

UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

**INTEGRATED FRAMEWORK OF CULTURAL VALUES AND CUSTOMER
PERCEPTION FOR SHANDONG MODERN FIBER ART CRAFTS IN
CHINA**

By

WANG NA

**Thesis submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

January 2025

FBSB 2025 5



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DEDICATION

This thesis is dedicated to

My parents:

For guiding me to live a bright and courageous womanhood.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment
of the requirement for the degree of Doctor of Philosophy

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January 2025

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Modern fiber art is a new artistic concept that has evolved based on traditional weaving techniques, including brocade crafts, embroidery, carpets, weaving, and other crafts. Over the last decade, fiber art has progressively transitioned into production and become integrated into the everyday lives of the Chinese populace. It has two main functions: practical and decorative. However, current fiber art crafts designs frequently lack emotional resonance and fail to engage users meaningfully. The research discovered that cultural values deeply influence craft creation. However, specific characteristics and elements related to consumer preferences have not been thoroughly examined. The study intends to develop a framework based on the cultural values dimensions and customer perception for Shandong modern fiber art crafts. The framework becomes a guideline for product designers in the design and development of a new modern fiber art crafts toward satisfaction. The study adopts a Case Study methodology. Data is collected through Focus Group Discussion (FGD), survey, and Kansei Engineering (KE). Firstly, the cultural values scale with 34 items and 5 cultural

values dimensions for fiber art crafts were determined using Grounded Theory Analysis, Item Analysis, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA). Then, 16 fiber art crafts were used as representative samples for in-depth research, and 4 dimensions and some design elements of fiber art crafts that affect customer perceptions are determined through Factor Analysis (FA), Principal Component Analysis (PCA), K-means Cluster Analysis and Partial Least Square Analysis (PLS). Finally, the relationship between the cultural values of fiber art crafts and customer perceptions factors was determined, and based on this, the Cultural Values and Customer Perception (CVCP) framework of fiber art crafts was developed, which was verified by an expert panel. The results validate that the 5 dimensions of cultural values and 4 influencing factors of customer perceptions are positively correlated and have a reciprocal relationship. The study identifies and validates the cultural values, customer perception factors, and design features of fiber art crafts. These findings will help designers establish emotional bonds with users and identify their emotional needs as a reference for the initial stage of product design, thereby improving the user experience of fiber art crafts among Chinese consumers and promoting the development of the fiber art crafts industry in China.

Keywords: Fiber Art Crafts, Cultural Values, Emotional Resonance, Customer Perception

SDG: GOAL 12: Responsible Consumption and Production

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**RANGKA KERJA INTEGRASI NILAI BUDAYA DAN PERSEPSI
PELANGGAN BAGI KRAF SENI GENTIAN MODEN DI SHANDONG
CHINA**

Oleh

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Seni gentian moden ialah sebuah konsep kesenian baharu yang telah berevolusi berlandaskan teknik-teknik tenunan tradisional, termasuk kraf brokad, sulaman, permaidani, tenunan dan kraf-kraf lain. Sepanjang dekad yang lalu, seni gentian telah melalui transisi secara progresif ke dalam industri pengeluaran dan menjadi sebahagian daripada kehidupan harian masyarakat Cina. Ia mempunyai dua fungsi utama, iaitu dari sudut praktikal dan juga sebagai hiasan. Namun begitu, reka bentuk kraf seni gentian masa kini kurang mempamerkan resonans emosi dan gagal memikat pengguna secara bermakna. Kajian ini mendapati bahawa nilai-nilai budaya amat mempengaruhi penciptaan kraf. Walau bagaimanapun, ciri-ciri dan elemen-elemen khusus yang berhubung kait dengan keutamaan pengguna tidak dikaji secara mendalam. Kajian ini bermatlamat untuk membentuk sebuah rangka kerja berdasarkan dimensi-dimensi nilai budaya dan persepsi-persepsi pelanggan ke atas kraf seni gentian moden Shandong. Rangka kerja menjadi garis panduan untuk pereka produk dalam reka bentuk dan pembangunan kraf seni gentian moden baharu ke arah kepuasan.

Kajian ini menggunakan metodologi Kajian Kes. Data dikumpulkan menerusi perbincangan kumpulan fokus (FGD), tinjauan dan Kejuruteraan Kansei (KE). Pada mulanya, kajian telah menentukan skala nilai budaya dengan 34 item dan 5 dimensi nilai budaya untuk kraf seni serat dengan menggunakan Analisis Teori Berasaskan Data, Analisis Item, Analisis Faktor Eksploratori (EFA) dan Analisis Pengesahan Faktor (CFA). Kemudian, 16 kraf seni serat telah digunakan sebagai sampel perwakilan untuk kajian yang lebih mendalam, dan 4 dimensi gentian beberapa elemen kraf seni gentian yang mempengaruhi persepsi pelanggan telah ditentukan menerusi Analisis Faktor (FA), Analisis Komponen Utama (PCA), Analisis K-means Cluster dan Analisis Partial Least Square (PLS). Akhirnya, hubungan antara nilai budaya kraf seni gentian dan faktor persepsi pelanggan telah ditentukan, dan berdasarkan dapatan ini, rangka kerja Nilai Budaya dan Persepsi Pelanggan (CVCP) kraf seni gentian telah dibangunkan, dan telah disahkan oleh sebuah panel pakar. Dapatan-dapatan ini telah mengesahkan 5 dimensi nilai budaya dan 4 faktor yang mempengaruhi persepsi pelanggan adalah berkolerasi secara positif dan mempunyai hubungan timbal balik. Kajian ini telah mengenal pasti dan mengesahkan nilai budaya, faktor persepsi pelanggan dan ciri reka bentuk kraf seni gentian. Dapatan-dapatan ini akan dapat membantu pereka bentuk untuk mewujudkan ikatan emosi dengan pengguna dan mengenal pasti keperluan-keperluan emosi mereka sebagai rujukan kepada peringkat awal penciptaan reka bentuk produk, agar dapat menambah baik pengalaman pengguna kraf seni gentian dalam kalangan pengguna Cina seterusnya memupuk pembangunan industri seni serat di negara China.

Kata kunci: Kraf Seni Gentian, Nilai-Nilai Budaya, Resonan Emosi, Persepsi-Persepsi Pelanggan

SDG: MATLAMAT 12: Penggunaan dan Pengeluaran Bertanggungjawab

ACKNOWLEDGEMENTS

First and foremost, I would like to extend my heartfelt appreciation to Dr. Sazrinee binti Zainal Abidin, my supervisor, for the unwavering assistance she has provided throughout. Her willingness to give time so generously is very much appreciated. Dr. Sazrinee binti Zainal Abidin has always been kind and encouraging during times of difficulty. Thank you for sticking with and believing in me.

In addition to my supervisor, I am grateful to my co-supervisors, Associate Prof. Ts. Dr. Nazlina Sharri and Dr. Noranita binti Mansor. Associate Prof. Ts. Dr. Nazlina Sharri's patience, thoughtfulness, and knowledge kept me through this process. I want to express my sincere gratitude to Dr. Noranita binti Mansor for her invaluable guidance and insightful comments on the methodology employed in this study.

I sincerely thank my family and friends—especially my beloved husband, parents, and sister. My daughter was only two years old when I started my doctoral studies. I owe my ability to get through this tough time to the unwavering support of my family. My husband has been a constant source of support, encouraging me to pursue my research. My parents have provided financial assistance, allowing me to focus on my studies without worry. My sister has continually encouraged me and gone above and beyond to offer her help whenever I faced difficulties. I am incredibly fortunate to have them by my side, and I feel immensely grateful and proud to have such a supportive family.

Lastly, I sincerely appreciate all the individuals and institutions who have helped and motivated me during my doctoral studies, especially the associations and organizations that provided practical assistance and encouragement throughout my research journey.

I deeply appreciate every individual among you.



This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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TABLE OF CONTENTS

	Page
ABSTRACT	i
ABSTRAK	iii
ACKNOWLEDGEMENTS	v
APPROVAL	vii
DECLARATION	ix
LIST OF TABLES	xiv
LIST OF FIGURES	xvii
LIST OF APPENDICES	xix
LIST OF ABBREVIATIONS	xx
 CHAPTER	
 1 INTRODUCTION AND CONTEXT OF THE STUDY	 1
1.1 Introduction	1
1.2 Background of the Study	1
1.3 Definition of Terms	4
1.4 Statement of Problem	5
1.5 Research Aim	8
1.5.1 Research Questions	8
1.6 Research Objectives	8
1.7 Case Study Inquiry Strategy	11
1.8 Scope and Area of Study	14
1.9 Significance of Study	15
1.10 Outline of the Thesis	16
 2 LITERATURE REVIEW	 18
2.1 Introduction	18
2.2 Part One: Literature Review on Fiber Art Crafts	19
2.2.1 Development of Fiber Art	20
2.2.2 History of Fiber Art in China	21
2.2.3 Famous Locations of Chinese Fiber Art Crafts	25
2.2.4 Design Elements of Fiber Art Crafts	31
2.2.5 Application of Fiber Art Crafts in Different Interior Spaces	42
2.2.6 Types of Fiber Art Crafts in Current Lifestyle	47
2.2.7 Design Process of Fiber Art Crafts	51
2.2.8 Summary and Point of Departure	53
2.3 Part Two: Literature Review on Cultural Values in Relation to Fiber Art Crafts	54
2.3.1 Overview of Cultural Values	54
2.3.2 Chinese Cultural Values Dimensions	55
2.3.3 Cultural Values and Buying Behavior to Fiber Art Crafts	58

2.3.4	Summary and Point of Departure of Consumers' Cultural Values of Fiber Art Crafts	60
2.4	Part Three: Literature Review on Customer Perception in Relation to Fiber Art Crafts	61
2.4.1	Overview of Customer Perception	61
2.4.2	Emotional Resonance	62
2.4.3	Customer Perception Related to Cultural Values	63
2.4.4	Customer Perception Factors for Fiber Art Crafts	63
2.4.5	Summaries and Points of Departure	64
2.5	Theory Related to Study	65
2.5.1	Chinese Cultural Values (Chinese Economists Pan et al.)	66
2.5.2	Perceived Value Theory (Marketing Specialist Sweeney & Soutar)	68
2.5.3	Research Gap and Strategy	70
2.6	Summary of Chapter	72
3	RESEARCH METHODOLOGY	73
3.1	Introduction	73
3.2	Research Design Workflow	74
3.3	Rationale for Using Case Study as A General Approach to This Study	77
3.4	Data Collection Technique	79
3.4.1	Phase 1: Focus Group Discussion (FGD)	79
3.4.2	Phase 2: Survey	90
3.4.3	Phase 3: Kansei Engineering Type I	96
3.5	Correlation Validation	111
3.5.1	The Relationship Between Cultural Values and Customer Perception of Fiber Art Crafts	111
3.5.2	Measurement of the Relationship Between Cultural Values and Customer Perceptions of Fiber Art Crafts	112
3.5.3	Expert Validation	112
3.6	Summary of Chapter	115
4	DATA ANALYSIS AND RESULTS	116
4.1	Introduction	116
4.2	Result I – FGD Analysis	116
4.2.1	Coding of Focus Group Discussion (FGD)	117
4.2.2	Cultural Values Scale Development	121
4.3	Result II – Survey Analysis	122
4.3.1	Result of Preliminary Data Analysis	123
4.3.2	Result of Socio-Demographic Information	125
4.3.3	Result of Exploratory Factor Analysis	127
4.3.4	Result of Confirmatory Factor Analysis	129
4.3.5	Result of Reliability and Validity Analysis	130
4.4	Result III – KE Analysis	131
4.4.1	Result of Identification of the Fiber Art Crafts Samples	131
4.4.2	Result of Kansei Word Pairs	135
4.4.3	Result of Semantic Difference Technique	138

4.5	Result IV – Correlation Analysis	167
4.6	Summary of Chapter	169
5	DEVELOPMENT OF NEW FRAMEWORK	170
5.1	Introduction	170
5.2	Discussion of Finding	170
5.2.1	Finding based on Research Question 1	170
5.2.2	Finding based on Research Question 2	172
5.2.3	Summary of Finding	179
5.3	New Framework Development	180
5.3.1	Develop New Framework	180
5.3.2	The Framework Process	183
5.4	Validation of Framework	185
5.4.1	Validation Process	186
5.4.2	Experts Validation	186
5.5	Summary of Chapter	189
6	CONCLUSION AND RECOMMENDATIONS	190
6.1	Introduction	190
6.2	Conclusion of the Research	190
6.3	Contributions of the Research to Knowledge	193
6.3.1	Research Novelty	193
6.3.2	Research Contributions	194
6.4	Limitation of the Research	196
6.5	Recommendation for Future Research	197
6.6	Summary of Research	198
	REFERENCES	199
	APPENDICES	222
	BIODATA OF STUDENT	281
	LIST OF PUBLICATIONS	282

LIST OF TABLES

Table	Page
1.1 Summarize the Research Framework Adopted from the Eagle Table	10
2.1 The Main Patterns of the Fiber Art Crafts	35
2.2 The Main Colors & Materials of the Fiber Art Crafts	38
2.3 The Types of Chinese Fiber Art Crafts in Current Home	48
3.1 FGD Research Site and Samples	85
3.2 Sample Size of Population at a 95% Confidence Level	93
3.3 Select the Representative Samples Using FGD	101
3.4 Process of Screening of Kansei Word Pairs	103
3.5 Expert Validation	113
3.6 The Group of Expert Validators of the Framework of Fiber Art Crafts Integrating the Relationship Between Cultural Values and Customer Perception	114
4.1 Classification Table of Cultural Values Encoding of Fiber Art Crafts	118
4.2 Selective Coding after Discussion among FGD	119
4.3 Discrimination Screening	122
4.4 The Questionnaire Survey Recovery Information	123
4.5 Descriptive Analysis Table I	124
4.6 Gender and Age of the Respondents	125
4.7 Education and Occupation	126
4.8 Exploratory Factor Analysis	127
4.9 Confirmatory Factor Analysis	129
4.10 Reliability and Validity Analysis	130
4.11 Item/Category Classification List	132
4.12 Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD1	132

4.13	Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD2	133
4.14	Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD3	133
4.15	The Samples of the Fiber Art Crafts	134
4.16	Kansai Word Pairs	135
4.17	Kansei Word Pairs after Screening	136
4.18	Kansei Word Pairs after Secondary Screening	137
4.19	Representative Kansei Word Pairs	138
4.20	Descriptive Analysis Table II	140
4.21	Cronbach's Alpha of the Scale	141
4.22	Factor Contribution Table	142
4.23	Embroidery Rotated Component Matrix ^a	143
4.24	Carpet & Tapestry Rotated Component Matrix ^a	144
4.25	Bamboo Grass Weaving Rotated Component Matrix ^a	145
4.26	Component Score Coefficient Matrix for Embroidery	146
4.27	Component Score Coefficient Matrix for Carpet & Tapestry	146
4.28	Component Score Coefficient Matrix for Bamboo Grass Weaving	147
4.29	Cluster Classify for Embroidery	149
4.30	Cluster Classify for Carpet & Tapestry	150
4.31	Cluster Classify for Bamboo Grass Weaving	150
4.32	The Selection of 11 Kansei Word Pairs	153
4.33	The Selected Design Elements of Fiber Art Crafts	154
4.34	Kansei Word Pairs Score of the Samples	156
4.35	Code of Design Features of the Fiber Art Crafts Samples	158
4.36	Partial Least Square Results Between Design Features and Kansei Word Pairs	160
4.37	Design Features with Positive and Negative Related to Kansei Word Pairs	163

4.38	The Fond of Fiber Art Crafts Evaluation	167
4.39	Correlation Analysis of Cultural Values and Customer Perception in Fiber Art Crafts	168
4.40	Correlation Analysis of Cultural Values and Each Dimension of Customer Perception in Fiber Art Crafts	169
5.1	A Summary of Expert Analysis of Cultural Values and Customer Perception Framework of Fiber Art Crafts	187



LIST OF FIGURES

Figure	Page
2.1 Theoretical Framework	19
2.2 Straw Mats in the Neolithic Period	22
2.3 Ivory Mat in Qing Dynasty	24
2.4 Book Box in Qing Dynasty	24
2.5 Double-faced Embroidery	27
2.6 Dongyang Bamboo Weaving	28
2.7 Yantai Carpet	29
2.8 Pingdu Grass Weaving	30
2.9 Lu Embroidery	31
2.10 Fabric Sofas	43
2.11 Different Color Carpets	44
2.12 Children's Room Supplies	44
2.13 Tablecloths	45
2.14 Bamboo Roll-up Curtains	46
2.15 Product Design and Development	53
2.16 Classification of Chinese Cultural Values	56
2.17 Consumer Choices and Buying Behavior	59
2.18 Perceived Value Model	69
2.19 Research Conceptual Framework	71
3.1 Research Process Diagram	74
3.2 Case Study Research Methodology Design	75
3.3 Research Site on the Map	86
3.4 The Detail of the Focus Group Discussion (FGD) Analysis	89
3.5 The Process of Survey	91

3.6	Choices of Route to Reach the Kansei	97
3.7	Fiber Art Crafts Product Samples	100
3.8	The Semantic Differential Method (SD) Scale	105
4.1	Kansei Word Pairs Evaluation	139
4.2	Regression Factor Scores 1-2 Position for Embroidery	148
4.3	Regression Factor Scores 1-2 Position for Carpet & Tapestry	148
4.4	Regression Factor Scores 1-2 Position for Bamboo Grass Weaving	149
4.5	K-means Cluster Analysis for Embroidery	151
4.6	K-means Cluster Analysis for Carpet & Tapestry	151
4.7	K-means Cluster Analysis for Bamboo Grass Weaving	152
5.1	The Relationship Between Consumers' Cultural Values and Customer Perception of Fiber Art Crafts	180
5.2	The Cultural Values and Customer Perception (CVCP) Framework of Fiber Art Crafts	181
5.3	Operational Framework for Designers: Cultural Values and Customer Perception Framework of fiber art crafts	184
5.4	Expert Evaluation Score Analysis Mean	188

LIST OF APPENDICES

Appendix	Page
1 Ethical Approval	222
2 Sample of Consent Form for Focus Group Discussion	225
3 Data Collections from FGD from NVIVO Applications	226
4 Question Form for Questionnaire	227
5 Expert Evaluation Form	228
6 Questionnaire 1 (English Version)	232
7 Questionnaire 1 (Chinese Version)	236
8 Questionnaire 2 (English Version)	239
9 Questionnaire 2 (Chinese Version)	243
10 Questionnaire 3 (English Version)	246
11 Questionnaire 3 (Chinese Version)	264

LIST OF ABBREVIATIONS

CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
FA	Factor Analysis
FGD	Focus Group Discussion
KE	Kansei Engineering
PCA	Principal Component Analysis
PLS	Partial Least Square Analysis
SD	Semantic Differential

CHAPTER 1

INTRODUCTION AND CONTEXT OF THE STUDY

1.1 Introduction

This chapter discusses the context and background of the study. It also explains the statement of the problems as detailed in the study and establishes the research goal and objective of the study. This chapter also details the significance of the study, the scope and limitations, the definition of terms, and the organization of the thesis.

1.2 Background of the Study

Fiber art, a new artistic concept from ancient traditional weaving, first emerged in the United States in the 1970s. Conceptually, it refers to diverse artistic creations made of fiber materials using traditional or modern crafting tools and methods, such as woven products, dyed and printed items, quilted pieces, and soft sculptures. In the academic circle, fiber art has two definitions due to its general concept, either generally referring to works made of fine fiber materials using techniques such as weaving, embroidery, printing, and dyeing, integrating practical application, aesthetic appreciation, clothing, and decoration, or specifically referring to works based on weaving techniques with a focus on their aesthetic value (Trejo & Lewis, 2020; Li & Li, 2020; Chen, 2006).

Over the past two decades, fiber art activities in China have been highly active and closely associated with the ‘From Lausanne to Beijing’ International Fiber Art

Biennale (Hereinafter referred to as the 'Biennale'). Since 2000, it has been held in various cities across China, including Beijing, Shanghai, Suzhou, Zhengzhou, Nantong, Wuhu, and Shenzhen. The 9th Biennale received approximately 2,000 applications from 54 countries and regions, making it the world's largest fiber art biennale (Liang, 2018). Since 2014, the China International Fiber Art Exhibition has been organized seven times in a row by the China National Textile and Apparel Council, China Textile Industrial Branch, and China Council for the Promotion of International Trade, promoting the industrialization of fiber art and its integration into home living in China. With its distinctive qualities, fiber art has transformed over time into a unique form of decorative art, gaining growing recognition and admiration for its aesthetic appeal (Li & Pan, 2023). Consequently, it is progressively transitioning into production and becoming integrated into the everyday lives of the Chinese populace. In modern home design, fiber art seamlessly integrates decoration and functionality, owing to the high plasticity, soft draping texture, compatibility, simplicity, and natural availability of fiber materials. This integration offers various forms of expression in home spaces, such as tapestries, screens, carpets, tablecloths, and more, serving both decorative and practical purposes and becoming increasingly utilized in modern home decoration.

This study took Shandong Province of China as the research site. The Shandong Province has various fiber art crafts, including Lu embroidery, Pingdu straw weaving, Weifang bamboo weaving, and Yantai carpets (Zhang & Shi, 2022). With the rapid development of Shandong province's fiber art industry, more and more fiber art products have been introduced into lifestyle, whether in home decoration, gift giving, or cultural tourism (Zhang, 2022). These fiber art crafts add a special flavor to people's

living spaces. However, despite the wide variety of fiber art crafts in Shandong province, with the development of the times, consumer demand for these fiber art crafts has gradually decreased (Lu, 2023).

Based on Maslow hierarchy of needs (1943), the satisfaction of basic needs paves the way for the emergence of more advanced needs. The modern living room, often filled with an abundance of hard materials, significantly impacts the psychological well-being of its inhabitants. However, current research on the fiber art industry predominantly focuses on workshops or small factories. This has led to production processes lacking artistic concepts, merely replicating the use of fibers mechanically and disregarding consumer needs, consequently diminishing the value of fiber art itself (Chen et al., 2019; Xu et al., 2013).

Cultural values are a social product that serves people. The dominant cultural values within a society can be considered as the main defining characteristic (Schwartz, 1999; Williams, 1985; Hofstede, 1980; Inglehart, 1977; Weber, 1958). Both people's cultural needs and products that satisfy these needs can only be formed in people's social practices. As a higher-level necessity, cultural aspects empower individuals to validate the significance and purpose of their lives through cognitive and sensory experiences, facilitating their engagement in evaluative thinking and decision-making. Cultural values research can provide a reasonable description and positioning for product value. Fiber art possesses unique affinity and deep historical-cultural value; the choice and evaluation of consumers towards fiber arts products are often influenced by the cultural environment they are in (Song, 2021). Therefore, studying consumers' cultural values towards fiber art crafts can better understand and explain consumers' attitudes and behaviors toward the products (Meng & Kang, 2023; Liang, 2018).

What designers need to provide nowadays is not only the improved design of new products. They need to create an appropriate design in a specific socio-cultural environment. It can be concluded that taking the common elements of cultural values and customer perception as a design concept will be necessary to enhance user preferences at the early stage of design development. It will also help maintain the heritage and development of fiber art crafts.

1.3 Definition of Terms

Several terms were used in this study and explained as follows:

i. Fiber Art Crafts

The development of modern fiber art originated from traditional hand-dyeing, weaving, and knotting techniques (Balagtas et al., 2022; Wen et al., 2022). In this study, fiber art crafts refer to various practical and aesthetically valuable items created by artists using fiber materials and artistic techniques, such as brocade crafts, embroideries, carpets, and knotting crafts.

ii. Cultural Values

Cultural values are the basis of cultural identity, and the essence of cultural identity is the identification of values (Song & Li, 2024). In this study, cultural values refer to the values that Chinese consumers have long recognized and inherited in a specific culture. It has a significant impact on shaping Chinese individual behavior, decision-making, and attitudes in daily life (Li, 2024).

The cultural values scale of consumers is a scoring tool used to study and evaluate consumer values using the Likert scale. It uses a series of questions or statements to investigate an individual's attitudes, beliefs, and preferences regarding consumption, brands, products, and services.

Cultural values dimensions of consumers refer to a series of basic dimensions or aspects considered in the study of consumer behaviors and values, which can be used to explain changes in consumer behaviors and attitudes.

iii. Customer Perception

Schacter (2011) defines perception as the organization, identification, and interpretation of sensory information to understand and express the information or environment presented. In this study, customer perception refers to consumers' feelings and emotions about fiber art crafts in terms of appearance, performance, price, quality, and reputation.

1.4 Statement of Problem

Researchers have made many efforts to explore diverse methodologies in fabric design to enhance user experience. Cultural values can elicit resonance with consumers towards the product, but current fiber art crafts designs frequently exhibit a lack of emotional resonance and fail to engage users meaningfully (Wang et al., 2023; Pozzo, 2020; Qin et al., 2019; Lunde, 2018). As Guo and Sun (2016) stated, due to different cultural values, consumers may have different evaluations and recognition levels for the same product. Therefore, in this study, the following questions are determined:

i. Fiber art crafts pay less attention to cultural identity in their production process.

In contemporary society, numerous regions have acknowledged the significance of safeguarding traditional crafts. According to Yang et al. (2022) and Fan (2022) state that modern handicrafts place greater emphasis on technology while neglecting cultural identity in their production processes. Consequently, Shandong Lu embroidery solely concentrates on decorative style development, causing consumers to lose their cultural connection with Lu embroidery (Guo et al., 2023). However, this decline in cultural identity stems from a lack of attention to the importance of cultural value orientations (Li, 2019). One prevailing issue the research currently face is the scarcity of literature exploring the characteristics of cultural values associated with handicrafts. Chen and Kui (2023) highlight that this dearth may hinder consumers' ability to experience diverse values through existing products, influencing consumer decision-making.

ii. The design of fiber art crafts on the market is outdated and lacks emotional resonance with consumers.

The lifestyle of contemporary Chinese individuals has undergone significant transformations, consequently leading to a shift in consumer demands. Neha and Aravendan (2023) have highlighted that consumers exhibit a negative inclination towards fiber art crafts characterized by outdated designs, commonplace materials, and coarse aesthetics. Such products are often perceived as inadequate in fulfilling their emotional requirements, diminishing the desire to purchase. Chen and Xue (2021) pointed out that it is difficult for consumers to resonate emotionally with outdated fiber art crafts. Pan (2019) proposed that cultural values deeply influence craft creation;

however, specific characteristics and elements related to consumer preferences have not been thoroughly examined (Xu et al., 2022; Yang & Zhang, 2019). This gap poses challenges for designers aiming to develop fiber art crafts that satisfy consumers' needs.

In this study, the researchers will identify the dimensions of cultural values and perception factors related to fiber art crafts and subsequently establish their interrelationship. This study is of paramount importance as it will provide a foundation for designing fiber art crafts. It holds significance for research and development projects within Shandong Province's fiber craft product industry, as well as for the production of globally competitive products.

The current challenge the research is confronted with pertains to the scarcity of literature on the cultural identity and design elements inherent in fiber art crafts. Regrettably, there is a dearth of active research exploring the values dimensions and perception factors associated with fiber art. Suppose products designed by designers lack emotional resonance and fail to engage consumers in meaningful interactions. In that case, it is likely that consumers will develop a progressively negative attitude towards fiber art crafts. The study intends to use a framework to determine the relationship between cultural values dimensions and customer perception of fiber art crafts and find solutions for designers to change negative consumer attitudes.

1.5 Research Aim

The research aims to develop a new framework that integrates the cultural values and customer perception for Shandong modern fiber art crafts. The framework becomes a guideline for product designers in design and development of a new modern fiber art crafts toward satisfaction. Thus, there are three research questions about fiber art crafts as following:

1.5.1 Research Questions

- i. What are the importance of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?
- ii. What are the factors of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?
- iii. How to integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?

1.6 Research Objectives

This research addresses the issues faced by consumers who have yet to fully embrace fiber art crafts. These issues include the current important of the cultural values and customer perception, cultural values dimensions of fiber art crafts, factors of customer perception of fiber art crafts, and the determination of the relationship between cultural values and customer perception of fiber art crafts in the current lifestyle in Shandong province in China. Therefore, all these issues will form the framework for the study objectives, which will be used to identify and analyze them.

- i. To identify the importance of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.
- ii. To examine the significant factors of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.
- iii. To integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.

Below is the Eagle table adopted by Ibrahim (2020) to summarize the research framework:



Table 1.1: Summarize the Research Framework Adopted from the Eagle Table

DESCRIPTION OF CONSTRUCT	SUB-RQ	RESEARCH OBJECTIVE	STRATEGY OF INQUIRY
Importance of the cultural values and customer perception	SRQ1: What are the importance of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?	To identify the importance of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.	Literature Review
The factors of cultural values and customer perception	SRQ2: What are the factors of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?	To examine the significant factors of cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.	FGD/Survey/Kansei Engineering
Develop the framework of fiber art crafts	SRQ3: How to integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?	To integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.	Correlation analysis

(Ibrahim, 2020)

1.7 Case Study Inquiry Strategy

This study proposes to explore the fiber art crafts in Chinese and attempts to focus on value issues in the current lifestyle. Consequently, it is necessary to accurately locate consumers' cultural value orientations toward fiber art crafts based on customer perception. Therefore, this study needs to identify the relationship between cultural values and customer perception to better understand the innovative design thinking of fiber art crafts design.

In this study, the researcher utilizes the Case Study research methodology as a general approach. The selection of a case study for this research adheres to Yin (2014), which suggests that if the main research question begins with "HOW" or "WHY," and the researcher lacks control over the situation while investigating a contemporary phenomenon, then employing case study research methodology is appropriate. Hence, in this study, where the main research question commences with "How" and seeks answers from contemporary events beyond the researcher's control or influence, utilizing case study research methodology is deemed suitable.

For the development of the research framework, this researcher utilized Yin's (2014) case study design components, which are illustrated as follows:

a. Main Research Question

The main research question in this study is:

How to integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?

Based on the formulation of the research question provided above, it can be observed that the main research inquiry in this study commences with the term “HOW,” which aligns with Yin’s (2014) first criterion. As per Yin (2014), a case study strategy is commonly employed to address most main research questions beginning with “HOW.”

b. Theoretical Proposition of the Study

This researcher developed a theoretical proposition below:

Designers can successfully change the consumer attitude towards fiber art crafts by integrating the cultural values and customer perception.

c. Unit of Analysis

According to Yin (2014), the unit of analysis can vary from a place or object to a person or an individual and is subject to the content and topic of the research. Therefore, in this study, “Fiber Art Crafts” is the unit of analysis because this researcher intends to review and investigate the state of fiber art crafts in current lifestyle in order to find out how to integrate the relationship of cultural values and customer perception in fiber art crafts of Shandong Province in China.

d. Linking Data to Proposition

According to Yin (2014), each proposition should be directly linked to the subject to be examined within the scope of the study. Thus, this can be explained as follows: aligning research sub-questions with data sources guides the researcher in planning data collection and analysis (refer to Table 1.1).

e. Criteria for Interpreting the Finding

The definite criterion in interpreting the findings in this study is the correlation coefficient between consumers' cultural values towards fiber art crafts and customer perception factors. The standard of interpretation is based on the size of the correlation coefficient. The researchers found that a correlation coefficient of $r \geq 0.1$ indicates that there is a correlation between two variables: small ($r > 0.1-0.3$), moderate ($r > 0.3-0.5$), large ($r > 0.5-0.7$), extensive ($r > 0.7-0.9$), nearly perfect ($r > 0.9$), and perfect ($r = 1.0$) (Di Mascio et al., 2020; Hader et al., 2019).

For that reason, this study agreed that the coefficient needs to be at least greater than 0.1, and the two can be considered to be correlated.

With the success in integrating cultural values and customer perception in fiber art crafts, the design process may encourage designers to design for user resonance. As a result, this study anticipates integrating the relationship of cultural values and customer perception in fiber art crafts, justifying the validation of the theoretical proposition in this study. In summary, in agreement with Yin (2014), Creswell and Poth (2016) also propose that employing the case study methodology is a suitable approach for examining real-life scenarios and workflow procedures, as well as activities and events. Utilizing the case study method offers the potential to unveil fresh perspectives on fiber art crafts design while enabling researchers to contribute theoretically by utilizing data in strategizing design tasks throughout the design process.

1.8 Scope and Area of Study

This study will examine the cultural values and consumer perception of fiber art crafts. Special attention is paid to the cultural identity and perception factors of Shandong consumers on fiber art. This study focuses on analyzing the cultural values and influencing factors of consumers in Shandong Province regarding the three major fiber art categories (embroidery, carpet and tapestry, bamboo grass weaving). Subsequently, this study investigates consumer perception factors of fiber art crafts, including grade, performance, material and style. The study used a combination of Focus Group Discussion (FGD) and Survey to obtain experts' and consumers' in-depth knowledge of fiber art crafts and identify the key factors influencing consumer choice.

The goal of this study is to provide theoretical guidance for the market development of fiber art crafts, in particular, to help designers and brands optimize product design and marketing strategies by understanding consumer perception factors. In the research process, Kansei Engineering (KE) is adopted to transform consumer emotional words into design elements. A comprehensive framework is established by combining Chinese Cultural Values Theory and Perceived Value Theory. This study will help to increase the market acceptance of fiber art crafts and promote the integration of culture and design, thereby facilitating the development of the fiber arts industry in Shandong Province while strengthening consumers' identity and purchase intention for cultural products.

1.9 Significance of Study

The significance of this research can be summarized as follows:

This study emphasizes the pivotal role of cultural values and customer perception in shaping satisfaction among consumers of modern fiber art crafts in Shandong, China. By exploring the intricate relationship between cultural values and consumer preferences, this research offers a profound understanding of how traditional artistic heritage can be seamlessly integrated into contemporary design to enhance its relevance and appeal in today's market.

Moreover, this study delineates the significant factors influencing cultural values and customer perception, providing valuable insights into consumer behavior and expectations concerning fiber art crafts. These findings contribute to the development of a novel conceptual model, the Cultural Values and Customer Perception (CVCP) Framework, which serves as a cornerstone for aligning traditional craftsmanship with contemporary consumer needs.

Through the application of this framework, the study seeks to elevate customer satisfaction with Shandong modern fiber art crafts, ensuring their sustained relevance in contemporary lifestyles. Enhanced satisfaction levels will not only cultivate significant appreciation for these cultural handicrafts but also stimulate market demand, thereby contributing to the revitalization and economic growth of the fiber art crafts industry in Shandong Province. Consequently, this research holds significant implications for artisans, designers, and industry stakeholders, enabling them to

strategically preserve cultural heritage while adapting to evolving consumer expectations.

1.10 Outline of the Thesis

This study is divided into six chapters. The chapters can be concisely explained as follows:

Chapter 1: Introduction—This chapter introduces the current issues surrounding fiber art crafts, the research problem, questions, objectives, significance, and a study summary.

Chapter 2: Literature Review—This chapter reviews relevant literature on the history and development of fiber art, design elements in fiber art crafts, customer perception, application in interior design, and cultural values. This is of great significance for the implementation of this study and will help to determine the theoretical framework and research design.

Chapter 3: Research Methodology—This chapter introduces the research design, Focus Group Discussion, Survey, and Kansei Engineering. It also explains data collection and analysis.

Chapter 4: Data Analysis and Results—This chapter describes the study findings, including consumers' cultural values of fiber art crafts, factors influencing customer perception, and the relationship between the two to the validation survey, with the outcomes discussed as well.

Chapter 5: Development of New Framework—This chapter provides discussions and explanations to address the study questions, highlighting the impact of customer perception on fiber art crafts and the cultural values of fiber art crafts in current lifestyles, develop a new framework and interpreting the results of the framework's validation.

Chapter 6: Conclusion—This chapter summarizes the key results and the contribution to knowledge and offers recommendations for future research based on the study's findings.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter aims to conduct a comprehensive literature review, aiming to establish a contemporary and pertinent rationale for the relevant field. Additionally, some theories will be examined to ascertain the correlation between Chinese cultural values and customer perception of fiber art crafts. Various resources, including museum exhibits, books, journal articles, conferences, and dissertations, have been scrutinized to broaden the perspective on research and design. **Figure 2.1** provides a comprehensive theoretical framework for the study. It presents the various key factors relevant to fiber art crafts in China. This study found that consumers have different perceptions and evaluations of fiber art crafts due to the influence of different cultural values. Therefore, this research framework explores how consumers' cultural values dimensions regarding fiber art crafts relate to customer perception factors. This theoretical framework aims to help researchers determine appropriate working guidelines in order to determine the research methodology further.

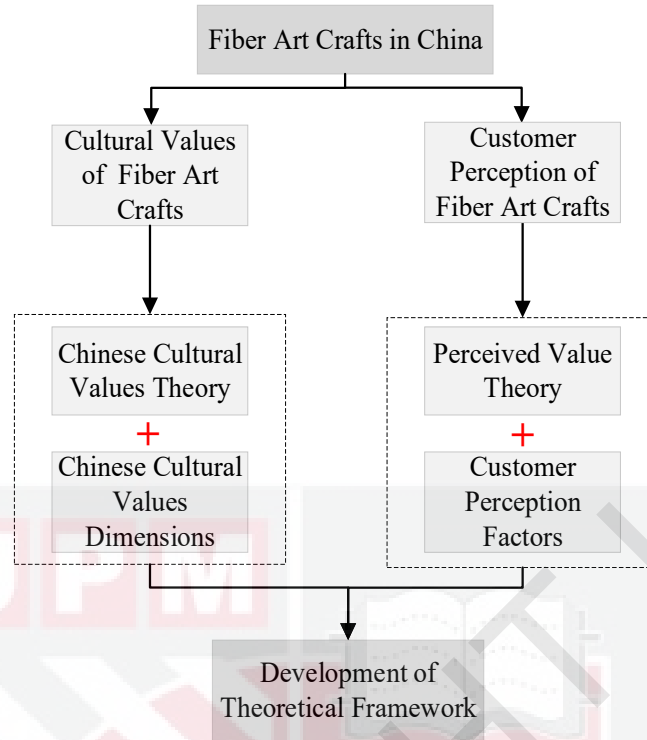


Figure 2.1: Theoretical Framework
(Illustration by Author)

2.2 Part One: Literature Review on Fiber Art Crafts

Shandong has been an important textile production area in China since ancient times. As early as the Han Dynasty, it was renowned for its silk, linen and cotton textiles. The rise of the fiber art crafts industry in Shandong Province is not only attributed to its profound cultural tradition but also driven by the demands of modern consumer markets. This part initiates the literature review and takes a broad view of fiber art. It discusses the development of fiber art, its design elements, and its application in interior design, together with current issues and challenges in fiber art crafts.

