



DESIGN AND DEVELOPMENT FROM THE QING DYNASTY ARMCHAIR INSPIRED FOR
MODERN HOME DECORATION BUSINESS



Graduate School Srinakharinwirot University

2023

การออกแบบและพัฒนาเก้าอี้ราชวงศ์ชิงสำหรับธุรกิจรถแท็กซี่บ้านสมัยใหม่



สารนิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตร
ศิลปศาสตรมหาบัณฑิต สาขาวิชาการออกแบบเพื่อธุรกิจ
วิทยาลัยนวัตกรรมการสื่อสารสังคม มหาวิทยาลัยศรีนครินทรวิโรฒ

ปีการศึกษา 2566

ลิขสิทธิ์ของมหาวิทยาลัยศรีนครินทรวิโรฒ

DESIGN AND DEVELOPMENT FROM THE QING DYNASTY ARMCHAIR INSPIRED FOR
MODERN HOME DECORATION BUSINESS



A Master's Project Submitted in Partial Fulfillment of the Requirements
for the Degree of MASTER OF ARTS
(Master of Arts (Design for Business))
College of Social Communication Innovation, Srinakharinwirot University

2023

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THE MASTER'S PROJECT TITLED
DESIGN AND DEVELOPMENT FROM THE QING DYNASTY ARMCHAIR INSPIRED FOR MODERN
HOME DECORATION BUSINESS

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HAS BEEN APPROVED BY THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE MASTER OF ARTS
IN MASTER OF ARTS (DESIGN FOR BUSINESS) AT SRINAKHARINWIROT UNIVERSITY

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Degree	MASTER OF ARTS
Academic Year	2023
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Chinese traditional culture is extensive and profound, among which the Qing Dynasty culture has had a profound influence on modern design. The Qing Dynasty was a period of rapid development of Chinese furniture culture, and many representative works appeared in the history of furniture. The chairs of the Qing Dynasty have a design and unique style, atmospheric beauty, and simple beauty, which are still representative even after hundreds of years. However, the progress of modern home improvement companies has brought about changes to the needs of people, so the chair design must also change. Nowadays, needs and aesthetics have changed dramatically, and the main consumers of the furniture design market are young customers, so it is important to meet their needs. Therefore, chairs should be made to conform to current trends and had Chinese characteristics. In summary, this research should develop and design new Chinese chairs based on Qing Dynasty style. Through a questionnaire survey of 30 people and interviews with three people, the evaluation and the expectations of consumers on three new Chinese chair design cases, and then the chair cases were improved and the final design innovation scheme was determined.

Keyword : New Chinese style, Qing Dynasty armchairs, Modern home

ACKNOWLEDGEMENTS

In the process of writing this paper, I got help from my teachers and classmates, who generously helped me to collect the data I needed and put forward many valuable suggestions. Here, I would like to express my heartfelt thanks to them for their warm help.

Special thanks to my supervisor, Professor Saowaluck Phanthabutr, for her patient guidance throughout the writing of this paper. She read the whole article carefully and gave a lot of constructive advice. Her excellent academic standards were helpful and made my writing experience very smooth.

In the process of writing this thesis, my family took good care of my life and gave me a lot of encouragement. I am very grateful and owe my achievements to them with all my heart.

Moreover, none of this would have been possible without the help of those individuals and organizations: our school library and its staff.

JIALIN HU

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CHAPTER 1

INTRODUCTION

Research background

As one of the four ancient civilizations in the world, China's culture has never declined until today. China has a rich and profound history and culture. After five thousand years of development, it has a very profound traditional culture. At the same time, the country has a vast territory and a large number of ethnic groups, which also makes China have a colorful national culture. In the course of China's development, various ethnic cultural branches have been divided and combined, and finally, with the unification of China, they have integrated, exchanged and coordinated development with each other, forming a distinctive Chinese national cultural system.

Hu Wenyan (1988) mentioned that the world furniture system is divided into two categories, one is the European furniture system, the other is the Chinese furniture system. Chinese furniture culture is a unique cultural branch of global furniture culture, which has great influence in the history of global furniture civilization. Chinese furniture culture has been developing continuously in the history of China for thousands of years. With the changes of Chinese society, the breadth and depth of Chinese furniture culture have been improved. Chinese furniture is an important part of Chinese culture, has a long history, in its long historical process, to create a brilliant culture, Chinese furniture is the cultural heritage of the Chinese nation, is the common wealth of the world. With the development of social economy and culture, furniture has also developed and changed in the long historical changes. Zhu Jiaqian (2002) mentioned that Chinese furniture covers a wide range, but usually refers to "tables, chairs and benches" and so on. The ancients were sitting on the floor, the indoor bed, the floor mat; Later appeared screen, several, case and other furniture, bed is both a sleeper and a seat, on this basis and extend the bed and so on. In the Shang, Zhou, Qin, Han and Wei dynasties, there were not many changes. Benches and tables appeared, but they were not the mainstream. Until the Han Dynasty, Hu bed into the Central plains, to the Northern and Southern Dynasties, the high type of sitting has appeared, and the foot and sitting began to be

popular. By the Tang Dynasty, the two forms were still parallel, and high tables, chairs, and stools were no longer used, but sitting on the floor was still a daily habit for many people. People's lifestyle determines the direction of furniture development. People in Wei and Jin dynasties used to sit on the floor, so the furniture was mostly low. Until the Tang Dynasty people's way of life changed, people began to sit high, feet hanging, Chinese foot furniture gradually emerged, Tang Dynasty, through the five dynasties and ten countries to the Song Dynasty, foot furniture was finalized, foot furniture completely replaced the floor furniture, the production process is basically mature. In the Ming and Qing Dynasties, Chinese furniture reached its peak, truly pushing Chinese furniture to the peak of art. Excellent material, skilled technology, these are the previous furniture can not be compared. Until the Qing Dynasty, China's furniture culture gradually reached its peak because of its great progress. Furniture is an indispensable part of Chinese culture. As Fei Hailing, Zhao Xiaomao and Zhang Shuangbao (2004) mentioned, Chinese Qing Dynasty furniture, like other artworks in ancient China, not only has profound historical, cultural and artistic heritage, but also has elegant and practical functions, which is unforgettable. Qing Dynasty classical furniture is a bright pearl in China's long and splendid art culture. Huai 'an Guo (2001) mentioned that the value of Qing Dynasty furniture is not only the use value of serving people, but also embodies the different artistic styles, aesthetic tastes and the development level of science, technology and material in different periods formed in a specific environment.

Chinese traditional culture is extensive and profound, among which the Qing Dynasty culture has a more profound influence on modern design. Zhang Shuanghong and Xu Hao (2004) mentioned the development of Chinese traditional arts, including calligraphy, painting, arts and crafts design, architectural design, interior design, etc. all have strong Oriental characteristics. They are unique and have their own system, which is also known as Chinese style works. The Qing Dynasty chair is the most prominent in the Chinese-style works. In the Qing Dynasty, Chinese furniture culture developed rapidly, and there emerged many representative works in the history of furniture. In these works, the Qing Dynasty chairs have a unique style, unique design and

atmospheric simple beauty, in our country in the long history of chair culture very representative. Zhou Haoming and Jiang Zhengqing (2002) mentioned that as a model of Chinese classical furniture, Qing Dynasty chairs also had a certain influence in the world, and has gained unanimous praise in its wide range of dissemination and influence. Qing Dynasty chair even after hundreds of years of baptism, still has its unique charm, it has good texture, exquisite shape, exquisite structure, decoration complement each other, still attracts the attention of furniture designers from all over the world, of which the consistent armchair line on the back is also very attractive to people's attention, now the Chinese chair is basically to imitate the Chinese Qing Dynasty chair. Wang Shisai (1996) mentioned that at the end of the Renaissance when Baroque and Rococo style furniture was on the decline, as many European and American scholars went to China in large numbers, they gradually discovered the furniture art form that made them more satisfied - Chinese Qing style furniture. They have a special fondness for traditional Chinese chairs, and after a long time of in-depth understanding and exploration of China's Qing Dynasty chairs, a large number of research results soon appeared all over the world, the design of Qing Dynasty chairs has a huge impact on the world's modern art and design.

So far, there is no special work to describe the Qing Dynasty chair, so the research should be summarized from the materials of Ming and Qing furniture. Our research has gained theoretical support in the works of many scholars who explore the furniture culture of Ming and Qing dynasties. Yang Yao (1994) is the first scholar to deeply discuss the chair of the Qing Dynasty in China. After studying a large number of relevant classics and analyzing and summarizing the existing classic works of Qing Dynasty chairs, he wrote and published a book *Furniture Research*, which mainly focuses on the form of Qing Dynasty chairs and its influence on the history of Chinese furniture development. This book is the first work related to the study of Qing Dynasty chairs published in China. In this work, he collected many outstanding works of hardwood chairs in the history of Chinese chairs and measured the relevant parameters of these works, so that readers can obtain intuitive and detailed visual information from

them. In addition to the above works, there are other excellent works in the field of Qing Dynasty chair research in our country, such as the Research on Qing Dynasty Furniture by Wang Shixiang (2008), which has a greater influence in the field of Qing Dynasty furniture research in our country and has a wider influence. In this book, Wang Shixiang analyzed the manufacturing process and mechanical structure of the Qing style armchair (as shown in the figure 1), such as the arc of the chair circle should be elliptical, especially the back of the chair should be smooth. Armrests such as a bow, relaxation degree, the crescent design of the chair circle forms a ring for the person sitting, and the stick is curved like holding things in both hands, forming an arch for the person sitting, which implies "encircling sentience, arch support righteousness". And the thickness of the armrest is changed, the brain is often thicker, the two ends are thinner than the brain, the turn of the armrest is the thinnest, such a line is not only smooth, but also very chic and graceful, can stand up to scrutiny and taste.



Figure 1 Armchair of Qing Dynasty

Source: Wang Shixiang (2008)

Among the older generation of furniture experts, there are many scholars who have published excellent works in the research field of Qing style chairs and made outstanding contributions to the research of Qing style chairs. Their works have greatly promoted the development of research in the field of Chinese style chairs and filled the gaps in this research field to a great extent. The senior experts in the field of furniture culture have carried out in-depth research and summary of Qing Dynasty chairs, which has become the theoretical basis for us to advocate the implementation of safeguard measures for classic Chinese chair design. At the same time, based on their research results, we can also conduct further research and exploration of Qing Dynasty chair culture, the previous research data for future generations to learn and study provides a very valuable reference.

The research direction of young and middle-aged scholars in the field of Chinese chair is different from that of the older generation. Most of the research focus of young and middle-aged scholars is the application of Chinese chair design theory in modern furniture design practice, and the research work of these scholars has certain practical significance. They studied the design theory of traditional Qing Dynasty chairs, and analyzed the application of the former in the latter market environment in combination with the design practice of today's chair market products. For example, Hu Zhongyan (2009) mentioned that the lack of originality in design made the development of Chinese furniture gradually enter a bottleneck period. This is a great contrast to the prosperity and development of chairs in the Qing Dynasty. In this way, it can lay a theoretical foundation for the combination of modern and traditional furniture design concept based on the Qing Dynasty chair design concept. The research data of these scholars can also provide certain help for the design and production of the new Chinese style chair, and its reference significance is very important.

Since the middle and late Qing Dynasty and the Republic of China, due to the influence of many reasons, the development of Chinese chairs has stagnated, forming a fault. After the founding of New China, the reform and opening up implemented by the state greatly led to the rapid development of China's furniture industry. Tang Kaijun

(2005) mentioned that at the beginning of the 21st century, China has developed into a big furniture manufacturing country with an output value of 200 billion yuan and exports of more than 7 billion US dollars. However, behind the bright data, the concept of Chinese chair is not optimistic. Because manufacturing is not the same as design, especially in the current era, modern home improvement enterprises are more and more like the new Chinese style, Yang Xingxing and Li Qiang (2001) mentioned that people like the consistent and smooth backrest lines of Qing Dynasty chairs, like the Qing Dynasty chair exquisite workmanship and carving, more like the Qing Dynasty chair contained in the Chinese traditional style temperament, so the design and improvement of Qing Dynasty chair is the trend of The Times. Therefore, the traditional chair needs to be improved with new Chinese style and the design needs to be updated. Therefore, this has also made many domestic designers gradually realize the importance of exploring and creating chairs with Chinese national characteristics. If the Chinese chair wants to return to the top again, it must have its own unique design style, rather than simply copying the original style of the Qing Dynasty. The improvement of Chinese chair design style is mainly based on Chinese Qing chair. While taking the essence of Chinese traditional culture, modern science and technology are used to create a new Chinese chair that meets the life and aesthetic needs of contemporary people. The new Chinese chair is a new chair design system that came into being in the new century. It is a combination of classic and modern, this paper mainly discusses the design improvement and development of Qing Dynasty chair in the current era.

Fang Hai (2007) found that the current popular "antique furniture" and "art antique furniture" do not reflect people's appreciation and pursuit of classical beauty, but more reflect the commercial atmosphere of the consumption era, whose purpose is to enable consumers to obtain a sense of identity. Therefore, if Chinese designers want to make the new Chinese chair better go to the world, like the Qing Dynasty chair once again lead the trend of world furniture design, they must have a unique design concept and vivid design language. The chair should not only consider the complete function of the chair, but also reflect the emotional care of the user.

To sum up, the author thinks that this study should develop and design a new Chinese chair on the basis of Qing Dynasty style. Because the progress of modern home improvement enterprises has made new changes in people's needs, chairs are the furniture most closely related to people, so the design of chairs should also progress with the increasing progress of society. The design of the chair should be connected with the needs of people, and with the development of society, the needs and aesthetics of people today have also changed greatly. For people aged 25-50, fashion and cost performance are important factors for them to consider when choosing and buying furniture. Nowadays, the main consumers of the design furniture market are young customers, so it is particularly important to meet the needs of young customers. We should sort out these needs and make some chairs that conform to the trend of The Times and have Chinese characteristics at the same time, so that the transformed chairs are more in line with the aesthetic of 25-50 years old people.

Research objectives

1. To define and characterize of the Qing Dynasty Armchair.
2. To study 5 well-known brands of new Chinese style chairs in the market.
3. To develop and design new Chinese chairs based on Qing Dynasty style.

Scope of the study

Population: Chinese people who live in apartments (distributed in selected cities, not counties) and own furniture such as sofas, chairs, armchairs, etc. (People who like new Chinese furniture and appreciate Chinese style)

Customer group: 25-50 years old. Yang Xingxing (2002) found that people aged 25-50 are generally well-educated and market-trained, and are more willing to accept and try new things. And this generation has been the mainstay of the country, for the current consumption upgrade, they have their own aesthetic and taste. Most of the people in this group have been abroad, traveling to study, and being educated in multifaceted cultures. At the same time, with the rapid development of science and technology, this generation still has a new understanding of Chinese tradition, and has

modern habits and ways of thinking. Therefore, the development of new Chinese chairs is to a large extent to meet the needs of this group of people.

