experience and cultural feeling of products and services and needs to convey the specific cultural connotation and spiritual

value in the relevant enterprise or service content, which is reflected in the cultural characteristics in the prototype. It can be used to analyze the relevant emotional information and cultural attribute information in the design concept. Through the integration of the above research process, the prototype analysis and production process model are proposed, and the design and production of Guangxi Miao silver jewelry products are carried out based on the core needs of consumers for product shape, process precision, man-machine scale and cultural connotation.

iii Silver jewelry product design assessment

In the basic principles of service design, user-centered, that is, from the needs of users to provide useful, usable, easy to use, easy to use products and services, can be extracted as reliability evaluation standards. Materialized items visually display relevant service content, so that users can obtain relevant services. These can be extracted as tangibility evaluation criteria. Integrity and sequential implementation principle emphasizes the service system, grasps relevant details from the overall perspective, orders the distribution of contact points in the dynamic service process, seeks harmony to create a pleasant rhythm, improves user experience, and extracts as coordination evaluation standard. Finally, consumers' evaluation of the prototype of the Miao silver jewelry product in Guangxi was surveyed through the form of questionnaire release, using the Li Keret scale. Five response levels were used to comprehensively evaluate the product prototype, improve it according to the evaluation criteria, and constantly improve and iterate. Finally, products that meet consumers' needs were formed and promoted to the market.

Vi. Summary

User-centered service design will become the key content of future design with the development of the market. As for the current situation of Guangxi Miao silver jewelry, in design practice, research on how to carry out service design process to meet users' needs and create high-quality products is still

not deep enough. Based on this phenomenon, through the double diamond model and design thinking method in service design, KANO model is used to clarify user demand information and design elements of Miao silver jewelry products, clear design positioning, design ideas, and extract design prototyping feature information based on emotion hierarchy theory to analyze related concepts and make prototyping. Based on Likert scale test, user test was conducted. The feasibility of the design prototype was evaluated. Finally, the design process model of Miao silver jewelry product service was completed by integrating the above research process. It was used to guide related design practice and provide new practical ideas for the inheritance and development of Miao silver jewelry culture in Guangxi.

References

- [1]Yin Hong, The historical origin and aesthetic view of design of Miao silver jewelry in Rong Shui, Guangxi. *Art age*, 2019, 5: 195-196.
- [2]ZHANG Yan, ZHANG Jie: Research on the productive protection of traditional handicrafts based on the dynamic inheritance of intangible cultural heritage in Tianjin . *Packaging Engineering*. 2019, 40 (4) . 192-196.
- [3]SHOSTACK G L. Designing Services That Deliver[J]. *Harvard Business Review*, 1984, 62: 133—139.
- [4]EDVARDSSON B. Quality in New Service Development: Key Concepts and a Frame of Reference[J]. *International Journal of Production Economics*, 52(1): 31—46.
- [5]SECOMANDI F, SNELDERS D. The Object of Service Design[J]. *Design Issues*, 27(3): 20 —34.
- [6]Teemtichule Kokko, Marko Maki. The verbal judo approach in demanding customer encounters[J]. *Services Marketing Quarterly*, 2009, 30(3).
- [7]XIN Xiangyang, CAO Jianzhong. Positioning service design[J]. *Packaging Engineering*, 2018, 39(18): 43-49.
- [8]Luo Shijian, Hu Yi. Service design-driven model innovation[J]. *Packaging Engineering*, 2015, 36(12): 14-28.
- [9] KIMBELL L. Designing for Service as One Way of Designing Services[J]. *International Journal of Design*, 2011, 5(2): 41—52.

- [10] Luo Shijian, Zou Wenyin. Current status and progress of service design research[J]. Packaging Engineering, 2018, 39(24): 43-53.
- [11] Kano, N. et al. Attractive quality and must-be quality[J]. The Journal of Japanese Society for Quality Control, 1984, 41(2): 39-48
- [12] Ping Ji, Jian Jin, Ting Wang, Yizeng Chen. Quantification and integration of Kano's model into QFD for optimizing product design[J]. International Journal of Production Research, 2014, 52(21): 380-390.
- [13] FU Tian, WEN DeCheng, SHI Xiaoya. An empirical study on service quality of 12306 website-based on analytical kano model[J]. Shanghai Quality, 2014, 11(11): 60-60.