2.2.1 Development of Fiber Art

Rooted in ancient tapestry art, fiber art thrived during the Middle Ages and continued to evolve thereafter. The intricately woven tapestries crafted by renowned artists of that time served as a testament to the harmonious fusion of textiles and pictures, resulting in captivating decorative and functional narratives (Radermecker & Brosens, 2023; Koşar, 2015). In the beginning, the function of tapestries was to keep warm and avoid moisture. Later, tapestries were used as luxurious artifacts to decorate courts or palaces. Tapestries then became status symbols and were used for special ceremonial occasions, such as coronations, royal entrances, and weddings, where they were decorated. In the 16th century, the art of tapestry production gradually spread to European countries, and during the Renaissance, famous countries such as Raphael and Rubens designed tapestry sketches, of which there were many masterpieces. In the 17th century, France established large-scale royal tapestry factories in Paris, Lyon, and other places (Belmas, 2022; Campbell & Ainsworth, 2002). With the onset of the Industrial Revolution, society underwent significant changes, marked by the widespread adoption of mechanization and the subsequent decline of traditional handmade craftsmanship in favor of machine-made art. This shift also impacted the production of woolen tapestries, which increasingly came to be manufactured using machines. Consequently, the traditional handicraft industry suffered, leading to the closure of traditional workshops and the erosion of valuable skills. Nonetheless, this period also signified a new chapter in history. The rapid advancement of productive forces brought about transformations in social structures and economic systems, subsequently influencing people's aesthetic sensibilities and ideological perspectives. In the 19th century, tapestry became popular again in Britain. The famous British art

designer William Morris was one of the most outstanding representatives, who was enthusiastic about the design of dyed fabrics and advocated drawing materials from nature, especially from the natural form of plants. He put forward the principle of ‘combining art and technology’ and advocated that artists engage in the design of products, which opened up a brand-new era (Boos, 2020; Frederick, 2020). In 1962, Jean Lurçat was pivotal in introducing tapestry textile art as flat wall hangings, with significant contributions from the “Biennial International Tapestry Conference.” This development led to increased production and visibility of fiber art creations. The conference underwent a name change in 1992 to “Biennial International Lausanne Conference: Modern Textile Art,” signifying the formal inclusion of fiber art within the conference’s framework (Koşar, 2015).

2.2.2 History of Fiber Art in China

Studying the historical evolution of fiber art provides valuable insights into its potential use in contemporary Chinese home decor.

2.2.2.1 The Origin of Chinese Fiber Art

The origin of fiber art in China can be traced back to primitive societies. As early as the Paleolithic Age, people mastered the craft of weaving and knitting, and from 2004 to 2007, a piece of prehistoric mat-like debris was unearthed at the Tianluoshan archaeological site in Zhejiang Province, the earliest surviving piece of woven material in China that has been accurately identified and dated to about 6,645 years ago. This woven fabric has crisscrossed patterns, and the weaving technique is not complicated.

Scientific tests have shown that this piece of mat is made of woven reeds, which indicates that Chinese ancestors used plant fibers to make accessories for daily life as early as 6,000 years ago (refer to Figure 2.2).



Figure 2.2: Straw Mats in the Neolithic Period
(Source: Zhejiang Province Museum, China)

2.2.2.2 Development of Chinese Fiber Art

During the tumultuous eras of the Spring and Autumn period and the Warring States period, various states competed for dominance, resulting in constant turmoil. However, amidst this strife, both the economy and culture experienced remarkable growth, particularly in the field of the textile industry. Needlework (known as Nv Hong) held significant relevance in the prevailing value system of that time, serving as a prominent criterion for evaluating spiritual beauty and skill. It encompassed various textile techniques and practices. Due to the rapid development of textiles at that time, some advanced fabrics appeared in textiles. The weaving methods, mainly twill and coiling, were constantly improved and varied, which could produce geometric patterns such as herringbone patterns, cross patterns, and stripes (Fang, 2023). These patterns and

weaving methods are also frequently used in today's weaving crafts. In addition, plant weaving crafts were widely used in people's production and life, and the bamboo weaving craft reached a reasonably high level during the Warring States period (Fang, 2023; Tian, 2012).

From the Qin and Han Dynasties to the Tang Dynasty, China witnessed a flourishing era for hand-woven products. The art of bamboo weaving during the Qin-Han period inherited weaving techniques from the Chu State. Notably, a significant archaeological discovery was made in Xi'an in 1980, where Chinese archaeologists unearthed a bronze carriage bottom casting that featured a chevron pattern. Expert analysis suggests that this chevron design was based on the bamboo-woven mats popularly used for weaving during that time. After the Tang Dynasty, the weaving method became more complex, plant weaving new technology; new materials also continued to emerge, the emergence of regional famous origin, such as grass mats origin, rattan implements origin, willow boxes, and straw fans origin. Handmade weaving machines, such as reeling wheels, spinning wheels, and treadle looms, have been widely adopted (Zhao, 2021; Xu, 2012).

During the Northern and Southern Song dynasties, the government established a dedicated production management department for various weaving crafts, such as rattan and bamboo workers. This initiative aimed to regulate and support the weaving industry's development, ensuring efficient production and maintaining high-quality standards. During the Ming and Qing dynasties, many government officials and gentry founded various craft factories, craft bureaus, and craft training centers to teach various weaving crafts, which led to the large-scale development of weaving skills (refer to

Figures 2.3 and 2.4). At the beginning of the 20th century, a number of large-scale grass and willow product companies appeared, and their products were sold throughout the country. The woven mats of Suzhou, the straw and willow weaving of northern Suzhou, and the straw hats of eastern Zhejiang were all famous at that time (Fang, 2023; Tian, 2012).



Figure 2.3: Ivory Mat in Qing Dynasty
(Source: Gugong Museum, China)



Figure 2.4: Book Box in Qing Dynasty
(Source: Zhejiang Province Museum, China)

2.2.2.3 Current Situation of Chinese Fiber Art

As we all know, China, known to the world because of the Silk Road, is a major country with a long history of fabrics. In modern society, advances in science and technology have had the most direct impact on the materials used to create and the techniques used to produce them. This impact has been revolutionary whether it is raw fiber materials or finished products. Large-scale industrialized production methods have made them grow in production and become common commodities that everyone can own, and the hierarchical significance that traditional fabrics have had has been dissolved to the greatest extent possible (Huang, et al., 2021; Tian, 2012). With the support of new technologies, the variety of fiber materials has shown explosive growth. In addition to traditional products and their improved versions produced by processing natural materials, diversified chemical fiber products have gradually made their way into Chinese homes. With the continuous development of material science, fiber art is comprehensively transcending its traditional functions and redefining the concepts of fiber materials and soft materials, and the position of fiber art in environmental space is becoming more and more prominent (Wang, 2023; Xu, 2012). Therefore, fiber art has a significant position in current Chinese homes.

2.2.3 Famous Locations of Chinese Fiber Art Crafts

China's fiber art crafts industry has experienced significant growth, spreading across the nation. According to the website of the Intangible Cultural Heritage of China, certain regions have emerged as renowned hubs for fiber art crafts. Notably, Jiangsu Province, Zhejiang Province, and Shandong Province have gained recognition as the

most prominent areas for this artistic tradition. These provinces have nurtured rich cultural heritages and possess a long-standing history of producing exceptional fiber art and craftsmanship. The skilled artisans in these regions have mastered intricate techniques and styles, making them notable contributors to the development and preservation of China's fiber arts heritage. Among them, the list of intangible cultural heritages published by Shandong Province includes more than 30 types of fiber arts intangible cultural heritage projects at the provincial level and above, including ten types of embroideries, four types of woven carpets, and five types of bamboo and grass weavings (Shandong Provincial Department of Culture and Tourism, 2023).

2.2.3.1 Suzhou Embroidery in Jiangsu Province

According to Watt and Wardwell (1997), Zhu (2009), and Jackson et al. (2022), embroidery has a long history and is one of China's most popular categories of fiber art crafts. Because of the different market demands and origins of embroidery, embroidery handicrafts have regional solid characteristics. In particular, Suzhou embroidery, located in Jiangsu Province, is the first of the four significant embroideries in China (Zhou & Liu, 2023). Suzhou embroidery has a unique style of beautiful patterns, ingenious ideas, meticulous embroidery, lively needlework, elegant colors, and local solid characteristics (Wang, 2023). The embroidery technique in Suzhou is renowned for its characteristic features, including being “flat, flush, fine, harmonious, light, smooth, and even.” The term “flat” refers to the spread-out surface of the embroidery. “Flush” indicates that the edges of the pattern are meticulously neat. “Fine” highlights the use of thin needles and delicate embroidery threads. “Harmonious” denotes the appropriate selection and combination of colors. “Light” implies a vibrant and bright appearance. “Smooth” emphasizes the rounded and smooth filigree. Lastly,

“even” signifies the uniformity and consistency of pattern width. In terms of types, Suzhou embroidery encompasses three main categories: Ling Jian, Xi Yi, and Gua Ping. These categories encompass both decorative and practical works. Suzhou embroidery artists skillfully integrate artistic expression with functional applications, resulting in intricately crafted pieces that serve aesthetic and practical purposes. Among them, the “double-sided Suzhou embroidery” works are the most exquisite, as shown in Figure 2.5.



Figure 2.5: Double-faced Embroidery
(Source: Photo by author)

2.2.3.2 Dongyang Bamboo Weaving in Zhejiang Province

Zhejiang Province has a favorable climate and abundant rainfall, suitable for growing bamboo and grass plants, so bamboo and grass weaving crafts are prevalent (Zhang et al., 2018). The most well-known ones are Dongyang bamboo weaving. Dongyang bamboo weaving does not stick to the traditional bamboo weaving expression but also combines with interior decoration, taking a different path and creating a number of excellent bamboo weaving works (Lu, 2019). Dongyang bamboo weaving offers a diverse array of products, encompassing baskets, boxes, plates, jars, and cases. As for color usage, Dongyang bamboo weaving predominantly relies on red, black, yellow,

and gold thread, which is simple, rustic, and elegant, giving people a sense of luxury and solemnity, as shown in Figure 2.6. The coloring of contemporary Dongyang bamboo weaving is based on the advantages of traditional coloring methods, and emphasizes “the same tone with minimal contrast.” This approach adheres to the principle of maintaining a uniform color tone with minimal contrast. This shift towards a more subdued palette aims to create a harmonious and understated visual appeal in the bamboo weaving artistry.



Figure 2.6: Dongyang Bamboo Weaving
(Source: Cultural Heritage Bureau of Zhejiang Province, 2003)

2.2.3.3 Fiber Art Crafts in Shandong Province

Shandong Province is the birthplace of one of the famous handicrafts in China, and the categories of fiber art crafts are very rich. The carpet industry in Shandong Province is very active, and there are more than a dozen famous brands at home and abroad (Shandong Development and Reform Commission, 2024). The carpet industry in Shandong Province primarily relies on the preservation of traditional skills, research, and development of technology, as well as product innovation. It follows a general trend where traditional handmade and large-scale industrial production carpets

complement each other in development. As per the product segmentation pattern of China's carpet industry in 2019, mechanism carpets accounted for 73%, while handmade carpets comprised the remaining 27%. Currently, the product categories of carpets in Shandong Province are mainly divided into Hand-woven Carpets, Cashmere Carpet, Color Printing Carpets, Blended Carpets, Single-sided Wilton Carpets, Wilton Carpets, and Tufted Carpets, as shown in Figure 2.7. Among them, the pile embroidery of Yantai in Shandong Province is called the queen of embroideries (Wang, 2022; Ling, 2010). Pile embroidery carpets are considered high-grade decorative artworks for their unique art style, combining shape and spirit. They feature a stunning array of colors that are vibrant and abundant. These carpets are meticulously handcrafted using pure wool thread, which offers flexibility, moisture-absorbency, and warmth. Each pile embroidered carpet is created with the utmost care, requiring the insertion of tens of thousands and, in some cases, even hundreds of thousands of needles. Through the process of dyeing, splitting threads, the convergence of colors, color gradient, dot transition, color mixing, and creating rich pictures to express (Wang, 2022; Cui & Xiao, 2016).



Cashmere Carpet



Blended Carpet



Tufted Carpet

Figure 2.7: Yantai Carpet
(Source: Photo by author)

Pingdu straw weaving has a long history and has been inherited until now. Pingdu straw weaving has made a significant reform based on the original flat weaving, absorbing and borrowing the bamboo weaving technique, weaving into overlapping cross-eyes so that the woven products give the feeling of double layers (Liu, 2023). The evolution of Pingdu straw weaving has progressed from the one-pistil technique to more intricate methods such as double-pistil, triple-pistil, leave-hollow, overlapping, and braid techniques. Presently, Pingdu straw weaving encompasses a wide range of products that fall into various categories. These include cushions, flower baskets, candy boxes, jewelry boxes, bread boxes, toys, placemats, door curtains, wall hangings, grass fans, grass mats, grass wallpapers, and many more, as shown in Figure 2.8. The skillful use of different weaving techniques and the diverse range of products produced showcase the craftsmanship and versatility of Pingdu straw weaving. With its extensive array of offerings, Pingdu straw weaving continues to captivate admirers and serves both aesthetic and practical purposes. Zhang (2018), wrote that the current Pingdu grass-weaving craft is advancing with the times, and it is worth mentioning that the grass-weaving women use salted grass, a coastal specialty, to weave salted grass products, which are very popular among consumers.



Figure 2.8: Pingdu Grass Weaving
(Source: Photo by author)

As one of the intangible cultural heritages of Shandong Province, Lu embroidery not only serves as a cultural emblem for the region but also represents a precious legacy within traditional Chinese handicrafts. In contemporary times, Lu embroidery has transcended its conventional forms and embraced modern design elements, thereby embarking on a more diversified and fashionable developmental trajectory (Guo et al., 2023). For instance, modern designs can amalgamate Lu embroidery with other traditional crafts or contemporary techniques such as hand knitting, embroidery decals, and three-dimensional sculpture to engender an array of innovative and diverse creations (refer to Figure 2.9).



Figure 2.9: Lu Embroidery
(Source: Photo by author)

2.2.4 Design Elements of Fiber Art Crafts

Design factors for products usually include appearance, materials, and functions (Tao et al., 2018). According to J. Su et al. (2021) and Lin (2003), the appearance design encompasses its external features, such as shape, pattern, and color, to name a few. In a study conducted by Gil-Pérez et al. (2020) and Creusen (2000), it was highlighted that the product's appearance could serve as a fundamental factor in consumers' decision-making process. Consumers often make inferences about various product

attributes based on their appearance, and these inferences greatly influence their purchasing decisions. Aesthetic and novel product modeling makes it easy to win the favor of customers, thus making the goods sell well (Tractinsky et al., 2000).

The love of “beauty” is the innate nature of human beings. The most direct way to perceive beauty is mainly through vision, which has been shown that at least 80% of the external information acquired by animals comes from vision, and human beings rely on vision to perceive the color, size, light, and darkness of objects (Vuong, 2023; Livingstone & Hubel, 1987). Dsouza et al. (2020) and Thayer (1996) pointed out that, after investigation, good-looking things are more likely to awaken dopamine in the body, so that people will feel pleasure. It is unsurprising that many people choose to buy it simply because it is good-looking. People come in diverse shapes and sizes, with varying genders and ages, and each has unique aesthetic preferences. As a result, every product caters to its specific target audience.

According to Jiang (2020), product materials also affect consumer experience and purchasing decisions. The choice of materials is crucial in the design of fiber art crafts. For example, in embroidery, the texture, color, and thickness of the silk thread used will affect the texture and visual effect of the final product. Toy materials need to be soft, safe, and suitable for children’s hand feeling and grasping.

In addition to appearance and materials, the function of fiber art crafts is also an important consideration in design (Hai, 2018). Designers need to deeply understand consumers’ needs and use scenarios to design ergonomic, easy-to-use, and practical products. Hu (2017) proposed that the design of table flags should take into account their practicality, such as ease of spreading and packing.

In summary, the design elements of fiber art crafts include appearance, material, and function, which together constitute the quality and appeal of the product.

2.2.4.1 Shape

Fiber art has developed from the initial wall-hanging form to soft sculptures, miniature landscapes, and other art forms to meet people's multiple life needs. Che (2010), Ren (2014) and Liu (2019) pointed out that in the indoor spatial environment, fiber art has two kinds of application forms: flat and three-dimensional.

First, fiber art is mainly flat. For example, wall hangings, tapestries, and decorative paintings are often hung on the interior walls (Zhang et al., 2023; Che, 2010). This type of fiber art is mostly composed of various types of fiber materials to express the designer's ideas of wall-hanging decorative paintings or tapestries, some of which also have local three-dimensional forms or detailed concave and convex shapes. Fiber art uses various soft and commonly available fiber materials, such as floss and silk wool, which undergo a specialized weaving process. This particular approach enables artists to convey the distinctive value of fiber art and its aesthetic language. Conversely, traditional tapestry commonly showcases a strong inclination towards realism, often imitating realistic paintings through the intricate weaving techniques employed. These woven creations serve as tangible representations of artistic expressions. Modern fiber art is different from traditional tapestry, created by the designer after measuring and judging the indoor space, and then creating the art, which has customized characteristics, has a higher degree of integration with the overall space, and can also show the designer's artistic conception, in addition to showing the designer's high level of craftsmanship, but also reflects the designer's creative spirit (Liu, 2019).

Second, the three-dimensional form of fiber art. This type of fiber art product refers to the use of fiber material plasticity characteristics after special processing made of the three-dimensional forms of three-dimensional works. Liu (2019) pointed out that “three-dimensional” of fiber art crafts is the use of fiber materials layered with the creation of the way, showing the difference from traditional flat product, soft visual effects to bring people closer to the distance between the works of art. Jiang (2020) pointed out that such products used a variety of materials for mixing and matching, multi-directional and multi-angle highlight the sense of space of the product. Different styles exhibit distinct characteristics; wool fibers, for example, offer a thick and substantial texture, while hemp fibers exude a rustic charm, and silk fibers possess a light and delicate quality. By utilizing these diverse fiber materials, artists can create a plethora of texture effects and embrace rich artistic modeling. As a result, when integrated into the layout of indoor spaces, fiber art can harmoniously coexist with its surroundings, serving to accentuate and enhance the viewer’s visual experience. Including fiber art in interior design injects a heightened sense of aesthetic pleasure, ultimately bolstering the overall artistic value of the space.

2.2.4.2 Pattern

The patterns of fiber art crafts can be diversified and both figurative and abstract (Wen et al., 2022; Wu & Yu, 2020), as shown in Table 2.1. Tian (2021) points out in his article that in the development of fiber art nowadays, more and more designers are beginning to find inspiration from traditional patterns (Plant Patterns, Animal Patterns, and Character Patterns) and then combine them with the direction of the development of fiber art. For example, Shi (2021) found in the study of Zhuang ethnic embroidery that modern fiber art retains the traditional Zhuang ethnic embroidery patterns but at

the same time carries out various innovations, such as adding other novel fiber materials in terms of color and cultural connotations, to create more fashionable and modern patterns for people to enjoy. Sun (2016) also found in his study of Peach Blossom Embroidery Art of Huangmei that there is a close intrinsic connection between fiber art and Peach Blossom Embroidery Art of Huangmei. Fiber art is deeply rooted in traditional folk art, incorporating a range of techniques from modern textiles to weaving and embroidery. By integrating modern fiber art with the traditional “Peach Blossom Embroidery Art of Huangmei,” it is possible to create contemporary works that retain the essence of traditional patterns while infusing them with a modern touch. However, when employing abstract patterns in the design of fiber art crafts, it needs to prioritize exquisite style and give due importance to the preservation of cultural connotations. Abstract patterns should be incorporating with thoughtfulness to ensure that the cultural heritage connected to these motifs is properly conveyed. It is important to strike a balance between aesthetics and the meaningful depiction of cultural symbolism, thereby creating fiber art crafts that showcase impeccable craftsmanship and serve as vehicles for the inheritance and appreciation of cultural richness.

Table 2.1: The Main Patterns of the Fiber Art Crafts

Item	Examples		
	Plant Patterns	Animal Patterns	Character Patterns
Figurative Pattern			
Abstract Pattern			
	Geometric Patterns	Symbolic Patterns	Textural Patterns

(Adapted from Wu & Yu, 2020)

Wang (2021) pointed out in his article that using abstract patterns does not only test the designer's aesthetic taste and, artistic thinking, design expression techniques but, more often than not, what is behind a simple piece of work is the designer's thoughts and feelings about the whole world. But Rao (2008) pointed out that handmade fiber weaving lacks innovative consciousness, and the pattern types are relatively monotonous at present. Liu et al. (2019) also pointed out in the survey that Liuzhou craft products and weaving patterns are single and lack innovation. Dou (2021) in his recent study, pointed out that the patterns and styles of most woven products nowadays are traditional plain styles. With the current trends, these products appeal to a smaller audience, with young people generally disliking overly traditional patterns and embellishments. Currently, fiber art crafts are limited in pattern, making it challenging to meet the diverse needs of modern consumers. In response to this situation, it is crucial to update the pattern design of fiber art crafts according to consumer demand.

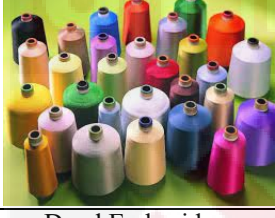
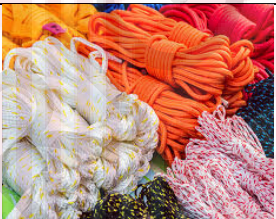
2.2.4.3 Color & Material

Li and Choe (2023) pointed out in their book that color has a strong visual expression and is the most infectious element. Albers (2013) also pointed out that Color is the most relative medium in art. Color has a very significant moderating effect on the art of indoor environments (Wang et al., 2021; Pang, 2008). Color is not only the fundamental tone of the interior environment but also shows the taste and style of the interior space, such as romantic and warm or neat and sensible. Lassen et al. (2021) pointed out that the use of color in the interior environment can also reveal the personality of the occupants of the information. For example, the owner of a colorful

environment will be lively and enthusiastic, while the owner of a cool color environment will be gentle and quiet.

Smith (2021) found the range of materials are mainly cotton, silk, wool, rice straw, twine, bamboo and so on in current fiber artwork. And Lu (2005) found in the research that fiber materials have unique properties that make it very convenient to dye them and make them produce patterns, and fiber artwork can achieve very rich changes and produce a very tense expression, as shown in Table 2.2. Therefore, these rich colors and diverse patterns can provide different styles of interior space decoration, which can fully meet the needs of consumers at different levels, and the scope of use is very diversified. Wu and Yu (2020) and Tan (2020) pointed out in their article that the color of fiber materials can be divided into two categories: the natural colors and the artificial colors of the fiber material, as shown in Table 2.2. Natural material colors, which can also be referred to as natural colors, refer to those processed using the original color of natural materials in fiber art crafts. Cui (2016) also points out that natural colors can reflect the most primitive beauty of nature and make people feel immersed in intimacy and harmony. Artificial material color, mainly through the synthetic processing of natural materials made into a variety of color materials. Tan (2020) pointed out that due to the complexity of the types of fiber materials, the color creativity of these commonly used materials needs to accurately and reasonably grasp the characteristics of materials.

Table 2.2: The Main Colors & Materials of the Fiber Art Crafts

Item	Category & Example		
Natural color			
	Cotton Thread	Bamboo Strips	Rice Straw
			
	Natural Silk	Woolly	Twine
Artificial color			
	Dyed Embroidery Thread	Dyed Wool Yarn	Dyed Bamboo Strips
			
	Dyed Rice Straw	Dyed Cotton Thread	Dyed Twine

(Adapted from Wu & Yu, 2020)

In fiber art, color is manifested through the intricate interplay and arrangement of warp and weft color threads, as well as in the nuanced textural elements at the level of point, line, and surface created by their intertwining (Smith, 2014). Color serves as a crucial expressive element within the constituent fiber material (Dong, 2012). Mathur and Seyam (2011) argue that color in fiber art is different from the pursuit of chromatic light in painting, which emphasizes the interweaving effect of spatially mixed colors. Therefore, in the interweaving of warp and weft, color is not only a part of the form, but it is also the most important and intuitive part of the structure of the form. When

carrying out the color design of fiber art crafts, it should be human-oriented and take the aesthetic psychology of creating the overall spatial color as the ultimate purpose.

2.2.4.4 Function

With the passage of time, there is no longer a clear distinction between the practical and decorative aspects of fiber art (Liu, 2019). Wang (2021) also pointed out that in modern fiber art, there are many products that highlight both decorative effects and practical functions. From this, it can be seen that the practical function and decorative effect of fiber art can exist together. Generally speaking, the integration of fiber art and modern interior design is manifested in two aspects, namely, practical function and beautification function.

Fiber art crafts include carpets, wall blankets, and tapestries, which are frequently utilized in interior decoration in everyday life. Over time, these fiber products have gained widespread acceptance among the public and are extensively employed in indoor environments. This type of fiber art offers several advantages, such as ease of replacement and cleaning, allowing for convenient adaptation to changing demands. Moreover, these items contribute to space separation, provide warmth, and offer sound absorption capabilities (Ren, 2014).

Kao (2015) and Hai (2018) both emphasized in their research that the practical function of fiber art lies in creating a unified and harmonious overall environment, achieved through the thoughtful selection of materials, colors, and forms. The contemporary abundance of fiber art materials and the versatility of artistic expression provide an

advantageous foundation for interior space decoration. Common items like cushions and carpets exhibit a soft texture, vibrant colors, and elegant shapes, fulfilling functional and decorative roles within living spaces. Additionally, curtains and drapes serve practical purposes such as shading and dust prevention while reducing indoor noise levels and creating a comfortable living environment.

Auther (2008) pointed out that decorative fiber art refers to the value of decoration only does not have the value of practicality; its main purpose is to add artistic charm to the decorative effect of the indoor environment and only to the indoor environment to produce a decorative effect of fiber art products. Changes in ideological concepts so that art is gradually accepted by the public and the trend of popularization, for the mainstream trend of interior design in recent years, with the idea of “not so much the renovation, but the decoration,” as the lead, people focus on decorative choices, especially to be able to move at any time or can be replaced at will the most popular decorative items. It is reported that in the design of modern interior decoration environments, the proportion of soft decorative ornaments is showing an increasing trend, and the types of decorative fiber arts are getting richer and richer (Wang, 2021). The role of decorative fiber art is to enhance the artistic sense of the indoor space’s overall environment, enrich the indoor space’s cultural connotation, highlight the artistic qualities of the occupants, and even highlight the status and religious beliefs of the owner. However, through reading the literature, it is found that fiber art crafts in the application of indoor soft furnishings appear to be the problem of fewer types of products, a single function, and the consumer’s willingness to buy is not high. For example, Xiao (2021) found that fiber art crafts in interior soft furnishings in the product type are relatively small, the display form is relatively single, and the overall

approach is also more traditional. Zhang et al. (2021) found in the study of bamboo woven products that bamboo woven products in western Hunan have insufficient formal aesthetics and pay attention to the symmetry of the form, especially the storage of bamboo woven products, all of them cannot jump out of the basic form of the container, and the most important function of these traditional handicrafts is decorative, the function is relatively single. There are few fashionable consumer products with the times and products with stronger practical functions. Moreover, Gao (2021) found in the study of handmade cultural and creative products that consumers buy decorations and ornaments, because they are impractical, when the sensation of novelty passes, these ornaments and decorations are placed in the corner of the house, dusty and unattended. Therefore, this staged fever of interest is not conducive to sustained regional cultural diffusion. In addition, Edbring et al. (2016) also believe that most such ornaments and decorations are single consumption, and the probability of repetitive purchases is not large enough to increase the consumption stickiness. The reason for this is that the functional value of these cultural and creative tourism products is too single, disconnected from the needs of life, and not very practical.

In addition, some questions have been raised in the literature about the longevity of fiber art crafts made of cotton materials. According to Briggs-Goode and Townsend's (2011) history of textile development, textiles have cyclical characteristics, such as the materials used, colors, and patterns. Xie (2021) found that with the pursuit of a higher and higher taste of life, textile updating and iteration are more and more frequent, and the lifecycle of civilian textiles is getting shorter and shorter. In order to meet the needs of different consumer groups in different regional markets, Zhu (2021) proposed that in the market-oriented era, it is necessary to form good design concepts in combination

with the background of the times and people's aesthetic characteristics to meet the preferences and needs of consumers, thus prolonging the maturity period of textiles.

2.2.5 Application of Fiber Art Crafts in Different Interior Spaces

Fiber art crafts can occupy an important position in modern home design because of their soft material, fabric color, decorative pattern, and texture (Steed & Stevenson, 2020). Yao (2022) pointed out in the research that different fabrics can bring different effects; decorative fabrics dress up people's lives and bring a cozier feeling. Since each room in the home has a different function, it is necessary to apply fiber art crafts according to the function of the room, and the design should be consistent with the room.

2.2.5.1 Living Room

When designing a living room, the fiber art crafts applied should carry a sense of relaxation and pleasure, creating an intimate atmosphere (Corkhill et al., 2014). For example, decorating the wall can be done with tapestries and randomly placing a few cushions on the floor to create relaxation and harmony. The design of the living room should show the family's personality and interest; the cushions applied to the decoration can enhance the effect. Cushions come in various forms, such as square or round, and sometimes triangular and polygonal; sofa cushions and sofas often have a contrasting relationship between the fabrics sofa (Ramstedt, 2020; Smardzewski, 2015). Suppose the sofa color is too monotonous; brightly colored cushions will make the indoor atmosphere more active for the gorgeous sofa fabric with elegant cushions (Jiang & Jie, 2023; Wormleighton, 2004), as shown in Figure 2.10. In addition, the

shape of the cushion can strengthen the expression of interior design, such as square cushions, which can give people a sense of solemnity. At the same time, round cushions can also bring a sense of liveliness.



Figure 2.10: Fabric Sofas
(Source: Photo by author)

2.2.5.2 Bedroom

Choosing suitable fabrics in the bedroom can relax the mind and body and optimize the bedroom environment. In the choice of bedroom, decorative fabrics should be comfortable and serene mainly (Ramstedt, 2020; N. Gokarneshan, 2004). Wallpaper and ceiling fabrics can be selected with a pleated form to give people a comfortable, soft feeling; to get a sense of tranquility, thick curtains, and decorative fabrics can be applied to achieve light and noise. Carpets can not only optimize the indoor living environment but also can play a beneficial role in physical and mental health. Usually, the carpet color and people's emotions have a direct relationship, such as a golden yellow-red carpet, which can give the interior a sense of grandeur and make a person feel rich and relaxed (Keyanfar et al., 2022; Holtzschue, 2012), camel and beige carpet will make the indoors peaceful and quiet, letting a person feel peaceful and elegant (refer to Figure 2.11). Because the carpet material is relatively soft, it will also give people a sense of warmth and comfort, make it easy to adjust the human nerves, and

relieve work fatigue. In addition, the carpet also has heat preservation, keeps out the cold, sound insulation, and moisture-proof to create a quiet rest environment for the occupants.



Yellow Carpet



Red Carpet



Camel Carpet

Figure 2.11: Different Color Carpets
(Source: Photo by author)

Miguel et al. (2019) and Belsky and Pluess (2009) pointed out that the environment easily influences children. Therefore, in the design of children's rooms, choosing fiber art crafts must pay attention to children's psychology. In the children's room, decorative fabric design, to avoid accordance with the adult way of thinking set up, to choose the children like the color and design, pay attention to the fabric to make the room fresher and livelier atmosphere (Huang, 2022; Eiseman, 1998), as shown in Figure 2.12.



Bamboo Toys and Straw Cushions



Handmade Macrame

Figure 2.12: Children's Room Supplies
(Source: Photo by author)

2.2.5.3 Dining Room

When designing decorative fabrics for the dining room, matching them with tablecloths, napkins, dishes, patterns, and colors is essential. Similarly, the design of tablecloths is also essential. According to Volli (2022), and Ryu and Jang (2008), research shows that tablecloths and napkins help people eat and form good eating habits. Usually, warm colors can bring warmth to people (Choi et al., 2016), such as orange tablecloths, which make people more appetizing (refer to Figure 2.13). Therefore, for the dining room, the main focus should be decorative fabrics in the design of warm colors. Choose a bright tone and an unrestrained pattern to strengthen people's eating mood (Ramstedt, 2020; Miller, 1997). In addition, if the tablecloth color is beige or white, it can be matched with any furniture color.



Figure 2.13: Tablecloths
(Source: Photo by author)

2.2.5.4 Study Room

According to the studies conducted by Hytonen-Ng et al. (2022) and Ramstedt (2020), curtains can be effectively utilized to enhance the acoustic environment of study rooms by reducing noise levels. When selecting fabric for study room decorations, it is

essential to choose materials that promote concentration, avoiding overly bright fabrics (Steed & Stevenson, 2020). Opting for fabrics with delicate floral patterns, such as a light-yellow bamboo roll-up curtain (refer to Figure 2.14), can create a relaxed atmosphere conducive to focused studying. Additionally, incorporating diverse textures into the design helps to alleviate the monotony typically associated with subtly elegant colors.



Figure 2.14: Bamboo Roll-up Curtains
(Source: Photo by author)

However, when Chinese interior designers apply fiber art crafts, they only focus on the charm of the decorative fabric itself, do not start from the perspective of the indoor environment, and lack the integration of the emotional attributes of fiber art crafts (Cheng, 2017). Therefore, when using decorative fabrics, attention should also be paid to the emotional communication between nature, people, and the environment. Xu et al. (2022) and Xiong et al. (2011) also pointed out that with the improvement of living conditions, people's life rhythm is also gradually accelerated, and psychological pressure is also increasing; to alleviate people's nervousness, the application of decorative fabrics should play a role in regulating the atmosphere of the indoor environment. Yin et al. (2016) and Chen (2016) pointed out that each person's thoughts, occupation, cultural level, and religious beliefs differ, which also puts

forward different requirements for decorative fabrics, which must play a fundamental role in interior design and show the charm of fiber art crafts.

2.2.6 Types of Fiber Art Crafts in Current Lifestyle

Wang (2022) pointed out that fiber crafts used in modern Chinese family life are crafts made by artisans from a variety of fibrous materials that are rich in ethnic culture. Wen et al. (2022) and Hu (2017) conducted a detailed study on the attributes of the current categories of fiber handicrafts in China and delineated the product types of fiber handicrafts, such as brocade handicrafts, brocade embroidery, carpets, weaving, and other handicrafts. According to the National Bureau of Statistics of China, the Ministry of Commerce of China, the China Light Industry Federation, and the China Industrial Statistical Yearbook, from 2016 to 2021, the first ranking of handicrafts in China is the embroidery category, bamboo weaving and straw weaving is the second. The third one is the weaving category, such as carpet tapestry (Dong & Xing, 2021). Pang (2016) also pointed out in his study that the use of traditional carpets has declined in the current home life in China, but modern home life has produced many new forms, such as tatami carpets and wall tapestries. The e-commerce platform counts keywords for home textile products. The data shows that since April 2020, online searches for keywords related to weaving have grown rapidly. According to the Statistical Classification of Agriculture and Related Industries by the National Bureau of Statistics (2020), bamboo weaving, straw weaving, embroidery, carpet, and tapestry are collectively classified into one category, called weaving and embroidery crafts, which is consistent with the fiber art crafts in this study.

Table 2.3: The Types of Chinese Fiber Art Crafts in Current Home

Type	Products	Category				
		Shape	Pattern	Color	Material	Function
Embroidery		Three - dimensional	Figurative Pattern	Artificial Color	Natural Silk	Fan
	Silk Fan (Shang, 2018)					
		Three - dimensional	Figurative Pattern	Artificial Color	Cotton Thread	Smell
	Sachet (Geng & Duan, 2008)					
		Flat	Figurative Pattern	Natural Color	Natural Silk	Sunshade
	Screen (Photo by author)					
		Three - dimensional	Figurative Pattern	Artificial Color	Natural Silk	Storage
	Pen holder (Photo by author)					

Table 2.3: Continued

Carpet & Tapestry	 Throw Pillow (Photo by author)	Three - dimensional	Figurative Pattern	Artificial Color	Cotton Thread	Keep Warm
		Flat	Abstract Pattern	Natural Color	Twine	Keep Warm
	 Carpet (Wu & Yu, 2020)	Flat	Abstract Pattern	Artificial Color	Woolly	Keep Warm
		Flat	Figurative Pattern	Artificial Color	Cotton Thread	Decoration
	 Cushion (Photo by author)	Three - dimensional	Figurative Pattern	Artificial Color	Cotton Thread	Keep Warm
		Flat	Abstract Pattern	Natural Color	Twine	Keep Warm

Table 2.3: Continued

Bamboo Grass Weaving		Three - dimensional	Figurative Pattern	Artificial Color	Bamboo Strips	Storage
	Basket (Photo by author)					
		Three - dimensional	Abstract Pattern	Natural Color	Rice Straw	Storage
		Three - dimensional	Abstract Pattern	Natural Color	Twine	Plant
		Three - dimensional	Figurative Pattern	Natural Color	Rice Straw	Decoration

There are many kinds of fiber art crafts. Table 2.3 shows some fiber art crafts of three categories in Chinese current home life. The characteristics of different types of fiber art crafts are not the same. Embroidery products are usually very delicate and brightly colored, and the patterns are mostly figurative. Carpets and tapestries are warm and decorative. Bamboo grass weaving products mostly use natural colors, and the shape is mostly three-dimensional. Therefore, embroidery, carpet and tapestry, and bamboo grass weaving were chosen as the main research directions of this study.

2.2.7 Design Process of Fiber Art Crafts

A product development process can be divided into different stages. According to Ulrich and Eppinger (2012), the product development process includes identifying customer needs, establishing target performance specifications, generating product ideas, testing product ideas, establishing final product specifications, and planning downstream development. These stages are shown in Figure 2.15. However, the first step of the design process is to identify the needs of consumers at the early stage of design activities. In this stage, designers need to obtain as much information as possible about the design intention and user preferences. The information obtained in this stage needs to be accurately translated into the design.

Understanding consumer demand can help product design teams better grasp market trends and popular elements, thus designing more competitive products. Through market-oriented design, the needs of target consumers can be better met, and the market competitiveness of products can be improved. On the other hand, consumer demand is directly related to the user experience of products. If the product can meet

the actual needs of users and provide a good user experience, users will be more willing to buy and recommend the product. By deeply understanding consumer demand, design teams can better optimize product functions, appearance, and operating procedures and improve user experience.

According to Figure 2.15, the fiber art crafts design process in Shandong Province is as follows:

Step 1: Conduct market research to understand current consumer preferences, lifestyles, and trends. This step is the basis of the whole process. Step 2: Define functional and aesthetic requirements of fiber art crafts. Combination of modern and traditional aesthetics, such as using ancient Chinese motifs (dragons, phoenixes, calligraphy patterns) in carpet design (Ling, 2010). Step 3: Brainstorming sessions among designers, artisans, and industry experts using design thinking and cultural inspiration to create new craft patterns, fabric compositions, and artistic motifs. Increased focus on modular and customizable fiber arts products, allowing consumers to personalize their designs (Jiang, 2020). Step 4: Review potential designs based on feasibility, cost-effectiveness, and market appeal. This step can use consumer co-creation models: Some fiber arts brands invite customers to vote for their favorite designs before finalizing the product. Step 5: Obtain feedback from focus groups, craft exhibitions, and online test markets. Shandong Lu embroidery usually showcase prototype testing in live-stream events, allowing real-time feedback from customers (Guo et al., 2023). Step 6: Finalize design, materials, stitching techniques, and production methods to establish the final fiber art crafts specifications. Step 7: Develop marketing strategies, including branding, packaging, and storytelling. Plan distribution

channels, including Shandong local craft fairs, online marketplaces, and international exports.