Sample size: 30 people, including 6 designers, 6 new Chinese furniture sales, 18 customers who love new Chinese style. (There were only about 30 participants around me who covered the characteristics and backgrounds required by the target group, so their responses were somewhat representative of the views of the group as a whole.)

Five brands of new Chinese furniture: Yeswood, Erhei wood, Kuka, Linsy, Fanwu from Taobao (2023), these brands have stores offline, high product sales, fans, novel design, new Chinese characteristics are obvious.

Content: New Chinese chair based on Qing Dynasty style.

Benefits of research

To get knowledge about the Qing Dynasty style by analyzing style, material, and structure to be a guideline for developing New Chinese chairs based on the Qing Dynasty style.

Definition of terms

Chinese style in this article refers to a kind of Chinese classical architectural interior decoration design art style. This style of high space, deep, carved beam and column modeling pay attention to symmetry, color pay attention to contrast, decorative materials mainly wood, pattern style and elaborate. However, the traditional Chinese-style decoration cost is high, and the lack of modern atmosphere can only be used at home.

Qing Dynasty armchair in this article refers to the Qing Dynasty, the Chinese traditional circle back attached to the armrest, from high to low down the chair, round and graceful, the seat can make people's arms lean on the circle armrest, feel very comfortable, popular with people.

Modern home in this article refers to the current era, the main consumer groups choose and like the house decoration.

Decoration business in this article refers to a kind of soft decoration design, which means that people choose a variety of elements mainly furniture for space decoration in commercial space and living space.

Research Framework

This illustrates show that the conceptual framework of the Qing dynasty armchair design and development for modern home decoration business.

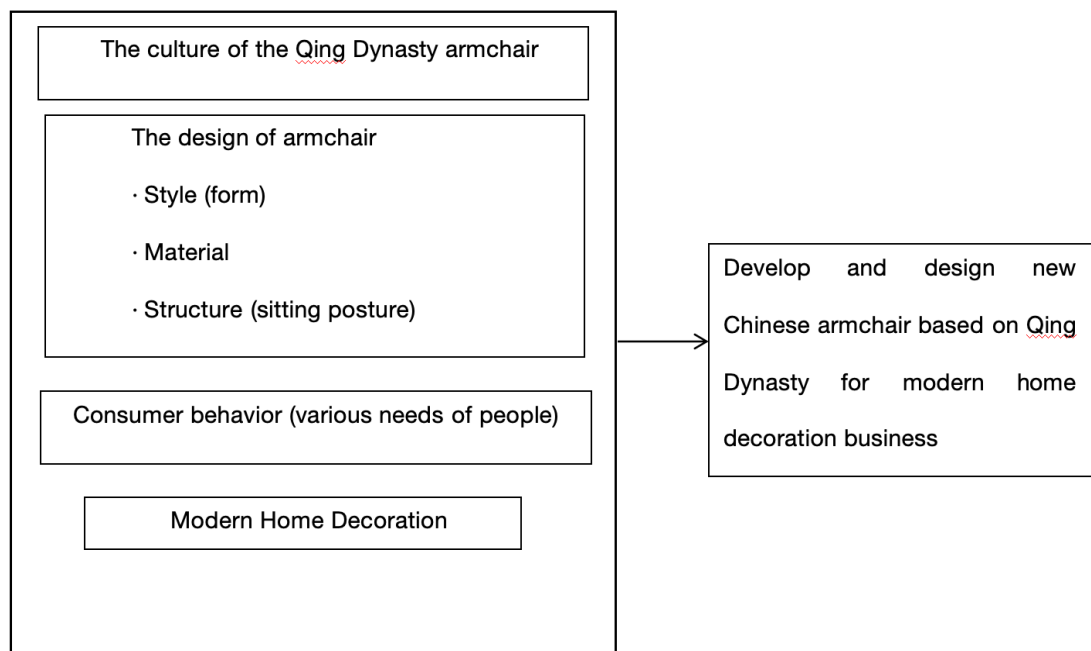


Figure 2 Conceptual Framework

CHAPTER 2

LITERATURE REVIEW

This chapter includes Qing dynasty cultural background, modern home decoration business, Qing dynasty chair design, related design cases, related research and summary of the second chapter as follows:

1. Qing dynasty culture
 - 1.1 Introduction to Qing dynasty culture
 - 1.2 Importance of Qing dynasty culture
2. Modern home decoration business
 - 2.1 Importance of home design business
 - 2.2 Trends of modern home design
 - 2.3 What kind of chair do modern people like (Consumer behavior)
3. Chair design
 - 3.1 Qing dynasty chair introduction
 - 3.1.1 Style
 - 3.1.2 Material
 - 3.1.3 Structure
 - 3.2 Limitations and problems of Qing dynasty chairs
 - 3.2.1 Style
 - 3.2.2 Material
 - 3.2.3 Structure
 - 3.3 Factors affecting chair design
 - 3.3.1 Style (Various needs of people)
 - 3.3.2 Material
 - 3.3.3 Structure(Sitting posture)
4. Relevant design cases

5. Related research

5.1 Introduce of the related research

5.2 Summary of the related research

6. Summary of the second chapter

1. Qing Dynasty culture

1.1 Introduction to Qing Dynasty culture

Li Yuhong (2000) mentioned that the Qing Dynasty was the last dynasty of Chinese feudal society, which lasted 268 years from its establishment in 1644 to its demise in 1912. The Qing Dynasty is one of the most important dynasties in Chinese history. It not only ruled extensively, but also had a profound influence on China's politics, economy, culture and so on. During the Qing Dynasty, the commercial economy developed rapidly. The Qing government vigorously promoted foreign trade and developed trade with European and Asian countries through the land and maritime Silk Roads. At the same time, the Qing Dynasty also actively developed foreign trade and contributed to the development of the Silk Road, and handicrafts and handicraft arts were widely developed and prospered, such as cloisonne, glass, lacquer, jade, embroidery and other handicraft arts, which have become an important part of Chinese culture. The culture of the Qing Dynasty has a profound influence on the development of Chinese history and culture, and has also left many precious cultural heritages and historical sites, which are of great significance for the study of Chinese history and culture.

The prosperous situation of Kangxi, Yongzheng and Qianlong dynasties created favorable conditions for the formation and development of Qing style furniture. In addition, at the same time of the development of commodity economy and handicraft technology, the ruling class built palaces in the famous resorts of Jiangsu and Zhejiang, arranged furnishings, carved ivory, rosewood, flower and pear screen seats, as well as copper, porcelain, jade pedestals, etc. which were decorated with dragon and phoenix, water clouds, Chinese patterns, thunder patterns, foreign flowers, lotus and other patterns. Under the influence and drive of the supreme ruler, officials at all levels and

local strongmen competed to follow suit, forming a wind of competing for wealth among the ruling class, and this social atmosphere played a certain role in promoting the recovery and development of the furniture industry. In the early Qing Dynasty, carving also developed like other crafts. The woodwork is gorgeously carved and inlaid. As for Beijing cloisonne, carved lacquer, gold, bone carving, wood carving, tooth carving and other products, were very famous at that time, they played an important role in the formation and development of Qing furniture style.

It is not difficult to see that the rapid development of manual technology in the Qing Dynasty is a primary condition for the formation of Qing furniture style. On the other hand, the Qing rulers, in order to show their dominance as solid as a rock and stable as Mount Tai, did not hesitate to spend hours and cut large materials, the pursuit of gorgeous, heavy furniture style. This characteristic has intensified with the intensification of the extravagance and corruption of the ruling class.

Generally speaking, the formation of Qing style furniture inherited the craft tradition of the past dynasties and has been developed. The craftsmen of the Qing Dynasty used all kinds of means, all kinds of materials, and tried all kinds of ways to make the furniture achieve the gorgeous and stable purpose they expected. Therefore, the Qing Dynasty furniture in the decorative techniques to the application of a variety of materials, the combination of a variety of processes, constitute their own unique characteristics and style.

1.2 Importance of Qing Dynasty culture

During the Qing Dynasty, due to the convergence of Manchu, Han, Mongolian and other ethnic groups, a situation of cultural diversity was formed, and a diversified cultural atmosphere was formed in China. There were distinct cultures of Manchu, Mongolian, Han and other ethnic groups, as well as unique regional cultures such as Shanghai culture, academy culture, and Jiangnan culture. These cultures interact and blend to inspire different forms of thought, art, belief and other expressions. The late Qing Dynasty, especially the period from Guangxu to Xuantong, was the period when China sought to transform to modern civilization, which paved the way for the

opening and transformation of Chinese culture in the later period. The cultural opening of this period also laid a solid foundation for the development of modern Chinese culture, which has extensive historical significance in the world.

Zhou Haoming and Jiang Zhengqing (2002) called Qing Dynasty the "Renaissance Era" of China, and Qing Dynasty culture had a great influence on the whole world. For example, when the European missionaries who went to China presented the picture of China in front of the European people at that time, it triggered a long-term "Chinese wind" in Europe for more than 100 years from the end of the 17th century to the end of the 18th century. During the "Chinese style" period of more than a century, European society once fanatical pursuit of Chinese style has become a universal fashion, and this fashion has entered all aspects of European life, such as daily necessities, furniture, garden architecture, etc., and Chinese Peking Opera is also popular in Europe.

In short, the cultural pattern of Qing Dynasty not only formed with the development of Chinese feudal culture, but also its tolerance, openness, pluralism and integration are part of Chinese traditional culture. The historical significance of Qing Dynasty culture is not only the integration of local culture or the inheritance of beliefs, but also the outline of China's future cultural development in an open and courageous situation.

2. Modern Home Decoration Business

2.1 Importance of home design business

Yang Chunhong (2006) once said, "The design of a chair is the beginning of any interior design." When the design problem of the chair is solved, the design of other types of furniture can be easily solved by analogy. Because the first basic concept is that no object is more closely related to humans than the chair; At the same time, no other type of furniture was as widely created and sold as chairs. Li Yuhong (2000) found that the highly developed modern civilization and the wide dissemination of information culture have brought tremendous changes to people's lives. People need "diversified" design to meet the fast-changing, high-demand, high-taste lifestyle. Chairs are the

furniture most closely related to people, so the design of chairs should also progress with the increasing progress of society and the improvement of science and technology. The design of the chair should not only be improved and enhanced in function, but also make a breakthrough in appearance, which should meet people's physiological needs and meet people's psychological needs.

Therefore, for a long time, people have explored and worked harder on the design, creation and innovation of chairs than any kind of furniture. By creating the chair, any designer is also interpreting the special needs and functions of the chair itself. At the level of practical design, the design and creation of chairs should be connected with people's psychology and physiology, and the shape and material of chairs should also be considered. At the same time, it must also involve the special needs of users in knowledge, emotion, aesthetics, culture and other spiritual aspects. On the other hand, it is the basic link between design and manufacturing, process and structure.

2.2 Trends of modern home design

Yu Xiaohong (2006) found that the name of the chair originated from the Tang Dynasty (AD 618-907), while the image of the chair can be traced back to the Hu bed introduced to the north during the Han and Wei dynasties. Before the Tang Dynasty, the chair referred to the fence on the car. As people's dependence on cars, it plays a role in safety enclosure and relieving fatigue. Later the form of the chair was inspired. From the available information, the chair of the Tang Dynasty has been quite gorgeous. For example: in the "Emperors of the Past Dynasties", Tang Taizong sat on a chair is very delicate, four straight legs, waist, angular lines, there are four pillars behind, the middle two pillars are slightly higher, a layer of coat arc tower brain, and the long part of the carved dragon head at both ends. The handrail is surrounded by the rear column, the side column is rotated forward, and the front column is filled with empty ring teeth in the middle of the handrail and the seat surface. The end of the handrail is also carved with the head of a dragon, and the back of the head into one. The seat is cushioned and backed with front feet. From the Five Dynasties to the Song Dynasty (960-1279 AD), new forms of armchair, armchairs and armchairs appeared. There are many kinds of chairs

in the Ming Dynasty, such as treasure chair, seat, armchair, official hat chair, backrest chair, rose chair and so on. Due to the development of handicraft technology in the Qing Dynasty, chairs were carved and became treasures in furniture, and an armchair with legs and teeth and supporting mud appeared under the surface of the chair. The armchair style of the Qing Dynasty is highly respected by the world, so that people call it the armchair, also known as the main chair, with symbolic significance.

Firstly, in terms of the needs of chair design, Heng Xiaodong (2012) found that the rapid development of modern society and economy and the spread of Internet information make the communication between people more convenient. The carrier of information transmission such as telephone, mobile phone, computer and TV has become an indispensable household appliance in people's life. It is because of the existence of these carriers that people's lifestyle has changed, resulting in home-centered "otaku", "drifter", "SOHO", etc., and this modern lifestyle, chairs have become the most important support for their activities in indoor space. With the improvement of people's living standard and aesthetic level, people's requirements for chairs are getting higher and higher, and chair design is also getting more and more attention from the society. The design of modern chairs should not only meet the needs of practical functions, but also include the new aesthetic concepts of modern people. The chair becomes the narrator of the change of contemporary aesthetic thought.

Fang Hai (2007) found that the current popular "antique furniture" and "art antique furniture" do not reflect people's appreciation and pursuit of classical beauty, but more reflect the commercial atmosphere of the consumption era, whose purpose is to enable consumers to obtain a sense of identity. Therefore, if Chinese designers want to make new Chinese armchair better go to the world, like Qing Dynasty furniture to lead the trend of world furniture design again, they must have a world vision and national feelings. They must have a unique design concept and a vivid design language. The chair should not only consider the complete function of the chair, but also reflect the spiritual care of the user. Italian designers have been at the forefront of the world in the design concept, they believe that furniture is not only to provide a space to rest and put

things, but to restore people's lost emotions and provide a comfortable refuge. Young Italian designer Masim Giosa Gini calls his armchairs "Mama," meaning that they can provide protection and warmth like a mother's arms.

Secondly, from the material trend of chair design, the design of any chair is based on materials, and the chairs born in each era have their own material characteristics. The glory of the Qing chair is due to Zheng He (Qing Dynasty explorer) brought back a large number of precious hardwoods, such as rosewood, chicken wing wood, yellow pear and so on. Philip Stark uses technology to combine laser technology with plexiglass to create a ghost chair that gives a sense of drama, but also can't help but admire the beauty of technology. After the industrial Revolution in the 19th century, the history of wood crafts furniture basically ended.