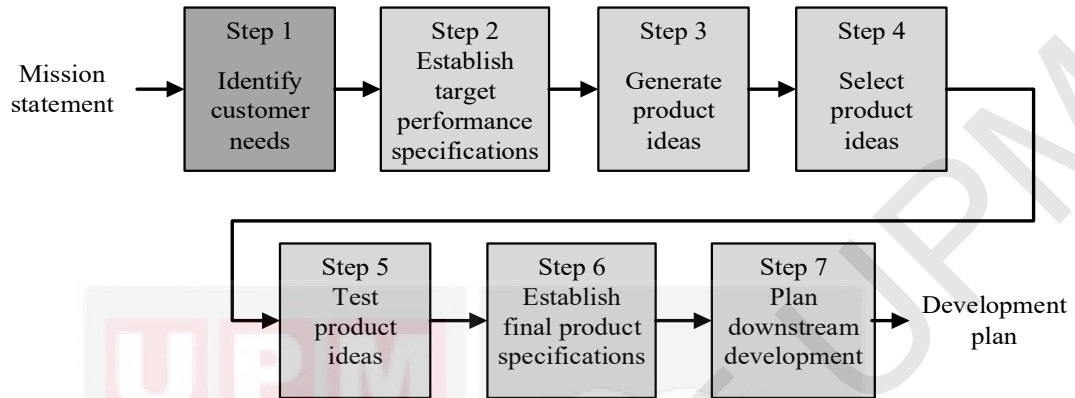


Figure 2.15: Product Design and Development
(Source: Ulrich & Eppinger, 2012)

2.2.8 Summary and Point of Departure

Fiber art crafts, with their unique textures, colors, and patterns, bring rich visual enjoyment to modern home life. In addition, the practicality of fiber art crafts also enriches people's life experience. With the passage of time, the practice of fiber art crafts has also undergone significant changes according to the needs of users. People's attitude towards fiber art crafts with single functions and outdated styles is negative. Judging from the established evidence, the design of fiber art crafts should be from the perspective of appearance, material, and function to meet consumer needs, which has become a new design challenge for fiber art crafts. This new challenge requires new guidance, especially in the early stage of product design. Therefore, this study agrees with Ulrich and Eppinger (2012) that determining consumer needs is the main factor in product development.

2.3 Part Two: Literature Review on Cultural Values in Relation to Fiber Art Crafts

Part Two discusses the overview of cultural values, the dimensions of cultural values, and the impact of cultural values on consumers' choice of fiber art crafts.

2.3.1 Overview of Cultural Values

Cultural identity is an individual's identification and sense of belonging to the culture in which he or she lives, which is part of an individual's identity. The core of cultural identity is the identification of values. Different theories of cultural identity all attach importance to the interpretation of value identification, so the research on cultural identity mainly focuses on studying cultural values (Li, 2024). Hofstede (1994: 5) coined culture as "the shared set of attitudes, values, beliefs, and behaviors that are unique to each individual but are also transmitted from one generation to the next." Therefore, culture encompasses the attitudes, values, beliefs, and behaviors that enable individuals to effectively communicate and interact within a society and across generations. It encompasses both intangible and abstract aspects as well as tangible, material elements. The study of culture includes three key components: conceptual formations, spiritual products, and lifestyles. Conceptual formations encompass religious beliefs, values, and ideology. Spiritual products refer to knowledge, art, technological achievements, and more. Lifestyle includes clothing, food, housing, transportation, folk customs, and all social aspects. Cultural values, therefore, represent significant and core ideas within a particular cultural system.

Values pertain to an individual's perception and assessment of people, events, and objects surrounding them, exerting a direct influence on their thoughts and practical actions. However, these values are not innate; rather, they are cultural constructs that evolve over time through environmental changes and educational enhancements. This kind of values will also play a leading role in people's daily consumption and even form a general understanding and value judgment on the way of consumption behavior and the process of consumption (Yi & Jia, 2020).

2.3.2 Chinese Cultural Values Dimensions

Cultural identity plays a significant role in shaping Chinese cultural values (Horak et al., 2019; Yau, 1988). Cultural identity, which is deeply rooted in historical traditions, religious beliefs, and artistic expressions, is a critical aspect of cultural values. It influences the way Chinese people perceive themselves, their society, and their relationships with others. To describe consumer values in the Chinese cultural background, Yau (1988) proposed a classification of value orientations (refer to Figure 2.16).

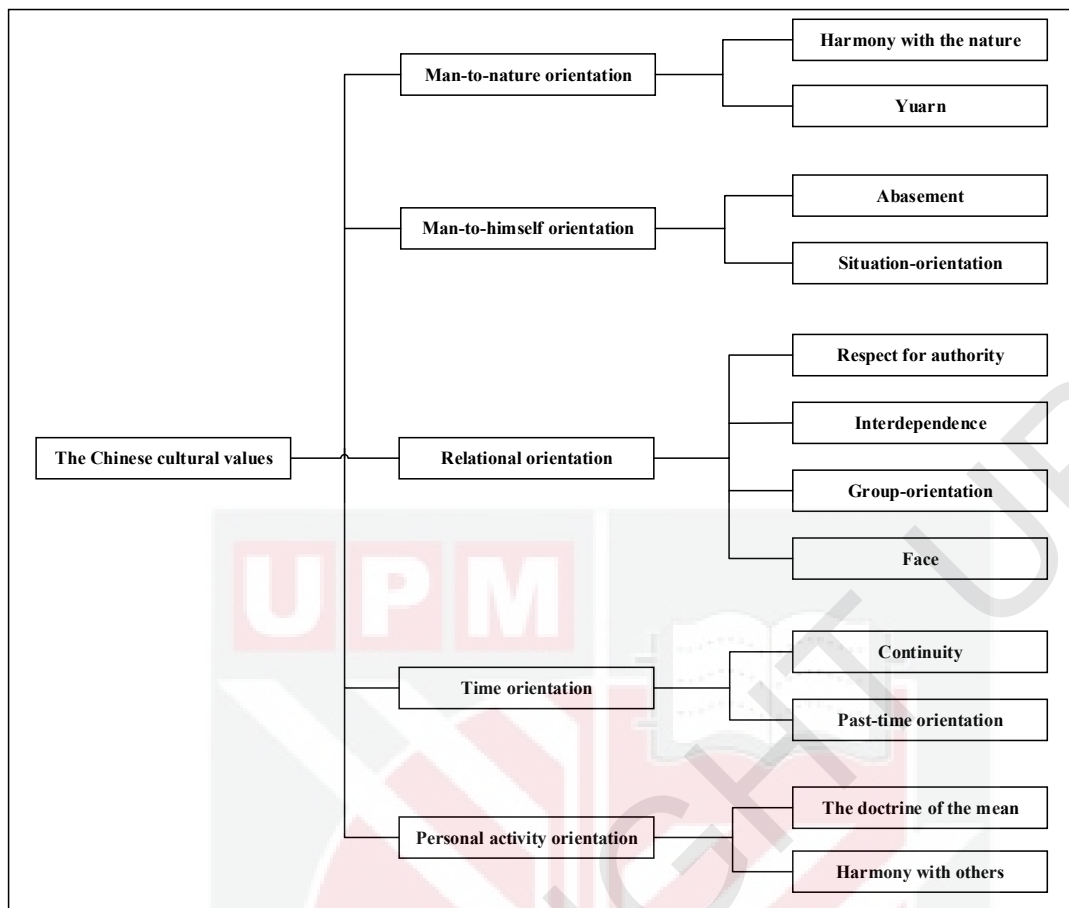


Figure 2.16: Classification of Chinese Cultural Values

(Source: Lee & Yau, 2020; Yau, 1988)

Yau's research included 5 Chinese cultural values orientations: man-to-nature orientation, man-to-himself orientation, relational orientation, time orientation, and personal activity orientation. These orientations consist of 12 dimensions of Chinese values, including harmony with nature, fate, tolerance, situational orientation, respect for authority, interpersonal relationship, collective orientation, face, ancient orientation, moderation, and kindness to others. These five dimensions offer a comprehensive understanding of Chinese cultural values and their influence on consumer behavior. Firstly, the man-to-nature orientation emphasizes harmony with nature and respect for its cycles and cycles. This value is reflected in Chinese consumers' preference for environmentally friendly and sustainable products, as well

as a tendency to favor traditional materials and craftsmanship. Secondly, the man-to-himself orientation focuses on self-improvement and self-cultivation. Chinese consumers often value products that can enhance their personal growth and development, such as educational resources or items that promote self-expression and creativity. Thirdly, the relational orientation emphasizes the importance of interpersonal relationships and social harmony. Chinese consumers tend to value products that foster social connections and community, such as gift-giving or products that cater to family and group needs. Fourthly, the time orientation reflects a respect for and a sense of historical continuity. Chinese consumers often appreciate products that carry cultural or historical significance, such as antiques or items with traditional designs and motifs. Lastly, the personal activity orientation promotes activity and a positive attitude toward life. Chinese consumers tend to favor products that encourage physical activity or provide entertainment and relaxation, reflecting a desire for a balanced and fulfilling life.

Another researcher, Hofstede (1994), incorporated the dimension of Confucian dynamism into his cross-cultural work, "Culture and Organization: Software of the Mind." Due to the term "Confucianism" being less familiar to many countries, Hofstede renamed this dimension as a long-term and short-term orientation, which carries the same meaning as Bond's "Confucian dynamism" (Minkov & Hofstede, 2012, p. 4). Francesco (2015) highlights that Confucian dynamism is one of the four cultural factors of the Chinese Value Survey and is associated with Confucian work ethics. The aspects captured by Confucian dynamism include ordering relationships by status, observing this order, thriftiness, persistence, having a sense of shame, reciprocation of greetings, personal steadiness and stability, protecting one's face, and respect for tradition.

Pan et al. (2014) employed Hofstede's research model to establish a scale of cultural values and construct dimensions of cultural values within the context of Chinese culture. These dimensions encompass practicality and rationality, face and image, diversity-ordered relationships, human relations, the doctrine of the mean, striving and enterprising, authority and subordination, and independence. The study discovered a correlation between Chinese cultural value orientations and consumer behavior, thereby presenting valuable evidence to deepen our comprehension of Chinese consumers through the lens of Chinese cultural values.

2.3.3 Cultural Values and Buying Behavior to Fiber Art Crafts

Researchers have identified the importance of culture and cultural dimensions in marketing regarding their influence on consumer behavior (Wibowo et al., 2020; Bathaee, 2014). Different cultures have different values, leading to different buying habits among consumers (Niosi, 2021). For consumers, cultural value orientations are essential in determining whether they will purchase the item. Figure 2.17 explains that this is an excellent example of the importance of cultural value orientations in consumer product selection.

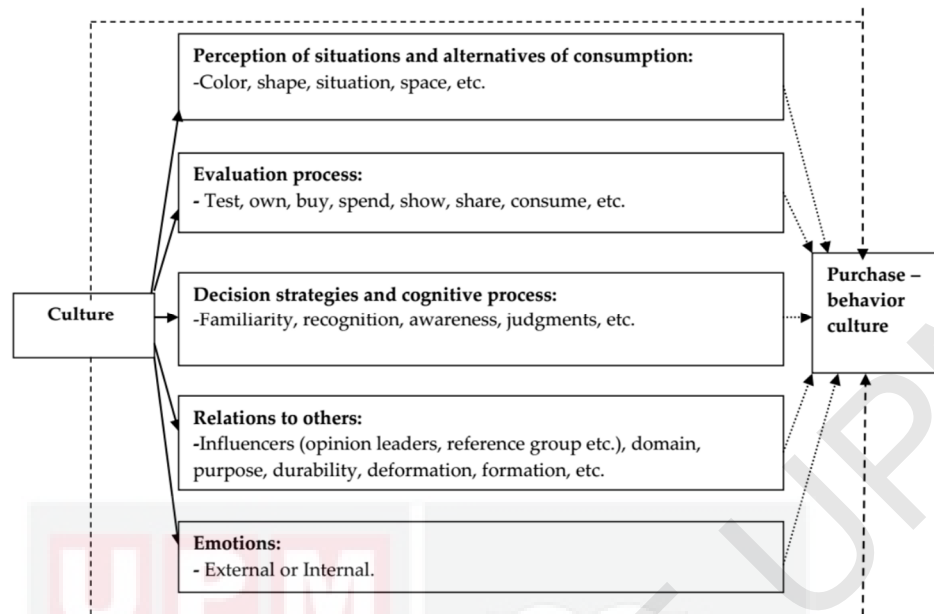


Figure 2.17: Consumer Choices and Buying Behavior
(Source: Bathaee, 2014)

Culture can affect consumers' consumption cognition, evaluation process, decision-making process, and emotions, thus affecting consumption behavior (Bathaee, 2014). Consumers may have a higher interest in the products of their own culture because of their cultural identity and these fiber art crafts reflect the characteristics and traditions of their culture. At the same time, products can also be a way of expressing individual or group cultural identity. People express their cultural identity and pride by purchasing, collecting, and displaying fiber art crafts of a specific culture. This cultural identity will affect their understanding and acceptance of cultural values.

Subawa et al. (2020) pointed out that consumers may pay more attention to the brand, popularity, and cultural connotation of products in order to show their social status and cultural accomplishment. Du and Xu (2014) in the research pointed out that the influence of the Confucian scale's "Behavioral and Status Congruence" dimension on consumer purchasing behavior is very obvious. As a matter of fact, social hierarchy is

still very deep in Chinese consumers' values system, and people attach great importance to the harmony and consistency between "self-concept" and "other-concept" (Zhang & Dong, 2020 Zhang, 2006). For example, some consumers prefer luxury or high-end brands of fiber art crafts. Before making a purchase decision, they are used to repeatedly weighing the symbolic meaning of the product with their status characteristics and expected value, and the standard of weighing is the value of "behavioral and status consistency." This study, therefore, finds the importance of cultural values in influencing consumers' choice of fiber art crafts. Therefore, this study agrees with Stathopoulou and Balabanis (2019), who suggested that consumers' purchasing behavior should be studied from the perspective of the guiding role of cultural values.

2.3.4 Summary and Point of Departure of Consumers' Cultural Values of Fiber Art Crafts

In summary, this study determines that cultural values are an essential factor affecting consumer choice, which includes color, appearance, and space, as well as the cognitive process of purchasing, displaying, consuming, and evaluating fiber art crafts. Furthermore, cultural values may also impact internal and external emotional experiences related to fiber art crafts. This fact requires the determination of consumers' cultural values dimensions to support the design of fiber art crafts. Therefore, this study agrees with Bathaee's (2014) view that different cultural values will shape and influence consumers' purchasing behavior.

2.4 Part Three: Literature Review on Customer Perception in Relation to Fiber Art Crafts

This section provides an overview of customer perception, emphasizing the role of emotional resonance in consumer behavior. Reviewing customer perception theory determines the relationship between customer perception and consumer purchase behaviors.

2.4.1 Overview of Customer Perception

Customer perception is the opinions, feelings, and beliefs when customers buy or use the products. Abusaada and Elshater (2020) suggest that perception is the main stage of cognitive activity. That sensation reflects people's information about the attributes of things, such as their color, taste, and temperature, in the mind's reflections that constitute people's senses. The conclusions of different people who see the same thing simultaneously in different ways are not the same. Similarly, the same person who sees the same thing in different ways at different times will naturally come to different conclusions.

Perceived product meaning reflects the customer perception of the product, including the perception of product efficacy meaning and product symbolism (Tzavlopoulos et al., 2019). Where efficacy meaning derives from the tangible attributes of the product, reflecting the product's functional characteristics, symbolic meaning derives from the intangible attributes of the product, reflecting the user's emotions, interpersonal interactions, self-perception, and self-expression (Coelho et al., 2020). The meaning that products bring to consumers, whether instrumental or symbolic, is dominated by

values. For example, consumers concerned with social prestige or image will focus on the symbolic meaning of a product (Nobre et al., 2023), while consumers who prefer functional products may be more concerned with the efficacy meaning of a product (Tseng & Wei, 2020; Allen et al., 2002).

2.4.2 Emotional Resonance

Emotional resonance usually manifests as an individual's ability to empathize with and experience the emotional state or experience of others and to resonate. This resonance can be joy, sadness, anger, happiness, and other emotions, establishing an emotional connection and understanding between an individual and others or a specific situation. When users choose a product, they will feel the emotions and characteristics conveyed by the product and have emotional resonance and experience (Gaur & Chandra, 2021). Emotional resonance helps strengthen the emotional bond between consumers and products and improves loyalty and consumer satisfaction (Habib et al., 2021). When designers can generate emotional resonance between product appearance and users' emotions, the products will be more attractive, intimate, and trustworthy. The integration of emotional elements into the design is one of the essential means to generate emotional resonance. Plass et al. (2020) point out in the study that the emotions represented by the products can be expressed through design language, color, shape, and other elements. Wang (2022) argues that traditional embroidery can convey the warm color and soft touch of embroidery products through the use of color and material, and other elements, thus making users feel the pleasant emotional resonance. Therefore, emotional resonance needs to ensure that the appearance is not only visually beautiful but also can touch the user's inner emotions.

2.4.3 Customer Perception Related to Cultural Values

According to Marin and Gamba (2003), Values are people's views and evaluations of some things in people's hearts. Based on their cultural background, consumers' values will affect their cognition, evaluation, and choice of products and services, thus affecting their purchasing behavior; this indicates that consumers' cultural values can influence their purchasing behavior (Wang & Zhu, 2021). Gutman (1982) pointed out the "means-end chain," the study believed that personal values guide consumers' pursuit of consumption results, and values influence consumers' evaluation of product attributes, affecting their consumption willingness and behavior. Lindberg et al. (1989) also put forward a multi-dimensional view of attributes, pointing out that consumers evaluate product attributes with values and thus determine their product preferences. Allen (2001) integrated the views of previous scholars. He proposed the model of perceived product meaning to explain the mechanism of values influencing consumer behavior by influencing consumers' perception and judgment of the meaning of products or services, thus influencing their decisions.

2.4.4 Customer Perception Factors for Fiber Art Crafts

In terms of aesthetics, the color, material, and design features of fiber products are often the focus of consumers' attention (Liu, 2023; Nimkulrat, 2009). Consumers' aesthetic evaluations of fiber artwork are often based on their tastes and preferences (Nartker et al., 2022; Andrew, 2008). For instance, a wool hand-knit sweater offers warmth and comfort and showcases personal style and taste through its color and design. Similarly, a wall hanging crafted with embroidery not only enhances the

aesthetics of a room but also showcases the inherent value of the handicraft through its intricate patterns and meticulous details. When consumers purchase such products, they frequently consider practicality, quality, appearance, color, material, and design, making their decisions after thorough deliberation.

On the other hand, the product symbolism of fiber art is more related to emotional, cultural, and social values (Rusu, 2011). Black and Burisch (2020) argue that fiber artworks can convey emotions and emotional resonance through their handmade and unique design styles. In addition, consumers consider the symbolic significance of its self-perception aspects, such as environmental protection and sustainability, when purchasing fiber artworks, which leads to a greater sense of identity and value for these products (Kim et al., 2021).

Therefore, determining the customer perception factors in fiber art crafts has become the focus of the design. However, at present, most scholars talk about the impact of customer perception on the design of fiber art crafts, and few kinds of literature mention how to accurately identify customer perception (Xu, 2022).

2.4.5 Summaries and Points of Departure

Previous literature has pointed out that consumers' purchasing behavior can be determined by judging their feelings toward products. According to the second part of the literature review, cultural values can also affect consumers' purchasing behavior. Therefore, this study agrees with Tzavlopoulos et al. (2019) viewpoint that cultural values will dominate consumers' perception of a product's efficacy and symbolic meaning. Therefore, in view of consumers' preference for fiber art crafts, in addition

to focusing on the relationship between the characteristics of the products and consumers' perception, it is also necessary to pay attention to the relationship between consumers' cultural values and the products.

2.5 Theory Related to Study

This study explores the historical origins of fiber art crafts, their evolution in China, and their status in contemporary Chinese lifestyle. This study also includes the pattern, color, material, function, and type of fiber art crafts. The application of fiber art crafts in indoor spaces will also be introduced. This study also introduces the consumer's cultural values and perception factors of fiber art crafts. Some of these theories will be selected to build a framework for this study.

In this study, cultural values are one of the essential factors shaping individual behavior and attitudes. Studying consumers' cultural values is helpful in understanding their purchasing decisions, product preferences, and consumption behaviors. Understanding Chinese consumers' cultural values towards fiber art crafts can better predict their reactions and evaluations towards products.

However, to identify the consumers' cultural values to fiber art crafts, it is also necessary to determine how consumers perceive fiber art crafts. In this study, by deeply understanding customer perception of fiber art crafts, preferences and needs in the use process are found to optimize product design, improve product quality, and enhance user experience.

This study adopts the Chinese cultural values theory and the perceived value theory to measure the value dimension and perception factors of fiber art crafts. The application of the theory of this study aims to determine the relationship between the consumer's values dimensions and perception factors in fiber art crafts, and finally provide designers with a reference for the design of fiber art crafts.

2.5.1 Chinese Cultural Values (Chinese Economists Pan et al.)

Cultural values refer to individuals' assessments and selections of values within their cultural surroundings, which are partially linked to their satisfaction levels (Diener & Suh, 1997). Consequently, cultural values differences are key in distinguishing and comprehending consumer preferences and acceptance (Samli, 1995). In this study, the use of Chinese native cultural values theory is the main method to answer the Chinese cultural background of consumers' values of fiber art crafts.

In the research on cultural values, Hofstede (1994) identified five dimensions of cultural values, which are tools for comparing different cultures: power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, and later long-term orientation. Additionally, Inglehart's theory of materialism-postmaterialism was formulated to better comprehend the influence of modernization on values and attitudes across various societies (Inglehart, 2000).

Building upon the aforementioned research, Schwartz (1994) originally proposed a theory containing ten dimensions of fundamental human values: power, achievement, hedonism, stimulation, self-orientation, universality, charity, tradition, conformity,

and security. Lately introduced seven cultural value orientations: intellectual autonomy, affective autonomy, embeddedness, egalitarianism, hierarchy, harmony, and mastery (Schwartz, 2014; 2006). This theory has been extensively utilized in cross-cultural psychology to gain a deeper understanding of the commonalities and differences in values across various cultures and their impact on behavior and attitudes.

Pan et al. (2014) utilized Hofstede and Schwartz's research to develop the Chinese cultural values scale and construct cultural values dimensions specifically pertaining to Chinese culture. These dimensions encompass practical and rational, face and image, diversity-orderly relations, human relations, the doctrine of the mean, striving and enterprising, authority and subordination, and independence.

“Practical and rational” emphasizes combining practical action and rational thinking, focusing on practice and experience. “Face and image” refer to the reputation and image of an individual or group in society, which is often very important to maintain face. “Diversity-orderly relations” refers to the hierarchical relationship between different individuals or groups, emphasizing respect and following the hierarchy. “Human relations” emphasizes emotional exchange and mutual benefit between people, attaching importance to interpersonal relationships and emotional connections. “The doctrine of the mean” advocates avoiding extremes and excesses and pursuing balance and harmony. “Striving and enterprising” emphasizes individual efforts and fighting spirit and pursues progress and success. “Authority and subordination” emphasizes the tendency to respect authority and follow mainstream views in Chinese culture. “Independence” emphasizes individual independence and autonomy and pursues self-actualization and personality development. These dimensions reflect the

essential value orientations in Chinese culture, covering social, personal, moral, and interpersonal relationships. Based on this scale, this study uses this theoretical model to identify the cultural values dimensions of consumers' fiber art crafts.

2.5.2 Perceived Value Theory (Marketing Specialist Sweeney & Soutar)

The concept of perceived value has its roots in consumer behavior and marketing. According to Suphasomboon and Vassanadumrongdee (2022), the theory of perceived value emphasizes that consumers' value judgments are subjective and will vary in different situations. However, perceived value takes a more comprehensive perspective by considering emotional and subjective factors such as emotions, perceptions, and attitudes toward a product or service (Jain & Kabia, 2022).

Sheth et al. (1991) proposed "Consumption Value Theory" to explain consumers' value cognition and evaluation of products or services. This theory concludes with 5 dimensions (functional, emotional, social, epistemic, and conditional). Functional Value: The functional benefits provided by a product or service, such as performance, reliability, and convenience. Emotional Value: The emotional experiences associated with a product or service, such as pleasure, excitement, and satisfaction. Social Value: The social recognition, status, or identity a consumer obtains from a product or service. Epistemic Value: The knowledge, information, or cognitive satisfaction a consumer obtains from a product or service. Conditional Value: The value that a consumer feels in a specific context or condition, such as the time, place, or context of purchase.

Sweeney and Soutar (2001) developed a perceived value scale based on functional, emotional, and social values (PERVAL). Singh et al. (2021) and Suphasomboon and

Vassanadumrongdee (2022) both consider this scale to be valid, parsimonious, reliable, and well-acceptable. This study agrees with this approach, considering these three dimensions to be a suitable framework for exploring the relationship between perceived value and cultural values.

Usually, data collection for perceived value will be conducted through questionnaires and interviews. The questions in the questionnaires or interviews should cover all aspects of customer perception and evaluation of products or services, including their satisfaction, preferences, and needs, among others. According to the different types of values in the theory of consumer value, the evaluation of consumers on products or services in all aspects should be analyzed. Therefore, perceived value theory serves as a critical consumer benchmark when evaluating a product (refer to Figure 2.18).

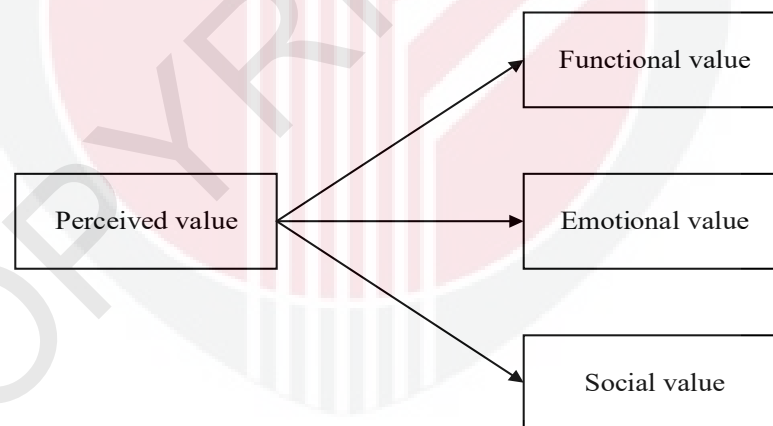


Figure 2.18: Perceived Value Model
(Source: Sweeney & Soutar, 2001; Jain & Kabia, 2022)

The use of perceived value theory in this study can help researchers determine the research method of identifying the value in the design of fiber art crafts. By collecting consumers' subjective experiences and feelings about fiber art crafts, they can be converted into quantifiable indicators. These feelings and experiences are realized

through consumers' perceptual vocabulary selection of fiber art crafts. This may include appearance, material, technological level, historical and cultural background, as well as consumers' personal emotions. By analyzing consumers' perceptions of these elements, designers can better grasp consumer demand. Based on the identification of value elements, designers can start to create and strengthen these elements to enhance the perceived value of fiber art crafts.

2.5.3 Research Gap and Strategy

The literature review demonstrates the development of Chinese fiber art crafts in modern home furnishing and elaborates on the significance of cultural values and customer perception in consumers' choices of fiber art crafts. As Zhang (2023) pointed out, due to historical influences and social development, consumers' needs for fiber art crafts have changed. Moreover, according to Ulrich and Eppinger (2012), in product design and development, it is necessary first to determine consumers' needs. However, the potential needs of consumers are not directly displayed. As Habib et al. (2021) said, consumers' emotional resonance is an implicit sense that affects consumer behavior. Creating this conceptual framework is to determine that cultural values and customer perception can be integrated to fill the research gap (refer to Figure 2.19). Integrating cultural values and customer perception can help designers understand the potential emotional needs of consumers in the early design definition stage.

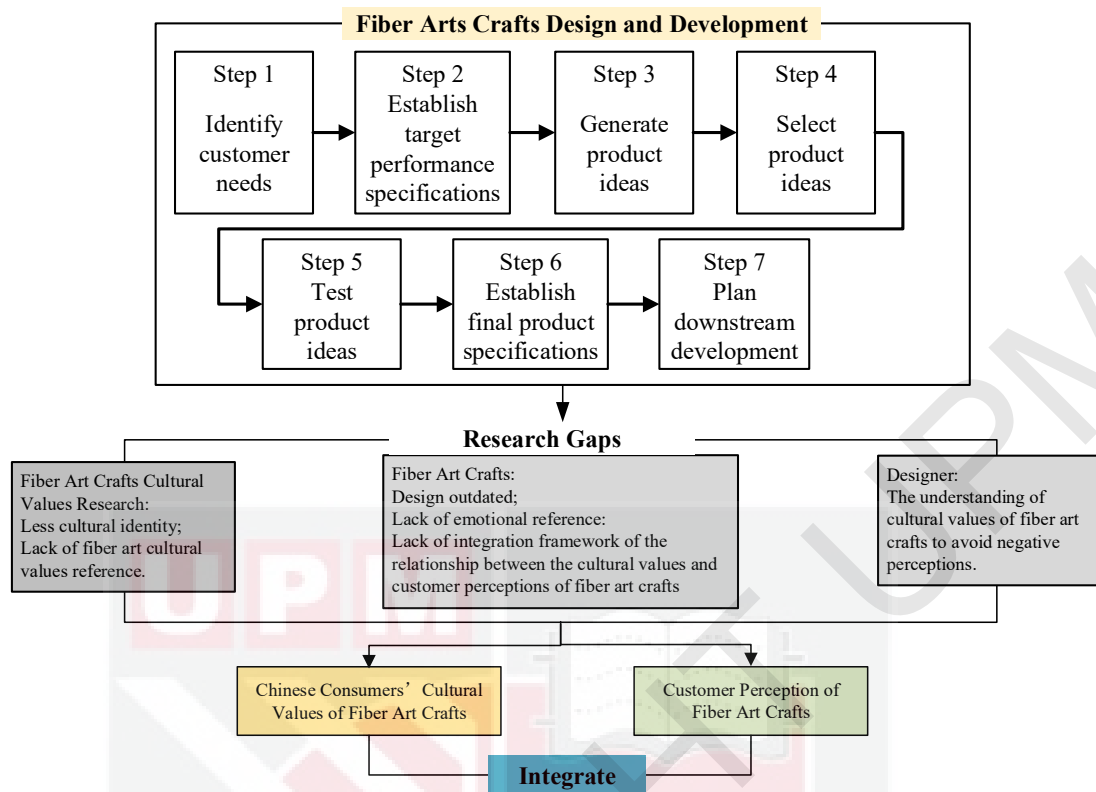


Figure 2.19: Research Conceptual Framework
(Illustration by Author)

The literature review shows the importance of cultural values in evoking emotional resonance, enhancing cultural identity, and influencing product creation. However, the conceptual framework reveals the gap between designers and consumers in creation and demand. Integrating cultural values and customer perception is expected to promote the modern application of traditional Chinese handicrafts. Establishing a systematic design framework not only enhances the market competitiveness of products but also ensures the sustainable development of fiber art crafts in contemporary society. At the same time, this framework helps to bridge the cognitive gap between designers and consumers, enabling designers to conduct more targeted product innovation based on cultural values and customer perception, thereby creating fiber art crafts with cultural depth and market appeal.

2.6 Summary of Chapter

This study aims to investigate the importance of cultural values and customer perception, and the relationship between the two aspects, considering the historical development of fiber art and the present state of Chinese fiber art crafts. The conceptual framework developed in this chapter is instrumental in fulfilling the objectives of this study. Notably, the categories of fiber art crafts commonly found in modern Chinese households, as identified in the literature review, play a crucial role in the subsequent chapters. This study seeks to establish a correlation between consumers' cultural values and their perceptions of fiber art crafts, ultimately providing valuable insights into the design factors affecting these crafts. In Chapter 3, a comprehensive discussion of the research methodology employed to achieve the research objectives will be presented.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter encompasses details on the research methodology, instruments used, sampling criteria for the questionnaire, pilot study, data collection, and data analysis procedures. The study site is Shandong Province. This study uses a Case Study combining qualitative and quantitative approaches. McCusker and Gunaydin (2015), and Williams (2007) also pointed out that combining qualitative and quantitative methods can quantify the obtained data for further research. Qualitative methods primarily entail data collection through access, observation, and literature review, with research conducted based on subjective interpretation and qualitative analysis. In this study, firstly, through the literature review, the importance of cultural values and consumer perception for Shandong modern fiber art crafts in China towards satisfaction was identified. Secondly, through Focus Group Discussion (FGD), the consumers' cultural values of fiber art crafts were obtained. These two steps are qualitative research. Conversely, statistical analysis of the questionnaire data falls within quantitative analysis methods. Quantitative research provides methods for accurate measurement and analysis of data, which makes research results more accurate and reliable and helps to build the accumulation and verification of theories (Mohajan, 2020). Therefore, this study continues to use Survey and Kansei Engineering (KE) to conduct a quantitative analysis of the results of the qualitative research in order to verify whether the results of the qualitative research are accurate. Therefore, in this chapter, the first question is solved by literature review, and the

second question is answered by Case Study research, and the third goal is to confirm the research results by expert interviews.

3.2 Research Design Workflow

Based on the above research, this study adapted research framework workflow established by Ibrahim (2020) to show the overall strategy in articulating the logical technique to ensure an effective way of addressing the research problem. Following is the research design workflow for this study:

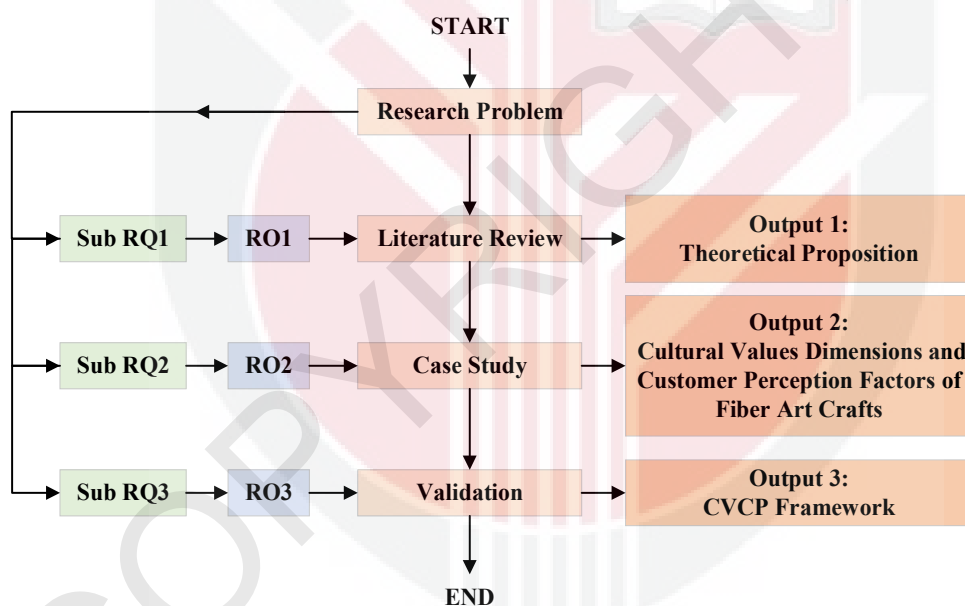


Figure 3.1: Research Process Diagram

From the research design workflow, this study starts with the research problem. From the problem statement, this study developed three sub-research questions related to the construct consist in the main research question. From the sub-research (RQ) this study developed research object (RO) to propose the technique on how to answer and to accomplish the research. As shown in Figure 3.1, the first sub-RQ is to answer by

literature review. The output is expected to obtain the theoretical proposition. The second sub-RQ is to be answered by the Case Study research methodology. The Case Study is divided into three parts 1) The Focus Group Discussion (FGD), 2) Survey, 3) Kansei Engineering (KE). The output is cultural values dimensions and customer perception factors for fiber art crafts. Once the data collection accomplished workflow into the sub-RQ3, to integrate cultural values and customer perception. After that, the result is validated, and the output is expected to be the framework of fiber art crafts based on cultural values and customer perception (CVCP).

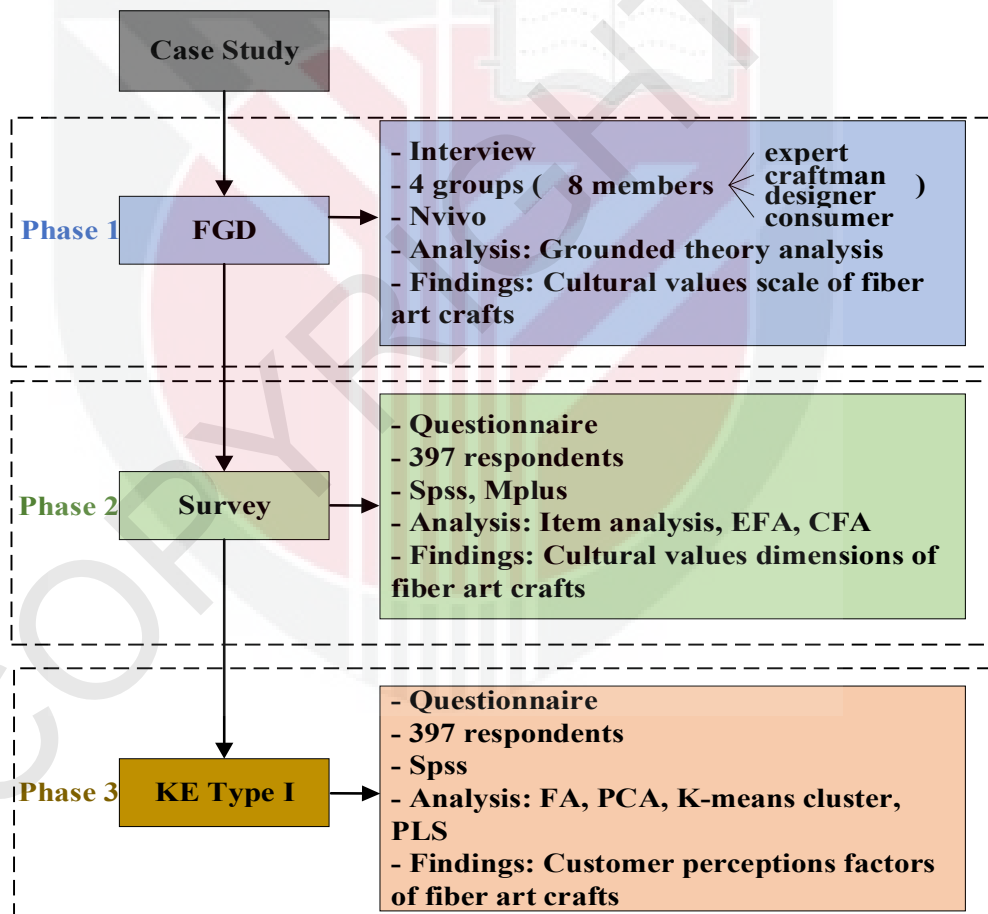


Figure 3.2: Case Study Research Methodology Design

As illustrated in Figure 3.2, data collection comprises three phases in the Case Study: Phase 1: Focus Group Discussion (FGD). Through interviewing 4 groups to collect the data and using grounded theory to analyze data through Nvivo. In this part, FGD was employed as the initial stage of qualitative data collection to obtain participants' perspectives on the cultural values associated with fiber art crafts. Barbour (2017), Breakwell, and Timotijevic (2020) have highlighted that FGD has been extensively utilized for investigating and analyzing a diverse range of dynamic relationships encompassing attitudes, opinions, motivations, concerns, as well as trends in problematic issues and human behavior. Gerson and Damaske (2020) also reported that, in many cases, FGD interviews surpassed the information obtained through surveys, thus expanding the depth of the research. Phase 2 will use the survey. The FGD is typically used in conjunction with survey research; integrating FGD and survey is a common method to merge qualitative and quantitative approaches (Creswell & Hirose, 2019). Phase 3 is Kansei Engineering (KE) Type I. Jasmy et al. (2021) proposed that Kansei Engineering can quantify human emotions. It employs interviews, card-stacking, and questionnaires to collect data (McCusker & Gunaydin, 2015; Williams, 2007). Kansei Engineering quantifies human emotions into words to obtain customer perception and emotion (Nagamachi, 2010). In this stage, Kansei Engineering Type I is used to identify, measure, and analyze consumers' preferences for fiber art crafts design by identifying, measuring, and analyzing Kansei word pairs of fiber art crafts using FA, PCA, K-mean cluster, and PLS analysis.

From the proposed research methodology design framework, this study affirms that the general approach to research methodology in this research is Case Study Research Methodology. The following is the justification for employing case study research methodology in this study.

3.3 Rationale for Using Case Study as A General Approach to This Study

The selection of the research approach is influenced by two main ideas. Firstly, Punch and Oancea (2014) argues that the research approach should align with the research questions. Conversely, Creswell (2021) suggests that the research approach is closely connected to knowledge claims, strategies, and methods. This study concurs with both perspectives, emphasizing that research questions play a crucial role in guiding empirical investigations and determining suitable methodologies.

Based on the above thought, this section explores the main research inquiry established in Chapter One and identifies an appropriate research methodology for this study. Following Yin (2014) for more precision in selecting research methodology that indicated 1) if the main research question begins with “How” or “Why”, 2) if the researcher lacks control over the situation, and 3) if the research issue is a contemporary phenomenon. As such, this study’s main research question is presented below:

How to integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction?

For the development of the research inquiry, it is explicitly mentioned that the case study methodology aligns well with this investigation. The main focus of this study revolves around understanding “How” and it aims to provide insights into current occurrences, such as the current fiber art crafts design that the researcher hasn’t explored based on cultural values and customer perception.

Moreover, the justification for selecting this particular case study is supported by Yin (2014), who argues that employing a research methodology based on case study allows for a practical investigation of existing occurrences within their factual contexts. Furthermore, Yin also suggests that case studies are suitable methods for comprehending “complex social phenomena” and exploring “real-life events”, which can be effectively analyzed through a combination of qualitative and quantitative approaches. Additionally, according to Creswell (2021), utilizing the case study technique is highly appropriate when examining processes, activities, and events.

To summarize, this study supports the idea that case study research methodology is useful for exploring a program, an event, an activity, a process, or individuals in depth. Additionally, a case study is bounded by time and activity and involves collecting detailed information over an extended period using various data collection methods (Stake, 2013). Based on the research question developed above, the main issue was identified: integrating cultural values and customer perception of fiber art crafts in China.

At this point of view, when the nature of the study focuses on the specific contexts, such as understanding the cultural values guiding consumer’s purchases of fiber art crafts, and the issue is a contemporary phenomenon, it merits that the data collection is going to be a qualitative approach. On the contrary, when measuring the relationship between variables in the research problem, such as measuring the process of customer perception and evaluation of fiber art crafts, it is best to use a quantitative approach for data collection and test a theory or explanation.

As a result of this study, it is suggested that the case study serves as an appropriate research methodology. However, considering the aforementioned situation, Punch and Oancea (2014) argue that utilizing both qualitative and quantitative methods for data collection would be equally suitable. They further propose that combining these techniques can effectively leverage their respective strengths while minimizing any overlapping weaknesses in data collection approaches. According to Rahman (2017), by using both quantitative and qualitative methods, the credibility and validity of research results can be verified and enhanced. Based on the background of this study, the research method combines qualitative and quantitative methods to obtain more comprehensive research results. The subsequent section will discuss the detailed analysis of a case study and the data collection technique.

3.4 Data Collection Technique

According to Yin (2014), various techniques are used in data collection. In this study, three data collection methods are needed for the study — Phase 1: Focus Group Discussion (FGD), Phase 2: Survey, and Phase 3: Kansei Engineering Type I.

3.4.1 Phase 1: Focus Group Discussion (FGD)

Focus Group Discussion (FGD) is an effective qualitative research methodology employed to swiftly derive comprehensive and nuanced conclusions. By assembling a group of individuals with similar characteristics, a focus group facilitates in-depth discussions on a specific research topic (Dijkhuizen, 2021; Breakwell & Timotijevic, 2020). As described by Gerson and Damaske (2020), these gatherings involve informal

dialogues among selected participants, providing a platform for insightful exchanges centered around a particular subject. In this study, FGD gathers some people familiar with fiber art crafts to discuss.

The FGD is generally conducted in a semi-structured format with an outline set for discussion based on the study's purpose (Brown, 2018). The process is to have a full and free discussion around the topic, outline it under the facilitator's guidance, and finally arrive at a more convincing conclusion after discussion and summarization among the discussants (Robinson, 2019). Therefore, Gerson and Damaske (2020) and Ward et al. (1991) confirmed that the greatest advantage of FGD, compared to other research methods, is their ability to generate more in-depth information about the research topic. Hence, this proves that using FGD can delve into information on the topic of fiber art crafts. FGD can be carried out during the phases of comprehending user needs and conceptual design, playing a critical role in pinpointing the conceptual framework and acquiring insights into user backgrounds at the early stages of research. FGD gives participants equal opportunities to express their opinions about the cultural values of fiber art crafts. It can facilitate a more profound comprehension of consumer needs for fiber art crafts and foster the uncovering of innovative breakthroughs or ideas for fiber art crafts.

The number of participants in a focus group is not fixed, and it is generally believed that 6 to 8 participants are sufficient (Krueger, 2014). On the other hand, Casey and Krueger (1994) recommend that ten participants are considered large enough to gain various perspectives and small enough not to become disorderly or fragmented. FGD could be split into two or three groups, each with its own independent discussion

(Breakwell & Timotijevic, 2020). Therefore, in the current study, to obtain a more comprehensive discussion result and ensure that each group has an independent discussion, 8 participants were selected for four separate FGDs. In this study, FGD is used to obtain consumers' views on the cultural values of fiber art crafts. Through the discussion of participants, Chinese consumers' statements about the value orientations of fiber art crafts can be collected, which provides a basis for the subsequent mining and refining of the cultural values scale.

3.4.1.1 Research Site and Samples of Focus Group Discussion (FGD)

The FGD is conducted among a homogeneous population to facilitate in-depth discussions on the research question and ensure data saturation (Hennink et al., 2019). Therefore, snowball sampling and purposive procedures will be employed to recruit participants for the focus groups by Rivera (2019). Firstly, select people with the desired characteristics as the initial respondents, then rely on them to provide another set of qualified respondents, and then from these people to provide a third batch of respondents. The sample is like a snowball from small to large.

All participants must meet the following criteria to be eligible for the study:

Subject criteria:

1. Participants cope with adequate experience or contact with fiber art crafts.
2. Participants should be able to understand or speak Chinese. This is because the Chinese language is the medium to communicate (Zhang, 2019).

Paul et al. (2023), Gaiardelli et al. (2021), and Kazancoglu et al. (2020) pointed out that focus groups of users, customers, or specialists can be used to explore the research in a deeper way. Therefore, four distinct focus groups were included in this study, consisting of experts, designers, craftsmen, and consumers who understand the history, culture, and development of fiber art crafts, as indicated in Table 3.1.

Experts with over 15 years experiences can provide a deeper understanding of the cultural values of fiber art crafts from the perspectives of history, cultural inheritance, social changes, etc. They can also explain cultural connotations that consumers may not be aware of (Gaiardelli et al., 2021). For example, some consumers may buy fiber art simply because the product is designed to be beautiful or useful, but experts can reveal the cultural symbols, historical context, and how the art represents a cultural tradition or identity. Designers are able to provide more professional insights from the perspective of artistic creation and market trends. Designers' understanding of consumer behavior is usually based on a deep analysis of the market, fashion trends and cultural aesthetics. They may observe the underlying cultural motivations of some consumers when making a purchase or how their preferences for certain elements reflect cultural context. Craftsmen are inheritors of the intangible cultural heritage of the master-apprentice inheritance system with over 15 years experiences. They have exquisite skills and rich historical knowledge of the creation and inheritance of fiber art crafts. Consumers' views are usually based on personal experience and immediate purchase needs, which can directly reflect consumers' interests and preferences, and understand consumers' cognition and understanding of cultural values of fiber art crafts.

The FGD questions were developed based on the research objectives and literature review, ensuring they align with the study's focus on cultural values and consumer perceptions. The question design followed these principles:

1. **Clarity and Simplicity:** Questions were framed in simple and direct language to ensure participants easily understood them.
2. **Open-ended Structure:** Questions were formulated to encourage discussion rather than elicit short, one-word answers.

Before conducting the actual FGD, the designed questions were validated through the following methods:

1. **Expert Review:** The initial set of questions was reviewed by a panel of academic experts to ensure content validity and relevance. Experts provided feedback on clarity, bias, and completeness.
2. **Pilot Testing:** A small-scale pilot FGD was conducted with a limited number of participants (5 individuals) to assess how well the questions functioned in a real discussion setting. This pilot helped identify any ambiguous wording, redundancy, or difficulties in answering.
3. **Revisions Based on Feedback:** The feedback from the expert review and pilot test was used to refine the questions, ensuring they were concise, clear, and effective in capturing meaningful data.

FGD uses semi-structured interviews, which ask five questions, and panelists are free to express their opinions based on the questions. These five questions were strategically chosen to explore:

1. Current applications of fiber art crafts.
2. Awareness and perception of Chinese cultural values.
3. The role of cultural values in design.
4. The most significant cultural influences on fiber art crafts.
5. How fiber art crafts can evolve to fit modern lifestyles.

This structured approach ensures a comprehensive understanding of the integration between cultural values and customer perception, ultimately contributing to the development of an effective conceptual framework.



Table 3.1: FGD Research Site and Samples

Number	Site	Participant No.	Participants and Organizations	Semi-structure Questions
Group 1	Jinan City	8	Experts with over 15 years of experience and master and above education level in the universities and other government organizations are the source of reference for education and marketing promotion of fiber art crafts .	1. What are the features of fiber art crafts used in the current lifestyle? 2. Have you ever heard of Chinese cultural values? (If not, explain the Chinese cultural values) 3. Do you believe Chinese cultural values influence the design and creation of fiber art crafts?
Group 2	Yantai City	8	The craftsmen of intangible cultural heritage in fiber art crafts with over 15 years experiences.	4. Which cultural values do you think have the most significant impact? Please provide examples.
Group 3	Qingdao City	8	Full-time designers and freelance designers with over 5 years of experience in design projects.	5. To adapt to the evolving nature of the current lifestyle, what adjustments and optimizations do you think are necessary for current fiber art crafts?
Group 4	Shandong Province	8	In everyday life, the general public enjoys using fiber art crafts. The participants were selected through Weibo Advertisements.	

FGD research site is in Shandong Province, of which the experts group is in Jinan City, the craftsmen group is in Yantai City, the designers group is in Qingdao City. Figure 3.3 can clearly show these sites. Jinan city, Qingdao city, and Yantai city are three important cities in Shandong province. Jinan is the cultural and academic center as the capital of the Shandong. There are so many universities and government organizations. Qingdao is gathering for emerging art designers and modern consumer cultural with distinctive international characteristic and open design concept. Yantai is a coastal cities characterized by traditional crafts have unique advantages in the inheritance and industrialization of fiber art crafts. Selection the three cities can cover the cultural and consumption difference of inland, coastal land, urban and rural area, and provide multi-dimensional data for the research.



Shandong Province Map



Shandong Map in China

Figure 3.3: Research Site on the Map

3.4.1.2 Data Collection Process of Focus Group Discussion (FGD)

In this study, FGD was used to identify consumers' cultural values towards fiber art crafts. The facilitator mainly guided the team members during the discussions, noting down essential opinions, but was unable to document the entire interview process

comprehensively. Hence, an observer was designated to provide assistance by meticulously documenting the discussion process, taking notes, ensuring order at the scene, and handling logistical responsibilities. Each interview session lasted for 90 minutes and encompassed five steps.

i. Previous Preparation

Prepare the interview venue, clarify the interview objectives, and create a concise interview outline that emphasizes the expressions of cultural values in fiber art crafts. Based on the interactive nature of the interviews, be adaptable in modifying and adding questions to facilitate more profound and comprehensive communication.

ii. Participants Gathering

Coordinate the participants and appoint a facilitator. The group members were informed and readied for the focus group sessions. At this stage, participants were provided with a questionnaire to collect personal information, including gender, age, professional background, and years of experience. These particulars are crucial for gaining a better understanding of the participants and confirming their suitability for the study.

iii. Introduction and Description

Briefly introduce the purpose and rules of the group, then proceed to the discussion phase. The introduction should not take too much time, aiming to keep it within approximately 5 minutes.

iv. Sharing Ideas

Pose inquiry questions based on the established interview outline. The facilitator should control the discussion direction towards using fiber art crafts in contemporary Chinese households. In a group discussion, participants are invited to seek verbal explanations or further details on ideas they are unclear about from other group members. The moderator plays an important role in ensuring that all participants engage in the discussion without spending too much time on one idea. The discussion should be as impartial as possible, avoiding judgments and criticisms.

v. Summary Group Discussion

Summarize the viewpoints expressed during the group discussion, confirming their accuracy and checking for omissions. This stage summarizes the statements of the cultural values orientation of fiber art crafts. After discussion, each group summarizes the statements about the cultural values of fiber art crafts. These statements are the basis for the formation of the values scale.

3.4.1.3 Analysis of Focus Group Discussion (FGD)

Leech and Onwuegbuzie (2008; 2007) have highlighted qualitative analysis techniques such as grounded theory analysis (Charmaz, 2006; Glaser, 1992; Strauss, 1987), content analysis (Morgan, 1996), and discourse analysis (Potter & Wetherell, 1987) that can all be employed to analyze focus group data. Once FGD has concluded, the recordings are transcribed into written transcripts. These transcripts are then meticulously organized and encoded by the author of this paper. Categorization is integral to effective research, serving not only as an analytical tool but also as the

cornerstone of the study and the theoretical framework that researchers aim to explore. Therefore, this study will employ grounded theory for encoding, resulting in an initial scale of cultural values in fiber art crafts. Subsequently, a questionnaire survey will be conducted to refine and enhance the initial items, yielding dimensions of cultural values in fiber art crafts. Therefore, the progress of the FGD analysis is shown as follows (refer to Figure 3.4).

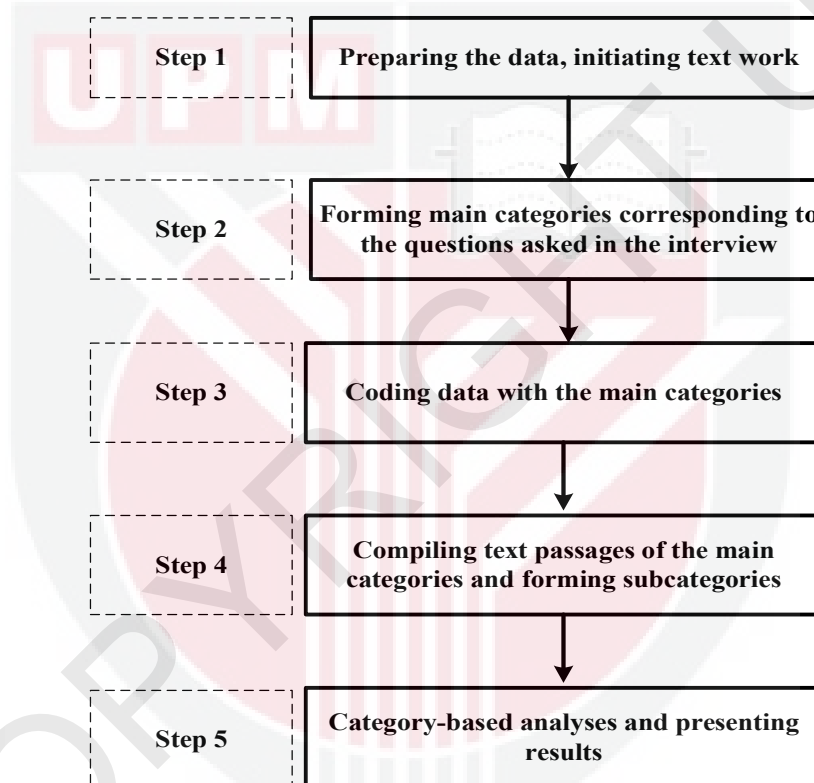


Figure 3.4: The Detail of the Focus Group Discussion (FGD) Analysis

The coding was done in three steps using NVIVO. Firstly, initial open coding was carried out. Gerson and Damaske (2020) suggest that initial coding refers to generating many category codes without limiting the number of codes. In this stage, the researcher records emerging ideas based on the content of the audio recordings and maps the relationships, identifying keywords of cultural values of fiber art crafts that the

interviewees frequently mention. The second stage is focused coding, where the researcher will categorize, combine, or subdivide the coded categories identified in the first step and generalize the clustering of the distilled concepts and categories. Chen et al. (2021) and Charmaz (2006) alluded to the fact that at this stage, the researcher should pay attention to keywords that recur in the coding and to broader themes. To delve deeper into the inherent structure of cultural values in fiber art crafts, the items from the initial scale were once again merged and classified to extract conceptual levels. This study phase seeks to enrich the theoretical coherence and content validity of the structural framework of cultural values in fiber art crafts within modern Chinese households through qualitative research methods. Kuckartz (2019) pointed out that selective coding is done to discover the core categories that unify and connect the other categories to form a complete interpretive framework.

3.4.2 Phase 2: Survey

A survey uses a series of questions to collect data (Kent, 2020). In this study, the quantitative research method was used to further organize and test the structural system of cultural values of fiber art crafts based on the results of data analysis.

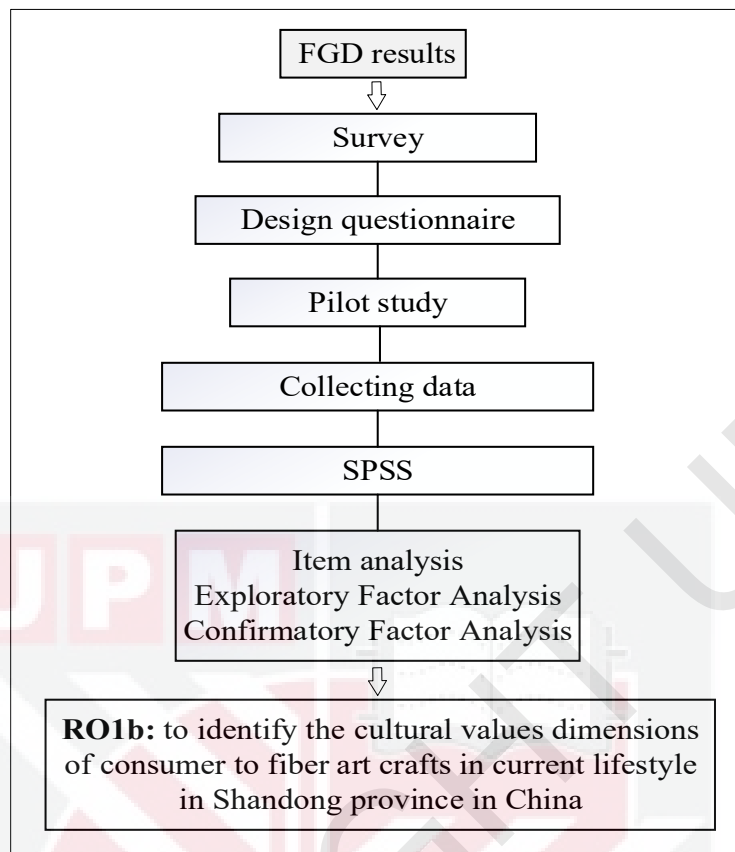


Figure 3.5: The Process of Survey

As shown in Figure 3.5, the survey questionnaire was used to identify the cultural values dimensions of fiber art crafts based on the FGD result. This information was used in the first version of the questionnaire. It was revised after the pilot test, and the final version of the questionnaire was used for the actual data collection.

3.4.2.1 Research Site and Samples of Survey

Since this study is to determine consumers' cultural value orientations towards fiber art crafts, participants need to have a certain understanding of fiber art crafts or have purchased or used fiber art crafts. Since there are 110,000,000 people in Shandong Province (Shandong Provincial Bureau of Statistics, 2021), in order to obtain abundant

research data, the questionnaire was conducted using multistage sampling in Shandong province. According to Oribhabor and Anyanwu (2019), multistage sampling applies to studies involving large-scale populations, especially in national or regional surveys, and can effectively cover the target groups in different regions. Multistage sampling can first be stratified by geographical regions, and then random sampling can be conducted among specific populations to ensure that the data are both extensive and can penetrate deeply into the target groups. According to statistics, there are 28 large-scale exhibition and trading centers in Shandong Province (Shandong Provincial Exhibition Industry Development Association, 2022). Firstly, five exhibitions and trading centers were randomly selected as questionnaire distribution points using SPSS. In this step, using random sampling can ensure the effective control of the representative sample and enhance the reliability of the research results. Secondly, through communicating with the managers of the exhibition and trading centers, after obtaining the permission of each store's manager, the store manager communicates with the store's members to determine the group. The third step is to distribute the questionnaires to the store members. According to the previous research (Ryan, 2013; Al-Subaihi, 2003), with a confidence level of 95% and a margin of error of 3% ~ 5%, the sample should be sufficiently large to be representative of the population. The sample size table 3.2 (Saunders et al., 2012) was used to identify the suitable sample for this research based on the total number of people residing in Shandong province. Based on the sample size table, if a population was beyond 1 million, and the margin of error was 5%, then a minimum sample size was 384. Hence, this research used a sample size of more than 384. The chosen sample was believed to be appropriate to obtain more accurate results (Galanis et al., 2023; Dietvorst & Bharti, 2020). However, the researcher distributed 409 questionnaires, because 12 questionnaires were invalid,

397 questionnaires were used. Participants need to be able to understand or speak Chinese and over 18 years old (Tam et al., 2015; Helm & Landschulze, 2013). The questionnaire will be distributed to the participants using the Wenjuanxing App.

Table 3.2: Sample Size of Population at a 95% Confidence Level

	Margin of error (5%)	Margin of error (3%)	Margin of error (2%)	Margin of error (1%)
Population (N)	Sample Size(s)	Sample Size(s)	Sample Size(s)	Sample Size(s)
1000	278	516	706	906
2000	322	696	1091	1655
5000	357	879	1622	3288
10000	370	964	1936	4899
100000	384	1066	2395	9513
1000000	384	1067	2400	9595

[Source: Saunder et al. (2012)]

3.4.2.2 Data Collection of Survey

The respondents will be explained the cultural values of the fiber art crafts to ensure the same level of understanding of these terms. A set of questionnaires was distributed to investigate the cultural values that may influence consumers' choice of fiber art crafts (see Appendix 6). The questionnaire was divided into two parts. The first part was related to the participants' background. The second part was a scale of cultural values of the fiber art crafts. Each question was based on a five-point Likert scale. Each participant was asked to look at the pictures of the fiber art crafts provided and read the explanations of the values before answering the questionnaires. In addition, the participants were asked to select the relevant options as answers.

3.4.2.3 Construct the Pilot Study

To accurately evaluate the cultural values of fiber art crafts in modern Chinese households, this study will employ SPSS 24.0 and Mplus 8.3 for data analysis. Prior to the main study, a pilot study will be carried out to confirm the reliability and validity of the measures. The survey is scheduled to take place from December 14th to December 28th, 2022, spanning a two-week period. The prediction experiment was located at the Shandong Arts & Crafts Exhibition Center in Jinan City. Participants were randomly selected at the entrance of the exhibition hall, and 90 questionnaires were distributed to them. Among them, 58 were valid questionnaires, with an effective rate of 64.44%. The reliability was 0.91 (more than 0.7), and the validity was 0.93 (more than 0.6); therefore, this study can progress to the next stage of analysis (Heckler, 2005).

3.4.2.4 Analysis of Survey

After conducting the pilot survey, it is necessary to perform item analysis validity and reliability tests as a basis for creating the formal questionnaire. The purpose of item analysis is to explore the differences between high and low scorers on each item or conduct homogeneity tests between items. The item analysis results can be used to select or modify individual items (Hartati & Yogi, 2019). The main goal of item analysis is to assess the appropriateness and reliability of the scale or individual items in a test. It differs from reliability testing, which examines the reliability of the entire scale or the inclusion of several items at the level of dimensions or constructs (McCrossan et al., 2022).

Socio-demographic information mainly focuses on conducting descriptive analysis. It is common for questionnaires to include questions related to age, gender, educational background, and other demographic variables. The analysis of Socio-Demographic Information primarily involves examining the frequency, percentage, mean, and standard deviation of these demographic variables (Samuel & Onyinyechi, 2019).

Exploratory Factor Analysis (EFA) aims to uncover phenomena' underlying essence or structure. The main question addressed by exploratory factor analysis is whether it is possible to extract a small number of meaningful new dimensions or latent variables from complex and diverse raw data, thereby seeking and determining the underlying structure behind the original data (Schreiber, 2021). In exploratory factor analysis, researchers do not have pre-existing theoretical hypotheses about the factors that will be obtained. Therefore, exploratory factor analysis is typically utilized in the initial stages of research. The study randomly divided the valid questionnaire into two equal parts and first used 198 questionnaires to conduct exploratory factor analysis (EFA) to find out the internal structure of consumer cultural values for fiber art crafts.

The other half of the data sample ($n=199$) was used for Confirmatory Factor Analysis (CFA) using Mplus 8.3 to test the fit of the conceived model obtained from the exploratory factor analysis to the actual observations. Confirmatory Factor Analysis (CFA) tests whether a known specific structure operates as expected (McNeish & Wolf, 2023). Goodness-of-fit is an essential indicator for assessing the validity of a CFA model (Finch, 2020). Goodness-of-fit measures the degree of agreement between the model parameters obtained from the data and the parameter values of the theoretical model; it is a statistic that examines the similarity between the sample covariance

matrix and the estimated covariance matrix, with an expected value of 1. In practice, the closer the goodness-of-fit index of a factor model is to 1, the greater the similarity between the sample covariance matrix and the estimated covariance matrix, indicating a better fit of the factor model. Therefore, validation of the factor model of cultural values of fiber art crafts is required by analyzing the results of the model fit.

3.4.3 Phase 3: Kansei Engineering Type I

Kansei Engineering involves translating customer emotions into design specifications using technological methods (Lokman & Nagamachi, 2010). In Kansei Engineering, “Kansei” is a dynamic process that evolves with time, trends, fashion, and individual perspectives, making it challenging to grasp and quantify. However, as the fundamental perceptual process through which humans understand things, Kansei Engineering can be measured, quantified, and analyzed using modern physiological and psychological measurement techniques. Through research, patterns, and regularities in the process of sensibility can be discovered (Di Nuovo & Sinatra, 2022).

Kansei Engineering refers to the technological process of incorporating the consumer’s sensory and emotional responses into the domain of product design (Nagamachi, 2010; 1995). Kansei Engineering primarily analyzes human sensibility to design products based on individual preferences. It explores factors related to human perception and investigates the alignment between product attributes and consumer psychological experiences. It aims to transform vague Kansei demands and imagery into detailed design elements. There are various expressions of Kansei from a psychological standpoint to psychophysiological measurement, with each measurement having multiple manifestations (refer to Figure 3.6).

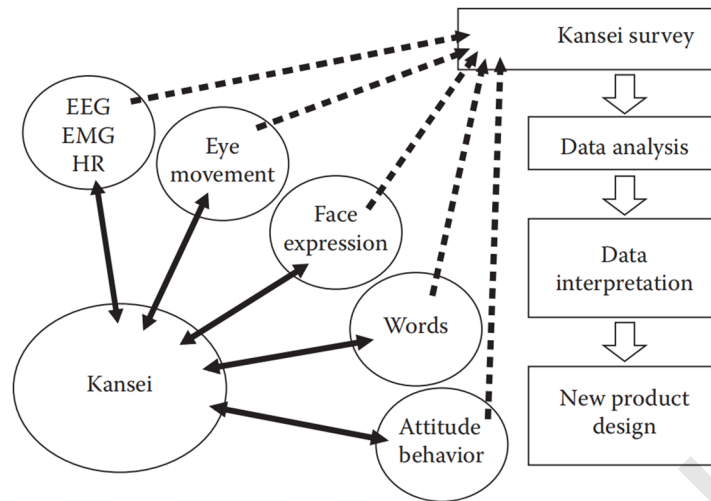


Figure 3.6: Choices of Route to Reach the Kansei
(Source: Nagamachi, 2010)

Customer perception is believed to be based on interaction with products and services (Cui & Chen, 2020). Therefore, it requires an understanding of consumer preferences. Kansei Engineering strives to identify and capture these preferences, integrating them into product design to evoke specific emotional resonance. In today's globalized market, products are not just utilitarian objects but also vehicles for emotional connections and cultural expressions. Consumers increasingly seek products that resonate with their values, beliefs, and emotional needs. To achieve this, Kansei Engineering utilizes a range of techniques and methods, including psychophysical measurements, consumer surveys, and behavioral observations. These methods help designers understand the emotional and sensory experiences consumers associate with different product attributes. There are eight types of Kansei Engineering methodology (Lokman & Nagamachi, 2010). The selection of which type of Kansei Engineering methodology to be used to develop a product needs to be based on the characteristics of the product and the goal to be achieved. Kansei Engineering Type I can focus on analyzing the existing products. It can identify the influential consumer experiences of

the fiber art crafts by using quantitative research methods. Therefore, this study uses Kansei Engineering Type I. By identifying and measuring the emotional vocabulary of fiber art crafts, designers can understand the factors that consumers perceive fiber art crafts, to design products that can evoke emotional resonance with consumers.

In this study, the application of Kansei Engineering (KE) Type I involved four distinct phases: a) Choice of domain. b) Identification of Kansei. c) Measurement of Kansei d) Analysis of Kansei. The step-by-step procedure for implementing the KE methodology in this study is outlined as follows:

3.4.3.1 Choice of Domain

Product domain positioning is selecting a product concept and determining the target audience and market segmentation (Nagamachi, 2010). It primarily focuses on defining the direction of product sensory research, involving identifying product concepts and selecting product samples and sensory vocabulary. According to Schertz and Berman (2019), semantic description pertains to the sensory perception of a product, where designers collect subjective evaluations of products or concepts from individuals and categorize them to generate representative sensory vocabulary. On the other hand, product attribute description involves collecting various representative product samples, sketches, and concepts to explain the initial product concept (Lin & Xue, 2019). These descriptions in both aspects form a collection of sample spaces.

This study focuses on the Kansei evaluation of fiber art crafts. Therefore, the product domain is set as fiber art crafts, referring to handcrafted items made predominantly from fiber materials.

3.4.3.2 Identification of Kansei

i. Collecting Fiber Art Crafts Product Samples

The collection of product samples is based on the product domain. The objective is to select representative images, such as products, sketches, and prototypes, as product samples (Nagamachi, 2010; Schütte, 2005). Based on the literature review conducted in Chapter 2, the predominant fiber art crafts found in modern Chinese households are embroidery, carpet and tapestry, and bamboo grass weaving.

To ensure that the samples are suitable for the Kansei evaluation, the following standards need to be met:

1. **Cultural Representativeness.** The samples should reflect the traditional Chinese cultural values, such as Face and image, practicality and rationality, etc. Specialized handicrafts with regional characteristics should be selected.
2. **Product Diversity.** Ensure that the samples have wide coverage in terms of materials, production techniques, and design styles, for example, select products with different techniques and different functions, different materials and different design styles.
3. **Market Adaptability.** The samples should cover the mainstream trends in the market, such as the modern transformation of traditional handicrafts and the innovative design of cultural and creative products. Ensure that the selected samples still have practical value in contemporary family life.
4. **Visual and Emotional Characteristics.** Ensure that the samples have clear visual features, such as colors, textures, and forms, which are conducive to the analysis of Kansei Engineering. Select samples with high consumer feedback to study their emotional resonance characteristics.

Hence, a diverse array of samples encompassing embroidery, carpet and tapestry, and bamboo grass weaving will be gathered, drawing from various sources such as websites, magazines, and advertisements. This will involve exploring online fiber art

stores and official websites of cultural and creative fiber art enterprises, as well as visiting physical retail outlets and production facilities specializing in fiber arts, the result of collection as shown in Figure 3.7



Figure 3.7: Fiber Art Crafts Product Samples
(Source: Photo by author)

ii. Selecting Representative Samples

Once the fiber art crafts samples have been collected, they will be systematically organized. A focus group comprising six experts in fiber art design will then be invited to participate. The images from the three categories will be refined based on their main characteristics, such as craftsmanship, materials, colors, and more. Following this, several representative samples will be carefully selected based on their design elements in order to establish sample groups that effectively reflect the distinctive product attributes of each respective category.

According to the List of Craftsmen Artists in the Sixth Shandong Arts and Crafts Masters Exhibition (Human Resources and Social Security Department of Shandong Province, 2022), there are a total of 109 members in the expert group, with 45 experts engaged in the field of fiber art. The details of select samples using FGD are shown in Table 3.3.

Table 3.3: Select the Representative Samples Using FGD

FGD	Item
Sample size	6 people
Sampling method	Random sampling
Research tools	Adobe Photoshop, Adobe Illustrator
Interview questions	1. What do you think are the representative products of the embroidery? 2. What do you think are the representative products of the carpet and tapestry? 3. What are the representative products of bamboo grass weaving?

Randomly select six fiber art experts from the fiber art expert's database in Shandong Province. Organize focus group interviews with these fiber art crafts experts. The aim is to identify the samples of fiber art crafts.

iii. Collecting Kansei Word Pairs

To collect Kansei word pairs, the researcher leverages personal experience in fiber art crafts and employs semantic differential analysis as the method. Čok et al. (2022) pointed out that the emotional vocabulary should be as much as possible, and the product samples in the given product domain should be fully described. In the Kansei word pairs collection, the researchers applied their personal research experience on fiber art crafts and referred to the semantic difference analysis method to consider the following: how the Kansei word pairs are reflected in this product. Through answering questions, the nuances of each word pair can be ascertained while duplicate and irrelevant words can be eliminated, aligning with the objective of initial screening. The goal is to compile a comprehensive list of 100-word pairs that effectively articulate the characteristics of the fiber art crafts samples within the designated product domain.

iv. Screening of Kansei Word Pairs

To further narrow down the vocabulary, after extensively collecting Kansei word pairs, need to screen the Kansei word pairs. The process is shown in Table 3.4. The first step is using FGD to screen and classify the Kansei word pairs (Zheng & Wang, 2020; Li & Li, 2020). The semantic differential method was employed to eliminate word pairs with ambiguous or overlapping meanings, swiftly pinpointing highly representative terms from the gathered Kansei word pairs in the preceding phase (Huo et al., 2023; Meylia & Iskandar, 2022). Additionally, step 2 is a questionnaire survey (see Appendix 8), which was administered to gather data for mathematical and statistical analysis, aiding in the streamlined development of evaluation questionnaires in subsequent stages. Participants were prompted to select descriptive adjectives that resonated with their subjective perception of fiber art crafts products, thereby contributing valuable insights to the study. According to Bimaruci et al (2021) and Crosby et al (1998), confidence level is 95% and margin of error is less than 10% is acceptable when data collection is at the exploratory stage, The purpose of this questionnaire collection is to screen Kansei word pairs. After the questionnaire collection, FGD will continue to be used for result screening and verification. Therefore, the sample size at this stage should more than 97.

In addition, because the screening of Kansei word pairs requires participants to have a certain understanding of Kansei word pairs, the educational level of people in this stage is set as undergraduate or above. A 50% critical proportion was used for vocabulary screening.

Table 3.4: Process of Screening of Kansei Word Pairs

Step 1 FGD		Step 2 Questionnaire
Study location	Shandong Province	Shandong Province
Sample size estimation	6 people	The sample size need more than 97.
Sampling method	Random sampling	Random sampling
Research tools	SPSS	SPSS, Wenjuanxing App
Data collection	6 experts in fiber art crafts from Shandong province were selected (6 experts same to Table 3.2). The experts were provided with a list of vocabulary related to fiber art crafts perceptions. Based on their own perceptions of fiber art crafts, the experts conducted a screening of the vocabulary, excluding word pairs with ambiguous expressions or similar meanings.	Excel was used to randomly select three cities in Shandong Province, namely Jinan, Weifang, and Yantai. Fiber art crafts exhibition halls in these three cities were chosen as the distribution locations for the questionnaire. Respondents obtained the questionnaire by scanning a QR code and providing their responses (The questionnaire only involved statistical research content analysis and did not reveal the respondent's privacy).

3.4.3.3 Measurement of Kansei

This study will evaluate Kansei's word pairs using psychometric and semantic differential methods. A sample group of fiber art crafts of different categories will be combined with representative imagery word pairs, a semantic difference scale will be created with the semantic difference method, and the subjects will be invited to make a multi-scale evaluation according to their subjective feelings and a preference rating.

3.4.3.3.1 Semantic Differential Method (SD)

The semantic differential method is a psychological research approach proposed by psychologist Osgood et al. (1957). It is a fundamental method used in Kansei engineering to analyze emotions quantitatively (Guo et al., 2016; Fang et al., 2015; Bouchard & Kim, 2014; Huang et al., 2012). It is primarily applied to measure the extent to which semantic words align with the participants' feelings and to transform matching imagery words into specific design elements for practical applications (Osgood, 2019).

The semantic differential (SD) questionnaires commonly utilize a five-point or seven-point scale. One of the challenges associated with this technique is selecting genuinely opposite, bipolar, contrasting adjectives (e.g., good-bad, light-dark, social-unsocial) and establishing a neutral zero point. In the study, the researcher labeled the poles of the SD scales, assuming equal intervals between them. The left direction represents negative judgments; positive judgments are in the right direction, and the middle option indicates a neutral description. The selected adjectives in these descriptions convey subtle feelings (Mattson et al., 2013), as shown in Figure 3.8.

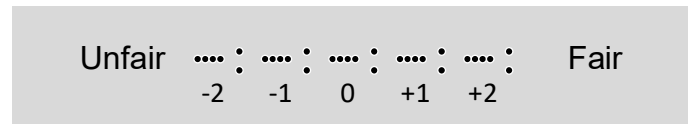


Figure 3.8: The Semantic Differential Method (SD) Scale
(Source: Osgood et al., 1957)

3.4.3.3.2 Research Site and Samples of Semantic Differential Method (SD)

The SD technique was conducted in Shandong Province. Because the responses of the same group can eliminate the influence of individual differences on the results, the relationship between two variables can be observed more clearly (Puimège & Peters, 2019; Kusumaningrum et al., 2019). Therefore, in order to ensure the reliability and accuracy of the research results, the sample of this study needs to be the same as the sample in 3.5.2, so the multistage sampling method is also adopted in this questionnaire. The process and standards are the same as those in 3.5.2.1.