Zhang Yang, Wang Fenghu (2007) found that chair design has entered the era of machine mass production. Nowadays, people pay more and more attention to the exploration of materials in chair design, and the application of various new materials has become another pursuit of chair design. The first to explore this were the Italians, who used polypropylene, a material synthesized by chemists, to cheaply create a wide variety of chairs with the simple tap of a machine. Its price is affordable, beautiful, simple shape, won people's love. For example, household appliances such as plastic chairs and plastic stools still exist in people's lives today, which has also promoted human civilization to take a step forward, and also made design materials become the new favorite of designers. Compressed synthetic panels, synthetic aluminum alloy materials, native natural materials, various cloth materials, toughened materials, stone, etc. have become props in the hands of designers, beautifying the space through their creation.

2.3 What kind of chair do modern people like (Consumer behavior)

With the development of society, great changes have taken place in people's needs and aesthetics. For people aged 25-50, fashion and cost performance are important factors for them to consider when choosing and buying furniture. Li Ming and Chai Songhua (2009) found that young people are the main consumers in the

current design furniture market (as shown in the figure 3), so it is particularly important to meet the needs of young customers. Therefore, we should sort out these needs and make some chairs that conform to the trend of the times and have Chinese characteristics at the same time, so that the transformed chairs are more in line with the aesthetic of 25-50 years old people.



Figure 3 Portraits of Chinese furniture industry users in 2022

Source: Li Ming and Chai Songhua (2009)

3. Chair design

3.1 Qing Dynasty chair introduction

The development process of the Qing armchair began in the Spring and Autumn Period in China, during which several types of furniture were manufactured due to the rapid development of handicraft industry and the rapid improvement of productivity, which is the historical prototype of several types of furniture such as the armchair. Then, to the end of the Tang Dynasty and the five Dynasties, Chinese furniture after hundreds of years of change, the emergence of a new type of high seat gradually replaced by several, then there was the earliest armchair in history. When it came to the Song and Yuan Dynasties, the armchairs were called armchairs. After that, it was the Ming and Qing Dynasties, where politics and economy were consolidated and developed, and also promoted the gradual maturity of the Qing style armchair, making it

a treasure of China. Today's armchair furniture products are developed from the Qing Dynasty armchair. The most fundamental reason why the Qing style armchair can stand out from many Chinese furniture works is the deep cultural heritage and exquisite design concept behind it.

3.1.1 Style

The round chair is a unique style of chair in the Qing Dynasty of China, named because the backrest is like a circle, the back is connected to the armrest, from high to low, and slowly walk down, and the shoulder and back of the person can lean on the armrest, very comfortable. Xu Qiupeng and Zhang Fuchang (2005) put forward that the round-shaped chairs in Qing Dynasty, adhering to the ancient concept of a round sky and a round place, were shaped with a combination of square shapes, the upper circle and the lower circle, the outer circle and the inner square, and people sitting in the middle symbolized "the unity of heaven and man". This is also a philosophy of life advocated by Chinese tradition, that is, we should be flexible and smooth on the surface of dealing with people and strictly abide by principles on the inside. Specific styling features and different styles can be seen below. Some armrests in the Qing Dynasty are shaped like semicircular armrests, which are smooth linear shapes, and the detailed structure is not complicated with decoration. Some chairs have patterns on the backrest boards for decorative modeling. Some chair shape armrest lines are more square, and square feet echo. (as shown in the figure 4)











		Legs	Back Rest	Armrest	Reinforcement Structure Component
	Basic				
	Variation				
Round-Back Armchairs	Proportion		Backrest Height : Seat Height 1:1	Radius : Seat Width 1:1.1 Inner Radius : Outside Radius 1:1.3	

Figure 4 Qing Dynasty armchair style and the characteristics of different parts

Source: Xu Qiupeng and Zhang Fuchang (2005)

The overall form of the Qing style armchair is elegant and simple, less decorative, but it is not completely without decorative elements. The most of the decorative elements are mainly reflected in the relief patterns of the components such as the backplane. From the perspective of the types of decorative patterns, the common patterns are mainly rolled Grass patterns, Cloud patterns and Qilin patterns (as shown in the table 1), which have auspicious meanings and were very popular in the Qing Dynasty.

Table 1 The types of decorative patterns

Pattern	Name	Characteristics	Chair diagram
	Grass	<p>Mostly from flowers and plants, after treatment to make "S" shaped wavy curve arrangement, because of the shape of flowers and plants more curved and rounded, generally known as rolling grass pattern.</p>	

Pattern	Name	Characteristics	Chair diagram
	Cloud	Based on cloud pattern, left and right symmetry, meaning freedom, all wishes come true.	
	Qilin	Known as the fairy beast since ancient times in China, Qilin can guarantee safety and seek wealth.	

3.1.2 Material

In terms of the selection of chair materials, craftsmen in the Qing Dynasty liked to use high-hardness wood to make armchair, such as yellow pear, red sandalwood, chicken wing wood and so on. Hard and ductile, non-splitting, fine grained wood is the ideal choice for making armchairs. The above-mentioned wood chairs can last for hundreds of years because of their unique physical characteristics, and they are also favored by classical furniture collectors because of their preciousness and scarcity. Material characteristics are shown in the following table 2:

Table 2 Material characteristics

Wood	Name	Characteristics
	Huanghua pear	<p>Huanghua pear, also known as Xiangxiang rosewood, produced in Hainan. It has the texture of mahogany, the undertone of flower pear. The color is yellow, the material is fine, the texture is soft, and the aroma is sweet.</p>
	Rosewood	<p>Rosewood, mainly produced in tropical areas, not hundreds of years can not become wood, known as "an inch of rosewood, an inch of gold". The color is deep, the material is hard and dense, the texture is slim and floating, and the change is endless, and it has the reputation of "Emperor's wood".</p>
	Chicken wings wood	<p>Chicken wings wood, a mahogany, the so-called chicken wings, refers to the wood heartwood on the chord section of the "y" type of pattern. Mr. Wang Shixiang divided it into: the old chicken wing wood "dense texture, purple brown dark and light alternating lines, especially the longitudinal and slightly oblique section, delicate floating, giving people the feeling of bright feathers." New chicken wings wood "rough wood, purple and black, the texture is often cloudy, rigid and no rotation, and the wood wire is sometimes easy to warp and crack stubble."</p>

From the material characteristics of the above famous wood, it can be seen that the ancient people were very sophisticated in the selection of materials for chair design. From the point of view of furniture making process, these woods have the advantages of suitable hardness, tough and durable, thick and steady color, elegant and uniform, fine material, beautiful texture and so on.

3.1.3 Structure

From the visual point of view, the circle chair of the Qing Dynasty brings the viewer the most intuitive is its simple, ethereal and smooth shape. In fact, the seemingly simple form of the armchair, its structure is very complex, only thanks to the clever idea of the craftsmen in the Qing Dynasty, the complex structure of the armchair can be presented in front of the world in such a streamlined shape. The advantage of the Qing style armchair structure is that function and aesthetics are combined into one. The components of each part of the armchair have strong practicability and scientific nature, as well as strong aesthetic and artistic quality. The design method of its structure is still worthy of reference for today's seat design.

Zhang Yuanqun and Wang Wenning (2001) proposed that the structure of the Qing Dynasty armchair (as shown in the figure 5) can be mainly divided into four parts: the back of the chair, the seat surface, the legs and feet, and the armrest. The components used in the back of the armchair mainly have the following parts: First of all, the solitary chair circle, shaped like a crescent, which is also the most well-known armchair components in the world. The curve of the chair ring is smooth and smooth in shape, and naturally stretches. The structure of the chair ring is mainly composed of three rings and five rings, which means that it is formed by three sections of wood or five sections of wood. The chair circle of the armchair is mainly used for the support and support of the head, neck, back and elbow when the person is sitting. Next is the back plate in the center of the back of the chair. The width of the backplane accounts for about one-third of the entire back of the chair, and it is also the largest physical part of the back of the chair. In the shape, there are two common types, "s" and "C" shapes. The thing that they all have in common is that they are narrow on top and wide on the

bottom, curvilinear structures. In terms of function, "s" is more suitable for people's back than "C" shape, which can make people get a good comfort experience when sitting.

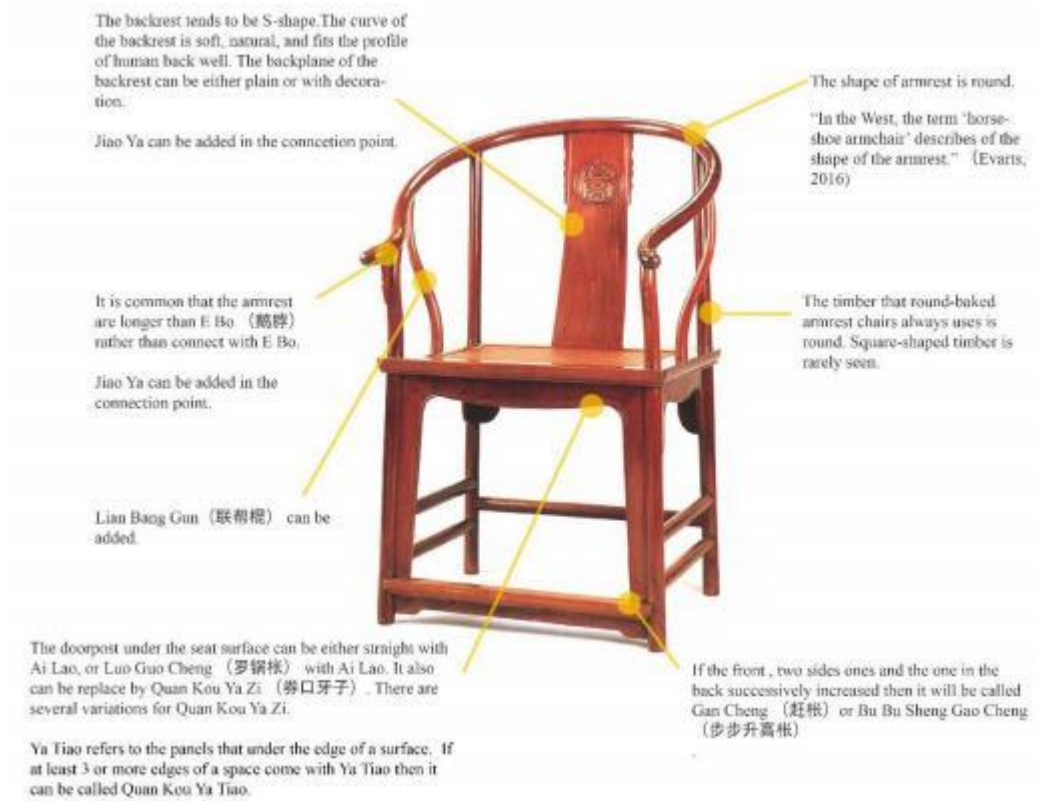


Figure 5 The structure of the Qing Dynasty armchair

Source: Zhang Yuanqun, Wang Wenning (2001)

Yu Shen (2006) proposed the knots between these components of the armchair, that is, the use of a four-convex connection, the use of the bite relationship of the mortise and tenon to form the overall structural framework of the armchair. (as shown in the figure 6) from the perspective of furniture design, the structural combination of wedges and dovetail makes the chair ring more firm and durable in the changes between wood and wood, concave and convex, high and low, long and short, fully reflecting the scientific and artistic nature of the Qing Dynasty chair.

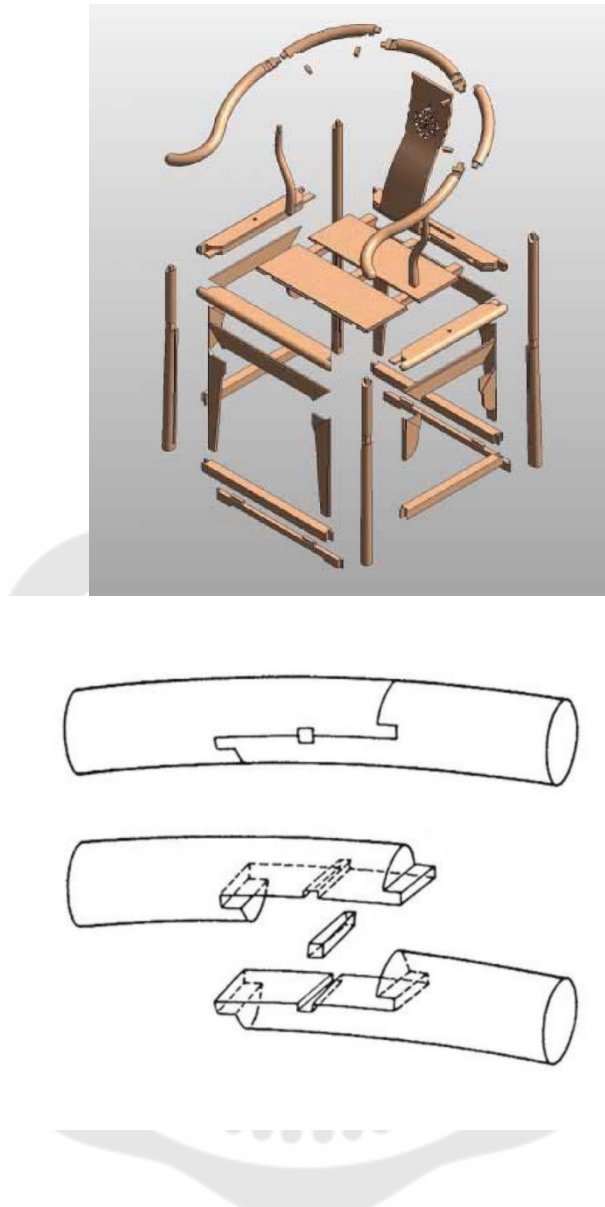


Figure 6 Structure diagram of mortise and tenon joints

Source: Yu Shen (2006)

3.2 Limitations and problems of chair design

Today's new Chinese chair design mainly has the following three aspects:

3.2.1 Style

Xu Qiupeng and Zhang Fuchang (2005) pointed out that since the 20th century, people's social life has become more and more industrialized. However, the traditional style of Chinese chair with complex workmanship has been difficult to adapt

to the industrialization process of today's society and the needs of modern people. If the chair design still adopts the traditional scheme, it will be difficult to meet the needs of modern people. It will greatly reduce the scope of application of the new Chinese chair in today's society. The ultimate purpose of the product is to serve people, so the new Chinese chair needs to improve the style, design a chair that is more in line with contemporary people's preferences and needs, so that the size of the chair is more comfortable, the curvature of the chair back and armrest is more humane, and pay attention to the comfort, convenience and safety of consumers in the use process.

3.2.2 Materials

The manufacturing materials of the Qing type armchair are usually hardwood wood with excellent properties, and now the natural environment deteriorates, these woods are endangered, very rare, and the output of these excellent hardwood woods is extremely low, and the wood needs to go through a long period of time from planting to growing, high-quality hardwood even takes hundreds of years to grow. It can be seen that the wood required for the manufacture of traditional Qing Dynasty chairs is now precious enough to meet the needs of new Chinese chairs. Although the manual production mode of the traditional Qing Dynasty chair adopted by the agricultural society makes its structure and appearance very beautiful, such a complex processing method also leads to its production efficiency is very low, obviously can not adapt to today's highly industrialized social market, and it is difficult to meet the demand for large quantities of supply.

3.2.3 Structure

The traditional Qing Dynasty chair because of its original design intention and the face of the crowd and today's living environment is different, so it has a wide and large seat plate and a high base, such a structure is not able to adapt to the modern life habits, therefore, if you want to promote the new Chinese chair in the modern furniture market, you must transform the local size of the traditional chair. After the furniture has the function of being used, as an important component of the interior structure, the form of the furniture also needs to be integrated into the overall living environment, without too much conflict. Therefore, if we want to promote the new

Chinese chair in the modern furniture market, we must transform the structure and function of the chair, so that it can meet the needs of modern consumers and meet the preferences of modern consumers.

3.3 Factors affecting chair design

3.3.1 Style (Various needs of people)

Only by improving the style design, making the appearance of the chair more novel and more humane, and meeting the different needs of people, can the new Chinese chair have better sales, mainly including the following 3 points:

(1) Selectivity. Universal design should not pursue a unified standard, but should increase its applicability to a certain product and a certain space. In general, we should provide goods and activity Spaces that meet different needs, provide people with different choices, and seek a balance between inclusiveness and selectivity.

(2) Convenience. Only when people's behavioral ability is fully considered can they achieve the most convenient, labor-saving, safe and accurate purpose of use and meet people's wishes to the greatest extent.

(3) Economy. To maintain low costs, low prices, to have a good cost performance.

For example, in response to the occupational diseases caused by unreasonable office furniture in modern offices, the American companies Steelcase and IDEO (1999) introduced the Leap chair (as shown in the figure 7), which can adjust the back according to the shape of each person's spine, suitable for people working on long desks. The upper and lower parts of the backrest can be locally adjusted according to the body structure and needs. Everyone will feel that this chair is tailor-made for themselves and can provide a good relaxation and rest.



Figure 7 Leap chair

Source: the American companies Steelcase and IDEO (1999)

3.3.2 Material

The manufacturing materials of the Qing type armchair are usually high-quality hardwood wood, and now the deterioration of the natural environment, these woods have been endangered, very rare, and these excellent quality hardwood wood production is very low, wood from planting to grow need to go through a long period of time, high-quality hardwood even need hundreds of years of wood. At the same time, these hardwood wood because of its hard material, some institutions complex, unique design scheme can not be effectively produced, these are the constraints of the new Chinese armchair design factors.

3.3.3 Structure (Sitting posture)

Comfortable chairs can improve work efficiency. Zhang Yang and Wang Fenghu (2007) found that to make chair design meet people's sitting needs, it is necessary to study human sitting posture, which mainly includes the following two points:

(1) The forward-leaning posture is the posture most people adopt at work and in daily life, they often sit on the edge of the seat, or tilt the seat so that the knees are tilted forward. Analysis of the sitting posture of most people shows that the lower part of the sitting bone accounts for 50% of the body weight, while the sitting bone supports only 8% of the seat area. This position has a positive effect on the vertical rotation of the pelvis, bringing the lordosis back to the waist. But this posture can lead to stress concentration and fatigue. If you focus on your feet, your legs will feel uncomfortable. Forward-leaning seats can reduce this shortcoming, but be sure to pay attention to the use of Angle, Angle instability, small Angle effect is not good.

(2) Backward leaning posture leans back to the back of the chair, so that the spine torso and the waist form a natural curve, so that a part of the weight is transferred to the back, reducing the burden of 20% of the waist. When the back is tilted 200 degrees, it can support 47 percent of the body's upper body weight. At this point, the human body is under the least pressure.

When the seat has armrests, the sitting position of the person leaning on the armrests can reduce the burden of the disc. Studies have shown that armrests can reduce stress on the lower back by 25 to 40 percent. To sum up, when we use the chair, due to the physical and psychological characteristics, the human body will produce a feeling of comfort, with the increase of sitting time, then the feeling of people will also change, and gradually produce the feeling of fatigue. The human body automatically adjusts its sitting posture subconsciously to reduce body fatigue by judging and reacting to the subjective state of the individual. Simply put, even sitting in a very comfortable chair can cause muscle fatigue after a while. Therefore, the chair must be designed so that a person's position and position can be changed frequently to reduce muscle stress.

4. Relevant design cases

The improved design of the new Chinese chair has been the concern of designers at home and abroad, from the Qing Dynasty to modern times, from home to abroad, the relevant design research has not stopped, and some very classic designs

have also appeared during the period. For example, Hans Wigner (1949) designed the "Y-shaped chair"(as shown in the figure 8), which is a furniture work improved on the form of the Qing Dynasty armchair. In the shape of the "Y-shaped chair", it can be seen that it retains the unique charm of the round-shaped chair to a large extent, and integrates the styling characteristics of modern people's preferences into the design of the "Y-shaped chair", so that it has a light shape and comfortable experience.

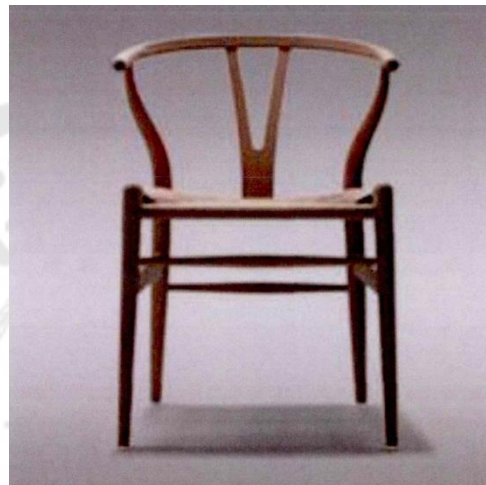


Figure 8 Y-shaped chair

Source: Hans Wigner (1949)

Zhu Xiaojie (2008) fully expressed his love for Chinese elements in his "clean water chair" design. Figure -- is the appearance of his design of the "Water chair"(as shown in the figure 9). From the appearance of his work, it can be seen that the design of his work runs through the design concept of "simplicity is beautiful" of Chinese furniture, and adopts a scientific physical structure to increase the comfort of users.



Figure 9 Water chair

Source: Zhu Xiaojie (2008)

5. Related research

5.1 Introduce of the related research

This section mainly studies how to better inherit the Qing Dynasty furniture culture, how to design new Chinese style chair. As one of the more prominent cultures in many Chinese cultures, the Qing Dynasty chair represents the essence of ancient Chinese furniture and China's excellent cultural thoughts. Studying the history of Qing Dynasty chairs and their design materials can better inherit and pass on the craftsmanship and cultural connotation of Qing Dynasty, and apply it to the design of new Chinese style chairs.

Ponder, N. (2013) studied about Consumer Attitudes and Buying Behavior for Home Furniture, he found that this article examines detailed information about consumer attitudes and behavior. This paper introduces five stages of consumer decision process : (1) problem or demand identification (2) information search (3) selection evaluation (4) export selection and purchase (5) post-purchase evaluation.

Recognize the influence of consumer information on new furniture design decisions. Although consumers do not often buy furniture, furniture is regarded as the center of a family's life, so consumer choice is seen as a very important factor. Furniture is an emotional purchase for many people because it helps to share a feeling with family and friends. Quality is the most important evaluation standard in furniture production, greener home consumers will also consider buying more. Finally, most furniture consumers do not experience brand and store loyalty. They like to search for information and buy furniture online.

LIU, X. Y., TIMAR, M. C., & YI, S. L. (2013) studied about a study on the history and materials of traditional Chinese furniture, they found that this paper briefly introduces the most important wood species for furniture. Traditional Chinese furniture can be divided into four main historical periods (youth period, growth period and prosperous period). Includes several dynasties, such as Song Dynasty, Yuan Dynasty, Ming Dynasty, Qing Dynasty and so on. Therefore, traditional furniture changes and develops constantly from one historical period to another. The differences in climate, culture and lifestyle between north and south China also have a great influence on furniture manufacturing. Chinese furniture represents a fine example of artistic excellence and is recognized as a valuable part of the world cultural Heritage. Therefore, it is very important to protect Chinese traditional furniture.

Cao, X., & Hansen, E. N. (2006) studied about Innovation in China's furniture industry, they found that this paper introduces that low cost advantage has been widely recognized as the main advantage of Chinese manufacturers in the rapidly growing Chinese furniture industry. This paper uses a combination of qualitative and quantitative methods to develop and measure its innovativeness, and evaluates four key variables of interest: innovation, competitiveness, firm size and export intensity. The results show that Chinese furniture enterprises are pursuing innovation in product, process and business system. Chinese companies pursue spiritual innovation rather than radical innovation. Innovation is significantly correlated with competitiveness and

firm size, suggesting that it is possible for large firms to become leaders in innovation, which in turn may improve the overall competitiveness of the industry.

Xiong, X. Q., Guo, W. J., Fang, L., Zhang, M., Wu, Z. H., Lu, R., & Miyakoshi, T. (2017) studied about Current state and development trend of Chinese furniture industry, they found that this paper reviews the status quo of China's furniture industry, analyzes the overall regional status quo of the industry, operation, industrial layout, consumer market, industrial technology development, information industry chain details. This paper proposes that the new situation and new challenges faced by China's furniture industry will meet in the future. At the same time, the author also suggests several measures, such as how to promote the development of industrial clusters and the upgrading of the whole industry, furniture chain, technology content, value-added production.

Zou, W. H. (2012) studied about Analyze the Method of Generative Design in New Chinese Furniture, he found that this paper makes a comprehensive investigation on the design examples of Chinese new furniture and their generative design, which mainly develops in two directions: one is to design the characteristic DNA related to the design, to integrate the classical elements of Chinese furniture with the modern lifestyle design, cultural consciousness and social perception; The other is about the arrangement pattern of DNA, the design of the classical form of Chinese furniture in harmony with the modern indoor environment and the joy of life.

Appiah-Kubi, OP, Lyv, J., & Wu, Z. (2021) studied about Historical Overview Of The Chinese Traditional Furniture, they found that this paper introduces that China is one of the top three ancient cultural centers in the world, and the traditional Chinese civilization is famous for its knowledge of the diversity of specific visual crafts. Although China's cultural history can be traced back to distant ancient rulers, the Chinese furniture industry has a long history. From the Shang Dynasty to the Qing Dynasty, Chinese traditional furniture has come a long way. Today, Chinese furniture is not only used by people, but also a cultural symbol, especially in the Qing and Qing dynasties.

Furniture items, especially beds, sofas, cabinets, tables and desks have evolved into multi-functional furniture.

Yin, Z., & Ruishuang, X. (2021, May) studied about Application of New Chinese Style in Interior Design Take the Cultural and Creative Museum of the Palace Museum as an Example ,they found that this paper explains that New Chinese style is an interior design style inherited from traditional Chinese culture, and also interprets the combination of tradition and modernization. This concept is based on the concept of traditional Chinese culture and expressed through modern design. Based on the analysis of the features and innovations of neo-Chinese style design in the Forbidden City, this paper briefly analyzes the design essence of neo-Chinese style and its integration with modern elements. Look forward to new Chinese style will have better development in the future, can better inherit Chinese traditional culture, innovation.

Wu, S., & Liu, W. (2019, July) studied about Discussion on the Aesthetic Concept of Chinese Traditional Culture in Modern Furniture Design,they found the paper starts from the Chinese furniture design in the new era, through the collation and analysis of Chinese traditional culture, discusses its inherent strength, expounds the inevitable requirements of modern furniture design; From the perspective of new expression of traditional culture aesthetics, it provides a new idea for Chinese furniture design in the new era context.

Zeng, J., & Deng, S. (2017, May) studied about The Development Direction of The New Chinese-style Mahogany Furniture Design-Based on Market Trend Concerning the Generation of 1980s/1990s,they found the article introduces that as Chinese traditional culture receives more and more attention, mahogany furniture is becoming more and more popular all over the world. But how can mahogany furniture conform to the aesthetic taste of the 80/90 generation and be more friendly to the people? This paper discusses the design orientation of new Chinese style mahogany furniture from four aspects: the introduction of Nordic design concept, the symbolization of traditional language, the use of fragmented mahogany, and the combination of mahogany and other furniture materials.

Zheng, Y., & Zhu, J. (2021) studied about The Application of Bamboo Weaving in Modern Furniture, they found the paper introduces that bamboo furniture is a kind of traditional furniture made of bamboo, but the industrialization degree is low, we should further explore the diversified development mode and profound cultural connotation behind bamboo furniture, strengthen inheritance and innovation. This paper gives a brief literature review on the development status of bamboo furniture, and then analyzes the aesthetic trend of modern bamboo furniture design through case analysis and questionnaire survey, and puts forward a variety of innovative ideas. From the Angle of speeding up modernization, the future development pattern and path of bamboo weaving are discussed. In order to achieve sustainable development of rattan furniture, it is necessary to coordinate the relationship among users, enterprises and producers with the help of interactive design platform, and grasp the balance between traditional process and modern design and manufacturing through modern advanced manufacturing technology and parametric design.

5.2 Summary of the related research

This paper mainly studies the influence of Qing Dynasty art symbols on contemporary home furnishings, because Qing Dynasty furniture is a classic work in the history of ancient Chinese furniture, which reveals the essence of ancient Chinese furniture and excellent Chinese cultural thoughts. By understanding the special cultural spirit of chairs in specific regions in specific periods and studying the history and materials of traditional Chinese furniture, modern chairs can better inherit and inherit the craft and cultural connotation.

In recent years, China's new Chinese furniture enterprises have been promoted in product innovation, technological innovation, management system innovation and other aspects. This paper discusses the inner strength of Qing Dynasty furniture culture, and provides new ideas for new Chinese chair design in the new era from the perspective of new expression of traditional cultural aesthetics. This paper briefly analyzes the essence of new Chinese style design and its integration with modern

elements. It is expected that the new Chinese style will have better development in the future, and can better inherit the traditional Chinese culture and continue to innovate.

Several papers have investigated consumer attitudes and furniture buying behavior and found that style and quality are the most important criteria, and more environmentally friendly chairs are also among the factors considered by contemporary consumers. For today's young new consumer groups, how to define the design orientation of China's new Chinese chair may require the interaction design platform to coordinate the relationship between users, enterprises and producers, and grasp the balance between traditional technology and modern design and manufacturing through modern advanced manufacturing technology and parametric design.