3.4.3.3.3 Date Collection Process of Semantic Differential Method (SD)

This study explores the key factors influencing consumers' demand for fiber art crafts products. To achieve this, the author utilized a refined set of perception-related vocabulary to develop a comprehensive questionnaire. By analyzing participants' perceptions and preference evaluations of fiber art crafts products, our goal is to gain insights into the underlying reasons why consumers opt for such items.

The data collection points were selected as 5 exhibitions and trading centers of fiber art crafts in Shandong Province. The study collected a second questionnaire from individuals who had previously participated in a cultural values survey on fiber art

crafts products. The survey was distributed to people who had participated in a survey on the cultural values of fiber art crafts. When distributing the survey, tracking parameters were set up, a follow-up survey was created, and the survey was pushed out via QR codes to track the same group of respondents (Fernandes & Feiner, 2016; Rea & Parker, 2014). Finally, the research used 397 samples, and these participants also answered the first survey.

The questionnaire survey comprised two parts (see Appendix 10). The first part involved participants' backgrounds and provided an analysis and statistical summary of certain common characteristics of the target user group, such as consumer demographics, occupation, education level, purchasing power, and purchasing tendencies. By conducting a questionnaire survey and analyzing user types and characteristics, the study could gain a deeper understanding of consumer needs and preferences for the researched products (Zu, 2017; Kanchanapibul et al., 2014), facilitating the scientific selection of the target population for subsequent investigations.

The second part combines product pictures and adjectives to make a new product perceptual evaluation table. This form aimed to assess consumers' preference levels for fiber art crafts products and provide insights into their attitudes. Each set of product images was accompanied by descriptive adjectives, including a "like/dislike" preference evaluation option. For each pair of descriptive adjectives, a 5-point measurement scale was provided. Participants were requested to provide subjective evaluations for each category of fiber art products, rating them on a scale of 1 to 5. A rating of 1 denoted the lowest value, 2 indicated a slight value, 3 represented a

moderate value, 4 denoted a high value, and 5 indicated the highest value. Higher numerical values indicated stronger sensations described by the adjectives, while lower numerical values suggested weaker sensations. The middle options represented neutral descriptions. Participants were encouraged to use checkmarks to express their sensory evaluations and preference scores for each product.

Finally, the interviewees logged in to the research platform through the website link and answered the questionnaire. The questionnaire only does a statistical analysis of the research content and will not reveal the privacy of the respondents.

3.4.3.4 Construct the Pilot Study

To accurately identify the customer perception factors of fiber art crafts in modern Chinese households, this study will employ SPSS 24.0 for data analysis. Prior to the main study, a pre-test will be carried out to confirm the reliability and validity of the measures. The pilot study has shown strong reliability (0.92) and validity (0.81), exceeding the required threshold of 0.6 for further analysis (Heckler, 2005). Therefore, this study can progress to the next stage of analysis.

3.4.3.5 Analysis of Kansei

In order to accurately understand the factors influencing consumers' affective needs for fiber art crafts, this study conducted data analysis using SPSS 24.0. To address the research questions, the study employed Factor Analysis (FA), Principal Component Analysis (PCA), K-means clustering, and Partial Least Squares (PLS) for the analysis of affective needs for fiber art crafts.

3.4.3.5.1 Factor Analysis (FA)

Factor analysis (FA) is commonly used to explore the psychological structure of Kansei, which forms the basis for investigating the fundamental concepts of Chinese characters (Lokman & Nagamachi, 2010; Nagamachi et al., 2008). Quan et al. (2018) proposed in their study that factor analysis is frequently employed to identify the basic interpretations of sensory needs within the domain of products. The results are often utilized to formulate new concepts for developing sensory products, representing a concentrated representation of people's sensory needs in a specific aspect. Additionally, factor analysis has been commonly used to identify effective Kansei words in previous Kansei engineering studies based on extensive questionnaires (Guo et al., 2020). Factor analysis assumes that the rating data for various attributes of fiber art crafts products can be effectively summarized into a limited number of essential dimensions. This reduction process minimizes information loss, condensing a large volume of raw data into a concise set of factors. These factors are distinct from one another yet collectively account for a substantial portion of the original data's information. This assumption of data condensation is reasonable since it acknowledges that other attributes can impact the rating outcomes for a specific attribute.

Hence, this study can confidently utilize the identified factors to construct the principal component domain of Kansei word pairs.

3.4.3.5.2 Principal Component Analysis (PCA)

In Kansei Engineering, Principal Component Analysis (PCA) is commonly used to find the spatial relationship between the perceptual and the sample (Vieira et al., 2017; Yanagisawa, 2011) as a way to assist companies in formulating product strategies (Distanont & Khongmalai, 2020; Narver et al., 2004). Cartone and Postiglione (2021) stated in their study that Principal Component loading plots can visualize the extent to which perceptions influence variables, and Principal Component Score Plots show which perceptions and samples have a strong connection. Thus, principal component analysis can visualize the Kansei factors of a product (Rosenkranz & Altinsoy, 2020). Using principal component analysis facilitates designers and companies to follow the design cues from fiber art crafts.

3.4.3.5.3 K-means Cluster Analysis

Cluster analysis is a multivariate statistical method that categorizes data based on spatial relationships (Dalmaijer et al., 2022; Kaufman & Rousseeuw, 2009; Romesburg, 2004). The K-means clustering analysis method can be used to select strategic Kansei word pairs and identify good design samples for fiber art crafts. In this study, various clustering methods can be employed to classify fiber art crafts. Firstly, the number of categories for fiber art crafts needs to be defined. Then, based on the principle of optimality, the overall dataset is divided into three categories, four categories, or as many as necessary until reaching the desired K categories (Heckler, 2005). By carefully selecting design elements relevant to Kansei, the study can enhance the overall quality of fiber art crafts designs. To achieve this, conducting a

questionnaire survey on customer perception factors of these products can help identify the sources of Kansei word pairs and determine the design elements associated with strategically important Kansei word pairs. Moreover, applying K-means cluster analysis can effectively evaluate the strengths and weaknesses of various samples of fiber art crafts products, providing valuable insights for identifying favorable options in this category.

3.4.3.5.4 Partial Least Square Analysis (PLS)

Partial Least Squares (PLS) is utilized to establish the mapping relationship between the design characteristics of fiber art crafts and customer perception factors. PLS regression analysis is a statistical method used for modeling multi-linear regression. First introduced in 1983, this method has been widely adopted and developed over nearly 30 years, resulting in significant advancements in theoretical research and practical applications. It is recognized as a second-generation regression analysis method. Partial least squares regression enhances traditional regression modeling by establishing relationships between multiple dependent and independent variables, effectively addressing issues like variable autocorrelation commonly encountered in typical multiple regression analyses. Due to its ability to mitigate these challenges, the partial least squares regression method holds significant importance in various statistical applications.

In Kansei Engineering design, PLS analysis can be employed to identify favorable design elements in fiber art crafts. Given the various ways to combine design elements in fiber art crafts, it becomes essential to determine the optimal design combination.

PLS analysis enables the recognition of sound design elements by examining the ranking of PLS coefficients for each design element (Jasmy et al., 2021).

3.5 Correlation Validation

To develop a framework based on consumer cultural values and customer perception of fiber art crafts, it is essential to understand the relationship between these values and the factors that influence customer perception of products. Therefore, this study implements correlation analysis to establish the association between the two. By utilizing correlation analysis, the research can determine the strength and direction of the relationship, providing valuable insights into the impact of consumer cultural values on perceptions of fiber art crafts.

3.5.1 The Relationship Between Cultural Values and Customer Perception of Fiber Art Crafts

Based on cultural values and customer perception, developing a framework of fiber art crafts requires determining the relationship between cultural values and customer perception. Cultural values refer to widely accepted and recognized beliefs, ideas, and behavioral norms within a society or group. Customer perception refers to their subjective cognition, evaluation, and attitudes toward products or services. Therefore, there is a close relationship between cultural values and customer perception (Stathopoulou & Balabanis, 2019; Pantano, 2011).

3.5.2 Measurement of the Relationship Between Cultural Values and Customer Perceptions of Fiber Art Crafts

This study involves the following variables: cultural values dimensions for fiber art crafts and customer perception factors for fiber art crafts. All variables are evaluated using a Likert 5-point scale, and the surveyed products are exclusively fiber art crafts.

Pearson's correlation coefficient is an analytical method for determining the degree of linear correlation between two continuous variables (Chatterjee, 2021). It is also used to analyze the correlation between cultural values and customer perception. Therefore the relationship between cultural values and customer perception can be explained based on the correlation analysis. A correlation coefficient close to either 1 or -1 indicates a strong correlation, while a coefficient close to 0 suggests a weak or nonexistent correlation. Furthermore, by considering the sign (positive or negative) and magnitude of the coefficient, the research can determine the strength and direction of the correlation between cultural values and customer perception.

3.5.3 Expert Validation

This stage of the study validates previous research, with all findings and results aimed at constructing a framework based on cultural values and customer perception of fiber art crafts. This framework is founded on insights from both practice and theory, facilitating the execution of relevant design, implementation, and production processes by designers in relation to these crafts. The development of this framework involves validation by various field experts to ensure the accuracy and comprehension of the research, paving the way for its practical application in enhancing the quality of fiber art crafts, as shown in Table 3.5.

Table 3.5: Expert Validation

Object	Activities	Analysis	Outcomes	Participants	Locations
To validate the suitability of fiber art crafts framework for designers	Questionnaire for validation	Likert Scale; Questionnaire; SPSS	Framework for fiber art crafts integrating the relationship between the cultural values and customer perception	Academic expert; Designer; Weaver	Shandong Provincial Fiber Art Association; Shandong Province Intangible Cultural Heritage Museum

(Source: Researcher, 2023)

This process entails engaging in meetings with field experts, including academic professionals, designers, and craftsmen, who have been chosen for their ability to validate the feasibility of the framework. These individuals were selected as field experts based on their extensive experience in the field of fiber art, with a minimum of ten years of practical involvement. The research site is situated in Shandong Province. Data analysis is carried out using the Likert scale questionnaire method. The inclusion of these experts in evaluating the framework is a crucial step in this study. The data from expert evaluations in the validation of the framework development study are presented in Table 3.6.

Table 3.6: The Group of Expert Validators of the Framework of Fiber Art Crafts Integrating the Relationship Between Cultural Values and Customer Perception

No.	Category	Age (Years)	Education	Field Experience (Years)	Job Scope
1	Academician	56	Master	20 years	Lecture in weaving
2	Academician	40	Master	15 years	Lecture in weaving
3	Designer	48	Degree	25 years	Designer in weaving
4	Designer	44	Degree	20 years	Designer in weaving
5	Textile Maker/Weaver	55	Diploma	30 years	Weaver

The participants came from different categories, such as academicians, designers, and textile makers. The selection was made to ensure that participants have a wealth of design knowledge and experience and understand the elements and characteristics of the designs. They have 15 to 30 years of field experience. Choosing participants with more years of experience produces more compelling results. The validation session was conducted face-to-face.

3.6 Summary of Chapter

This chapter discusses the use of Case Study. It can deeply explore the information related to fiber art crafts. Using FGD, the views of the group members are recorded, and then the initial scale of consumers' cultural values toward fiber art crafts is identified through grounded theory analysis. The survey is used to verify the scale. Through KE, representative samples of fiber art crafts and Kansei word pairs are identified, and the consumer perceptions factors for fiber art crafts are determined through the measurement of Kansei word pairs. Finally, the relationship between consumers' cultural values and customer perception is determined through data analysis. The final results are verified through expert interviews.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter presents the key findings from qualitative and quantitative data analysis, employing a case study approach and according to the principles of data analysis as outlined by Hair et al. (2019). There are four parts in this chapter. In part one, using grounded theory analysis to analyse the data of Focus Group Discussion (FGD), then, extract the connotation and structure of cultural values of fiber art crafts through encoding, form a theoretical structure. Subsequently, analysis of the Survey data, obtained the cultural values scales of fiber art crafts through item analysis, and identified the cultural values dimensions through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). In the third part, obtained the factors of the customer perception of fiber art crafts through analysis the data of Kansei Engineering (KE). Finally, the study uses correlation analysis to confirm the relationship between the cultural values and customer perception of fiber art crafts. The results of the survey will be discussed in Chapter 5.

4.2 Result I – FGD Analysis

In order to explore the connotation of the cultural values of fiber art crafts, this study adopted the FGD. All members are divided into four groups: experts group, craftsmen group, designers group, and consumers group (refers to those people who have

purchased fiber art crafts multiple times), according to the suggestion by Barbour and Flick (2017). Transcription results of the interview (refer to Appendix 3).

4.2.1 Coding of Focus Group Discussion (FGD)

In order to analyze the text data obtained from the focus group discussion (FGD), this study employed a coding method to extract and examine the textual meaning. The author and an expert in fiber art collaborated to collate and code the manuscript. Following the procedural grounded theory's three-step coding paradigm suggested by Strauss and Corbin (1997), the coding process was carried out in three stages. Firstly, open coding was conducted to organize and conceptualize the data information. Secondly, axial coding was employed to induce and cluster the extracted concepts and categories. Finally, selective coding was utilized to identify the core categories, guide and connect other categories, and establish a comprehensive explanatory framework. To ensure the reliability and validity of the coding process, the coding results were tested and reviewed by an expert in fiber art crafts. The results are shown in Table 4.1.

Table 4.1: Classification Table of Cultural Values Encoding of Fiber Art Crafts

Serial Number	Open Coding	Reference Number	Axial Coding	Serial Number	Open Coding	Reference Number	Axial Coding
1	Interpersonal relationships	23	Courtesy demands reciprocity	28	Practical value	6	Functional
2	Affection matters more	14		29	High performance	8	
3	Giving gifts	12		30	Decorative function	7	
4	Human relationship	10		31	High utilization rate	8	
5	Gifts	8		32	Customer satisfaction	10	
6	Seeking others' opinions	13	Conformity	33	Practical	7	Traditional
7	Following the crowd	8		34	Cultural heritage	6	
8	Lack of comparison	14		35	Emotional value	8	
9	Blindly following	8		36	Traditional concepts	24	
10	Popularity	7		37	Traditional culture	8	
11	Popular	6	Authoritative consistency	38	Traditional forms	4	Free personality
12	Publicity effect	5		39	Hobbies and Interests	6	
13	Value of Reputation	6		40	Spiritual Feelings	5	
14	Significance	5		41	Pursuing originality	15	
15	Shop Around	9		42	Life concept	5	
16	Rational purchasing	9	Rational consumption	43	Freedom	6	Natural
17	Weighing the Pros and Cons	8		44	Personality	9	
18	Rational Spending	8		45	Pattern element	9	
19	Plan Your Purchase	6		46	Artistic Beauty	15	
20	Craftsmanship	6		47	Natural materials	11	
21	Inheritance and continuation	32	Development and inheritance	48	Contemporary	16	Trends
22	Handmade	8		49	Trends	18	
23	Transmission	5		50	Fashion	12	
24	Traditional skill	8		51	Pursuing Grade	16	
25	Innovation	10		52	Social Status	17	
26	Nostalgia	7	Environmental Protection	53	Quality of Life	6	Environmental Protection
27	Cultural Heritage	12		54	Green low-carbon	12	
Total		267		55	Environmental protection awareness	15	
				56	Recycling	10	
Total 566				Total		299	

The research team obtained 56 preliminary concepts through open coding, totaling 566 points. Then, spindle coding is carried out to combine first-order concepts to form the dimensional category of concepts.

In this step, the three persons from the focus group who did not participate in the aforementioned classification work were selected to summarize the initial coding results. Three team members classify back-to-back independently, and then the research team makes a comprehensive discussion and summary of the inductive results. After repeated refinement and classification, 12 second-order concepts were obtained. In order to ensure the reliability and validity of the process, this study gives feedback on the researcher's code and the original words of the focus group members to the members for confirmation. After repeated modification, the authenticity of the code is guaranteed. Next, this study classifies 12 secondary codes and forms tertiary codes by selective coding, the results of which are shown in Table 4.2.

Table 4.2: Selective Coding after Discussion among FGD

Selective Coding	Axial Coding	Meaning
Reverence for Nature	Environmental Protection	Emphasizing the harmonious relationship between humans and nature.
	Natural	
Practical and Rational	Functional	It represents the fact that fiber art crafts are highly durable and practical.
	Rational Spending	
Pursuing Trends	Trends	Includes emerging trends, new technologies, and new forms of development.
	Free Personality	
Nostalgia and Inheritance	Conformity	Involves the inheritance and development of culture.
	Development And Inheritance	
	Traditional	
Face and Image	Courtesy Demands Reciprocity	Represents identity and status, seeking recognition.
	Authoritative Consistency	
	Reputation	

Table 4.2 presents 5 dimensions. Firstly, the concept of “Reverence for Nature” concludes two secondary codes: “environment protection” and “natural”. It emphasizes the significance of sustainable development and the imperative to safeguard the environment within the context of fiber art crafts, thereby emphasizing the importance of promoting green and eco-friendly practices in the industry. Next is “Practical and Rational,” which comprises two secondary codes: “functional” and “rational spending.” This dimension reflects the durability and practicality inherent in fiber art crafts. Moreover, it signifies consumers’ expectation that products should not only meet aesthetic needs but also offer enhanced practicality, enabling them to perceive value for money during purchase and usage processes. Thirdly, “Pursuing Trends” includes two secondary codes: “trends” and “free personality.” By incorporating modern trend elements into their creative process, designers can render products more stylish and personalized. Additionally, pursuing a free personality allows designers to unleash their imagination during creation while breaking traditional constraints, thus offering consumers more unique and innovative products. The dimension of “Nostalgia and Inheritance” includes three secondary codes: “conformity,” “development and inheritance,” and “traditional.” It involves preserving cultural heritage through fiber art crafts by highlighting craftsmanship’s role in maintaining cultural authenticity while fostering a sense of belongingness among consumers with an emphasis on identity preservation. Lastly, “Face and Image” also incorporates three secondary codes: “courtesy demands reciprocity,” “authoritative consistency,” and “reputation.” This dimension emphasizes how Chinese consumer psychology regarding face-saving concerns, interpersonal relationships, and reputation influences their preference when selecting fiber art crafts.

4.2.2 Cultural Values Scale Development

To create the cultural values scale of fiber art crafts, the initial scale should be determined through FGD and then analyzed as follows.

4.2.2.1 Results of Initial Questionnaire

According to the text materials provided by the FGD and the classification results of three-step coding, this study constructed the first version of the fiber art crafts cultural values scale, which contains 40 items (refer to Appendix 6).

4.2.2.2 Item Analysis of the Initial Questionnaire

The purpose of item analysis is to evaluate the quality of the initial questionnaire items and purify and screen them. The main testing content is difficulty and discrimination. The questionnaire content of this study is values, which does not involve the concept of difficulty. Therefore, the item analysis of this study only conducts discrimination screening. This study used the simple random sampling method to randomly select participants from three home squares in Jinan city, Shandong, including IKEA, Fantasy Home, and Home Exhibition Center. Thirty questionnaires were distributed to each location, totaling 90 questionnaires distributed. There were 80 valid questionnaires, and the effective questionnaire rate was 88.9%. Select cases with a total score in the top 27% and the bottom 27%, conduct Levene's Test for Equality of Variances and then conduct an independent sample t-test. Remove items that are not statistically significant and have an absolute t value of less than 3 (Hartati & Yogi, 2019).

Table 4.3: Discrimination Screening

Item	Levene's Test for Equality of Variances	t	Item	Levene's Test for Equality of Variances	t
1	16.234***	-7.829***	21	13.014***	-13.096***
2	6.990**	-7.817***	22	3.180	-3.302**
3	2.919	-8.142***	23	1.334	-11.272***
4	1.716	-5.047***	24	58.165***	-11.202***
5	98.253***	-10.168***	25	35.060***	-12.838***
6	44.664***	-7.073***	26	18.703***	-28.528***
7	0.099***	-5.605***	27	5.443*	-3.682***
8	57.577***	-9.056***	28	18.820***	-18.695***
9	83.018***	-9.238***	29	33.428***	-14.717***
10	261.333***	-15.588***	30	14.685***	-17.019***
11	0.259	-3.947***	31	30.857***	-21.602***
12	27.506***	-10.267***	32	30.857***	-21.602***
13	120.550***	-12.167***	33	2.142	-12.204***
14	0.899	-9.442***	34	17.163***	-11.288***
15	4.667*	-21.494***	35	21.913***	-10.37***
16	22.245***	-15.603***	36	7.727**	-12.204***
17	10.828**	-16.361***	37	25.351***	-13.588***
18	3.375	-14.906***	38	59.924***	-14.717***
19	12.470***	-4.617***	39	31.827***	-14.491***
20	49.583***	-19.385***	40	49.583***	-19.385***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The results showed that the discrimination of 40 items reached statistical significance, and all absolute t values were larger than 3, which means good discrimination, as shown in Table 4.3. The findings suggest that the initial version of the cultural values scale for fiber art crafts, as obtained in 4.2.2.1, successfully passed the item analysis. Therefore, all 40 projects can be retained. Next, the study need to conduct a structural analysis on this scale.

4.3 Result II – Survey Analysis

After collection survey questionnaire, it is necessary to conduct a preliminary data analysis for the quantitative data to permit the researcher to evaluate the impact of missing data, identify outliers, and test of normality to avoid bias in the results obtained.

4.3.1 Result of Preliminary Data Analysis

The official questionnaire survey link received 423 participation clicks, and through screening the items, the actual number of participants in the survey was 409. Eliminate invalid questionnaires with response times less than 70 seconds and all the same options, and eliminated the questionnaire with only choose answer 1 and only answer 5. Therefore excluding 12 invalid questionnaires, the final number of valid questionnaires collected was 397, The recovery rate of valid questionnaires was 97.07% (refer to Table 4.4).

Table 4.4: The Questionnaire Survey Recovery Information

Surveys	Number	Percentage (%)
Answers	397	97.07
Invalid	12	2.93
Total	409	100

The next step is to evaluate the quality of the questionnaire. The questionnaire was sorted by total score, and the top 27% of the high score and the bottom 27% of the low score were divided into Critical ratio (CR), and an independent sample T-test was conducted. If the difference is significant, it is considered that the item has a good degree of differentiation. From Table 4.5, it can be seen that there are there are no missing values and outliers, and significant differences in the high and low groups of each topic ($p < 0.05$), indicating that each topic has a good degree of differentiation. The absolute values of skewness and kurtosis of each problem are less than 2, indicating that each problem conforms to normality. Pearson correlation analysis was used for the scores of each item and the total score of dimension, requiring $r > 0.4$ and the difference was statistically significant ($P < 0.05$). If each item has a high degree of

correlation with the total dimension, it is considered that the representativeness and differentiation of the questionnaire are good. Therefore, each item in this study has a high degree of correlation with the total dimension, it is considered that the representativeness and differentiation of the questionnaire are good.

Table 4.5: Descriptive Analysis Table I

	Mean	SD	Skewness	Kurtosis	Item differentiation	Total correlation coefficient
A8	4.083	.935	-.967	.660	-10.957***	.597***
A9	4.003	.965	-.902	.450	-10.041***	.578***
A10	4.121	.967	-1.053	.629	-10.940***	.562***
A11	4.045	1.012	-1.062	.738	-13.439***	.656***
A13	4.071	.953	-.950	.509	-11.452***	.581***
A31	4.013	.957	-.824	.179	-11.235***	.591***
A25	4.008	1.009	-1.009	.649	-11.043***	.591***
A20	4.063	.937	-.886	.391	-10.613***	.588***
A15	3.945	1.038	-.896	.201	-10.211***	.550***
A32	4.005	1.044	-1.012	.487	-12.104***	.616***
A36	3.990	1.047	-.962	.274	-13.084***	.635***
A33	3.919	1.024	-.802	.007	-10.187***	.570***
A37	4.010	1.020	-1.025	.666	-11.297***	.598***
A38	4.003	1.050	-1.056	.535	-12.217***	.604***
A35	3.955	1.077	-.971	.310	-12.024***	.632***
A39	3.970	1.029	-.875	.101	-11.662***	.605***
A40	3.957	1.033	-.924	.336	-11.432***	.622***
A14	3.864	1.149	-.847	-.102	-12.116***	.607***
A16	3.811	1.038	-.827	.185	-12.391***	.604***
A17	3.892	1.073	-.977	.395	-11.685***	.607***
A18	3.841	1.060	-.843	.202	-12.461***	.620***
A21	3.869	1.072	-.911	.383	-11.856***	.607***
A23	3.821	1.106	-.880	.180	-10.793***	.586***
A26	3.937	1.036	-.981	.568	-11.410***	.623***
A1	3.793	1.199	-.869	-.192	-12.382***	.573***
A2	3.723	1.182	-.804	-.222	-12.198***	.581***
A3	3.824	1.159	-.827	-.168	-12.322***	.546***
A4	3.793	1.182	-.858	-.085	-11.840***	.584***
A7	3.738	1.186	-.705	-.487	-12.736***	.575***
A28	3.821	1.101	-.678	-.407	-15.366***	.610***
A30	3.798	1.163	-.820	-.152	-14.633***	.617***
A29	3.811	1.186	-.854	-.124	-13.232***	.607***
A24	3.778	1.140	-.770	-.169	-12.971***	.564***
A34	3.781	1.119	-.690	-.333	-14.508***	.594***

4.3.2 Result of Socio-Demographic Information

After passing the above preliminary data analysis, it is necessary to analyze the scale with structure. The first activity is Socio-Demographic information, the second activity is the EFA and CFA, and the last is reliability and validity analysis.

4.3.2.1 Gender and Age

Table 4.6 shows the sex and age distribution of the participants. The male frequency was 121, accounting for 30.48%; The female frequency was 276, accounting for 69.52%. Females (69.52%) were the highest, and males (30.48%) were the lowest.

In the age group, the frequency of 18 - 25 age was 6, accounting for 1.5%; the frequency of 26 - 33 age was 75 (accounting for 18.9%); the frequency of 34 - 42 age was 41 (10.3%); the majority of the participants were 43-50 (n=161, accounting for 40.6%); the frequency of 51- 59 age was 92, accounting for 23.2%; the age of above 60, the frequency was 22, accounting for 5.5%.

Table 4.6: Gender and Age of the Respondents

Name	Option	Frequency	Percentage (%)
Gender	Male	121	30.48%
	Female	276	69.52%
Age	18-25	6	1.5%
	26-33	75	18.9%
	34-42	41	10.3%
	43-50	161	40.6%
	51-59	92	23.2%
	Above 60	22	5.5%
Total	397	100.0	100.0

4.3.2.2 Education and Occupation

As shown in Table 4.7, junior college and below was 32, accounting was 8.06%; university degree was the largest (n= 333, 83.88%); master or above was 32, accounting is 8.06%.

Among the respondents, the highest participants, 35.0% (n=139), belong to the “enterprise practitioners” group. The second highest was 25.1% (n=100) belonging to “freelance.” The frequency of “personnel of government agencies and public institutions” group was 15.1% (n=60). The frequency of “student” and “self-employed” were each 7.8% (n=31) and 5.0% (n=20). Moreover, the other was 12.0% (n= 47).

Table 4.7: Education and Occupation

Name	Option	Frequency	Percentage (%)
Education	Junior college and below	32	8.06%
	University Degree	333	83.88%
	Master or above	32	8.06%
Occupation	Student	31	7.8%
	Enterprise practitioners	139	35.0%
	Freelance	100	25.1%
	Personnel of government agencies and public institutions	60	15.1%
	Self-employed	20	5.0%
	Other	47	12.0%
	Total	397	100.0

Socio-demographic analyses revealed some important findings. Analysis of sex and age revealed more significant numbers of female participants than men, 69.52% for females and 30.48% for males. According to the age group analysis, the highest % of participants aged 43 – 50 was 40.6%. The second highest age group was between 51 and 59 (23.2%). According to the analysis of academic degrees, it was found that the most significant number of participants had bachelor’s degrees (n= 333, 83.88%).

Among the participant group, 139 people belonged to Enterprise practitioners; the frequency was the first, accounting for 35%, followed by Freelance (n=100), accounting for 25.1%.

4.3.3 Result of Exploratory Factor Analysis

Using the software SPSS 29.0, conduct principal component analysis (PCA) on 40 items, combined with the principle of eigenvalues greater than 1 and theoretical reference. Finally, 5 factors were fixed and extracted, and the final factor load matrix was obtained using maximum variance orthogonal rotation. During the analysis process, delete items that meet one of the following conditions: (1) The commonality is less than 0.5; (2) Factor load is less than 0.4; (3) the span load exceeds 0.4. After multiple factor analyses, six items (5, 6, 12, 19, 22, 27) were removed, and the factor structure with good differentiation was obtained. Therefore, the revised Chinese Consumers' Cultural Values Scale of Fiber Art Crafts includes 34 items.

Table 4.8: Exploratory Factor Analysis

	F1	F2	F3	F4	F5
39	0.813				
32	0.807				
38	0.801				
15	0.794				
36	0.769				
35	0.768				
37	0.767				
40	0.758				
33	0.741				
10		0.821			
13		0.790			
9		0.788			
8		0.775			
25		0.773			
11		0.757			
20		0.752			
31		0.740			
17			0.848		

Table 4.8: Continued

16	0.817				
26	0.815				
18	0.807				
14	0.787				
21	0.784				
23	0.751				
24				0.861	
30				0.852	
28				0.838	
29				0.812	
34				0.762	
4					0.804
3					0.792
1					0.789
2					0.788
7					0.747
Factor Name	Reverence for Nature	Pursuing Trends	Face and Image	Nostalgia and Inheritance	Practical and Rational
Eigenvalue	5.857	5.360	4.972	3.847	3.619
Factor Variance Contribution	17.227%	15.764%	14.624%	11.315%	10.645%
Cumulative Variance Contribution	17.227%	32.991%	47.615%	58.930%	69.574%

The factor load is shown in Table 4.8. The F1 factor contains 9 items, which express consumers' attention to the material environmental protection attributes and intrinsic natural attributes of fiber art crafts, fully reflecting consumers' attention to the intrinsic value attributes of fiber art crafts. It trends to the "green purchase" by Zhang and Dong (2020), so it is named "reverence for nature." Factor F2 contains 8 items that express consumers' new ideas and new styles of fiber art crafts, and emphasize "novelty" and "surprise," which tends to the "stimulus" value dimension proposed by Schwartz, so the named factor is "pursuing trends." Factor F3 contains 7 items to express consumers' concern about the external image and identity of buying and using fiber art crafts, hoping to win praise and respect from others while maintaining their own and others' self-esteem. These contents fully reflect the Chinese people's "face view," and these contents approached by Pan et al. (2014) proposed "face and image," so the naming factor is "face and image." Factor F4 contains 5 items to express consumers' attention to the tradition, humanity, and history of fiber art crafts, and emphasize "development"

and “inheritance.” These contents are in the “traditional” cultural value dimension proposed by Schwartz, so this factor is called “nostalgia and inheritance”. Factor F5 contains 5 items, which express that consumers pay attention to the actual value of fiber art crafts, emphasizing “functional” and “rational,” and these contents are approached by Pan et al. (2014) proposed “practical and rational.” Hence the naming factor is “practical and rational.”

4.3.4 Result of Confirmatory Factor Analysis

Mplus 8.3 was used to test the fit of the conceived model to the actual observed data obtained from the exploratory factor analysis. The validation results of the model fitting indicators are shown in Table 4.9. According to the verification results, all the indicators have reached the fit criteria: χ^2/df is 1.113, less than 3, RMSEA is 0.024, less than 0.08, and CFI is 0.989, greater than 0.9, TLI is 0.988, and greater than 0.9 (Shi et al., 2020). All the indicators have met the standard requirements, indicating that the scale has good structural validity, a relatively high degree of overall model fit, and an acceptable model fit.

Table 4.9: Confirmatory Factor Analysis

Fit Indices	Evaluation Criterion	Data of This Study
χ^2/df	1~3	1.113
RMSEA	<0.08	0.024
CFI	>0.9	0.989
TLI	>0.9	0.988

4.3.5 Result of Reliability and Validity Analysis

The combined reliability CR indicates the internal consistency between the observed variable and the corresponding latent variable, greater than 0.6 (Bagozzi et al., 1988). According to data analysis, the CR is greater than 0.9 (as shown in Table 4.8), so the scale is generally reliable.

Table 4.10: Reliability and Validity Analysis

Factor	AVE	CR
F1	0.707	0.956
F2	0.604	0.924
F3	0.647	0.927
F4	0.713	0.925
F5	0.703	0.922

The evaluation of scale validity mainly includes two aspects: the test of content validity and structure validity. Content validity refers to the scale can effectively measure the problems studied, and the test of content validity is mainly controlled by qualitative methods. In this study, based on the literature research and the initial scale of qualitative interview design, the author invited experts to communicate with and consider the questionnaire design repeatedly and implemented a small-scale pre-survey, so the researcher believed that the preparation of this scale took a serious control way. The content validity of the scale is, therefore reliable. Validation of construct validity mainly depends on the convergent and discriminative validity of the scale. According to Hair et al. (2019), an $AVE > 0.5$ indicates a good convergence validity of the scale. After data analysis, the standardized load of 34 remaining items after EFA was more than 0.5 (as shown in Table 4.10), which met the threshold requirements and reached the significance level, showing that the scale had good convergent validity. Therefore, this scale passed the validity test.

4.4 Result III – KE Analysis

This survey aims to obtain consumers' perceived needs for fiber art crafts. Fiber art crafts are not a necessity in modern Chinese home life. People buy fiber art crafts more because of their spiritual value. What fiber art crafts will lead to consumer purchasing behavior? In other words, what kind of fiber art crafts can win consumers' favor? This chapter studies the emotional needs of fiber crafts. People's perceived demand for fiber art crafts comes from subjective feelings and is hidden.

This study uses the semantic difference method in Kansei Engineering to conduct the perceptual evaluation of fiber art crafts products and to determine people's perceptual demand for fiber art crafts. By comparing the perceptual understanding of consumers under the stimulation of different types of fiber art crafts, the research can analyze the commonness and individuality among product groups to plan the direction of fiber art crafts design.

4.4.1 Result of Identification of the Fiber Art Crafts Samples

Extensive collection of embroidery, carpet and tapestry, and bamboo grass weaving three categories of fiber art crafts samples, and initially 210 picture-type samples were obtained. Both Yin and Xu (2022) and Jiao and Qu (2019) believe that when identifying representative samples, representative samples can be screened according to the similarity of type, color, pattern, shape, function, and material of samples. This study screens the samples according to the main characteristics of the fiber art crafts in terms of shape, pattern, and color, as shown in Table 4.11.

Table 4.11: Item/Category Classification List

Items	Categories
Shape	1) Flat, 2) Three-dimensional
Pattern	1) Figurative pattern, 2) Abstract pattern
Color	1) Artificial color, 2) Natural color
Material	1) Cotton thread, 2) Bamboo strips, 3) Rice straw, 4) Natural silk, 5) Woolly, 6) Twine
Function	1) Storage, 2) Sunshade, 3) Decoration, 4) Noise reduction, 5) Keep warm, 6) Other functions
Craftsmanship	1) Embroidery, 2) Weaving, 3) Textile, 4) Dyeing and weaving

According to the literature review in the second chapter, the appearance of fiber art crafts can be divided into three-dimensional and flat. Patterns can be abstract or figurative. Colors are divided into natural colors and artificial colors. The Material is divided into cotton thread, bamboo strips, rice straw, natural silk, woolly, and twine. Functions include storage, sunshade, decoration, noise reduction, keeping warm, and other functions. In addition, fiber technology mainly includes embroidery, weaving, textile, dyeing and weaving.

Then, 6 experts with fiber art crafts design experience were invited to form a focus group to screen the picture samples. The FGD1 is shown in Table 4.12. After the first round of group discussion, the 210 sample images were reduced to 115.

Table 4.12: Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD1

No.	Fiber Art Crafts (FGD1)	Proposed Fiber Art Crafts Before Discussion	Proposed Fiber Art Crafts After Discussion
1	Embroidery	56	34
2	Carpet	42	22
3	Tapestry	38	17
4	Bamboo Weaving	42	27
5	Grass Weaving	32	15
	Total	210	115

After a second round of screening, the 115 samples were reduced to 64. The results are shown in Table 4.13. Embroidery was reduced from 34 to 19, carpet from 22 to 13, tapestry from 17 to 8, bamboo weaving from 27 to 17, and grass weaving from 15 to 7.

Table 4.13: Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD2

No.	Fiber Art Crafts (FGD2)	Proposed Fiber Art Crafts Before Discussion	Proposed Fiber Art Crafts After Discussion
1	Embroidery	34	19
2	Carpet	22	13
3	Tapestry	17	8
4	Bamboo Weaving	27	17
5	Grass Weaving	15	7
	Total	115	64

After 3rd round of screening, 16 products were eventually identified as the most representative sample of fiber art crafts. The result is shown in Table 4.14. Embroidery is 6, carpet is 3, tapestry is 1, bamboo weaving is 3, and grass weaving is 3.

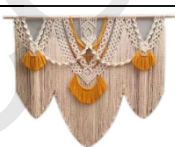
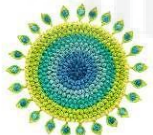
Table 4.14: Total Number of Proposed Fiber Art Crafts before and after Discussion among FGD3

No.	Fiber Art Crafts (FGD3)	Proposed Fiber Art Crafts Before Discussion	Proposed Fiber Art Crafts After Discussion
1	Embroidery	19	6
2	Carpet	13	3
3	Tapestry	8	1
4	Bamboo Weaving	17	3
5	Grass Weaving	7	3
	Total	64	16

Use Photoshop software to remove the background of the final sample pictures of the three groups to present the product outline and avoid visual confusion caused by the background and use Adobe Illustrator software for picture layout. Table 4.15 shows 6

embroidery samples, 4 carpet and tapestry samples, and 6 bamboo grass weaving samples were obtained, a total of 16 samples.

Table 4.15: The Samples of the Fiber Art Crafts

	1	2	3	4
Name	Embroidered throw pillow	Embroidered ornament	Embroidered jewelry box	Embroidered toy
Color	Artificial color	Artificial color	Artificial color	Artificial color
Pattern	Figurative pattern	Figurative pattern	Figurative pattern	Figurative pattern
Shape	Three-dimensional	Three-dimensional	Three-dimensional	Three-dimensional
Function	Keep warm	Decoration	Storage	Decoration
Material	Cotton thread	Natural silk	Cotton thread	Cotton thread
Product				
Brand	5	6	7	8
Color	Artificial color	Artificial color	Artificial color	Artificial color
Pattern	Figurative pattern	Figurative pattern	Figurative pattern	Figurative pattern
Shape	Flat	Flat	Flat	Flat
Function	Decoration	Decoration	Keep warm	Keep warm/Noise reduction
Name	Embroidered Painting	Embroidered table flag	Cashmere carpet	Blended carpet
Material	Natural silk	Cotton thread	Woolly	Woolly
Product				
Brand	9	10	11	12
Color	Artificial color	Artificial color	Natural color	Natural color
Pattern	Abstract pattern	Abstract pattern	Abstract pattern	Abstract pattern
Shape	Flat	Flat	Three-dimensional	Three-dimensional
Function	Decoration	Keep warm	Keep warm	Keep warm
Name	Linen tapestry	Knitted seat cushion	Woven bamboo lampshade	Woven grass seat cushion
Material	Cotton thread	Woolly	Bamboo strips	Rice straw
Product				
Brand	13	14	15	16
Color	Natural color	Natural color	Natural color	Natural color
Pattern	Abstract pattern	Abstract pattern	Abstract pattern	Abstract pattern
Shape	Three-dimensional	Three-dimensional	Three-dimensional	Flat
Function	Sunshade	Decoration	Storage	Sunshade
Name	Woven bamboo food cover	Woven grass toy	Bamboo basket	Woven straw curtain
Material	Bamboo strips	Twine	Bamboo strips	Rice straw
Product				

4.4.2 Result of Kansei Word Pairs

This study used the semantic difference scale to measure Kansei. Firstly, this study collected Kansei word pairs, and then screened them. Finally, the semantic differences questionnaire was developed.