6. Summary of the second chapter

Generally speaking, the practical ethics of "using" a chair can be divided into two levels. The first level is that the value of practical ethics is the fundamental attribute of a chair as a useful thing to meet the needs of human life and survival. Since human beings created the original chair due to the need of "sitting", the exploration of chair function has been further developed with the changes of a series of conditions such as social politics, economy and culture. At the second level, the fundamental value of "use" of chairs is deepened into the applicable principle of chair design, that is, the consideration range of chair design functionality extends to the applicability of chairs in different regions, different times, different places and different consumer groups, especially the applicability of chair design to functional appeals guided by different lifestyles. All of these show the breadth and depth of the chair's practical ethical value exploration.

Therefore, it is necessary to pay special attention to the following aspects in the design of chairs: Based on the measurement data of Chinese human body parameters and other relevant influencing factors, a relatively complete model of influencing factors of seat comfort in different application fields is established; Combining subjective and objective measurement methods in different application fields, the weight of influencing factors of seat comfort was quantified, and the seat comfort evaluation model was

established. The evaluation index system of seat comfort in different fields is further subdivided.

Chair design is the best performance of modern ergonomics stage, in order to better meet people's needs for a new way of life, chair design should be more perfect. Under the premise of "people-oriented", the chair can have the function of the promotion, so that people at work and rest, have a very good state. The appearance should also emphasize beauty and novelty, so that it has rich connotation, in the material to be in line with the principle of low carbon environmental protection, design a good chair.



CHAPTER 3

RESEARCH METHODOLOGY

1. To study the culture of Qing Dynasty armchair design

Qing Dynasty chairs represent the essence of ancient Chinese furniture and excellent Chinese cultural thoughts. By studying and studying the history of Qing Dynasty chairs and their design materials according to literature, the purpose is to obtain the characteristics of Qing Dynasty chairs in three aspects: shape, material and structure, better understand the Chinese cultural style contained in Qing Dynasty chairs, and better inherit and inherit the craftsmanship and cultural connotation of Qing Dynasty chairs. And apply it to the design of the new Chinese chair in the third step.

2. To investigate 5 new Chinese furniture brands

By investigating Taobao (2023), we selected 5 new Chinese furniture brands with high sales volume, many fans, novel design and obvious new Chinese characteristics (as shown in the following table 3), and then selected the top 3 chair cases in their respective sales volume from the 5 brands. A total of 15 chairs were analyzed and compared from three aspects: shape, material and function. Finally, their general characteristics are summarized to prepare for the step 3 of design.

Table 3 Five new Chinese furniture brands

No.	Chinese furniture brands	Logo	Follower
	Yeswood		12150000
	Erhei wood		930000

No.	Chinese furniture brands	Logo	Follower
3	Kuka		4090000
4	Linsy		19900000
5	Fanwu		770000

3.To design 3 new Chinese chairs

According to the study and research of Qing Dynasty chairs and new Chinese style furniture in step 1 and step 2, the design scheme of three new Chinese style chairs is obtained. The originality of the new Chinese armchair design is expressed in a "new" word, which represents a kind of original consciousness, which is also the key to the armchair design. The design of the new Chinese armchair cannot be separated from the Qing Dynasty furniture, so when transforming the chair, the traditional characteristics of the Qing Dynasty chair should be properly retained, and then the original modern elements should be added, such as the design of style, material and structure.

4.Data collection

4.1 Questionnaire survey

The purpose of this questionnaire survey is to obtain consumers' evaluation and expectation of the existing three new Chinese chair design cases, understand the use habits and psychological needs of consumers of new Chinese chair, analyze the

advantages and disadvantages of new Chinese chair cases, and then improve the chair cases to clarify the final design innovation scheme.

The focus of the questionnaire survey is to understand the age and annual income of consumers, consumers' attention to new Chinese furniture, consumers' demand for new Chinese chairs, consumers' evaluation and suggestions on three new Chinese chair design cases, and the impact of price on consumers' purchase.

The scope of the questionnaire:

- Sample size: 30 new Chinese chair consumers who agreed to the survey

- Age range: 25-50 years old

- Monthly income: no less than RMB 5,000

4.2 Interview

The purpose of this interview is to interview 3 experts in different fields to understand whether the 3 new Chinese chair design cases mentioned in the third step meet the current market demand, whether they meet the Chinese style, understand the customer's expected price range, and secondly understand the current market situation and future design trend of new Chinese chair.

Scope of interview:

- Sample size: 1 new Chinese furniture seller, 1 furniture designer, 1 history teacher with knowledge of Qing Dynasty culture.

- Job scope: front-line sales of well-known new Chinese furniture brands.

- Job requirements: No less than 2 years, familiar with new Chinese chair.

5. Conclusion and final design

Through questionnaire survey and interview, a universally recognized scheme is selected from the three design schemes, and the final design scheme is obtained according to the opinions of improvement and innovation, so as to make it more in line with the needs of people today.

CHAPTER 4

DATA ANALYSIS AND RESEARCH RESULTS

1. Conclusions of the culture of Qing Dynasty armchair design

The choice of the Qing Dynasty armchair is based on the fact that it has been created, tested and redesigned by thousands of generations, and it is a traditional cultural symbol formed in the traditional way of life, not created by individuals, but produced by the wisdom and power of the Chinese people. Therefore, Chinese style has gone through a long selection process for most people. In this process, traditional symbols embody Chinese wisdom and even represent the spirit of Chinese culture. In today's society, modern Chinese people are still influenced by Chinese style. Therefore, it is the most effective way to integrate modern and traditional styles to reconstruct the chair on the basis of the style of the Qing Dynasty.

1.1 Style

The main area of the style of the Qing Dynasty armchair is the shape of the chair, the armrest is divided into semicircular and square, and the chair has no foot, the backrest has no pattern and so on. In the backrest modeling, there are two common types, "S" and "C" shape (as shown in the figure). What they have in common is that they are curved structures. In terms of function, "S" is more suitable for people's back than "C" shape, which can make people get a good comfort experience when sitting. After analysis, it is concluded that when a product has a certain cultural style, these characteristics can help to make new products with similar cultural backgrounds. To create a new Chinese chair with traditional Chinese style, the most core element is to determine a style that can represent both traditional Chinese culture and modern culture. Instead of creating a new style, it is better to reconstruct or reorganize a new Chinese style on the basis of existing Chinese culture.



Figure 10 "S" and "C" shaped chairs

Source: Xiao Hongshu (2023)

1.2 Material

The main materials of the Qing Dynasty armchair can be divided into two parts, namely hardwood and non-hardwood, and wood with fine grain is usually used for prominent positions, such as the back of the chair. The royal family and aristocracies use hardwood for elegant furniture, while ordinary families mostly use non-hardwood for ordinary furniture manufacturing because of their limited budget. The manufacturing materials of the Qing style armchair are usually hardwood wood with excellent properties. In terms of the selection of chair materials, the craftsmen of the Qing Dynasty like to use high-hardness wood to make the armchair, such as Huanghua pear, rosewood, chicken wing wood and so on. Hard and ductile, non-splitting, fine grained wood is the ideal choice for making armchairs. The above-mentioned wood made by the armchair, because of its unique physical characteristics and can go through a hundred years, but also because of its precious and scarce chair cost is high, not easy to manufacture, modern people use walnut, cherry wood and other high-quality wood that is relatively easy to obtain the material replacement.

1.3 Structure

The advantage of the Qing style armchair structure is that function and aesthetics are combined into one. The components of each part of the armchair have strong practicability and scientific nature, as well as strong aesthetic and artistic quality.

The design method of its structure is still worthy of reference for today's seat design. The structure of the armchair can be divided into four parts: the back of the chair, the seat surface, the legs and feet, and the armrest. The components used in the back of the armchair mainly have the following parts: The first is the arc of the chair circle, shaped like a crescent,, which is also the most well-known armchair components in the world. The curve of the chair ring is smooth and smooth in shape, and naturally stretches. The structure of the chair ring is mainly composed of three rings and five rings, which means that it is formed by three sections of wood or five sections of wood. The chair circle of the armchair is mainly used for the support and support of the head, neck, back and elbow when the person is sitting. Next is the back plate in the center of the back of the chair. The width of the backplane accounts for about one-third of the entire back of the chair, and it is also the largest physical part of the back of the chair. The joints between these components of the armchair are fitted together in the form of mortise and tenon, that is, the use of a four-convex connection, the use of the bite relationship of the mortise and tenon to form the overall structural framework of the armchair. Each part of the furniture is connected by interpenetrating, maintaining the original properties of the wood. Most vertical timbers are used as struts, while horizontal timbers are used as connecting parts. Standing in the perspective of furniture design, the structural combination of wedges and dovetail, using wood and wood, in the concave and convex, high and low, long and short changes, making the chair ring more firm and durable, fully reflects the scientific and artistic Qing Dynasty chair.



2. investigate and analyze 5 new Chinese furniture brands

2.1 Online research

Through the investigation of Taobao (2023), we selected 5 new Chinese furniture brands with high sales and good evaluation, namely Yeswood, Erhei wood, Kuka, Linsy and Fanwu . The reason for choosing these brands is that these brands have their own stores online and offline, and the product sales are high, the followers are many, the design is modern, and the new Chinese characteristics are obvious. See the following table 4 for details:

Table 4 Five new Chinese furniture brands

No.	Brand name	Brand introduction	Logo	Follower
1	Yeswood	<p>Yeswood focus on pure solid wood furniture, to "make healthy furniture, create a better life" as a service concept, always adhere to create a more environmentally friendly and healthy home life for consumers. For eight consecutive years, it has ranked first in the pure solid wood furniture category of Tmall, and has become a strategic cooperative merchant of Alibaba Group.</p>		12150000




No.	Brand name	Brand introduction	Logo	Follower
2	Erhei wood	<p>Erhei wood is a brand that gives full play to the beauty of wooden furniture, adding vivid, diverse and interesting elements to the original simple wooden design, such as the exclusive design of rattan elements and glazed glass. And improve the regular edges of traditional furniture, explore more beauty on the basis of practicality.</p>		930000
3	Kuka	<p>Kuka is a leading brand in China's furniture industry, interpreting life with art and defining trends with design, which has won unanimous recognition from consumers and a high degree of recognition from the industry. It sells well in 186 countries and has more than 2,000 stores.</p>		4090000





No.	Brand name	Brand introduction	Logo	Follower
4	Linsy	Linsy mainly manufactures solid wood Chinese furniture, advocates to create a new ecological fashion lifestyle with furniture, and is committed to becoming "a fashion home brand that provides consumers with a diversified lifestyle", and is one of the first home brands in China to enter the Internet.		19900000
5	Fanwu	Fanwu pay attention to the cost and the sense of use of furniture, and strive to design furniture that can adapt to different people's tastes, and try to keep its cost performance, so that it can be affordable and affordable for more people, so as to enter a variety of different homes.		770000




2.2 Comparative analysis of cases




The top 3 chair cases with high sales volume were selected from 5 brands, and a total of 15 chairs were analyzed from three aspects: style, material and structure. See the following table 5 for details:

Table 5 Fifteen high-selling chairs from five brands

Brand number	Chair case diagram	Style	Material	Structure
Yeswood 1		Right Angle armrest molding	Black walnut, top layer of cowhide cushion	Mortise and tenon structure, small chair area, saving family area
Yeswood 2		A-frame chair leg design	Cherry wood, rattan weaving.	Mortise and tenon structure, seat plate and armrest are very wide, carrying more human body
Yeswood 3		Y-back shape, semi-circular armrest	Rope weaving process	Mortise and tenon structure, light structure
Erhei wood 1		The backrest and the seat plate are large arcs, and the whole chair is basically curved	Black walnut, top layer of cowhide	Mortise and tenon structure, chair arc fit the human body, sitting comfortable

Brand number	Chair case diagram	Style	Material	Structure
Erhei wood 2		Armrests are airfoil designed to fit the elbow	Dark green head layer cowhide	Full mortise and tenon structure, long service life
Erhei wood 3		Armless style	Rattan woven with wood	Mortise and tenon structure, small size of the chair, portable movement
Kuka 1		Radian back with semicircular armrests	High quality imported rubber wood, fine texture	The backrest fits ergonomically for more comfort
Kuka 2		The backrest and seat board are semicircular in shape, and the whole chair is basically curved	Ash wood, environmentally friendly and tasteless	Mortise and tenon structure, arc fit the human body

Brand number	Chair case diagram	Style	Material	Structure
Kuka 3		The overall line of the chair is straight and smooth, without armrests	Ash wood, kraft paper rope.	Modern welding structure, sitting plate for rattan weaving technology
Linsy 1		The backrest is curved, with A-style legs	Cloth fabric, more comfortable.	Mortise and tenon structure, stable and light, easy to carry
Linsy 2		A-style chair legs, armrests in A zigzag	Solid wood, leather and rattan three elements combined.	The seat is low, knees are naturally bent, and the backrest is tilted back
Linsy 3		The backrest is curved and the armrest is a zigzag	Ash wood, rattan.	Mortise and tenon structure, long armrest, can hold the entire forearm

Brand number	Chair case diagram	Style	Material	Structure
Fanwu 1		The backrest is semicircular and the armrest is linear	Imported artificial leather fabric, low cost and easy to clean.	The cushion is tilted and sunken, and angled, suitable for long and comfortable sitting at home
Fanwu 2		The armrests are short, the board is wide, and the whole chair is narrow and wide	Ju wood, very smooth, odorless.	Mortise and tenon structure, handrails can be suspended from the table
Fanwu 3		Semi-circular backrest, semi-circular armrest shape	Ash wood, Indonesian true rattan, environmental protection paint.	Hollow structure, sitting board wide, lean comfortably

2.3 Case summary

Firstly, The common point of the above 15 excellent chair products is that the style is simple, retaining the streamlined backrest elements of the Qing Dynasty armchair, lowering the seat height, widening the seat panel, and making the shape more modern while also more ergonomic. Secondly, these chairs are made of modern materials, using low-cost and easily available wood, such as beech, cherry, black walnut, etc. The innovation of these woods also makes the chairs more environmentally friendly, in line with the general trend of the global low-carbon economy in the current era. Finally, the structure is more in line with today's people's social needs or daily life needs, the lower height of the chair makes it closer to the height of the coffee table, people can directly put the laptop computer on the lap when sitting on the chair for office and social activities, or the chair can be lifted when the chair is placed on the table, so that it is more convenient for people to clean the floor of the family.

Therefore, through the analysis of these high-sales chairs, we can draw the following conclusion: in today's era, customers love new Chinese chairs with modern style, environmentally friendly materials, innovative structure and function, and in line with their daily life needs or social needs.