4.4.2.1 Results of Collect Kansei Word Pairs

In the word pairs collection, the collection process of fiber art crafts perceptions collecting word pairs was divided into three channels: online browsing, on-site visits, and literature review. Then, after the author had edited it referring to the semantic difference analysis method, 100-word pairs describing fiber art crafts were collected, the results as shown in Table 4.16.

Table 4.16: Kansai Word Pairs

1 Soft - Hard	2 Modern - Antique	3 Natural - Artificial
4 Rhythmic - Gentle	5 Delicate - Rough	6 Practical - Not Practical
7 Gentle - Powerful	8 Creative - Traditional	9 Comfortable - Uncomfortable
10 Unique - Public	11 Smooth - Coarse	12 Small - Big
13 Elastic - Inelastic	14 General - Individual	15 Sporty - Static
16 Cheap - Expensive	17 Durable - Nondurable	18 Traditional - Modern
19 Friendly - Provocative	20 Changing - Drab	21 Lively - Dull
22 Popular - Personal	23 Dry - Sticky	24 Like - Dislike
25 Smooth - Block	26 Simple - Complex	27 Serious - Relaxed
28 Flat - Solid	29 Glossy - Dullish	30 Sharp - Blunt
31 Wild - Tender	32 Childish - Mature	33 Flamboyant - Inconspicuous
34 Elegant - Tacky	35 Luxurious - Plain	36 Rational - Sensual
37 Gorgeous - Ugly	38 Delicate - Strong	39 Kind - Indifferent
40 Noble - Mediocre	41 Bright - Bleak	42 Machine-made - Handmade
43 Smooth - Rough	44 Streamlined - Geometric	45 Sparkling - Bland
46 Light - Heavy	47 Bold - Conservative	48 Casual - Deliberate
49 Deluxe - Ordinary	50 Innovative - Imitative	51 Sedate - Flirty
52 Pleasant - Unpleasant	53 Bright - Dim	54 Young - Old
55 Free - Bound	56 Novel - Conventional	57 Fresh - Stale
58 Masculine - Feminine	59 Exaggerated - Restrained	60 High quality - Low quality
61 Formal - Casual	62 Cute - Calm	63 Tight - Loose
64 Concrete - Abstract	65 Firm - Fragile	66 Snug - Cool
67 Blocky - Linear	68 Active - Inactive	69 Playful - serious
70 Energetic - Rigid	71 Complex - Simple	72 Beautiful - Ugly
73 Indigenous - International	74 Technical - Original	75 Unified - Change
76 harmonic - contrast	77 Uninhibited - Inhibited	78 Clash - Harmonious
79 Stain resistant - Non stain resistant	80 Harmonious - Messy	81 Simple - Fancy
82 Female - Male	83 Eastern - Western	84 Flat - Concave
85 Uniform - Jagged	86 Slender - Stout	87 Quiet - Lively
88 Rustic - Pretentious	89 Wet - Dry	90 Frigid - Hot
91 Civilized - Wild	92 Flimsy - Sturdy	93 Clean - Dirty
94 Soft - Imperious	95 Grand - Shabby	96 Fine - Sparse
97 Safe - Dangerous	98 Quaint - Avant-garde	99 Lovely - Poor
100 Warm - Cold		

4.4.2.2 Results of Screening of Word Pairs

In order to further reduce the word pairs, using FGD screened and classified them based on an extensive collection of image word pairs (Zheng & Wang, 2020; Li & Li, 2020).

i. Result of preliminary Screening of Kansei Word Pairs

First apply the semantic difference method to the collected Kansei word pairs to eliminate words with vague expressions (Meylia & Iskandar, 2022). Secondly, a cluster analysis was performed to eliminate Kansei word pairs with comparable connotations (Huo et al., 2023). Based on the above two steps, 36 pairs of emotional words were removed by the researcher, and 100 groups of adjectives were reduced to 64 groups; the results are shown in Table 4.17.

Table 4.17: Kansei Word Pairs after Screening

1 Soft - Hard	2 Modern - Antique	3 Natural - Artificial
4 Rhythmic - Gentle	5 Delicate - Rough	6 Practical - Not Practical
7 Creative - Traditional	8 Comfortable - Uncomfortable	9 Unique - Ordinary
10 Smooth - Coarse	11 Small - Big	12 Elastic - Inelastic
13 General - Individual	14 Cheap - Expensive	15 Durable - Nondurable
16 Traditional - Modern	17 Changing - Drab	18 Lively - Dull
19 Popular - Personal	20 Like - Dislike	21 Simple - Complex
22 Flat - Solid	23 Glossy - Dullish	24 Sharp - Blunt
25 Wild - Tender	26 Childish - Mature	27 Flamboyant - Inconspicuous
28 Elegant - Tacky	29 Luxurious - Plain	30 Rational - Sensual
31 Gorgeous - Awful	32 Delicate - Strong	33 Kind - Indifferent
34 Noble - Mediocre	35 Bright - Bleak	36 Machine-made - Handmade
37 Streamlined - Geometric	38 Sparkling - Bland	39 Light - Heavy
40 Bold - Conservative	41 Casual - Deliberate	42 Innovative - Imitative
43 Bright - Dim	44 Young - Old	45 Free - Bound
46 Novel - Conventional	47 Fresh - Stale	48 Exaggerated - Restrained
49 High quality - Low quality	50 Formal - Casual	51 Cute - Calm
52 Tight - Loose	53 Concrete - Abstract	54 Firm - Fragile
55 Snug - Cool	56 Blocky - Linear	57 Complex - Simple
58 Beautiful - Ugly	59 Indigenous - International	60 Stain resistant - Non stain resistant
61 Harmonious - Messy	62 Simple - Fancy	63 Safe - Dangerous
64 Warm - Cold		

ii. Result of Screening of Kansei Word Pairs Using Questionnaire

This survey aims to identify essential pairs of Kansei word pairs used to describe fiber art crafts. Each participant is required to complete a questionnaire, including personal information (age, major, etc.) and the questionnaire's content (see Appendix 8). Based on principles of statistics, participants are asked to select no less than 32 pairs of Kansei word pairs they personally believe best describe the imagery of fiber art crafts from a given set of 64 pairs of sensory imagery semantic words. The educational level of the participants is undergraduate or above. This group has a higher level of education and a good understanding of sensory vocabulary. During the experiment, all participants were shown representative samples of fiber art crafts (embroidery, carpet and tapestry, bamboo grass weaving) to clarify their feelings and understanding of the research subject. A total of 205 questionnaires were distributed, and 191 were collected. Of those, 144 questionnaires were deemed valid (with less than 32 selected pairs or obviously perfunctory responses were considered invalid). A threshold of 50% was used for selection, meaning word pairs that were selected more than 72 times will be chosen for further experiments. The test results are shown in Table 4.18.

Table 4.18: Kansei Word Pairs after Secondary Screening

Vocabulary	Frequency	Vocabulary	Frequency
Soft/Hard	144	General/Individual	91
Modern/Antique	111	Popular/Personality	97
Natural/Artificial	117	Cheap/Expensive	76
Delicate/Rough	98	Durable/Nondurable	84
Practical/Not Practical	104	Changing/Drab	74
Creative/Traditional	99	Simple/Complex	82
Comfortable/Uncomfortable	90	Flat/Solid	75
Unique/Ordinary	81	Luxurious/Plain	90
Smooth/Coarse	76	Machine-made/Handmade	85
Small/Big	83	High-grade/Low-grade	85
Elastic/Inelastic	83	Noble/Mediocre	73
Light/Heavy	81	Innovative/Imitative	74
Elegant/Humble	79	Indigenous/International	90
Warm/Cool	79	Formal/Casual	73
Stain-resistant/Non-stain-resistant	79		

The questionnaire survey resulted in a multidimensional sensory cognition composed of 29 pairs of Kansei word pairs. To further pinpoint the consumers' sensory cognition of fiber art crafts, it is necessary to reduce the cognitive dimensions and simplify the cognitive spatial structure. Therefore, the 29 pairs of Kansei word pairs are printed on paper and grouped and categorized according to their semantic similarities. These groups of Kansei word pairs are displayed on a tablet. Next, each group of Kansei word pairs is given a name by comparing the frequency and semantic similarity of the Kansei word pairs. From the original 29 pairs of Kansei word pairs, 17 representative pairs are selected. The list of Kansei word pairs is shown in Table 4.19.

Table 4.19: Representative Kansei Word Pairs

Vocabulary	Vocabulary	Vocabulary
Hard/Soft	Rough/Delicate	Uncomfortable/Comfortable
Antique/Modern	Handmade/Machine-made	Unpractical/Practical
Innovative/Imitative	Individual/General	Low quality/High quality
Nondurable/Durable	International/Indigenous	Complex/Simple
Casual/Formal	Big/Small	Heavy/Light
Plain/Luxurious	Cool/Warm	

4.4.3 Result of Semantic Difference Technique

Many product samples and Kansei word pairs have been collected in the designated product domain, and through systematic screening, 16 representative product sample images and 17 pairs of representative Kansei word pairs have been selected. These product images and Kansei word pairs are combined to create a new product sensory evaluation form, as shown in Figure 4.1. An additional “like/dislike” option is added to assess consumers' preference for fiber art crafts and gain deeper insights into their attitudes. For each group of images, 17 pairs of Kansei word pairs are provided (including the “like/dislike” preference evaluation option) for selection. A 5-level

measurement scale accompanies each pair of Kansei word pairs. Participants will evaluate each fiber art crafts based on their subjective perception, giving different degree ratings (1, 2, 3, 4, 5). The score does not represent the quality of the Kansei word pairs but differentiates between positive and negative meanings of the Kansei word pairs. Options on the left side indicate stronger feelings described by the corresponding adjective, options on the right side indicate stronger feelings in the opposite direction, and the middle option represents a neutral description where the adjective's feeling is weak. Participants are invited to provide sensory evaluations and preference ratings for each item using check-boxes, marking the options they perceive as being closer regarding similarity.

	1	2	3	4	5	
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Hard				✓		Soft

This product gives me the feeling: Soft

Figure 4.1: Kansei Word Pairs Evaluation

4.4.3.1 Results of Questionnaire Analysis

Before data analysis, firstly need to evaluate the quality of the questionnaire. Same to Section 4.2 survey, From the Table 4.20, it can be seen that there are there are no missing values and outliers, and significant differences in the high and low groups of each topic ($p < 0.05$), indicating that each topic has a good degree of differentiation. The absolute values of skewness and kurtosis of each problem are less than 2, indicating that each problem conforms to normality. Therefore, the questionnaire has good representativeness and differentiation.

Table 4.20: Descriptive Analysis Table II

	Mean	SD	Skewness	Kurtosis	Item differentiation	Total correlation coefficient
Hard-Soft	3.708	.671	.016	-.306	-23.800***	.859***
Rough-Delicate	3.947	.705	-.108	-.652	-24.219***	.798***
Uncomfortable-Comfortable	3.781	.659	.110	-.465	-28.140***	.888***
Antique-Modern	3.585	.798	.018	-.598	-27.528***	.876***
Machine-made-Handmade	3.825	.722	.046	-.676	-33.111***	.858***
Unpractical-Practical	3.740	.602	-.058	-.168	-16.511***	.710***
Imitative-Innovative	3.904	.735	-.009	-.732	-29.582***	.830***
General-Individual	3.652	.767	.083	-.713	-25.763***	.861***
Low quality-High quality	3.875	.723	-.046	-.588	-28.541***	.847***
Nondurable-Durable	3.831	.602	.068	-.505	-19.431***	.762***
International-Indigenous	3.566	.833	-.068	-.446	-25.504***	.862***
Complex-Simple	3.745	.620	-.069	-.387	-17.211***	.717***
Casual-Formal	3.474	.838	-.075	-.366	-25.800***	.825***
Big-Small	3.762	.671	.134	-.613	-27.231***	.879***
Heavy-Light	3.612	.723	.128	-.560	-28.142***	.875***
Plain-Luxurious	3.854	.712	.114	-.980	-30.833***	.864***
Cool-Warm	3.828	.589	-.031	-.290	-17.789***	.728***

After descriptive analysis, to accurately determine the value of fiber art crafts, this study analyzed the data using SPSS 29.0. First of all, this study performed a reliability test of the questionnaire. The obtained Cronbach's Alpha is shown in Table 4.21; all values are far greater than 0.9. Thus, this study can continue to do future analysis.

Table 4.21: Cronbach's Alpha of the Scale

Name of Fiber Art Crafts	Cronbach's Alpha	Name of Fiber Art Crafts	Cronbach's Alpha
Embroidered throw pillow	0.913	Linen tapestry	0.953
			
Embroidered ornament	0.922	Knitted seat cushion	0.956
			
Embroidered jewelry box	0.938	Woven bamboo lampshade	0.956
			
Embroidered toy	0.930	Woven grass seat cushion	0.958
			
Embroidered painting	0.942	Woven bamboo food cover	0.954
			
Embroidered table flag	0.946	Woven grass toy	0.959
			
Cashmere carpet	0.946	Bamboo basket	0.960
			
Blended carpet	0.947	Woven straw curtain	0.967
			

To determine the factors of customer perception of fiber art crafts, Factor Analysis (FA), Principal component analysis (PCA), K-means Cluster Analysis, and Partial Least Square (PLS) analysis were used.

4.4.3.1.1 Results of Factor Analysis

Factor Analysis (FA) is commonly used to find the psychological structure of Kansei that constitutes the essential concept of Kansei of the domain under investigation (Mohd Lokman, 2010). For the convenience of analysis, this study conducted factor analysis based on the three major classifications mentioned in 4.4.1. The final factor load matrix was obtained using maximum variance orthogonal rotation. The results are shown in Table 4.22.

Table 4.22: Factor Contribution Table

Name of Fiber Art Crafts		Eigenvalue	Variability (%)	Cumulative (%)
Embroidery	F1	4.647	27.336	27.336
	F2	3.616	21.271	48.607
	F3	3.198	18.812	67.419
	F4	2.949	17.349	84.767
Carpet & Tapestry	F1	4.539	26.698	26.698
	F2	3.466	20.389	47.087
	F3	3.159	18.582	65.669
	F4	3.054	17.964	83.633
Bamboo Grass Weaving	F1	3.923	23.078	23.078
	F2	3.746	22.036	45.115
	F3	3.491	20.537	65.651
	F4	3.118	18.342	83.993

The four factors of embroidery have a cumulative contribution of 84.767%. Factor 1 has a contribution of 27.336%, factor 2 has a contribution of 21.271%, factor 3 has a contribution of 18.812% and factor 4 has a contribution of 17.349%. The four factors of carpet and tapestry have a cumulative contribution of 83.633%. Factor 1 has a contribution of 26.698%, factor 2 has a contribution of 20.389%, factor 3 has a contribution of 18.582% and factor 4 has a contribution of 17.964%. The four factors of bamboo grass weaving have a cumulative contribution of 83.993%. Factor 1 has a contribution of 23.078%, factor 2 has a contribution of 22.036%, factor 3 has a

contribution of 20.537% and factor 4 has a contribution of 18.342%. In a social science setting, a cumulative variance explained should not be less than 50%. Therefore, this study can confidently use four factors to construct the principal component sphere of Kansei word pairs, as shown in Table 4.22.

Table 4.23: Embroidery Rotated Component Matrix^a

Kansei Word Pairs	Component			
	F1 Grade	F2 Style	F3 Performance	F4 Material
Machine-made-Handmade	.896	.226	.177	.092
Imitative-Innovative	.893	.260	.188	.102
Plain-Luxurious	.889	.266	.210	.131
Low quality-High quality	.882	.291	.216	.141
Rough-Delicate	.851	.287	.132	.173
International-Indigenous	.280	.875	.192	.105
Antique-Modern	.294	.872	.150	.187
General-Individual	.342	.830	.140	.179
Casual-Formal	.394	.803	.217	.132
Cool-Warm	.305	.069	.845	.190
Nondurable-Durable	.247	.232	.823	.150
Unpractical-Practical	.051	.350	.815	.218
Complex-Simple	.178	.068	.808	.239
Hard-Soft	.099	.178	.084	.868
Big-Small	.133	.094	.230	.811
Uncomfortable-Comfortable	.316	-.018	.249	.804
Heavy-Light	-.038	.418	.258	.741

According to Table 4.23, it can be seen that “Machine-made/Handmade,” “Imitative/Innovative,” “Plain/Luxurious,” “Low quality/High quality,” and “Rough/Delicate” have higher load values on factor 1, these words pairs can be grouped together as “grade.” Therefore, factor 1 is named “grade.” As for factor 2, word pairs such as “International/Indigenous,” “Antique/Modern,” “General/Individual,” and “Casual/Formal” these words can be grouped together as “style.” Therefore, factor 2 is named “style.” As for factor 3, word pairs such as “Cool/Warm,” “Nondurable/Durable,” “Unpractical/Practical,” and “Complex/Simple” have higher load values; these word pairs can be grouped together as “performance.” Therefore, factor 3 is named “performance.” Word pairs such as “Hard-Soft,” “Big/Small,” “Uncomfortable/Comfortable,” and “Heavy/Light” have higher load

values on factor 4; these word pairs can be grouped together as “material.” Therefore, factor 4 is named “material.”

Table 4.24: Carpet & Tapestry Rotated Component Matrix^a

Kansei Word Pairs	Component			
	F1 Grade	F2 Material	F3 Style	F4 Performance
Plain-Luxurious	.883	.229	.209	.245
Low quality-High quality	.873	.211	.199	.223
Rough-Delicate	.851	.249	.236	.219
Machine-made-Handmade	.840	.259	.230	.236
Imitative-Innovative	.783	.289	.275	.284
Heavy-Light	.204	.871	.194	.191
Hard-Soft	.210	.866	.172	.228
Uncomfortable-Comfortable	.252	.815	.196	.226
Big-Small	.412	.753	.238	.204
Antique-Modern	.409	.030	.829	.112
Casual-Formal	.070	.341	.821	.162
General-Individual	.281	.167	.801	.185
International-Indigenous	.204	.246	.772	.243
Complex-Simple	.144	.319	.177	.814
Unpractical-Practical	.149	.287	.193	.805
Cool-Warm	.368	.126	.143	.761
Nondurable-Durable	.405	.109	.200	.746

According to Table 4.24, it can be seen that “Plain/Luxurious,” “Low quality/High quality,” “Rough/Delicate,” “Machine-made/Handmade,” and “Imitative/Innovative” have higher load values on factor 1, these words pairs can be grouped together as “grade.” Therefore, factor 1 is named as “grade.” As for factor 2, word pairs such as “Heavy/Light,” “Hard/Soft,” “Uncomfortable/Comfortable,” and “Big/Small” have higher load values; these word pairs can be grouped together as “material.” Therefore, factor 2 is named as “material”. Word pairs such as higher load values of “International/Indigenous,” “Antique/Modern,” “Casual/Formal,” and “General/Individual” on factor 3, so factor 3 is named “style.” As factor 4, word pairs such as “Complex/Simple,” “Unpractical/Practical,” “Cool/Warm,” and “Nondurable/Durable” have higher load values, these words pairs can be grouped together as “performance,” So, factor 4 is named as “performance.”

Table 4.25: Bamboo Grass Weaving Rotated Component Matrix^a

Kansei Word Pairs	Component			
	F1 Style	F2 Grade	F3 Material	F4 Performance
Casual-Formal	.940	.124	.148	.044
Antique-Modern	.918	.129	.212	.070
General-Individual	.893	.161	.224	.062
International-Indigenous	.832	.166	.372	.085
Imitative-Innovative	.018	.867	.249	.143
Low quality-High quality	.177	.823	.305	.122
Machine-made-Handmade	.380	.811	.113	.053
Rough-Delicate	-.111	.802	.367	.069
Plain-Luxurious	.371	.769	.138	.105
Uncomfortable-Comfortable	.114	.303	.892	.083
Heavy-Light	.351	.268	.837	.079
Hard-Soft	.313	.236	.837	.119
Big-Small	.293	.276	.834	.076
Cool-Warm	.029	.090	.081	.919
Nondurable-Durable	-.012	.156	.088	.893
Unpractical-Practical	-.012	.014	.093	.869
Complex-Simple	.248	.111	.016	.786

According to Table 4.25, it can be seen that the “Casual/Formal,” “Antique/Modern,” “General/Individual,” and “International/Indigenous” have higher load values; these word pairs can be grouped together as “style.” So, the factor 1 is named as “style”. As factor 2, the word pairs such as “Imitative/Innovative,” “Low quality/High quality,” “Machine-made/Handmade,” “Rough/Delicate,” and “Plain/Luxurious” have higher load values; these word pairs can be grouped together as “grade.” Therefore, factor 2 is named as “grade.” As factor 3, word pairs such as “Uncomfortable/Comfortable,” “Heavy/Light,” “Hard/Soft,” and “Big/Small” have higher load values; these word pairs can be grouped together as “material.” Therefore, factor 3 is called “material.” Word pairs such as “Cool/Warm,” “Nondurable/Durable,” “Unpractical/Practical,” and “Complex/Simple” have higher load values; these word pairs can be grouped together as “performance.” So, factor 4 is named as “performance.”

Therefore, according to Table 4.23, 4.24, and 4.25, the results show that in embroidery, “grade” and “style” are the factors with the most significant contributions, while in carpet and tapestry, the most significant factors are “grade” and “material;”

respectively, in bamboo grass weaving, “style” and “grade” are still the two factors with the most significant contributions. According to Tables 4.26, 4.27, and 4.28, it can be seen that the factor scores the system value of each index. All these perceptual words related to factor 1, factor 2, factor 3, and factor 4 are related to the design elements of fiber art crafts such as shape, function, quality, and material. The results show that when consumers choose fiber art crafts, they will pay attention to the grade, style, performance, and material of the products.

Table 4.26: Component Score Coefficient Matrix for Embroidery

Kansei Word Pairs	Component			
	1	2	3	4
Hard-Soft	-.027	-.019	-.132	.383
Rough-Delicate	.232	-.047	-.073	.014
Uncomfortable-Comfortable	.070	-.157	-.045	.336
Antique-Modern	-.074	.324	-.060	-.020
Machine-made-Handmade	.257	-.081	-.036	-.029
Unpractical-Practical	-.131	.067	.328	-.067
Imitative-Innovative	.248	-.066	-.035	-.029
General-Individual	-.048	.297	-.065	-.020
Low quality-High quality	.235	-.056	-.029	-.017
Nondurable-Durable	-.040	-.019	.334	-.095
International-Indigenous	-.082	.331	-.024	-.066
Complex-Simple	-.035	-.089	.332	-.034
Casual-Formal	-.031	.273	-.022	-.054
Big-Small	-.013	-.071	-.047	.337
Heavy-Light	-.134	.115	-.031	.275
Plain-Luxurious	.243	-.067	-.029	-.019
Cool-Warm	.007	-.110	.346	-.067

Table 4.27: Component Score Coefficient Matrix for Carpet & Tapestry

Kansei Word Pairs	Component			
	1	2	3	4
Hard-Soft	-.073	.356	-.065	-.051
Rough-Delicate	.265	-.034	-.050	-.075
Uncomfortable-Comfortable	-.052	.323	-.052	-.054
Antique-Modern	.031	-.148	.364	-.085
Machine-made-Handmade	.257	-.030	-.055	-.064
Unpractical-Practical	-.133	-.021	-.029	.388
Imitative-Innovative	.214	-.021	-.031	-.035
General-Individual	-.047	-.072	.345	-.039
Low quality-High quality	.283	-.052	-.069	-.067
Nondurable-Durable	.006	-.131	-.036	.337
International-Indigenous	-.095	-.030	.326	-.001
Complex-Simple	-.138	-.004	-.042	.390
Casual-Formal	-.157	.040	.368	-.046
Big-Small	.021	.272	-.044	-.088
Heavy-Light	-.072	.362	-.050	-.075
Plain-Luxurious	.281	-.049	-.069	-.059
Cool-Warm	-.006	-.114	-.065	.355

Table 4.28: Component Score Coefficient Matrix for Bamboo Grass Weaving

Kansei Word Pairs	Component			
	1	2	3	4
Hard-Soft	-.032	-.095	.313	-.003
Rough-Delicate	-.138	.257	.034	-.030
Uncomfortable-Comfortable	-.113	-.066	.358	-.018
Antique-Modern	.281	-.042	-.063	-.006
Machine-made-Handmade	.072	.287	-.167	-.037
Unpractical-Practical	-.034	-.060	.018	.298
Imitative-Innovative	-.079	.297	-.059	-.007
General-Individual	.268	-.029	-.060	-.010
Low quality-High quality	-.030	.261	-.047	-.016
Nondurable-Durable	-.041	-.003	-.014	.298
International-Indigenous	.224	-.055	.020	-.006
Complex-Simple	.065	-.014	-.077	.261
Casual-Formal	.299	-.030	-.097	-.013
Big-Small	-.040	-.074	.308	-.020
Heavy-Light	-.020	-.081	.302	-.020
Plain-Luxurious	.067	.263	-.147	-.017
Cool-Warm	-.023	-.032	-.011	.310

4.4.3.1.2 Results of Principal Component Analysis

Principal component analysis (PCA) is often used to find the semantic space of Kansei and samples (Lokman, 2010; Nagamachi, 2008). The cumulative contribution of PCA is almost identical to our FA results. Figure 4.2 shows the results for embroidery, Figure 4.3 shows the results for carpet and tapestry, and Figure 4.4 shows the results of the bamboo grass weaving. Figures 4.2, Figure 4.3, and Figure 4.4 show the vector of Kansei word pairs, which indicates the intensity and direction of each Kansei word pair. The relative position of the specimen is covered in the form of dots. The figure illustrates the position of the specimens relative to the direction of the Kansei word pairs.

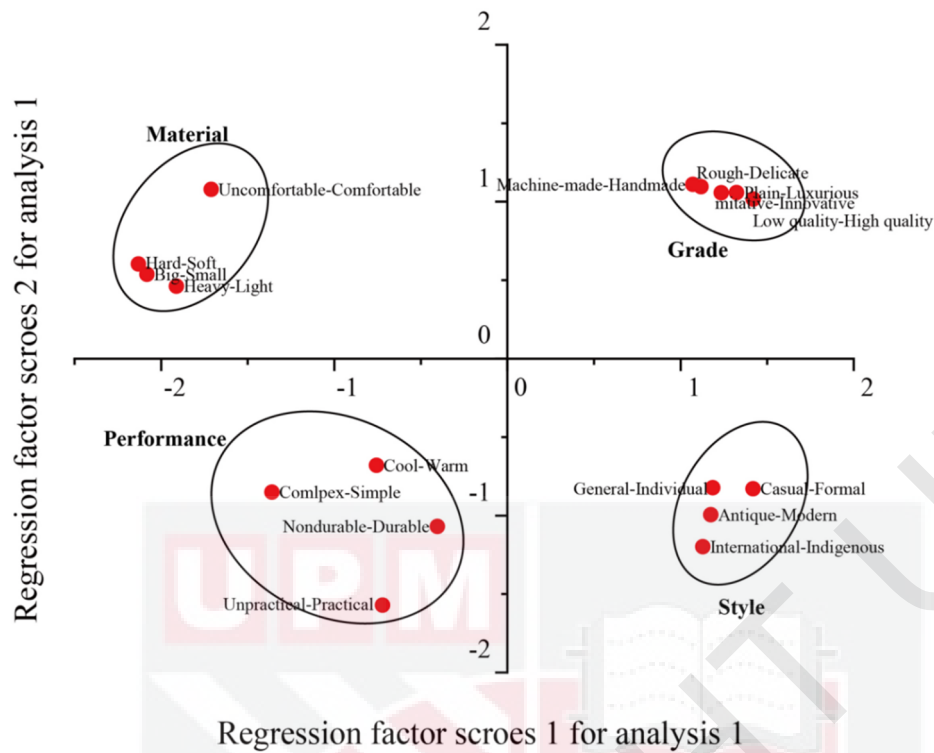


Figure 4.2: Regression Factor Scores 1-2 Position for Embroidery

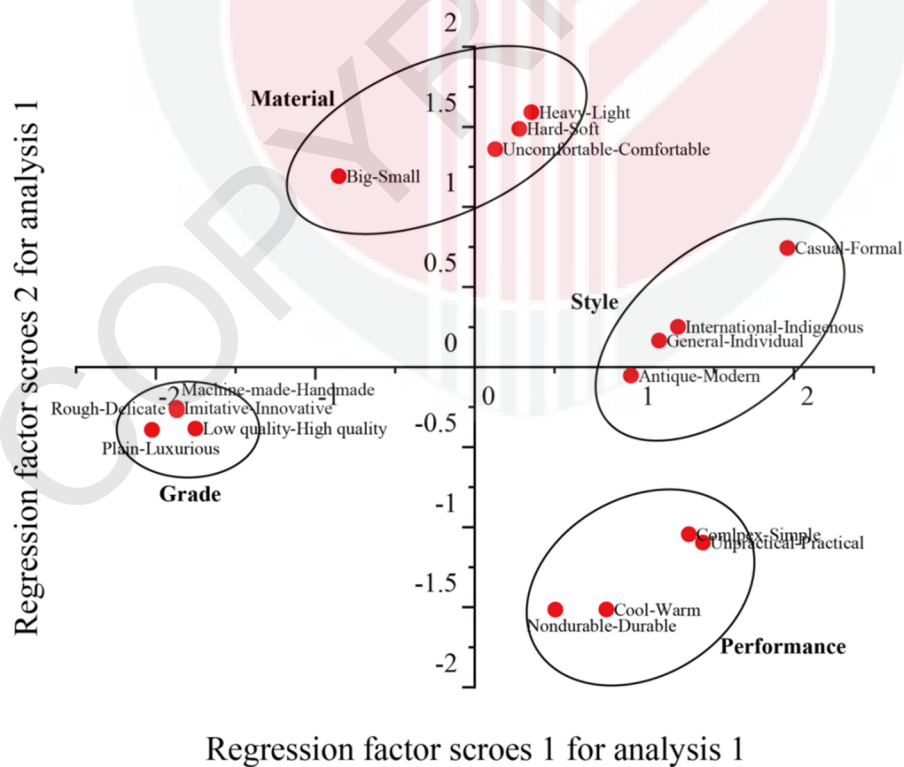


Figure 4.3: Regression Factor Scores 1-2 Position for Carpet & Tapestry

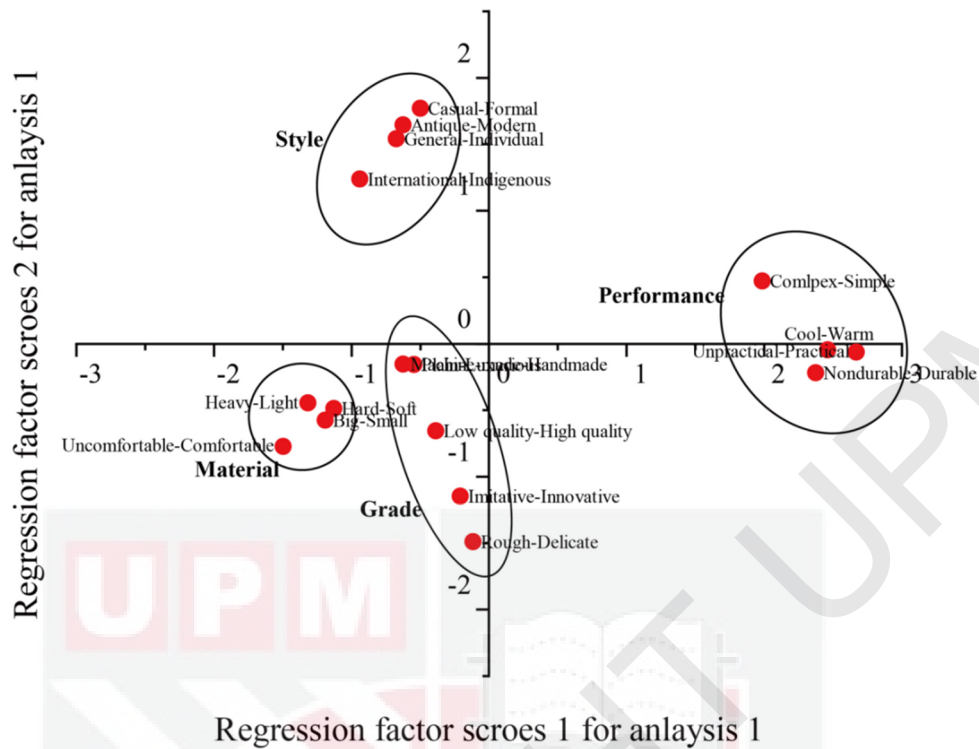


Figure 4.4: Regression Factor Scores 1-2 Position for Bamboo Grass Weaving

4.4.3.1.3 Results of K-means Cluster Analysis

Survey data EXCEL data was imported into SPSS for cluster analysis. According to the Distance of the Case from its Classification Cluster Center, the cluster classification values of embroidery (Table 4.29), carpet and tapestry (Table 4.30), and bamboo grass weaving (Table 4.31).

Table 4.29: Cluster Classify for Embroidery

Kansei Word Pairs	Cluster Number of Case	Distance of Case from its Classification Cluster Center
Hard-Soft	3	8.83059
Rough-Delicate	2	9.32933
Uncomfortable-Comfortable	3	9.47479
Antique-Modern	2	12.04599
Machine-made-Handmade	2	9.76069
Unpractical-Practical	1	9.58337
Imitative-Innovative	2	9.07488
General-Individual	2	10.66533

Table 4.29: Continued

Low quality-High quality	2	8.09227
Nondurable-Durable	1	8.43895
International-Indigenous	2	13.52507
Complex-Simple	1	9.58345
Casual-Formal	2	10.01145
Big-Small	3	10.08025
Heavy-Light	3	10.91627
Plain-Luxurious	2	8.74855
Cool-Warm	1	7.92893

Table 4.30: Cluster Classify for Carpet & Tapestry

Kansei Word Pairs	Cluster Number of Case	Distance of Case from its Classification Cluster Center
Hard-Soft	1	7.21571
Rough-Delicate	2	8.86420
Uncomfortable-Comfortable	1	8.29745
Antique-Modern	3	8.08306
Machine-made-Handmade	2	8.58603
Unpractical-Practical	2	12.91093
Imitative-Innovative	2	8.31985
General-Individual	3	8.43125
Low quality-High quality	2	8.74828
Nondurable-Durable	2	10.76732
International-Indigenous	3	9.04114
Complex-Simple	2	12.95201
Casual-Formal	3	9.38042
Big-Small	1	8.01780
Heavy-Light	1	7.77642
Plain-Luxurious	2	7.91477
Cool-Warm	2	11.35282

Table 4.31: Cluster Classify for Bamboo Grass Weaving

Kansei Word Pairs	Cluster Number of Case	Distance of Case from its Classification Cluster Center
Hard-Soft	2	9.81709
Rough-Delicate	2	10.42973
Uncomfortable-Comfortable	2	9.71019
Antique-Modern	1	6.42420
Machine-made-Handmade	2	11.66680
Unpractical-Practical	3	8.94669
Imitative-Innovative	2	10.54512
General-Individual	1	7.52914
Low quality-High quality	2	9.02318
Nondurable-Durable	3	7.32766
International-Indigenous	1	7.48618
Complex-Simple	3	11.21859
Casual-Formal	1	7.39365
Big-Small	2	8.97771
Heavy-Light	2	9.13413
Plain-Luxurious	2	11.62782
Cool-Warm	3	6.78958

Figures 4.5, 4.6, and 4.7, explain the neology that reflects each group's preferences in cluster analysis. Word's method was used to represent the image clusters of each group. The above figures showed that the large cluster directions were computed into the overall representation of the variables.