3. Three new Chinese chairs design

3.1 The first draft

Although the manual production mode adopted by the traditional Qing Dynasty armchair in agricultural society makes its structure and appearance very beautiful, it also leads to its production efficiency is very low, and can not adapt to today's highly industrialized social market. Therefore, the design adopts modern industrial furniture manufacturing technology and mortise and tenon technology, which can not only greatly improve the production efficiency of furniture, but also greatly reduce the waste of materials in the production process, and the production cycle will be greatly shortened. At the same time, the chair shape is extremely simplified (as shown in the figure 10), the backrest is Y shape, the armrest is curved, and the sitting board is enlarged and widened to improve comfort.



Figure 11 Armchair draft 1

Source: Hu Jialin (2023)

3.2 The second draft

The design retains the semi-circular armrest shape of the traditional Qing Dynasty armchair, and raises the arc at the wrist of the armrest to better fit the human wrist. At the same time, materials such as textiles or leather products can be selected in the application of new Chinese armchair processing materials (as shown in the figure 11), making the shape of the armchair more gentle than the traditional all-wood indifference, and more soft and comfortable to sit up.



Figure 12 Armchair draft 2

Source: Hu Jialin (2023)

3.3 The third draft

The design (as shown in the figure 12) in the design of the shape of the new Chinese armchair, the bold play of imagination, the use of similar categories, similar function of the furniture products orderly arrangement, reasonable combination of methods, to enrich the functionality of the new Chinese armchair, to meet the needs of people's lives. This one-piece armchair design scheme, while retaining the semi-circular armrests of traditional Qing Dynasty chairs and the material characteristics of wood, deconstructs and recombines the traditional furniture design elements with different functions, and adds a small coffee table in the middle of the two seats to form a new chair structure, so that the chair has both seating functions and social functions, meeting the different needs of modern people.

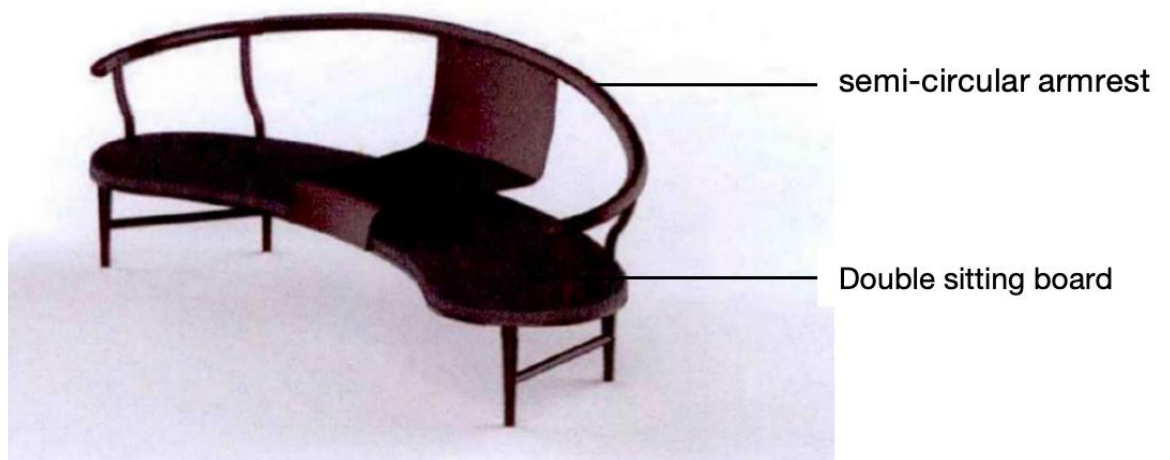


Figure 13 Armchair draft 3

Source: Hu Jialin (2023)

4. Data results and analysis

4.1 Questionnaire survey

4.1.1 Arrangement of online questionnaire results (Questions 1 to 10 of questionnaire are represented by Q1 to Q10)

Table 6 The figures come from the survey results of Question 1 in the online questionnaire

Q1	Option	Number of selections	Percentage
Do you know about the	Yes	30	100%
	No	0	0%
Qing Dynasty culture?	Number of respondents	30	

According to Question 1, it can be concluded that people understand and know the Qing Dynasty culture.

Table 7 The figures come from the survey results of Question 2 in the online questionnaire

Q2	Option	Number of selections	Percentage
Do you like the Qing Dynasty culture?	Like	30	100%
	Not like	0	0%
	Number of respondents	30	

According to Question 2, it can be concluded that people like traditional Qing Dynasty culture very much today, and the market prospect of new Chinese chair is very good.

Table 8 The figures come from the survey results of Question 3 in the online questionnaire

Q3	Option	Number of selections	Percentage
What do you look for when choosing new Chinese chair?	Style	12	40%
	Material	8	27%
	Structure	10	33%
	Number of respondents	30	

According to Question 3, it can be concluded that the style is modern, the material of the chair is comfortable to sit, and the function is the focus of people's choice of chairs today.

Table 9 The figures come from the survey results of Question 4 in the online questionnaire

Q4	Option	Number of selections	Percentage
What style of new Chinese chair do you like to buy?	The armrest is semicircular and the lines are simple and smooth	24	80%
	The chair back has a pattern	2	7%
	The handrail is square and has feet	4	13%
	Number of respondents	30	

According to Question 4, it can be concluded that most people choose chairs with semicircular armrests and simple and smooth lines, and it is widely believed that chairs with hollow patterns are not convenient to clean.

Table 10 The figures come from the survey results of Question 5 in the online questionnaire

Q5	Option	Number of selections	Percentage
What kind of material do you prefer for new Chinese chair?	Leather	5	16.5%
	Cloth	5	16.5%
	Wood	18	60%
	Iron	0	0%
	New materials (such as carbon fiber, plastic, rattan)	2	7%
	Number of respondents	30	





According to Question 5, it can be concluded that most people like wooden new Chinese chairs, leather and cloth materials are a small part.

Table 11 The figures come from the survey results of Question 6 in the online questionnaire

Q6	Option	Number of selections	Percentage
Which kind of new Chinese chair do you prefer ?	Bright color	2	7%
	Dark color	6	20%
	Natural wood color	22	73%
	Number of respondents	30	

According to Question 6, it can be concluded that the majority of customers like wood color chairs.

Table 12 The figures come from the survey results of Question 7 in the online questionnaire

Q7	Option	Number of selections	Percentage
Which sitting position do you prefer ?		0	0%
		21	70%
		9	30%
		0	0%
	Number of respondents	30	

According to Question 7, it can be concluded that most people prefer a seat back angle of 15° to 20° , which is more ergonomic.

Table 13 The figures come from the survey results of Question 8 in the online questionnaire

Q8	Option	Number of selections	Percentage
What is your dissatisfaction with the new Chinese chair on the market ? (Choose two)	Out of style	15	25%
	Single function	24	40%
	Occupy a large space	4	7%
	Hard to clean	10	17%
	Heavy weight	7	11%
	Number of respondents	60	


According to Question 8, it can be concluded that the existing new Chinese style chairs in the market generally have the disadvantages of outdated shape, single function, difficult to clean and heavy chairs, which is the need to improve the new Chinese style chairs.



Table 14 The figures come from the survey results of Question 9 in the online questionnaire

Q9	Option	Number of selections	Percentage
The price at which you can accept the new Chinese style chair is ?	Less than 500 RMB	4	13%
	500-1000 RMB	18	60%
	1000-2000 RMB	8	27%
	More than 2000 RMB	0	0%
	Number of respondents	30	

According to Question 9, it can be concluded that people tend to choose chairs priced at about 1000 yuan.

Table 15 The figures come from the survey results of Question 10 in the online questionnaire

Q10	Option	Number of selections	Percentage	Suggestions
If you were to buy a new Chinese-style chair, which of the following would you buy?		2	7%	The height of the armchair can be increased so that people can sit up more comfortably on the legs, and the function of the chair can be diversified.

And do you have any suggestions for improvement ?		7	23%	The backrest height can be increased, and the backrest fabric can be improved for easy cleaning.
		21	70%	The armchair can be divided into two seats, each chair can add its own back.
Number of respondents	30			

According to Question 10, it can be concluded that the draft 3 is the chair with the largest number of selections by 30 customers, and it is the chair design scheme that can be improved.

4.1.2 Analysis of online questionnaire results

Through the analysis of the results of the questionnaire from Question 1 to Question 10, it can be concluded that people like traditional Chinese culture and the new Chinese-style chair that combines Chinese elements with modern elements. The modern style, comfortable wood and rich functions of the new Chinese-style chair are the key points for people to choose the new Chinese-style chair. However, the existing new Chinese-style chairs in the market generally have the same shape. Single function, not easy to clean and heavy chair and other shortcomings, this is the new Chinese chair need to improve. And the chair design needs to be more ergonomic, because most people prefer a 15° to 20° seat back angle. In short, draft 3 is the chair with the largest number of choices by 30 customers, and it is the chair design scheme that can be improved.

4.2 Online interview data results and analysis

4.2.1 Arrangement of online interview results

Table 16 Interviewee

Interview code	A	B	C
Name	Li Juan	Xiao yang	Liu Rongjun
Age	35	32	48
Professional field	New Chinese furniture sales	Furniture designer	History teacher

The researchers interviewed the interviewees. The interview content can be found in the following table 17 (online interview questions 1 to 3, expressed by Q1, Q2, Q3)

Table 17 Interview record

Interview code	Question	Interview content record
A	Q1: Which of these three chair designs do you think is more in line with the needs of customers?	Draft 2 and Draft 3 will be more interested in customers, design 2 will be more in line with people's comfort needs, but design 3 is more novel in shape, more comprehensive in function, can sit together, I think customers will like it.
	Q2 : What needs to be improved about this chair that meets the needs of customers?	You can add a small coffee table in the middle of the two seats to meet people's social needs, so that the sales point will be more, which can increase sales.
	Q3 : What are the general needs of	Fashion style, complete functions, high sitting comfort.

	customers when choosing new Chinese chairs?	
B	Q1 : Which of these three chair designs do you think is more in line with the needs of customers?	I think customers will like the third chair more, because most of the new Chinese chairs in the market are the same style, but this chair is very fashionable and special, and it is fresh.
	Q2 : What needs to be improved about this chair that meets the needs of customers?	The opposite angle of the two chairs can be adjusted to 72° , which is more convenient for two people to communicate with each other from the design point of view, and the chair will be more beautiful. Then lower the height of the sitting board and increase the area of the sitting board, which is more ergonomic and more comfortable for customers to sit up.
	Q3 : What are the general needs of customers when choosing new Chinese chairs?	Customers now like the design of the chair, the shape should be a little more simple, the chair has Chinese elements at the same time need to be very fashionable.
C	Q1 : Which of these three chair designs do you think is more in line with Qing Dynasty	Draft 1 and draft 3 are more in line with the traditional arm-chair shape.

culture?	
Q2: What characteristics do you think the chair needs to meet the Qing culture?	Wood elements are the main elements, the sitting board is wide, and the armrest is shaped as a semicircle
Q3 : Is there anything that needs improvement in this chair?	Two chairs can be made to have their own backrest and semicircular armrests, while the handrails should retain the S-shaped bending shape, so that the characteristics of the traditional armchair will be more obvious. The chair material can be made of walnut, walnut is cheaper than the mahogany commonly used in traditional armchair, and the color is very close.

4.2.2 Analysis of online interview results

Through the interview, it can be concluded that the draft 3 is a chair that not only retains the characteristics of traditional armchair but also meets the needs of today's customers, and is a chair design scheme that can be improved. In the final design scheme, the draft 3 can be transformed into two independent armchairs, and then add a coffee table in the middle of the two seats, so that it is more comfortable to sit up and can meet people's social needs. At the same time, the seat angle and the width of the seat board are adjusted, and the S-shaped armrest elements of the Qing Dynasty armchair are retained.

5. Conclusion and final design

According to the analysis of the investigation results of step 4 and Step 5, the final chair design scheme is determined as transformation design 3, and the design results should meet the design characteristics of three aspects, namely, style, material and structure. The design is positioned as a new Chinese chair design with traditional Chinese cultural characteristics and innovation in style, material and structure. Therefore, the result should strike a balance between being simple to make and containing the flavor of the Qing Dynasty. New Chinese chair in the shape of traditional preferences and modern cultural atmosphere, different types of new Chinese chair to give consumers the appeal will be different, new Chinese chair consumer groups are diverse, no longer a single elderly group. The use environment of the new Chinese chair can be an office, a hotel lobby, a family living room, etc. The formation of new Chinese style chairs is the evolution of traditional Qing Dynasty chairs, the continuation of traditional Chinese culture, and a new form of furniture with a sense of the times and culture.

5.1 Design concept

First of all, in terms of style, the design of the new Chinese chair can be improved from multiple angles, and the rapid development of science and technology makes the design of the chair have different development directions. New materials and new technologies can also be used in the external structure of the new Chinese armchair, using the innovative advantages of new materials and new technologies, the modeling design of the armchair is streamlined to the maximum extent, in the external outline, still retain the semicircular armrest features of the Qing style armchair, and increase it into a double seat. In the design, fortitude and softness are coordinated and unified, so that it can show this aesthetic feeling at the same time, enhance the visual impact.

Secondly, in terms of material, in the design of new Chinese armchair, I focused on the detailed study of the materials of the armchair. In the selection of materials, the design of new Chinese armchair is different from that of traditional armchair, most of which choose mahogany as the processing material, so the new

Chinese armchair can have a wider choice space. In the design, the different needs of different parts of the chair lead to different materials. This is very different from the traditional armchair design. With the continuous improvement of science and technology, the use of new materials is also more flexible. Metal is one of the most common materials in today's society, which has the advantages of fast production speed, simple processing technology and abundant raw materials. At the same time, traditional hardwood materials are still selected on the external mechanism, which can better highlight the physical characteristics of the material. It can make people have a better use experience, and also make the shape of the armchair more innovative than the traditional all wooden indifference, the design truly reflects the "people-oriented" humanistic care.

Finally, in terms of structure, with the changes of The Times and the progress of society, the armchair has been unable to meet people's more and more functional needs, and people have put forward new requirements for its size, component composition and new functions. Therefore, the extraction of different design elements for deconstruction and reorganization is an indispensable part of the new Chinese style armchair design. I combined the functions of seating, reading, drinking tea, etc., and came up with the following scheme (as shown in the figure 13). In this scheme design, I deconstructed and reorganized traditional furniture design elements with different functions to form a new chair design, whose functions meet the diverse needs of different people in modern life.



Figure 14 Armchair design

Source: Hu Jialin (2023)

5.2 Final design scheme

Based on the analysis of the market research results of the previous questionnaire survey and interview, this paper summarized and sorted out various problems that should be considered in the design of the new Chinese armchair, analyzed in detail the areas that need to be improved in the design scheme 3, and focused on the research on the style, material and structure of the design scheme 3. After a series of investigation and analysis practice, the final design scheme of the new Chinese style round chair was designed. (as shown in the figure 14)

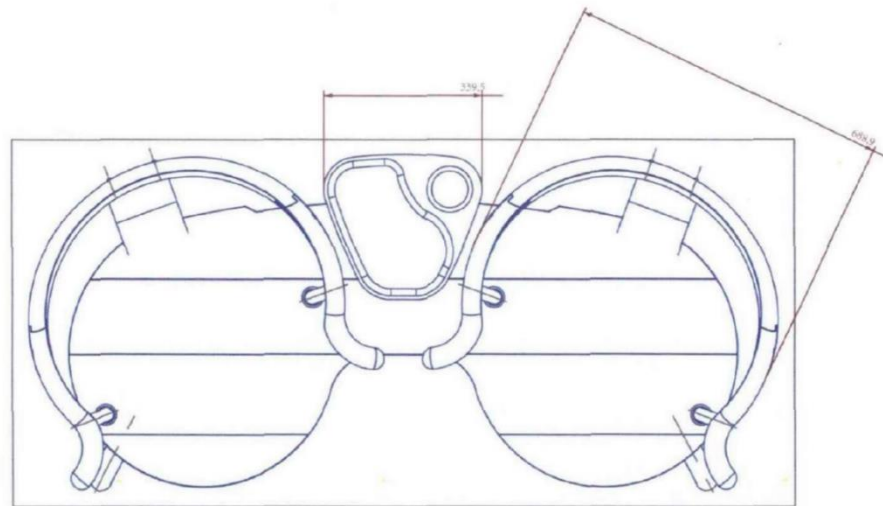


Figure 15 Armchair design

Source: Hu Jialin (2023)

The whole scheme design balances the many influencing factors of the armchair design, and there are some attempts and changes in all aspects. It is reflected in the following three aspects:

5.2.1 Style Design

The first step in style development is to analyze the basic functional framework and divide the framework into several parts according to the functional characteristics. In order to create Ming Dynasty style furniture with Chinese traditional

context, it is necessary to use a certain formal language. However, as mentioned earlier, the formal characteristics of Qing Dynasty furniture relied heavily on handwork, and the production time cost was high. This formal language is not productive. Functions based on the needs of modern society. In addition, the morphological characteristics of Qing Dynasty furniture were affected by the social, aesthetic and production mode at that time, and could not meet the functions of contemporary human beings. Therefore, a certain degree of change is needed to meet the requirements of high volume production.

Through the preliminary investigation and analysis, China's furniture market is facing a major problem at present. Rich in Chinese traditional characteristics of the Chinese chair due to its continuation of the Qing Dynasty design style, so can not meet the needs of modern urban life on the function of furniture, and most of the modern chair design and lack of classical charm, resulting in insufficient cultural connotation, armchair design also has the above problems. Faced with the above problems, I actively understand and analyze the main reasons, and actively make design practice. The design not only considers the use needs of current consumers, but also tries to retain the appearance characteristics of the armchair, taking into account the consumer's demand for its beauty, cultural connotation and other spiritual levels. (as shown in the figure 15)



Figure 16 Armchair design

Source: Hu Jialin (2023)

5.2.2 Material design

The manufacturing materials of the Qing type armchair are usually high-quality hardwood wood, and now the deterioration of the natural environment, these woods have been endangered, very rare, and these excellent quality hardwood wood production is very low, wood from planting to grow need to go through a long period of time, high-quality hardwood even need hundreds of years of wood. At the same time, these hardwood wood because of its hard material, some institutions complex, unique design scheme can not be effectively produced, these are the constraints of the new Chinese armchair design factors. If we still continue to completely use these hardwood wood will affect the development of new Chinese armchair design, so that its products can not be rapidly promoted, and eventually internationalization. Therefore, I have summarized the above problems, and proposed the following solutions after careful analysis and practice. (as shown in the figure 16) through the combination of metal and wood to solve such problems, metal is one of the most common materials in today's

society, it has the advantages of fast production speed, simple processing technology, rich raw materials, metal and wood coordination, play the role of support, decoration, coordination, the use of metal materials can expand product production, to ensure the production efficiency of products.



Figure 17 Armchair design

Source: Hu Jialin (2023)

5.2.3 Structure design

Because of its original design intention and customers and the current living environment have undergone certain changes, the change of living environment and lifestyle makes its wide and large seat panel and high base can not adapt to the living habits of modern people. Therefore, the appropriate adjustment of the local size of the armchair has a certain practical significance. In the early stage, the seat size and Angle of modern people were investigated, and according to the research results, the local size of the new Chinese armchair design was slightly adjusted to make it more in line with the needs of modern people's life. The following is a specific comparison of the improvements in the size of the armchairs. (as shown in the figure 17)



Figure 18 Armchair design

Source: Hu Jialin (2023)

The traditional Qing-style armchairs take the manual production mode of the ancient society, the advantage of this mode is that the structure and appearance of the product can be made very beautiful, similarly, such a production mode will also lead to its production efficiency is very low. Therefore, in today's highly industrialized society, this mode of production is no longer compatible with the needs of society. Out of consideration of the above problems, I conducted a detailed study of the processing technology of the traditional armchair, and analyzed its specific processing methods. (as shown in the figure 18) I have studied the processing technology of the armchairs in the Qing Dynasty, and changed the mortise and tenon structure that must be used in the traditional armchair through the combination of modern industrialization, greatly improving the production efficiency of the product.



Figure 19 Armchair design

Source: Hu Jialin (2023)

Of course, the traditional armchair processing technology also has certain advantages, its beautiful shape, strong structure is suitable for the rapid processing of many simple structures. (as shown in the figure 19) In the design of the new Chinese armchair, the seat surface and the chair ring part still choose the traditional curved shape, so as to ensure its processing efficiency while taking into account the modeling beauty of the armchair.



Figure 20 Armchair design

Source: Hu Jialin (2023)

The production of any furniture, its function must be the most basic and the most important. As a furniture that directly serves people, its function can be imagined. Compared with ancient times, the living environment and lifestyle of our modern people have undergone great changes, and the functional needs of furniture have also produced many new contents. If the round-chair design scheme of the Qing Dynasty has been continued, it will not be able to meet the increasingly diversified needs of modern people. Therefore, the functional innovation of armchair design is particularly important. As the most common chair in daily life, the functional innovation of the armchair also has certain limitations, and it must be innovated under the premise of meeting its most basic functions. In the design of the new Chinese style armchair, I focused on the functional needs of the armchair. According to the conclusions of the functional needs of the research feedback, I redefined the three functions of the armchair, namely drinking tea, reading books and resting, and emphasized these functions. Through the structural restructuring of traditional furniture design elements with different functions, a new chair design was formed. Its function meets the functional needs of different people in modern times, but also retains the beauty of the circular chair to a great extent. (as shown in the figure 20)



Figure 21 Armchair design

Source: Hu Jialin (2023)

The design of the new Chinese chair not only requires beautiful appearance, but also pays attention to its inherent humanistic care. The final destination of the product must be human service, so the design needs to pay attention to the comfort, convenience and safety of consumers in the process of use, so that people get double enjoyment in the material and spiritual level. There has been a big gap between the design of the chair and the modern new Chinese style chair in comfort, and the bulky and hard appearance characteristics of the Qing style chair need to be further improved. How to add new materials and new processes to make the design of the new Chinese style chair more in line with the comfort needs of modern people is also the main content of the research. Through the study of ergonomics, I have further improved the design of the new Chinese armchair, and have made certain improvements in the seat Angle, size and communication Angle. (as shown in the figure 21)



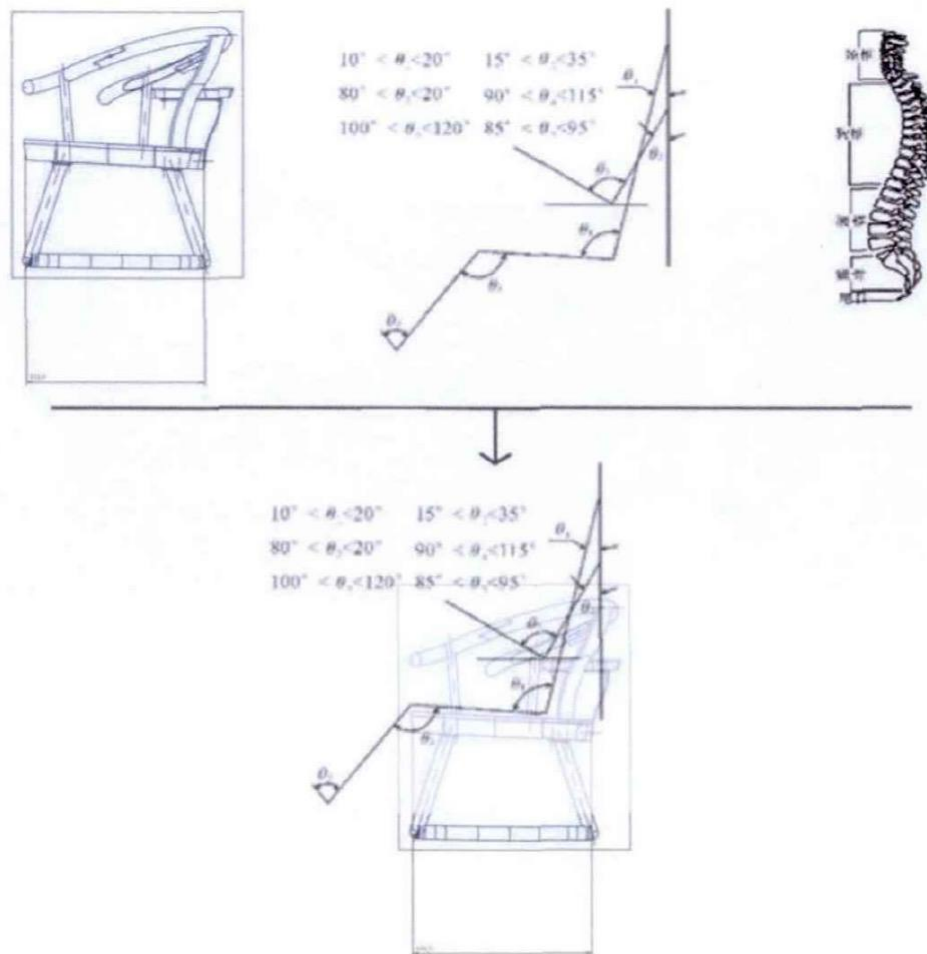


Figure 22 Armchair design

Source: Hu Jialin (2023)

At the same time, I conducted a detailed investigation and research on the dimensions of the armchairs, the distribution and Angle of the human spine, and the influence of the tilt Angle of the seat back on human fatigue. The survey found that when the seat back Angle reaches 15° to 20° , the degree of fatigue of the human body is the least. Therefore, in the design of the new Chinese chair, I adjusted the backrest Angle of the seat to 15° to fully meet the comfort needs of the human body. (as shown in the figure 22)

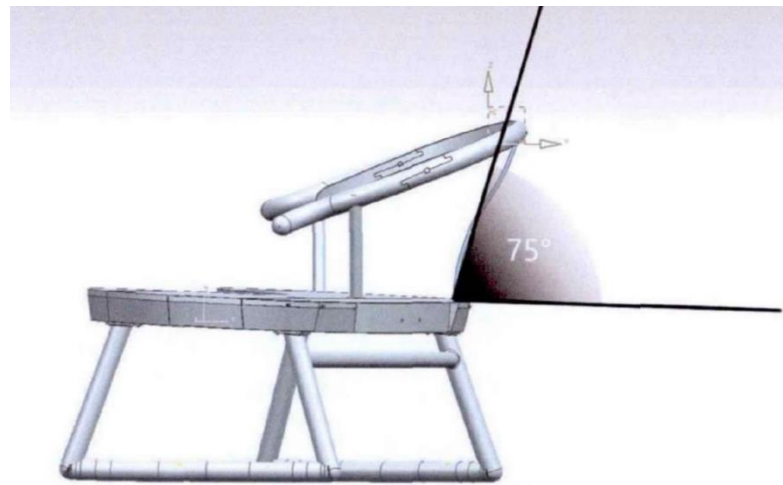


Figure23 Armchair design

Source: Hu Jialin (2023)

The angle of the seat is also a major factor affecting the comfort of the seat, and the same survey found that the angle of the seat is less than 90°

The leg muscles of the human body can be relaxed to a certain extent, but when the angle of the seat is less than 80° , the lumbar spine will produce a certain sense of pressure, which is very uncomfortable. Therefore, the angle of the seat also needs to be paid attention to in the design of the armchair, so I adjusted the angle of the seat to 86° in the design of the new Chinese chair, which can relax the leg muscles without affecting the lumbar spine, and improve the comfort of the seat design. (as shown in the figure 23)

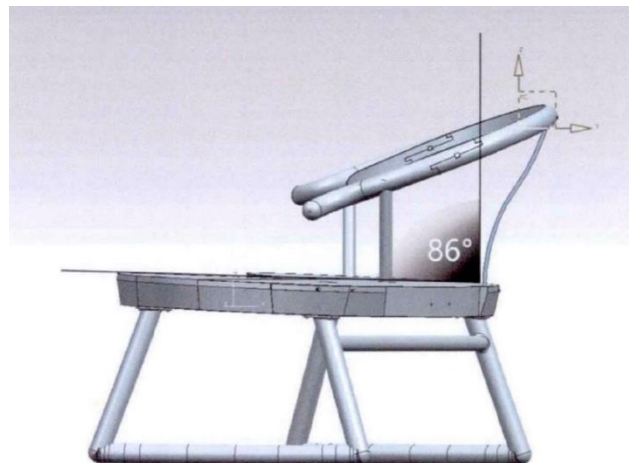


Figure 24 Armchair design

Source: Hu Jialin (2023)

Chair users reflect the humanistic care of more than the back of the seat, the study found that the two people sitting in the same direction in the communication process, the relative angle of 70° to 80 degrees is the best. After the experience of the actual size and direction, I designed the new Chinese chair as the relative angle of two seats is 72° , which can meet the comfort of people's communication experience. (as shown in the figure 24)



Figure 25 Armchair design

Source: Hu Jialin (2023)

In addition, I also conducted research on some habits of chair users in the actual use process, and found that people in the use of Qing style armchair, always completely lean on the back of the chair, if the back of the chair is strong in the process of leaning, there will be uncomfortable feelings. In order to solve this problem, I have made a series of attempts on the material of the back of the chair, and put forward two solutions: the use of soft materials and metal materials with slight elasticity. After comparative analysis, the final choice of a small elastic metal material as the chair back material, which can greatly improve the processing efficiency of the new Chinese armchair, shorten the production cycle, and also better sanitation. (as shown in the figure 25)



Figure 26 Armchair design

Source: Hu Jialin (2023)

CHAPTER 5

CONCLUSION DISCUSSION AND SUGGESTION

This study analyzed relevant information about the develop and design new Chinese armchair based on Qing Dynasty for modern home decoration business, Through online questionnaire survey and interview, the relevant personnel were studied. After analysis and research, the statement and discussion of the conclusion are divided into three parts.