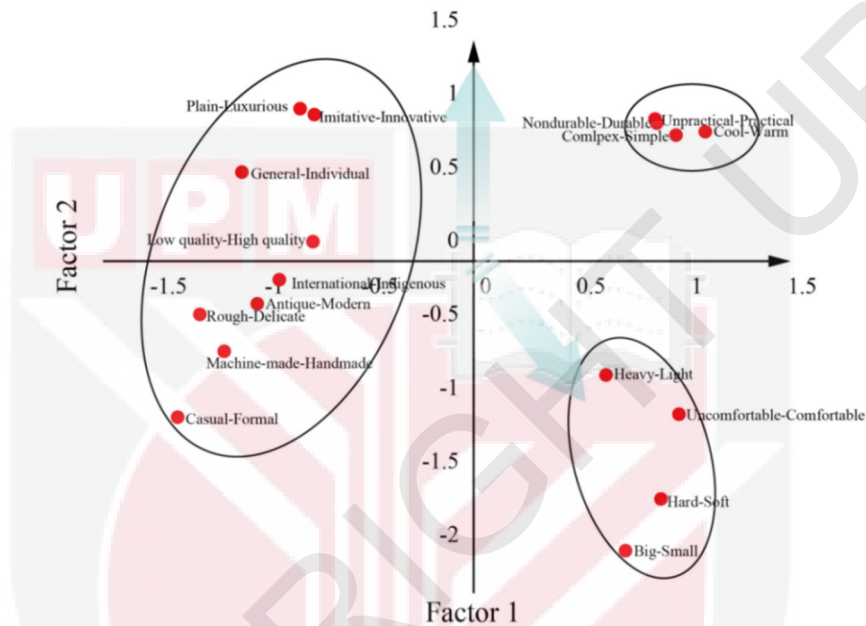


Figure 4.5: K-means Cluster Analysis for Embroidery

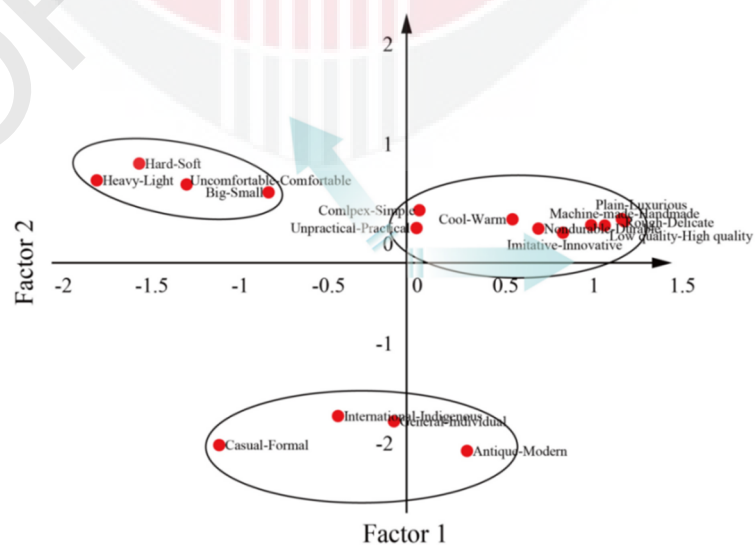


Figure 4.6: K-means Cluster Analysis for Carpet & Tapestry

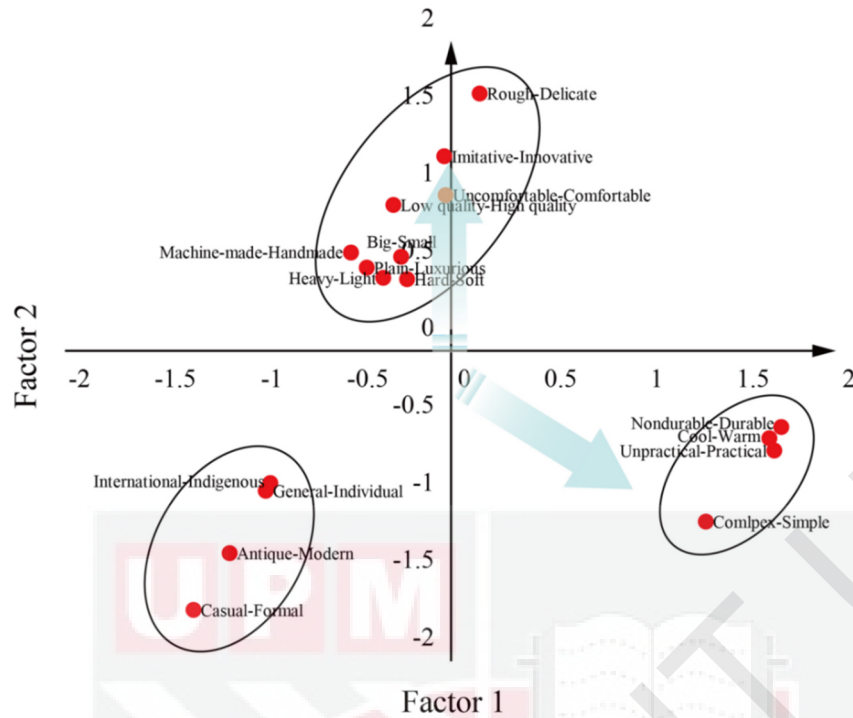


Figure 4.7: K-means Cluster Analysis for Bamboo Grass Weaving

According to Tables 4.29, 4.30, and 4.31, the embroidery finds nine Kansei words closest to the center of the cluster. These word pairs are “Cool/Warm,” “Low quality/High quality,” “Nondurable/Durable,” “Plain/Luxurious,” “Hard/Soft,” “Imitative/Innovative,” “Uncomfortable/Comfortable,” “Unpractical/Practical,” and “Big/Small.” Carpet & tapestry finds the nine Kansei words closest to the center of the cluster. These word pairs are “Hard/Soft,” “International/Indigenous,” “Plain/Luxurious,” “Antique/Modern,” “Heavy/Light,” “Imitative/Innovative,” “General/Individual,” “Machine-made/Handmade,” and “Big/Small.” Bamboo grass weaving finds the nine Kansei words closest to the center of the cluster. These word pairs are “Antique/Modern,” “Big/Small,” “International/Indigenous,” “Nondurable/Durable,” “Casual/Formal,” “Cool/Warm,” “Low quality/High quality,” “Unpractical/Practical,” and “Heavy/Light.” Screen the common factors of each sample, select words with factor loadings higher than 0.7 in the factor analysis in the

previous section, and record their scores. In Table 4.32, S01 (embroidery), S02 (carpet and tapestry), and S03 (bamboo grass weaving) represent the sample number, and V01, V02..., and V17 represent the Kansei word pairs code.

Table 4.32: The Selection of 11 Kansei Word Pairs

Name	S01	S02	S03	Total
V01		1	1	2
V02	1	1		2
V03			1	1
V04				0
V05		1		1
V06		1	1	2
V07	1		1	2
V08	1	1	1	3
V09		1	1	2
V10	1		1	2
V11	1		1	2
V12	1		1	2
V13				0
V14	1	1		2
V15	1			1
V16		1		1
V17	1	1		2

Finally, the Kansei word pairs with high scores are the words V01, V02, V06, V07, V08, V09, V10, V11, V12, V14, and V17. The final representative words of the previous words are selected: “Hard/Soft,” “Heavy/Light,” “Imitative/Innovative,” “Cool/Warm,” “Low quality/High quality,” “Big/Small,” “Plain/Luxurious,” “Unpractical/Practical,” “Nondurable/Durable,” and “International /Indigenous.” “Antique/Modern.”

Based on the classification of these 11 strategic characters, it is found that these strategic characters can be divided into five categories: “comfortableness,” “practicability,” “durability,” “quality,” and “popularity.” “Comfortableness” means that consumers will feel comfortable when using fiber art crafts. “Practicality” means

that fiber art crafts are highly practical. “Durability” means that the material of fiber art crafts is durable. “Quality” means that consumers pay attention to the grade of the craftsmanship when purchasing fiber art crafts. “Popularity” means that consumers tend to choose the fiber art crafts that are currently popular in the craftsmanship. These five words are related to the design elements such as material, function, and craftsmanship of fiber art crafts, and they also confirm the FA. So, designers need to translate these positive customer perception into the design elements of fiber art crafts. The items/categories related to the selected Chinese characters were classified according to their attributes, as shown in Table 4.33.

Table 4.33: The Selected Design Elements of Fiber Art Crafts

Kansei Word Pairs		Design Elements	
Selected Kansei Word Pairs	Kansei Word Pairs attributes	Item	Category
Hard/Soft Heavy/Light Big/Small	Comfortableness	Material	C1 Cotton thread, C2 Bamboo strips, C3 Rice straw, C4 Natural silk,
Nondurable/Durable	Durability		C5 Woolly, C6 Twine
Unpractical/Practical Cool/Warm	Practicability	Function	C7 Storage, C8 Sunshade, C9 Decoration, C10 Noise reduction, C11 Keep warm
Imitative/Innovative Plain/Luxurious Low quality/High quality Antique/Modern International/Indigenous	Quality	Craftsmanship	C12 Embroidery, C13 Weaving,
	Popularity		C14 Textile, C15 Dyeing and weaving

4.4.3.1.4 Results of Partial Least Square Analysis

Partial Least Square (PLS) Analysis can be used to identify the influential design elements. After K-means Cluster, obtained 11 pairs Kansei word pairs. Based on the result of K-means Cluster Analysis, using PLS to pick the design features

combinations of fiber art crafts. Firstly, 397 valid questionnaire scores were sorted, and the average scores of 16 samples under 11 pairs of Kansei word pairs were obtained (Table 4.34).



Table 4.34: Kansei Word Pairs Score of the Samples

Kansei Word Pairs		K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11
Sample												
1		3.574	3.451	3.97	3.584	3.793	3.793	3.922	3.738	3.607	3.695	3.932
2		3.642	3.416	3.816	3.597	3.61	3.657	3.861	3.557	3.476	3.688	3.743
3		3.484	3.411	3.604	3.549	3.819	3.683	3.864	3.587	3.469	3.773	3.914
4		3.736	3.395	3.836	3.559	3.725	3.809	3.899	3.612	3.438	3.529	3.869
5		3.403	3.453	3.944	3.524	3.763	3.678	3.861	3.572	3.476	3.705	3.758
6		3.703	3.441	3.989	3.652	3.685	3.63	3.809	3.61	3.524	3.592	3.849
7		3.685	3.589	4.048	3.65	3.854	3.904	3.924	3.796	3.652	3.831	4.045
8		3.708	3.599	3.995	3.584	3.846	3.859	3.874	3.725	3.66	3.796	4.018
9		3.758	3.572	3.995	3.753	3.768	3.882	3.937	3.741	3.675	3.652	3.997
10		3.645	3.511	3.864	3.829	3.796	3.798	3.872	3.592	3.758	3.713	3.846
11		3.521	3.791	3.531	3.932	3.889	3.917	3.864	3.421	3.579	3.839	3.919
12		3.814	4.028	3.859	3.932	3.992	3.907	4.018	3.325	3.287	3.982	3.668
13		3.927	3.756	3.773	3.912	3.884	3.945	3.967	3.413	3.728	3.962	3.809
14		4.108	3.902	3.463	3.972	4.05	3.952	3.922	3.38	3.491	4.023	3.917
15		3.723	3.673	3.877	3.929	3.859	3.94	3.955	3.499	3.358	3.592	3.655
16		3.919	3.892	3.864	3.947	3.94	3.892	3.914	3.531	3.642	3.841	3.859

The factors affecting consumer evaluation are relatively complex, including quantitative and qualitative factors. The scoring of sample adjectives can be used as quantitative variables, and material, performance, and craftsmanship belong to categorical variables, namely qualitative variables. In data analysis, when the independent variable is a qualitative variable, it is usually necessary to assign a value to the qualitative variable first. When the research object belongs to a certain category, it is assigned a value of 1; if it does not belong to this category, it is assigned a value of 0. This coding method can represent each category attribute of the research object without violating the regression conditions. For such variables that are only coded as 0 and 1, the meaning of the average is the proportion of cases coded as 1 in the sample, so that it can be regressed. Some design elements (such as patterns, colors, size, weight, and price) were not included in the list because doing so would severely limit the number of fiber art crafts that could be recommended after this study. Therefore, material, function, and craftsmanship are categorized (Table 4.11) and coded. So, the item and category codes are C1, C2 ..., and C15 (Table 4-33). According to this method, compared with the fiber art crafts design category, the author can code the design features of the 16 samples and organize the coding table of the sample design features, as shown in Table 4.35.

Table 4.35: Code of Design Features of the Fiber Art Crafts Samples

Item Sample	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
1	1	0	0	0	1	0	0	1	1	0	1	1	0	0	1
2	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0
3	1	0	0	0	0	0	1	0	1	0	0	1	0	1	1
4	1	0	0	0	1	0	0	0	1	0	0	1	0	1	1
5	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0
6	1	0	0	0	0	0	0	1	1	0	1	1	0	1	1
7	1	0	0	0	1	0	0	1	1	1	1	0	0	0	1
8	1	0	0	0	1	0	0	1	1	1	1	0	1	0	1
9	1	0	0	0	0	1	0	1	1	0	1	0	1	0	1
10	0	0	0	0	1	0	0	0	1	0	1	0	1	0	1
11	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0
12	0	0	1	0	0	1	1	0	1	0	1	0	1	0	0
13	0	1	1	0	0	0	1	1	0	0	1	0	1	0	0
14	0	0	1	0	0	1	0	0	1	0	0	0	1	0	0
15	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0
16	0	0	1	0	0	1	0	1	1	1	1	0	1	0	1

The cross load of each Kansei word pair and the design feature was obtained by PLS operation, as shown in Table 4.36. According to the cross load, can know the contribution of the sample design characteristics to the perceptual image, further understand the mapping relationship between the image evaluation and the design characteristics of the fiber art crafts, and summarize the perceptual factors based on the perceptual image at the qualitative and quantitative level.



Table 4.36: Partial Least Square Results Between Design Features and Kansei Word Pairs

	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11
Constant	3.687	3.607	3.766	3.752	3.804	3.816	3.906	3.494	3.473	3.755	3.787
C1	-0.019	0.041	-0.039	0.040	-0.013	-0.017	-0.008	-0.045	0.024	-0.022	-0.029
C2	0.020	0.039	-0.026	0.036	0.015	0.017	0.007	0.039	-0.012	0.020	-0.018
C3	-0.050	-0.085	-0.027	-0.073	-0.041	-0.040	-0.017	0.041	0.004	-0.045	-0.012
C4	0.048	0.059	-0.017	0.052	0.044	-0.036	-0.012	-0.005	0.042	-0.037	-0.026
C5	-0.005	-0.020	-0.039	-0.023	-0.001	-0.006	-0.004	-0.041	-0.032	-0.010	-0.033
C6	0.039	-0.064	-0.016	-0.055	-0.033	-0.037	-0.013	-0.027	0.007	-0.040	-0.005
C7	0.012	0.030	0.043	0.030	0.008	0.011	0.006	0.040	-0.024	0.015	0.028
C8	0.003	-0.009	-0.041	-0.014	0.006	-0.000	-0.002	-0.041	-0.038	-0.004	-0.036
C9	-0.021	-0.040	0.025	-0.037	-0.016	-0.018	-0.007	0.031	0.010	-0.021	0.017
C10	0.024	0.023	0.038	0.012	-0.024	0.016	0.003	0.034	-0.047	0.013	-0.039
C11	0.025	0.030	0.027	0.019	0.024	0.018	0.005	0.021	-0.037	0.017	-0.029
C12	0.051	0.077	-0.001	0.062	0.045	0.039	0.013	0.012	-0.029	0.042	-0.013
C13	-0.044	-0.071	-0.011	-0.059	-0.038	-0.039	-0.015	0.036	0.014	-0.041	0.000
C14	0.039	0.068	-0.001	0.048	0.034	0.030	0.010	0.009	-0.023	0.032	-0.010
C15	-0.011	-0.031	-0.043	0.038	-0.006	-0.011	-0.006	-0.047	-0.032	-0.016	-0.035

The cross-loading values, show the relationship score corresponding to each image phrase and the design feature. The absolute value of the cross-loading indicates the degree of correlation between each image phrase and the design feature, and its positivity or negativity represents the left or right-biased image evaluation. For example, in the image phrase K1 (Hard/Soft), a positive cross-loading score indicates a preference for “Soft,” and a negative cross-loading score indicates a preference for “Hard,” the more significant the positive value, the more a particular design feature tends to produce the image of “Soft. ” And the more negative the value, means that a particular design feature is more likely to produce a “Hard” image.

Therefore, in the imagery evaluation of “Hard/Soft” (K1), the absolute value of the cross-loading of C12 (embroidery), C3 (rice straw), and C4 (natural silk) is the largest, which indicates that these three designs features have the most significant influence on the presentation of the “Hard/Soft” imagery in the fiber art crafts.

For the imagery evaluation of “Heavy/Light” (K2), the absolute value of the cross-loading of C3 (rice straw), C12 (embroidery), and C13 (weaving) is the largest, which indicates that these three design features have the most significant influence on the presentation of the “Heavy/Light” imagery in the fiber art crafts.

For the imagery evaluation of “Plain/Luxurious” (K3), the absolute value of the cross-loading of C15 (dyeing and weaving), C8 (sunshade), C1 (cotton thread), and C5 (woolly) is the largest, which indicates that these four design features have the most significant influence on the presentation of the “Plain/Luxurious” imagery in the fiber art crafts.

For the imagery evaluation of “Unpractical/Practical” (K4), the absolute value of the cross-loading of C3 (rice straw), C12 (embroidery), and C13 (weaving) is the largest, which indicates that these three design features have the most significant influence on the presentation of the “Unpractical/Practical” imagery in the fiber art crafts.

For the imagery evaluation of “Nondurable/Durable” (K5), the absolute value of the cross-loading of C12 (embroidery) and C4 (natural silk) is the largest, which indicates that these two design features have the most significant influence on the presentation of the “Nondurable/Durable” imagery in the fiber art crafts.

For the “Cool/Warm” (K6) set of image evaluations, the absolute value of the cross-loading of C3 (rice straw), C12 (embroidery), and C13 (weaving) is the largest. It shows that these three design features have the greatest impact on the “Cool/Warm” image presented by fiber art crafts.

For the “Imitative/Innovative” (K7) group of image evaluations, the absolute value of the cross-loading of C3 (rice straw), C12 (embroidery), and C13 (weaving) is the largest. It shows that these three design features have the greatest impact on the “Imitative/Innovative” image presented by fiber art crafts.

For the image evaluation of “Antique/Modern” (K8), the absolute value of cross-loading of C15 (dyeing and weaving) and C1 (cotton thread) is the largest. It shows that these two design features have the greatest influence on the “Antique/Modern” image presented by fiber art crafts.

For the image evaluation of “International/Indigenous” (K9), the absolute value of cross-loading between C10 (noise reduction) and C4 (natural silk) is the largest. It shows that these two design features have the greatest impact on the “International/Indigenous” image presented by fiber art crafts.

For the imagery evaluation of “Big/Small” (K10), the absolute value of the cross-loading of C3 (rice straw) and C12 (embroidery) is the largest, which indicates that two design features have the most significant influence on the presentation of the “Big/Small” imagery in the fiber art crafts.

For the imagery evaluation of “Low quality/High quality” (K11), the absolute value of the cross-loading of C10 (noise reduction) and C8 (sunshade) is the largest, which indicates that the two design features have the most significant influence on the presentation of the “Low quality/High quality” imagery in the fiber art crafts.

In Table 4.37, the design characteristics with significant positive or negative effects on each perceptual imagery word ($p < 0.05$) are listed separately and ranked according to the degree of influence (absolute value of cross-load value).

Table 4.37: Design Features with Positive and Negative Related to Kansei Word Pairs

Kansei Word Pairs	Negative Correlation	Positive Correlation
K1 Hard/Soft	C3 C13	C12 C4 C14
K2 Heavy/Light	C3 C13 C6	C12 C14 C4
K3 Plain/Luxurious	C15 C8 C1 C5	C7 C10
K4 Unpractical/Practical	C3 C13 C6	C12 C4 C14 C1 C15
K5 Nondurable/Durable	C3 C13 C6	C12 C4 C14
K6 Cool/Warm	C3 C13 C6	C12 C14
K7 Imitative/Innovative	C3 C13 C6	C12 C14
K8 Antique/Modern	C15 C1 C8 C5	C3 C7 C2 C13
K9 International/Indigenous	C10 C8 C11 C15 C5	C4
K10 Big/Small	C3 C13 C6	C12 C14
K11 Low quality/High quality	C10 C8 C15 C5	C7

According to the design features in Table 4.37, the first two design features with positive or negative effects on each Kansei word pair are listed. In the pair Kansei words of “Hard/Soft,” for the evaluation of the “Hard” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Soft” imagery, the design feature combination with the highest score is “embroidery + natural silk.”

In the Kansei word pairs of “Heavy/Light,” for the evaluation of the “Heavy” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Light” imagery, the design feature combination with the highest score is “embroidery + textile.”

In the Kansei word pairs of “Plain/Luxurious,” for the evaluation of the “Plain” imagery, the design feature combination with the highest score is “dyeing and weaving + sunshade.” Conversely, for evaluating the “Luxurious” imagery, the design feature with the highest score is “storage.”

In the Kansei word pairs of “Unpractical/Practical,” for the evaluation of the “Unpractical” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Practical” imagery, the design feature combination with the highest score is “embroidery + natural silk.”

In the Kansei word pairs of “Nondurable/Durable,” for the evaluation of the “Nondurable” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Durable” imagery, the design feature combination with the highest score is “embroidery + natural silk.”

In the Kansei word pairs of “Cool/Warm,” for the evaluation of the “Cool” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Warm” imagery, the design feature combination with the highest score is “embroidery + textile.”

In the Kansei word pairs of “Imitative/Innovative,” for the evaluation of the “Imitative” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Innovative” imagery, the design feature combination with the highest score is “embroidery + textile.”

In the Kansei word pairs of “Antique/Modern,” for the evaluation of the “Antique” imagery, the design feature combination with the highest score is “dyeing and weaving + cotton thread.” Conversely, for evaluating the “Modern” imagery, the design feature combination with the highest score is “rice straw + storage.”

In the Kansei word pairs of “International/Indigenous,” for the evaluation of the “International” imagery, the design feature combination with the highest score is “noise reduction + sunshade.” Conversely, for evaluating the “Indigenous” imagery, the design feature with the highest score is “natural silk.”

In the Kansei word pairs of “Big/Small,” for the evaluation of the “Big” imagery, the design feature combination with the highest score is “rice straw + weaving.” Conversely, for evaluating the “Small” imagery, the design feature combination with the highest score is “embroidery + textile.”

In the Kansei word pairs of “Low quality/High quality,” for the evaluation of the “Low quality” imagery, the design feature combination with the highest score is “noise reduction + sunshade.” Conversely, for evaluating the “High quality” imagery, the design feature with the highest score is “storage.”

In the design of fiber art crafts, rice straw, and weaving techniques significantly impact participants’ sensory evaluation, followed by embroidery techniques and natural silk. Dyeing and weaving, textile techniques, sunshade, storage, and noise reduction functions also significantly impact participants’ sensory evaluation. This suggests that designers should pay more attention to these design features when designing and selecting fiber art crafts.

4.4.3.2 Results of Consumer Preferences for Fiber Art Crafts

Input the data from 397 valid questionnaires into Excel and calculate the consumers’ ratings of the “like/dislike” perceptual adjective pairs in the three categories of fiber art crafts. The average preference of each age group is listed, as shown in Table 4.38. The “dislike/like” perceptual vocabulary is tested on a 5-point scale (1, 2, 3, 4, 5). The 43 - 50 age group and the 51 - 59 age group have higher ratings. Fiber art crafts are more popular among middle-aged people. Among them, embroidery products are the most popular.

Table 4.38: The Fond of Fiber Art Crafts Evaluation

Item	Age	Mean score
Embroidery	18-25	3.444
	26-33	3.877
	34-42	3.935
	43-50	4.075
	51-59	4.016
	Above 60	3.954
Carpet & Tapestry	18-25	3.416
	26-33	3.776
	34-42	3.615
	43-50	3.982
	51-59	3.923
	Above 60	3.818
Bamboo grass weaving	18-25	3.471
	26-33	3.840
	34-42	3.731
	43-50	3.684
	51-59	3.560
	Above 60	3.628

4.5 Result IV – Correlation Analysis

From the perspective of customer perception, establishing a cultural values framework for fiber art crafts requires determining the relationship between the cultural values of fiber art crafts and customer perception factors. Five cultural values dimensions and four customer perception demand factors have been identified through correlation analysis.

The researchers found that a correlation coefficient of $r \geq 0.1$ indicates a correlation between two variables: small ($r > 0.1-0.3$) moderate ($r > 0.3-0.5$) large ($r > 0.5-0.7$), very large ($r > 0.7-0.9$), nearly perfect ($r > 0.9$), and perfect ($r = 1.0$) (Di Mascio et al., 2020; Hader et al., 2019).

The results of the correlation analysis, as shown in Table 4.39, indicate that cultural values of practical and rational, face and image, nostalgia and inheritance, pursuing

trends, and reverence for nature are positively correlated with customer perception factors. Among them, “practical and rational” and “face and image” have the highest correlation coefficients with customer perception, at 0.564 and 0.551, respectively. Additionally, “nostalgia and heritage” has a correlation coefficient of 0.502 with customer perception, while “pursuing trends” and “reverence for nature” have correlation coefficients of 0.489 and 0.474, respectively, with customer perception.

Table 4.39: Correlation Analysis of Cultural Values and Customer Perception in Fiber Art Crafts

	CP	PT	RFN	FAI	PAR	NAI
Customer Perceptions (CP)	1	.489**	.474**	.551**	.564**	.502**
Pursuing Trends (PT)	.489**	1	.323**	.457**	.396**	.421**
Reverence For Nature (RFN)	.474**	.323**	1	.378**	.338**	.350**
Face And Image (FAI)	.551**	.457**	.378**	1	.349**	.362**
Practical And Rational (PAR)	.564**	.396**	.338**	.349**	1	.387**
Nostalgia And Inheritance (NAI)	.502**	.421**	.350**	.362**	.387**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.40 can further refine the correlation between the 5 cultural values and the 4 customer perception factors. For “Practical and rational”, the correlation coefficient with “Performance” is 0.611, the correlation coefficient for both “Material” and “Style” is 0.492, and the correlation coefficient with “Grade” is 0.408. For “Face and image”, the correlation coefficient with “Grade” is 0.610, the correlation coefficient with “Material” is 0.493, the correlation coefficient with “Performance” is 0.415, and the correlation coefficient with “Style” is 0.414. For “Nostalgia and inheritance, the correlation coefficient with “Material” is 0.522, the correlation coefficient with “Style” is 0.448, the correlation coefficient with “Performance” is 0.400, and the correlation coefficient with “Grade” is 0.391. AS “Pursuing trends,” the correlation coefficient with “Grade” is 0.427, the correlation coefficient with “Style” is 0.411, the correlation coefficient with “Performance” is 0.408, and the correlation coefficient with “Material”

is 0.473. For “Reverence for Nature,” the correlation coefficient with “Material” is 0.465, the correlation coefficient with “Style” is 0.464, the correlation coefficient with “Performance” is 0.397, and the correlation coefficient with the “Grade” is 0.332.

Table 4.40: Correlation Analysis of Cultural Values and Each Dimension of Customer Perception in Fiber Art Crafts

	Grade	Material	Performance	Style	PT	RFN	FAI	PAR	NAI
Grade	1	.758**	.597**	.640**	.427**	.332**	.610**	.408**	.391**
Material	.758**	1	.674**	.842**	.473**	.465**	.493**	.492**	.522**
Performance	.597**	.674**	1	.624**	.408**	.397**	.415**	.611**	.400**
Style	.640**	.842**	.624**	1	.411**	.464**	.414**	.492**	.448**
Pursuing Trends (PT)	.427**	.473**	.408**	.411**	1	.323**	.457**	.396**	.421**
Reverence For Nature (RFN)	.332**	.465**	.397**	.464**	.323**	1	.378**	.338**	.350**
Face And Image (FAI)	.610**	.493**	.415**	.414**	.457**	.378**	1	.349**	.362**
Practical And Rational (PAR)	.408**	.492**	.611**	.492**	.396**	.338**	.349**	1	.387**
Nostalgia And Inheritance (NAI)	.391**	.522**	.400**	.448**	.421**	.350**	.362**	.387**	1

** . Correlation is significant at the 0.01 level (2-tailed).

4.6 Summary of Chapter

In this chapter, both qualitative and quantitative analyses were conducted. Qualitative analysis was performed on the text material obtained through FGD, and using Nvivo an initial scale for fiber art crafts was derived through grounded theory analysis. Quantitative analysis used SPSS to analyze the questionnaire data and determine the five dimensions of cultural values for fiber art crafts. KE was employed to conduct an in-depth analysis of consumer demand factors for fiber art crafts, using FA to identify four-factor dimensions. K-means and PLS were utilized to determine consumers’ preferred fiber art crafts design features. Subsequently, correlation analysis was conducted using the five cultural values dimensions and four perceptions factors. The results will be discussed in Chapter 5.

CHAPTER 5

DEVELOPMENT OF NEW FRAMEWORK

5.1 Introduction

Cultural values are crucial for guiding the creation of designs that reflect these values. However, Chinese fiber art crafts designers encounter obstacles in designing pieces that embody cultural values while also exploring new directions for the development of fiber art crafts in China. This challenge stems from varying customer perception of fiber art crafts. Previous research has shown a correlation between fiber art crafts and cultural values, as well as customer perception. Therefore, this research was conducted in Shandong Province in China, aiming to explore Chinese consumers' preferences for fiber art crafts in contemporary households and redefine the cultural value orientations of such crafts.

5.2 Discussion of Finding

In providing a comprehensive discussion, the main findings of the study are focused on a review of the research questions. The research questions are examined and subsequently discussed in relation to the findings.

5.2.1 Finding based on Research Question 1

For designers and stakeholders, it is crucial to enhance consumers' understanding of cultural values and to create designs that are centered around culture. Research or

learning about cultural values enhances consumers' understanding of product knowledge and semantics. As pointed out by Li (2019), fiber art crafts are frequently found in modern Chinese households, yet their cultural values have not been widely studied. The research found that cultural values and customer perception play an essential role as a perspective to improve consumer awareness.

a) Cultural values influence consumer behavior

Theoretical findings showed cultural values play a crucial role in shaping consumer behavior. When consumers purchase fiber art crafts, they are influenced by their social and cultural background. This is consistent with the viewpoint proposed by Bathaee (2014) that cultural values affect consumer behavior. Fiber art crafts carry rich cultural elements and reflect the local traditions, customs, and history. Consumers choose fiber art crafts to express their sense of national identity or personal values. This confirms the viewpoint of Subawa et al. (2020), which states that when consumers purchase traditional cultural products, they often hope to gain a sense of cultural identity. At the same time, the research also found that integrating Chinese "face culture" into product design and making it more in line with the needs of the high-end gift market can enhance the market competitiveness of the products.

b) Consumer Perception Facilitates Emotional Resonance

Research has revealed that the visual features, craftsmanship details, and design aesthetics of products directly influence consumers' emotional experiences. This aligns with the viewpoint of Gil-Perez et al. (2020), who pointed out that consumers' emotional responses are largely dependent on the visual stimuli of products, such as

colors, materials, and textures. Therefore, when fiber art crafts can present cultural values through elegant aesthetic features, consumers' emotional identification will be more intense.

5.2.2 Finding based on Research Question 2

In this phase, the findings of the study are an important component of the study because they inform the factors of cultural values and customer perception. The following are some of the findings:

5.2.2.1 Result Finding of Phase 1 (Examine the Cultural Values Dimensions)

32 participants took part in the FGD. The current findings show that FGD members were rich in ideas about fiber art crafts. For example, following two rounds of focus group discussions, 566 cultural values features related to fiber art crafts were identified. However, after discussion, the research team generated 56 preliminary concepts through open coding. Through iterative refinement and categorization, 12 second-order concepts were developed, resulting in the selection of 40 items for the cultural values measurement scale of fiber art crafts. Through surveyed 397 participants, a comprehensive examination resulted in the identification of five dimensions and a total of 34 items of scale representing cultural values associated with fiber art crafts. These dimensions are named (1) Reverence for nature, (2) Nostalgia and heritage, (3) Face and image, (4) Practical and rational, and (5) Pursuing trends.

Reverence for nature. According to Yau (1988) it proposed the dimension of “harmony with nature” in Chinese values. In the study, this dimension reflects the Chinese people’s respect for the environment and their affinity towards nature when choosing fiber art crafts. The essence of reverence for nature emphasizes the harmonious relationship between humans and nature. The values dimension of reverence for nature offers a wealth of advantages and benefits. Firstly, the use of natural fiber materials in fiber art crafts not only brings pleasure and enjoyment to individuals but also contributes to the creation of eco-friendly home products. Secondly, embracing the values of reverence for nature can raise consumer awareness about environmentally friendly practices and sustainable development within indoor home environments. This, in turn, helps safeguard the human living environment and fosters future development. It can be concluded that the cultural values of reverence for nature in fiber art crafts among Chinese consumers authentically reflects the green values of respecting and nurturing nature that is promoted in Chinese society.

Nostalgia and heritage. Schwartz and Bardi (2001) define the cultural values of heritage as the respect, commitment, and acceptance of customs and beliefs provided by traditional faith or religion. Building upon this definition, Guo and Sun (2016) propose that heritage refers to intergenerational transmission and the cultural values influenced by previous generations. Fiber art crafts, imbued with cultural significance, frequently incorporate elements of nostalgia. This study defines nostalgia and heritage within the context of fiber art crafts as the appreciation and embrace of old or renovated items infused with retro elements. This cultural values resonates deeply with the Chinese people’s commitment to preserving and advancing intangible cultural heritage.

Face and image. Face and image reflect self-expression for the Chinese people. “Face” is a term deeply rooted in Chinese cultures, and Francesco (2015) highlights the dimension of protecting one’s face. The cultural values of face and image is associated with individuals’ aspirations to elevate their social standing and gain recognition through the consumption of fiber art crafts. It reflects, to some extent, a desire for self-expression and the embodiment of personal style and lifestyle through such consumption. The act of purchasing fiber art crafts satisfies personal face-related needs in several ways. Firstly, it facilitates the establishment of interpersonal connections by allowing individuals to present these crafts as gifts to friends and family, thereby fostering friendships and garnering acceptance. These social resources are acquired through the acquisition of faces in social exchanges. Secondly, purchasing fiber art crafts can garner respect and admiration, fulfilling the need for recognition through compliments, congratulations, and flattery. Lastly, using fiber art crafts provides a psychological affirmation of one’s abilities and values, satisfying the need for self-esteem through the confidence, pride, and satisfaction derived from utilizing these products. Within the Chinese cultural context, face is often synonymous with personal dignity, and the concept of face deeply resonates within the people’s hearts.

Practical and rational. Reflects the basic methodology Chinese people employ when evaluating fiber art crafts and making purchasing decisions. Pan et al. (2014) summarized the emphasis on “utility,” “practicality,” and “substance” in Chinese consumer cultural values as “practical and rational.” “Practical and rational” embodies consumers’ focus on the realistic and practical value of choosing fiber art crafts rather than pursuing transcendental value. People pay attention to or purchase fiber art crafts with the intention of obtaining results and practical uses that are beneficial and

meaningful to themselves within reasonable and legal boundaries, thereby making their lives more comfortable and fulfilling. After decades of development, fiber art crafts have gradually evolved into more diversified household items and decorations in modern Chinese homes, with prices becoming more affordable for the general population (Ren, 2014; Wang, 2021).

Pursuing trends. Building on Su et al. (2013) definition of open values, this study defines the pursuing trends as the tendency for individuals to adopt certain behaviors, styles, or attitudes simply because others are doing so. With the accelerated pace of design and development in fiber art crafts products, waves of “internet-famous products” have emerged, captivating consumers’ senses (Pang, 2016). Furthermore, places great emphasis on reciprocity in interpersonal relationships, which often involve the exchange of gifts. Therefore, the trendiness of fiber art crafts products becomes particularly important. According to Demirdjian and Orzada (2023), the business of fashion is to pursue shifting. This is also consistent with “Pursuing trends.”

Overall, considering the five dimensions of cultural values mentioned above, it is evident that consumers’ cultural values pertaining to fiber art crafts are deeply influenced by traditional Chinese cultural norms and guided by folk ethics. Additionally, these values are also influenced by individuals’ lifestyle choices, further shaping their preferences in this domain. According to Liu (2023), consumers will prioritize the purchase of fiber products featuring printed patterns, as the preservation of these patterns also signifies the preservation of cultural heritage. Fan and Wang (2023) further discovered that consumers exhibit a greater preference for cultural and creative products that possess distinctive cultural attributes. Nithyaprakash et al. (2023)

also observed that culture plays a pivotal role in influencing consumers' selection of daily textiles. Hence, it can be inferred that the findings from this study align with previous scholarly research.

5.2.2.2 Result Finding of Phase 2 (Examine Factors of Customer Perception)

In the second stage, the findings showed that consumers perceive grade, material, style, and performance as influential factors in their perceptions of fiber art crafts. These findings confirm previous research highlighting that material, craft, design and function influenced customer perception (Almalki & Tawfiq, 2023; Neha & Aravendan, 2023). The following sections elaborate on each factor in detail:

Grade. It is the perceived quality and status level of fiber art crafts, it is often associated with the product's craftsmanship, exclusivity, and price positioning (Xu, 2012). Consumers perceive hand-made, intricately designed pieces as higher-grade than mass-produced alternatives. Luxury or high-status brands enhance the perception of grade (Zhang & Dong, 2020). Therefore, consumers will assess grade based on the brand reputation, rarity, and cultural significance of the craft.

Material. It refers to the type and quality of raw materials used in fiber art crafts. Research find the consumers assess material based on durability and comfortableness to evaluate the quality. The aforementioned findings further substantiate the previous perspective put forth by Liu (2023) consumers often associate natural materials (e.g., silk, cotton, bamboo fibers) with higher quality and authenticity.

Style. It refers to the artistic expression, visual aesthetics, and cultural symbolism in fiber art crafts. The analysis showed it affects the product's ability to resonate with consumer preferences and current popular trend. Liu (2019) pointed that Shandong handmade carpets and tapestries feature traditional motifs, such as dragons and floral patterns, but also incorporate modern minimalist styles, younger generations were deeply appealed to younger generations. Therefore, this is consistent with the results of the present study.

Performance. It refers to the functionality, practicability of fiber art crafts in daily life. The study finds the product's practicality influences consumer satisfaction and repeat purchases. Products that serve both decorative and practical purposes are valued (Wang, 2021; Liu, 2019). By prioritizing functionality and practicability of fiber art crafts, designers and manufacturers can enhance the perceived performance, ultimately leading to greater consumer satisfaction and increased market demand.

However, this study provides a more comprehensive analysis compared to previous studies. Specifically, when it comes to embroidery products, consumers place significant importance on grade and style, followed by performance and material. For carpet and tapestry, consumers prioritize grade and material, then style and performance influencing their perception. In the case of bamboo grass weaving products, consumers primarily value the style of the product, followed by grade, material, and performance. With grade and style emerging as the most important factors, Chinese consumers now prioritize the reputation, quality, and aesthetic design of fiber art crafts products when making choices. They also place value on the reliability of product performance and functionality, as well as the specifications and

texture of the materials. This finding further validates the previous research that a fan with exquisite design can generate pleasant emotional resonance among consumers, thus enhancing users' love and identification with the fan (Li, 2019).

Furthermore, it was discovered that there is a correlation between the design features of fiber art crafts and consumers' affective evaluations. The research clarified the imagery associated with each decomposed design feature and summarized the design features that significantly impact various affective imagery. Additionally, a method for combining design features to achieve fiber art crafts design was proposed. When designing fiber art crafts, designers should prioritize design features with higher absolute values of cross-loadings and emphasize or strengthen those features to create unique affective imagery. Specific design combinations such as rice straw and weaving techniques, embroidery techniques with natural silk, dyeing and weaving combined with textile techniques, as well as enhancing sunshade, storage, and noise reduction functions, can have a significant impact on affective evaluations of fiber art crafts. This discovery is an innovation point for the design of fiber art crafts. Therefore, designers of fiber art crafts should pay special attention to these design combinations in order to produce high-value products that consumers will appreciate.

Finally, the findings of the analysis of consumer preferences for fiber art crafts showed that the 43-50 age group and the 51-59 age group have higher ratings. Therefore, fiber art crafts are more popular among middle-aged people. However, this finding confirms that embroidery products are the most popular, which is a new discovery.

5.2.3 Summary of Finding

In Chapter 4, the correlation analysis results show that the five dimensions of the cultural values of fiber art crafts are positively correlated with the four dimensions of customer perception, indicating that cultural values and customer perception are interactive (refer to Figure 5.1). Among them, the correlation coefficient between “practical and rational” in the cultural values dimensions and “performance” in the customer perception factor is the highest, indicating that the two have a strong correlation, aligning with previous research conducted by Pan et al. (2014). This shows that the “practical and rational” values and the “performance” of the product are interactive; that is, consumers with “practical and rational” values tend to choose fiber art crafts with better performance. Similarly, “face and image” and “grade” also have a strong correlation. This shows that face-saving consumers attach great importance to the grade of fiber art crafts when choosing products, while face-saving consumers will not choose poor-grade products. This result is consistent with findings reported by Qi and Ploeger (2021). Through analysis, it is found that “nostalgia and inheritance” are highly correlated with the “material” dimension perceived by consumers, indicating that people influenced by the values of nostalgia and inheritance have higher requirements for the materials of fiber art crafts. Shi et al. (2021) also pointed out that traditional materials may be more likely to generate nostalgia in consumers. Therefore, the design of fiber art crafts can be explicitly analyzed based on cultural values such as “practical and rational,” “reverence for nature,” “pursuing trends,” “face and image,” and “nostalgia and heritage.” On the other hand, design requirements can be understood through customer perception factors, such as comfortable material texture, appropriate functionality, and fashionable and modern craftsmanship.