1. Conclusion

The prosperous situation of Qing Dynasty created favorable conditions for the formation and development of Qing style furniture. In addition, while the development of commodity economy and handicraft technology, it also played an important role in the formation and development of the Qing Dynasty armchair style. Generally speaking, the formation of the Qing Dynasty armchair inherited the craft tradition of the past dynasties and has been developed. Qing Dynasty craftsmen in the decorative techniques to the application of a variety of materials, the combination of a variety of techniques, constitute the unique characteristics and style of the Qing Dynasty armchair. The armrest is named because of its shape like a circle, the back is connected to the armrest, from high to low, and slowly walk down, the shoulder and back of the seat can lean on the armrest, very comfortable. Qing Dynasty armchair adhering to the ancient concept of heaven round place, the shape of the square combination, the upper circle below, the outer circle inside the square, people sitting in the middle symbolizes "heaven and man unity". This is also a philosophy of life advocated by Chinese tradition, that is, we should be flexible and smooth on the surface of dealing with people and strictly abide by principles on the inside. In terms of the selection of chair materials, craftsmen in the Qing Dynasty liked to use high-hardness wood to make armchair, such as yellow pear, red sandalwood, chicken wing wood and so on. Hard and ductile, non-splitting, fine grained wood is the ideal choice for making armchairs. The structure of the Qing Dynasty armchair can be divided into four parts: the back of the chair, the seat

surface, the legs and feet, and the armrest. The joints between these components of the armchair are fitted together in the form of mortise and tenon, that is, the use of a four-convex connection, the use of the bite relationship of the mortise and tenon to form the overall structural framework of the armchair.

The progress of modern home improvement enterprises has made people's needs have changed, the chair is the furniture that is most closely related to people, so the design of the chair should also progress with the increasing progress of society. The design of the chair should be connected with the needs of people, and with the development of society, the needs and aesthetics of people today have also changed greatly. For people aged 25-50, fashion and cost performance are important factors for them to consider when choosing and buying furniture. Nowadays, the main consumers of the design furniture market are young customers, so it is particularly important to meet the needs of young customers. We should sort out these needs and make some chairs that conform to the trend of The Times and have Chinese characteristics at the same time, so that the transformed chairs are more in line with the aesthetic of 25-50 year old people.

Through two methods of market research, questionnaire survey and interview, it can be concluded that the percentage of options selected in the questionnaire and the summary of interview questions are consistent. The summary shows that people have the following needs for the style, material and structure of the new Chinese chair:

1. Modern style, smooth chair lines, semi-circle shape armrest modeling.
2. The material is biased to wood, which can be combined with new materials to save costs and improve production efficiency.
3. Maintain the mortise and tenon structure of the traditional Qing Dynasty armchair, and carry out diversified functional design to meet the diversified needs of customers.

2. Discussion

The design focus of the new Chinese style chair is people-oriented, and the ultimate goal of people-oriented is to bring people actual use feelings according to the use habits and overall feelings of the chair in the current era, that is, the style, material and function of the chair. However, due to the development of the Qing Dynasty armchair has been difficult to adapt to the needs of people today, there are defects in use, such as outdated style, expensive materials, complex workmanship, difficult to clean and difficult to mass production, chair function is also very single. Therefore, the design of the new Chinese chair has become very important, which requires the designer to stand in the perspective of different customer groups to meet the diversified needs of customers to a greater extent. The similarities between this design and the "Y-shaped chair" designed by Hans Wigner(1949) in the related design cases in Chapter 2 are that the semi-circular armrest structure of the round-shaped chair is retained, but it is also different. The "Y-shaped chair" retains the shape of the round chair to a large extent, and the backrest of this design is a large curved wood board. Adds comfort but lacks styling. The similarities between this design and the "Water chair" designed by Zhu Xiaojie (2008) are that the seating area is large and the comfortable experience is very good. However, the difference is that this design deconstructs and reorganizes the design elements to form a new chair design, combining the functions of seating, reading, drinking tea, etc., to meet the diverse needs of different people in modern life.

Through the study of three design cases, questionnaire survey and interview, the author determined the final chair design scheme as the transformation design 3, and the design results should meet the design characteristics of three aspects, namely, style, material and structure. The design is positioned as a new Chinese chair design with traditional Chinese cultural characteristics and innovation in style, material and structure. The consumer group of the design sub-is diversified, and is no longer a single elderly group. The design can be used in an office, a hotel lobby, a family living room, etc.

First of all, in terms of style, the design of the new Chinese chair can be improved from multiple angles, using the innovative advantages of new materials and new technologies, the design of the chair will be streamlined to the maximum extent, and the chair lines are coherent and smooth. In the external outline, it still retains the semicircular armrest features of the Qing Dynasty armchair, and at the same time, it is changed to a double seat. The design considers the use needs of the current consumers, and tries to retain the appearance characteristics of the armchair, so that it can show this beauty at the same time, but also enhance the visual impact, taking into account the consumer's spiritual needs for its beauty and cultural connotation.

Secondly, in terms of material, in the design of new Chinese armchair, I focused on the detailed study of the materials of the armchair. In the selection of materials, the design of new Chinese armchair is different from that of traditional armchair, most of which choose mahogany as the processing material, so the new Chinese armchair can have a wider choice space. In the design, the different needs of different parts of the chair lead to different materials. This is very different from the traditional armchair design. With the continuous improvement of science and technology, the use of new materials is also more flexible. Metal is one of the most common materials in today's society, which has the advantages of fast production speed, simple processing technology and abundant raw materials. At the same time, traditional hardwood materials are still selected on the external mechanism, which can better highlight the physical characteristics of the material. It can make people have a better use experience, and also make the shape of the armchair more innovative than the traditional all wooden indifference, the design truly reflects the "people-oriented" humanistic care.

Finally, in terms of structure, with the changes of The Times and the progress of society, the armchair has been unable to meet people's more and more functional needs, and people have put forward new requirements for its size, component composition and new functions. Therefore, the extraction of different design elements for deconstruction and reorganization is an indispensable part of the new Chinese style

armchair design. I will combine seating, reading, drinking tea and other functions. In this scheme design, I deconstructed and reorganized traditional furniture design elements with different functions to form a new chair design, whose functions meet the diverse needs of different people in modern life. At the same time, the local size of the new Chinese armchair design has been slightly adjusted to make it more in line with the needs of modern life. And the processing technology of the new Chinese style chair design is improved, and the mortise and tenon structure of the traditional chair must be changed through the combination of modern industrialization, which greatly improves the production efficiency of the product.

3. Suggestion

The author puts forward two suggestions, the first is the design suggestion. If someone wants to study the Qing Dynasty chair or the new Chinese chair, they can go to Beijing, the capital of China, to make a field visit. The Palace Museum and other buildings in Beijing are all displaying Qing Dynasty furniture, which is of great historical significance and research significance. It is not very convenient to go to the Qing Dynasty history museum or the new Chinese furniture market for field study and research, so this article still has a lot of room for improvement. Entering the museum can better understand the culture of the Qing Dynasty, and then have a deeper understanding of the chair, which can make the design more suitable to the needs of users. The second is commercial advice. In order to make the sales of chairs better, we can first conduct research on the market of new Chinese style chairs to understand the preferences of target users. We can also conduct market research and investigation in some large Chinese style furniture markets to collect accurate data, such as questionnaires, online interviews, expert consultations, etc., so as to make the research more accurate and accurately meet the market demand. Boost sales of new Chinese chairs.

REFERENCES

- Appiah-Kubi, OP, Lyv, J., & Wu, Z. (2021). A historical survey of traditional Chinese furniture. *Asian Journal of Science and Technology*, 12 (05), 11704-11708.
- Cao, X., & Hansen, E. N. (2006). Innovation in China's furniture industry. *Forest Products Journal*, 56(11/12), 33
- Fang Hai, "Sinism in Modern Furniture Design, Beijing: China Architecture and Architecture Press,2007.
- Fei Hailing, Zhao Xiaomao, Zhang Shuangbao. The influence of Ming and Qing furniture on western modern furniture can be wood processing machinery.2004,(5):29-33
- Heng Xiaodong. Diversified development trend of new Chinese furniture. *Industrial Design*,2012 (11:98-98).
- Hu Wenyan. *Chinese Ancient Furniture* ™MI. Harbin; Heilongjiang People's Publishing House. 1988:147-152
- Hu Zhongyan, Cao Yang, Inheritance and development of ancient Chinese furniture design *A Packaging Engineering*,2009, (1) :158-160
- Huai Anguo. *Furniture Decoration Art of Ming and Qing Dynasties* M. Hangzhou: Zhejiang Photographic Publishing House,2001:45
- Journal*,2002,1(4):397-400
- Li Ming, Chai Songhua, Comparative analysis of modern furniture and Ming furniture IV. *Shopping Mall Modernization*.2009,(569): 155-156
- Li Yuhong, *History of Chinese and Foreign Furniture Development* IM, Harbin; Northeast Forestry University Press,2000:65-69
- LIU, X. Y., TIMAR, M. C., & YI, S. L. (2013). A STUDY ON THE HISTORY AND MATERIALS OF TRADITIONAL CHINESE FURNITURE. *Pro Ligno*, 9(4).
- Ponder, N. (2013). Consumer attitudes and buying behavior for home furniture. Report prepared for the furniture outreach program at Franklin Furniture Institute, Starkville, Mississippi, USA.

- Tang Kaijun. Discussion on the development trend of modern Chinese furniture. Furniture and Interior Decoration,2005,(07:11-15)
- Wang Shisai, Research on Ming style furniture IM. Hong Kong: Sanlian Bookstore Publishing House,1996:103-108
- Wu, S., & Liu, W. (2019, July). Discussion on the Aesthetic Concept of Chinese Traditional Culture in Modern Furniture Design. In IOP Conference Series: Materials Science and Engineering (Vol. 573, No. 1, p. 012023). IOP Publishing.
- Xiong, X. Q., Guo, W. J., Fang, L., Zhang, M., Wu, Z. H., Lu, R., & Miyakoshi, T. (2017). Current state and development trend of Chinese furniture industry. Journal of Wood Science, 63, 433-444.
- Xu Qiupeng, Zhang Fuchang, Research on the modernization of traditional Chinese furniture Structure, 4, Design,2005 (8 :25-25)
- Yang Chunhong, Chinese Modern Furniture design Concept Study D] Changsha: Central South University of Forestry and Technology,2006
- Yang Xingxing. Research on the development of Modern Chinese Furniture. Changsha: Central South Forestry College,2002
- Yin, Z., & Ruishuang, X. (2021, May). Application of new Chinese style in interior design--take the cultural and creative museum of the palace museum as an example. In IOP Conference Series: Earth and Environmental Science (Vol. 768, No. 1, p. 012144). IOP Publishing.
- Yu Shen, Wood Like Nian Hua - Ancient Chinese Furniture I]. Tianjin: Baihua Literature and Art Publishing House,2006:241-245
- Yu Xiaohong, Research on the Modern Application of Decorative Patterns of furniture carving in Ming and Qing Dynasties - Doctoral Dissertation, Beijing Forestry University,200663
- Zeng, J., & Deng, S. (2017, May). The Development Direction of The New Chinese-style Mahogany Furniture Design-Based on Market Trend Concerning the Generation of 1980s/1990s. In 2017 4th International Conference on Education, Management and Computing Technology (ICEMCT 2017) (pp. 320- 324).

Atlantis Press.

Zhang Shuanghong, Xu Hao. The beauty of Yi Yun) The artistic charm of Ming furniture.

Art Review.2004(3):45-51

Zhang Yang, Wang Fenghu, Modern Chinese Furniture Design based on symbolic thinking 0, Furniture and Interior Decoration,2007.05):28-29

Zhang Yuanqun, Wang Wenning. On the application of lines in furniture modeling. Wood Industry,2001,56(4):5-9

Zheng, Y., & Zhu, J. (2021). The application of bamboo weaving in modern furniture.

BioResources, 16(3), 5024.

Zhou Haoming, Jiang Zhengqing. The evolution of the chair to see the influential factors of the development of ancient Chinese furniture design - Jiangnan University

Zhu Jiaqian. Furniture of Ming and Qing Dynasties (Part 1) IM. Shanghai: Shanghai Science and Technology Press, 2002:27-55

Zou, W. H. (2012). Analyze the Method of Generative Design in New Chinese Furniture.

In Advanced Materials Research (Vol. 433, pp. 1582-1586). Trans Tech Publications Ltd.



APPENDIX

Questionnaire content:

New Chinese chair design questionnaire

Hello! I'm conducting a questionnaire about new Chinese chair design. I hope you can take some time to answer a few questions. You just need to fill them in according to your real ideas. Thank you very much for your cooperation!

Q1. Do you know about the Qing Dynasty culture?

Yes No

Q2. Do you like the Qing Dynasty culture?

Like Not like

Q3. What do you look for when choosing new Chinese chair?

Style Material Structure

Q4. What style of new Chinese chair do you like to buy?

The armrest is semicircular and the lines are simple

The chair back has a pattern

The handrail is square and has feet

Q5. What kind of material do you prefer for new Chinese chair ?

- Leather Cloth Wood Iron New materials (such as carbon fiber, plastic, rattan)

Q6. Which kind of new Chinese chair do you prefer ?

- Bright color Dark color Natural wood color

Q7. Which sitting position do you prefer ?



Q8. What is your dissatisfaction with the new Chinese chair on the market ?

(Choose two)

- Out of style Single function Occupy a large space Hard to clean
Heavy weight

Q9. The price at which you can accept the new Chinese style chair is ?

- Less than 500 RMB 500-1000 RMB 1000-2000 RMB More than
2000 RMB

Q10. If you were to buy a new Chinese-style chair, which of the following would you
buy?

And do you have any suggestions for improvement ?



Interview content:

For the sales of new Chinese furniture:

Q1. Which of these three chair designs do you think is more in line with the
needs of customers?

Q2. What needs to be improved about this chair that meets the needs of customers?

Q3. What are the general needs of customers when choosing new Chinese chairs?

For furniture designers:

Q1. Which of these three chair designs do you think is more in line with the needs of customers?

Q2. What needs to be improved about this chair that meets the needs of customers?

Q3. What are the general needs of customers when choosing new Chinese chairs?

For history teachers:

Q1. Which of these three chair designs do you think is more in line with the cultural style of the Qing Dynasty?

Q2. What do you think are the characteristics of chairs that meet the needs of Qing Dynasty culture?

Q3. Is there anything that needs improvement in this chair?

VITA