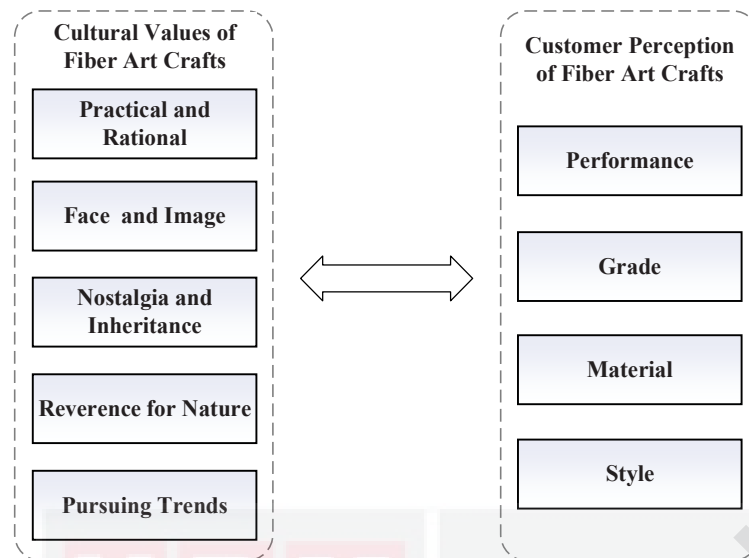


Figure 5.1: The Relationship Between Consumers' Cultural Values and Customer Perception of Fiber Art Crafts

5.3 New Framework Development

As shown in the conceptual framework (Figure 2.18), lack of knowledge, there is an urgent need to develop a framework integrated cultural values and customer perception of fiber art crafts are crucial.

5.3.1 Develop New Framework

This study finds that cultural values encompass the beliefs and principles guiding consumers in their purchase of fiber art crafts, constituting an intangible aspect. Previous research has highlighted those cultural values influenced the consumer in handwoven textiles (Parameswara et al., 2023). In contrast, customer perception pertain to the feelings, emotions, attitudes, and behaviors exhibited by users throughout the utilization of fiber art crafts. Hence, bolstering the product's functional, social, and emotional value is crucial for enhancing the overall user experience. This

finding further validates previous research indicating that customer perception exert a substantial influence on consumers' purchasing behavior (Júnior et al., 2023). An effective design philosophy can align the design more closely with user needs, fostering innovation, practicality, and resonance with users.

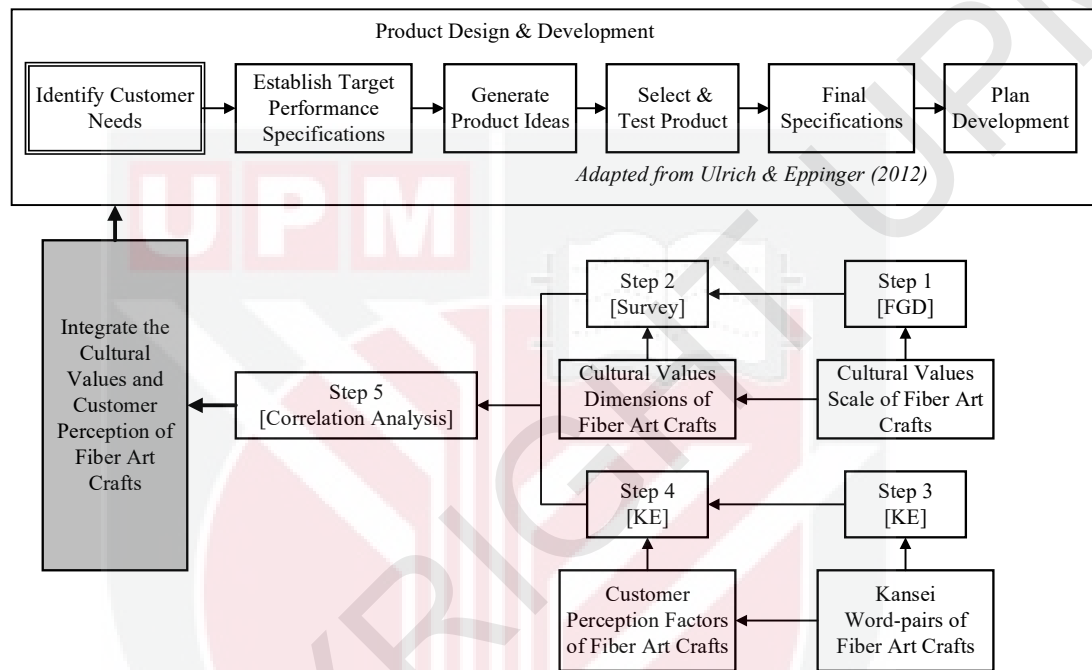


Figure 5.2: The Cultural Values and Customer Perception (CVCP) Framework of Fiber Art Crafts

Previous studies have indicated that due to different cultural values, customers' perceptions of products are different. Cultural values can evoke consumers' emotional responses to products, but the current fiber art crafts lack cultural identity, and outdated design, making them unappealing to consumers. Therefore, in order to help designers better determine the cultural values and customer perception factors for fiber art crafts, this study takes a five-step (refer to Figure 5.2).

Through the discussion of FGD and survey, the scale of cultural values and the dimensions of cultural values of consumers toward fiber art crafts are determined, including Step 1 and Step 2. In Step 3, the customer perception word pairs of fiber art crafts is determined through KE. On this basis, Step 4 determines the factors of customer perception of fiber art crafts. Based on Steps 2 and 4, the relationship between the cultural values dimensions of consumers toward fiber art crafts and customer perception is determined.

As Ulrich and Eppinger (2012) proposed, in the initial stage of product design, designers must accurately identify consumer needs in order to design successful products favored by the target population. By determining the design concept based on cultural values and customer perception, it is possible to accurately understand consumer needs and expectations from the initial stages of product design. Fiber art crafts designed through this process can enhance consumer preference.

The new framework provides a systematic and data-driven approach to understanding how cultural values influence customer perception, ensuring that fiber art crafts remain culturally authentic, emotionally engaging, and market-relevant. Below is the significance of this framework:

- a. Strengthening the cultural identity of fiber art crafts. This framework emphasizes the relationship between cultural values and consumer perception, by integrating cultural elements into product design and marketing, while ensuring its relevance in contemporary society
- b. Enhancing customer engagement and emotional resonance. This framework enhances emotional attachment and increases the likelihood of customer satisfaction and brand loyalty.

- c. Providing a practical guide for design and marketing. The structured approach allows artisans, designers, and businesses to develop fiber art crafts that resonate with consumer expectations while staying true to their cultural roots. The framework helps optimize product development, ensuring higher market acceptance.
- d. Increasing market competitiveness. The framework identifies the key factors that drive consumer preference, by balancing tradition with innovation, allowing fiber art crafts to be positioned more effectively in both domestic and international markets.
- e. Supporting academic research and policy development. This structured approach provides a theoretical foundation for future research in cultural value integration, customer perception analysis, and design innovation.

5.3.2 The Framework Process

The study in Chapter 1 has pointed out that there is a lack of literature based on the combination of cultural values and customer perception for the design of fiber art crafts. As a result, designers design products that cannot resonate with consumers. Therefore, in order to solve this dilemma, a operational framework for the designers is needed (refer to Figure 5.3).

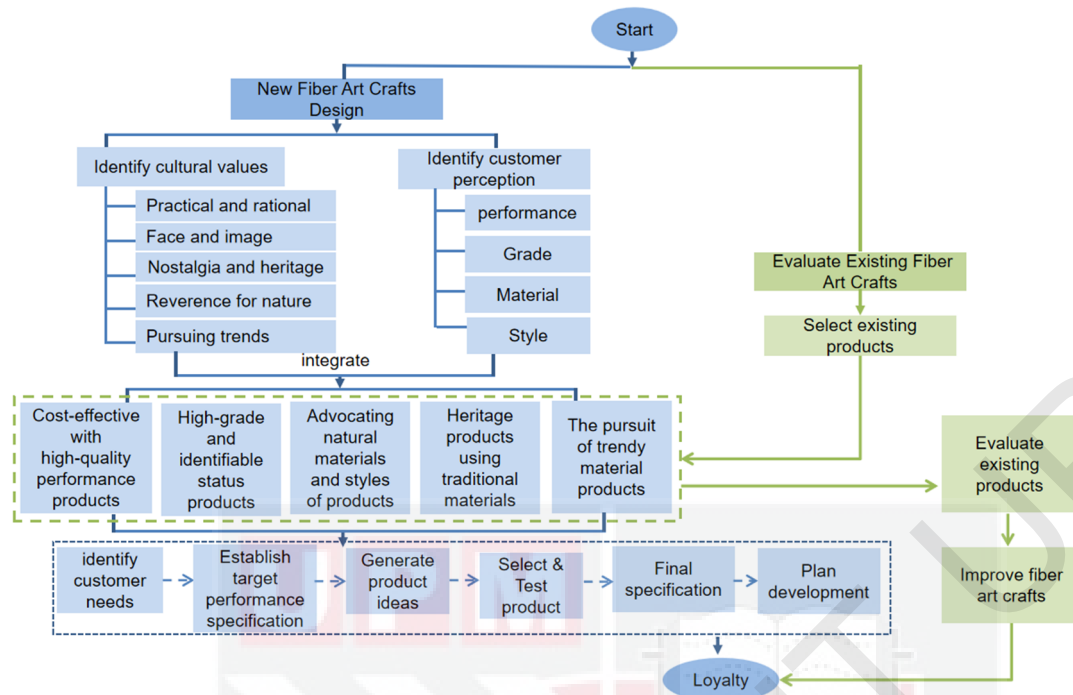


Figure 5.3: Operational Framework for Designers: Cultural Values and Customer Perception Framework of fiber art crafts

Creating an operational framework of fiber art crafts guided based on cultural values and customer perception can help redefine the cultural attributes and design components of fiber art crafts and delve into the value concepts of fiber art crafts that are suitable for the current lifestyle. In the development process of this framework, each theme is derived from interviews, observations, and literature review analysis. Each word in the created themes is treated as a reference during the process. Moreover, each established theme is also transformed into keywords. This is done to assist design practitioners in understanding the focus of creating fiber art crafts.

The process has two parts. This first part is to design new fiber art crafts. Firstly, designers need to identify consumers' cultural values and consumer perception factors for fiber art crafts. Secondly, by combining the relationship between cultural values and customer perception factors, designers can apply these following concepts to fiber

art crafts design: cost-effective with high-quality performance, high-grade and identifiable status, advocating natural materials and styles, heritage products using traditional materials, and pursuit of trendy material. The third step is to update the above design concepts into the Product Development Process to achieve consumer loyalty to the brand. The second part is to evaluate the existing fiber art crafts. Firstly, select the existing products, check if the products have these concepts which refer in part 1. Secondly, evaluate the product and find out the shortcomings of the existing products on the market. Thirdly, combine cultural values and consumer perception to improve it and to make sure the customer loyalty.

Through this framework, designers can not only understand that consumers choose fiber art crafts due to the influence of cultural values such as “practical and rational,” “reverence for nature,” “pursuing trends,” “face and image,” and “nostalgia and heritage,” but also can determine that consumers pay attention to the performance, materials, style, and grade of the product when purchasing fiber art crafts. By understanding the relationship between cultural values and customer perception factors, designers can deeply identify consumer needs for fiber art crafts in the initial stages of design. This allows for improvements in fiber art crafts design to enhance consumer identification with these products, increase emotional resonance, and ultimately attract consumers.

5.4 Validation of Framework

The development of Cultural Values and Customer Perception Framework of fiber art crafts (CVCP) is based on the research results of this stage. After the completion of the CVCP, the next step is to obtain validation from several experts in the field.

5.4.1 Validation Process

The experts were chosen to conduct their evaluation, which served as a reflection of their level of agreement or disagreement with the development of this CVCP as a step of fiber art crafts recreation in this study. This CVCP development was validated by two (2) academic experts as well as two (2) design experts. To finish the assembly, an expert weaver was invited to provide validation. The selection of these experts is justified by their extensive weaving knowledge. Most of them have 15 to 30 years of field experience. The validation session was conducted face to face, with the researcher providing a pre-briefing to ensure their adequate understanding of the CVCP development.

5.4.2 Experts Validation

Table 5.1 shows a summary of expert opinions on workflow findings of the framework for fiber art crafts by selected field experts. The results of this study were validated by several experts based on their opinions and consent questions regarding the developed findings. In addition, a description of the expert evaluator's views was considered on the developed framework of fiber art crafts based on cultural values and customer perception.

Table 5.1: A Summary of Expert Analysis of Cultural Values and Customer Perception Framework of Fiber Art Crafts

Items	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
The organization of content in this framework is clear.	Strongly Agree	Strongly Agree	Strongly Agree	Agree	Strongly Agree
This framework is relevant to reviving the cultural value of fiber art crafts.	Agree	Strongly Agree	Agree	Strongly Agree	Strongly Agree
This framework provides the capability to easily support future textile needs.	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
This framework provides the ability to support cultural value orientations understanding in the fiber maker.	Strongly Agree	Strongly Agree	Agree	Strongly Agree	Strongly Agree
This framework can help the designer to reproduce the fiber art crafts.	Agree	Agree	Strongly Agree	Agree	Strongly Agree
This framework can help weavers maintain the original features of fiber art crafts.	Strongly Agree	Strongly Agree	Strongly Agree	Agree	Strongly Agree
This framework can help the designer identity the design features of the fiber art crafts.	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree
This framework can help designers know the future and development of fiber art crafts.	Strongly Agree	Agree	Strongly Agree	Strongly Agree	Agree
This framework can help these designers identify the customer perception factors of the fiber art crafts.	Strongly Agree	Strongly Agree	Strongly Agree	Agree	Strongly Agree
This framework can help textile makers understand the value that exists in the process of making this fabric.	Agree	Strongly Agree	Agree	Agree	Agree

These are the activity steps to ensure that users have a comprehensive understanding of the framework. The experts also agreed that the demand and information design of the framework must be conducted through two key components to recreate the production process of the framework of the fiber art crafts. In evaluating the framework for fiber art crafts, all five experts agreed or strongly agreed. Two key components of the framework of fiber art crafts are identifying the cultural values dimensions of fiber art crafts, and customer perception factors. After fully understanding these elements, designers can create fiber art crafts that meet the requirements of consumers according to the framework.

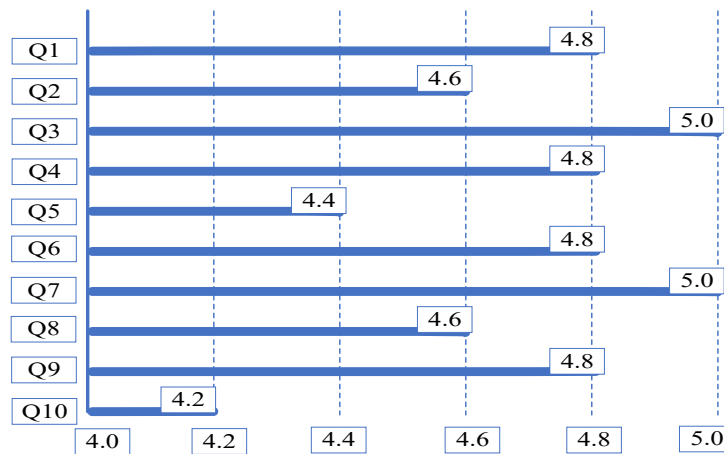


Figure 5.4: Expert Evaluation Score Analysis Mean

The analysis of the scores of the selected experts is shown in Figure 5.4. Based on 10 questions (score 1 - 5), most experts provided a positive assessment of the proposed framework (mean value between 4.00 and 4.8). Questions 3 (the framework effectively supports future textile needs) and 7 (the framework helps designers to identify the design features of fiber art crafts) average up to 5. However, the question 10 item (the aesthetic value of fiber art crafts) has a lower average of 4.2. All experts agreed with or strongly agreed with the setting of the framework. During the evaluation process, no expert responded negatively (the high disagree or disagree). Free elaboration of the insights gathered from the questionnaire forms was also considered during the validation process. The choice of experts is reasonable because they all have sufficient knowledge and experience in the field of fiber art crafts. Thus, their contribution to the findings is valuable to aiding the revival of fiber art crafts:

- i. Their expertise ensures that the contributions are credible and relevant, significantly enhancing the validity and applicability of the findings.
- ii. The majority of expert evaluators agreed with the five dimensions of cultural values in fiber art crafts and the four customer perception factors. They believed that the development of the framework through integrating two aspects and updating the product design and development process would be highly beneficial for design fiber art crafts.

- iii. Consequently, their input plays a crucial role in supporting the revival and preservation of fiber art crafts, offering valuable insights that could inform future strategies and initiatives in this domain.

On the other hand, Niosi (2021), Wibowo et al. (2020), Chopdar and Sivakumar (2019) also argue that customer perception of products is believed to be related to the cultural values they uphold. Therefore, by identifying the relationship between the cultural values dimensions of fiber art crafts and customer perception factors, can more accurately locate consumer preferences.

5.5 Summary of Chapter

This chapter introduces the framework of fiber art crafts, integrating cultural values and customer perception. The framework has been crafted for designers and design stakeholders, with the main goal of identifying and validating the key cultural values and customer perception factors associated with fiber art crafts. These attributes play a pivotal role in the initial phases of the design process, aiming to facilitate the creation of designs that resonate well with Chinese consumers. By leveraging this framework, designers can gain a deeper insight into the cultural values cherished by Chinese consumers concerning fiber art crafts, enabling them to tailor their designs effectively.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

In this final chapter, the study summarizes the research questions raised by the researcher at the start of the fiber art crafts research in this final chapter. The main objective of any study is to effectively address its research questions. In this regard, the study briefly touches upon three Research Questions (RQ). Next, this chapter presents several new insights garnered from the study. Among them are insights on the development of theoretical contributions and practical contributions.

6.2 Conclusion of the Research

First Objective: To identify the importance of cultural values and consumer perception for Shandong modern fiber art crafts in China toward satisfaction.

The study employed literature survey to obtain the sub research object one. The first research object is to identify the importance of cultural values and customer perception of fiber art crafts in Shandong province in China. Firstly, through the literature review, the various characteristics of fiber art crafts are described, such as category, color, pattern, and function. This study finds that, at present, Chinese fiber art crafts are mainly composed of three categories: embroidery, carpet and tapestry, and bamboo grass weaving. Then, this study finds that cultural values are related to consumer preferences. Previous researchers have pointed out that cultural values usually affect

consumer choice behavior, particularly in efficacy meaning and the symbolic significance of products. Integrating cultural values into design ensures that products resonate with consumers who seek authenticity and meaningful connections. From the literature survey, this study discovered that consumers evaluate fiber art crafts based on their function value, emotional value, social value, influencing purchase decisions and brand loyalty. Therefore, this study believes cultural values and customer perception have a significance role in supporting Shandong's modern fiber arts craft industry.

Second Objective: To examine the significant factors of cultural values and consumer perception for Shandong modern fiber art crafts in China toward satisfaction.

This study employed Focus Group Discussion (FGD) and survey to explore the viewpoints on the cultural values of fiber art crafts. Participants in the study include experts, designers, craftsmen in the field of fiber art, and consumers who have used fiber art crafts. A total of 34 items are identified for the measurement of cultural values of fiber art crafts, and five dimensions are identified: reverence for nature, nostalgia and inheritance, face and image, practical and rational, and pursuing trends (refer to Table 4.8). This helps designers and stakeholders to more accurately locate the value concept and product connotation of fiber art crafts.

Moreover, using KE to identify customer perception factors of fiber art crafts: grade, material, performance, and style. The findings indicate that the grade of fiber art crafts holds the highest level of significance in customer perception, followed by the style of the products. Besides that, the design elements such as good and popular craftsmanship, comfortable and durable materials, and practical function also will influence on

perceptions of fiber art crafts. Finally, Partial Least Squares (PLS) was employed to identify different combinations of design features that impact customer perception of fiber art crafts.

Additionally, design combinations such as rice straw and natural silk, as well as crafting techniques like weaving, embroidery, textile, dyeing and weaving, were identified as preferred design features among Chinese consumers. These fiber art crafts also exhibit design characteristics that encompass noise reduction, storage, and sunshade functionality.

Third Objective: To integrate the cultural values and customer perception for Shandong modern fiber art crafts in China toward satisfaction.

The third objective is to integrate cultural values and customer perception for Shandong modern fiber art crafts in China. The integration of the relationship between the cultural values of fiber art crafts and customer perception factors into the design of fiber art crafts is based on the results of correlation analysis. The result found that the five cultural values dimensions of fiber art crafts and the four customer perception factors are mutually influenced. The opinions of consumer were collection through Focus Group Discussion, Survey, and Kansei Engineering method. Three common tools were developed to establish the Cultural Values and Customer Perception (CVCP) Framework of Fiber Art Crafts (refer to Figure 5.2). This framework was subsequently validated by an expert panel. The survey questionnaires with ten questions about the framework were distributed to 5 experts (refer to Section 5.4). All experts strongly agreed with the framework.

6.3 Contributions of the Research to Knowledge

Based on this research, some findings have been made that greatly promote the understanding of cultural values identification and customer perception of fiber art crafts, which will greatly benefit designers and practitioners of fiber art.

6.3.1 Research Novelty

This study proposes an operational framework for designers and reveals how to combine five significant dimensions of cultural values (reverence for nature, nostalgia and inheritance, face and image, practical and rational, and pursuing trends) to match consumer preferences. For example, "nostalgia and inheritance" can correspond to "the use of traditional materials", thereby enhancing consumers' recognition of cultural inheritance; "pursuing trends" can correspond to "a combination of modern fashion elements" to attract younger consumers. This matching mechanism can be directly used in product innovation to make design decisions more scientific and precise.

It realizes the complete chain of fiber art crafts from cultural interpretation to perceptual quantification to design optimization to market transformation. This framework not only fills a gap in academic research, but also provides an actionable strategy for the modernization, marketization and internationalization of fiber art crafts.

6.3.2 Research Contributions

The research is of great importance to modern society. Generally speaking, previous research has been limited to a single category of fiber art crafts. But in this study identifying representative categories of fiber art crafts and the common factors of consumer preferences for these categories, and identifying the relationship between consumer cultural values are among the key contributions of this study to designers, craftspeople, and fiber art educators. To the researchers' knowledge, there has been no specific research in this area.

This study successfully analyzed three major categories of fiber art crafts. Afterward, the cultural values dimensions and customer perception factors of fiber art crafts were identified. Through the development of this framework, the contribution of this study can be summarized into two key aspects: theory and practice.

a. Theoretical Contributions

This study completed the research on fiber art crafts with reference to cultural values theory and perceived value theory. It allows for a more comprehensive understanding of consumers' preferences for fiber art crafts. The pursuit of knowledge in this field also provides innovative explanations. Researchers greatly benefited from the use of cultural values theory and perceived value theory when conducting this study. Cultural values theory verified the consumer's values dimension model of fiber art crafts, and perceived value theory helped the study choose a Kansei Engineering research method to identify customer perception factors of fiber art crafts. The researcher's development of a theoretical framework will be of great assistance to future

researchers in compounding novel discoveries that can be used in the future of fiber art crafts.

b. Practical Contributions

The second contribution is to create a practical guiding framework. This study is based in Shandong Province, but the framework has essential reference value for other regions of China. As a part of traditional Chinese culture, the value of fiber art crafts has been widely recognized nationwide. Therefore, this framework can provide guidance and inspiration for designers, craftsmen, and fiber art educators nationwide.

This framework facilitates designers and craftsmen in establishing emotional bonds with users and identifying their emotional needs as a reference for the initial stage of product design. For designers, this framework can help them better understand consumers' needs and preferences, to design fiber art crafts that are more in line with market demand. By analyzing the cultural values dimensions and customer perception factors, designers can match the material, performance, grade, and style of fiber art crafts with different cultural values dimensions of consumers, which is helpful in producing new design concepts and design directions in the product definition stage.

This framework can help craftsmen better inherit and develop traditional fiber art skills. By deeply studying the cultural values and customer perception factors of fiber art crafts, craftsmen can better grasp market demand and improve product quality and competitiveness.

For fiber art educators, this framework can provide them with new teaching content and methods. Fiber art crafts, as an essential part of traditional Chinese culture, should

be better inherited and carried forward in education. By teaching students how to understand and analyze the cultural values and customer perception factors for fiber art crafts, educators can help students better master relevant knowledge and skills and cultivate more excellent talents for the future field of fiber art.

In summary, this study's contribution to the field of fiber art crafts lies not only in its theoretical innovation and development but also in its practical guiding significance and application value. By creating a practical guiding framework, this study provides strong support and help for designers, craftsmen, and fiber art educators and promotes the development and progress of the field.

6.4 Limitation of the Research

During the course of this study, three limitations are identified and described as follows:

Firstly, although the participants in the Focus Group Discussion (FGD) lacked knowledge about the various types of use of fiber art crafts in modern Chinese homes, the study adopted a grouping method, which allowed each group of participants to present their views and freely participate in this study. On the other hand, during the questionnaire survey, some participants needed help understanding the terms used. Therefore, a significant amount of time was required to explain these terms further to the respondents during the survey period.

Secondly, obtaining samples of all types of fiber art crafts proved to be challenging due to their wide variety. However, the selection of commonly used fiber art crafts in

modern Chinese households was determined through extensive literature reviews and Focus Group Discussions. These selected crafts were regarded as representative products within the field of fiber art crafts. Hence, these samples proved to be sufficient in summarizing the findings of this study.

Thirdly, photographs were employed as visual aids during the research process, and experts were involved in deciding the implementation of photo-based surveys. However, the selection of fiber art crafts solely based on photographs proved to be ineffective and time-consuming. Moreover, the experts were not interested in reviewing the photographs. Focus Group Discussions were conducted instead to overcome these challenges.

6.5 Recommendation for Future Research

This study makes a significant contribution to developing a methodology for identifying the cultural values and customer perception factors for fiber art crafts. This methodology enables the creation to combine cultural values and customer perception and design factors from the initial phases of the design process. The potential applications of this research extend to various disciplines, particularly in the context of culture and values-centered design.

Highly recommend further research to enhance the ideal guidelines framework and address future needs. By incorporating additional components into the ideal guidelines' framework, it becomes possible to accommodate future structural innovations. Therefore, the following recommendations are proposed for future research:

1. This study was conducted in Shandong Province in China, with a limited sample group. A study involving a larger sample group consisting of current Chinese consumers may reveal more effective new findings.
2. The effectiveness of integrating cultural values into the initial design concepts of fiber art crafts should be explored.
3. Researchers should investigate the acceptance of framework integrating the relationship between the cultural values and customer perception of fiber art crafts to consumers.
4. Explore how to integrate the cultural values of fiber art crafts with the concept of sustainable development. Consider environmental and social sustainability in the design concept process to create culturally valuable and sustainable fiber art crafts.

By further researching these aspects, the development of the fiber art crafts industry can be promoted, fostering cultural exchange and understanding and providing more innovation and design opportunities for designers and stakeholders.

6.6 Summary of Research

Fiber art crafts have a variety of performance characteristics that are part of the current Chinese lifestyle. As consumers recognize the value of fiber art crafts, the industry will be developed. The data collected through methods such as Focus Group Discussion (FGD) and surveys in this study provides valuable insights into the cultural values dimensions of fiber art crafts. Furthermore, the study employs Kansei Engineering (KE) to investigate customer perception of fiber art crafts. As a result, a framework integrating cultural values and customer perception of fiber art crafts is established. The evidence obtained from this research significantly enhances the reliability and validity of the framework, making it a valuable resource for designers, stakeholders, and researchers. According to the results of this study, designers can make targeted product designs according to different values and customer perception factors to promote the development of the fiber art crafts industry.

REFERENCES

- Abusaada, H., & Elshater, A. (2020). Urban design assessment tools: a model for exploring atmospheres and situations. *Proceedings of the Institution of Civil Engineers-Urban Design and Planning*, 173(6), 238-255. <https://doi.org/10.1680/jurdp.20.00025>
- Albers, J. (2013). *Interaction of color*. Yale University Press.
- Allen, M. W., Hung Ng, S., & Wilson, M. (2002). A functional approach to instrumental and terminal values and the value-attitude-behavior system of consumer choice. *European Journal of Marketing*, 36(1/2), 111-135. <https://doi.org/10.1108/03090560210412728>
- Allen, T. D. (2001). Family-supportive work environments: The role of organizational perceptions. *Journal of Vocational Behavior*, 58(3), 414-435. <https://doi.org/10.1006/jvbe.2000.1774>
- Almalki, D. K., & Tawfiq, W. A. (2023). Implementation of a Sustainable Apparel Design Framework for Felted Women's Garments Made of Local Wool. *Fashion Practice*, 15(3), 401-423. <https://doi.org/10.1080/17569370.2023.2186033>
- Al-Subaihi, A. A. (2003). Sample size determination. Influencing factors and calculation strategies for survey research. *Neurosciences Journal*, 8(2), 79-86.
- Andrew, S. (2008). Textile semantics: Considering a communication-based reading of textiles. *Textile*, 6(1), 32-65. <https://doi.org/10.2752/175183508X288680>
- Auther, E. (2008). Fiber art and the hierarchy of art and craft, 1960–80. *The Journal of Modern Craft*, 1(1), 13-33. <https://doi.org/10.2752/174967708783389896>
- Bagozzi, R. P., Yi, Y., & Nassen, K. D. (1998). Representation of measurement error in marketing variables: Review of approaches and extension to three-facet designs. *Journal of Econometrics*, 89(1-2), 393-421. [https://doi.org/10.1016/S0304-4076\(98\)00068-2](https://doi.org/10.1016/S0304-4076(98)00068-2)
- Balagtas, C., Stanley, A. E., Le Troquer, F., & Coste-Manière, I. (2022). An Old Approach Sees Major Revival: Local Textiles Go Global. In *Sustainable Approaches in Textiles and Fashion: Consumerism, Global Textiles and Supply Chain* (pp. 183-203). Singapore: Springer Nature Singapore.
- Barbour, R. S., & Flick, U. (2017). *Doing focus groups* (2nd ed.). Sage Publications.
- Bathae, A. (2014). Consumer culture and purchase behaviors: Analyses of anticipated regret, variety-seeking and quality-consciousness in Germany and Iran [Unpublished doctoral dissertation]. University of Greifswald.
- Belmas, É. (2022). Products, training, and technology. In A. Arcangeli (Ed.), *A Cultural History of Sport in the Renaissance* (pp. 63-86). Bloomsbury Publishing.

- Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: Differential susceptibility to environmental influences. *Psychological Bulletin*, 135(6), 885-908. <https://doi.org/10.1037/a0017376>
- Bimaruci, H., Hudaya, A., & Ali, H. (2020). Model of consumer trust on travel agent online: analysis of perceived usefulness and security on re-purchase interests (case study tiket. com). *Dinasti International Journal of Economics, Finance & Accounting*, 1(1), 110-124.
- Black, A., & Burisch, N. (Eds.). (2020). *The new politics of the handmade: Craft, art and design*. Bloomsbury Publishing.
- Boos, F. S. (Ed.). (2020). *The routledge companion to William Morris*. Routledge.
- Bouchard, C., & Kim, J. (2014). About the nature of Kansei information. In *5th International Conference on Applied Human Factors and Ergonomics*. Springer.
- Breakwell, G. M., & Timotijevic, L. (2020). Interviewing and focus groups. In G. M. Breakwell, S. Hammond & C. Fife-Schaw (Eds.), *Research methods in psychology*. Sage Publications Ltd.
- Briggs-Goode, A., & Townsend, K. (Eds.). (2011). *Textile design: principles, advances, and applications*. Elsevier.
- Brown, W. (2018). *Politics out of history*. Princeton University Press.
- Campbell, T. P., & Ainsworth, M. W. (2002). *Tapestry in the Renaissance: Art and magnificence*. Yale University Press.
- Cartone, A., & Postiglione, P. (2021). Principal component analysis for geographical data: the role of spatial effects in the definition of composite indicators. *Spatial Economic Analysis*, 16(2), 126-147. <https://doi.org/10.1080/17421772.2020.1775876>
- Casey, M. A., & Krueger, R. A. (1994). Focus group interviewing. In H. J. H. MacFie & D. M. H. Thomson (Eds.), *Measurement of food preferences* (pp. 77-96). Springer US.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- Chatterjee, S. (2021). A new coefficient of correlation. *Journal of the American Statistical Association*, 116(536), 2009-2022. <https://doi.org/10.1080/01621459.2020.1758115>
- Che, Y. X. (2010). The creativity and performance of contemporary fiber art design. *Art and Design*, 2(10), 33-35. <https://doi.org/10.16824/j.cnki.issn10082832.2010.10.010>
- Chen, F., & Kui, X. D. (2023). A Research on the Influence of Cultural Confidence for Consumer Buying Decision. *Journal of Entrepreneurship in Science & Technology*, (06), 30-33. <https://doi.cnki:sun:kjck.0.2023-06-006>

- Chen, J., He, R., & Wang, Z. W. (2019). Research on the development, evolution, and innovation strategies of bamboo products in Yunnan. *Designs*, (5), 34-36. <https://doi.org/10.16129/j.cnki.mysds.2019.05.010>.
- Chen, M. (2006). Fiber art. *Journal of Guizhou Minzu University (Philosophy and Social Sciences)*, (1), 139-140. <https://doi.org/10.3969/j.issn.1003-6644.2006.01.034>
- Chen, M., Tworek, J., Jun, H., Yuan, Q., Ponde, H., Kaplan, J., ... Zaremba, W. (2021). Evaluating large language models trained on code. *Computing Research Repository*. Version 5. <https://doi.org/10.48550/arXiv.2107.03374>
- Chen, Y. (2016). *Design of landscape elements*. Chongqing University Press Co.
- Chen, Y., & Xue, K. (2021). Interactive Design of Intangible Cultural Heritage Based on Social Sharing—The Digital Revitalization of" Su Embroidery. *Academic Journal of Humanities & Social Sciences*, 4(4), 53-60.
- Cheng, Z. J. (2017). *Home furnishing design*. Chongqing University Press.
- Choi, J., Chang, Y. K., Lee, K., & Chang, J. D. (2016). Effect of perceived warmth on positive judgment. *Journal of Consumer Marketing*, 33(4), 235-244. <https://doi.org/10.1108/JCM-02-2015-1309>
- Chopdar, P. K., & Sivakumar, V. J. (2019). Understanding continuance usage of mobile shopping applications in India: the role of espoused cultural values and perceived risk. *Behaviour & Information Technology*, 38(1), 42-64.
- Coelho, F. J., Bairrada, C. M., & de Matos Coelho, A. F. (2020). Functional brand qualities and perceived value: The mediating role of brand experience and brand personality. *Psychology & Marketing*, 37(1), 41-55. <https://doi.org/10.1002/mar.21279>
- Čok, V., Vlah, D., & Povh, J. (2022). Methodology for mapping form design elements with user preferences using Kansei engineering and VDI. *Journal of Engineering Design*, 33(2), 144-170.
- Corkhill, B., Hemmings, J., Maddock, A., & Riley, J. (2014). Knitting and well-being. *Textile*, 12(1), 34-57. <https://doi.org/10.2752/175183514x13916051793433>
- Creswell, J. W. (2021). A concise introduction to mixed methods research. SAGE publications.
- Creswell, J. W., & Hirose, M. (2019). Mixed methods and survey research in family medicine and community health. *Family Medicine and Community Health*, 7(2), e000086. <https://doi.org/10.1136/fmch-2018-000086>..
- Creswell, J. W., & Poth, C. N. (2016). Qualitative inquiry and research design: Choosing among five approaches. Sage publications
- Creusen, M. E. H. (2000). *Product appearance and consumer choice*. Technische Universiteit Delft.

- Crosby, N., Lavers, A., & Murdoch, J. (1998). Property valuation variation and the 'margin of error' in the UK. *Journal of Property Research*, 15(4), 305-330.
- Cui, T. T. (2016). Application of color language of soft sculpture materials in the space with Shi Hui and Lin Lecheng's works as examples. In *Proceedings of the 2016 China Color Academic Annual Conference* (pp.47-50). IEEE.
- Cui, W., & Xiao, B. (2016). *Textile art and design*. China Textile & Apparel Press.
- Cui, Z. F., & Chen, Y. T. (2020). An empirical study on the impact of offline experiential characteristics on consumers' perceived value and willingness to revisit. *Enterprise Economy*, (2), 84-91. <https://doi.org/10.13529/j.cnki.enterprise.economy.2020.02.011>.
- Cultural Heritage Bureau of Zhejiang Province. (2003). *Brilliant Craftsmanship - Zhejiang Folk and Crafts*. Zhejiang People's Publishing House
- Dalmajer, E. S., Nord, C. L., & Astle, D. E. (2022). Statistical power for cluster analysis. *BMC Bioinformatics*, 23(1), 205. <https://doi.org/10.1186/s12859-022-04675-1>
- Demirdjian, A. R., & Orzada, B. T. (2023). Breaking the cycle: A sustainable fashion paradigm. *Fashion, Style & Popular Culture*. https://doi.org/10.1386/fspc_00175_1
- DeVellis, R. F., & Thorpe, C. T. (2022). *Scale development: Theory and Applications* (5th ed.). Sage Publications.
- Di Mascio, M., Ade, J., Musham, C., Girard, O., & Bradley, P. S. (2020). Soccer-specific reactive repeated-sprint ability in elite youth soccer players: maturation trends and association with various physical performance tests. *The Journal of Strength & Conditioning Research*, 34(12), 3538-3545.
- Di Nuovo, S., & Sinatra, M. (Eds.). (2022). *How to measure mind: A historical and epistemological approach to psychological assessment*. Hogrefe Publishing GmbH.
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research*, 40(1-2), 189-216. <https://doi.org/10.1023/A:1006859511756>
- Dietvorst, B. J., & Bharti, S. (2020). People reject algorithms in uncertain decision domains because they have diminishing sensitivity to forecasting error. *Psychological science*, 31(10), 1302-1314.
- Dijkhuizen, L. (2021). A walk in the woods: The role of focus groups in finding meaning. *Journal of European Baptist Studies*, 21(1), 67-85. <https://doi.org/10.25782/JEBS.V21I1.698>
- Distanont, A., & Khongmalai, O. (2020). The role of innovation in creating a competitive advantage. *Kasetsart Journal of Social Sciences*, 41(1), 15-21. <https://doi.org/10.16771/j.cn43-1247/ts.2019.09.028>.

- Dong, Q. (2012). The application of color in fiber art. *Art Research*, (1), 144-145. <https://doi.org/10.13944/j.cnki.ysyj.2012.01.012>.
- Dong, Z. J., & Xing, K. (2021). Transformation of function and production mode: Statistical analysis of key stages in China's century-old arts and crafts development. *Arts of Design*, (5), 85-93. <https://doi.org/10.3969/j.issn.1671-606X.2021.05.015>
- Dou, Q. (2021). Analyzing the development and emotional needs of traditional Chinese straw weaving craft. *West Leather*, (7), 11-12.
- Dsouza, J., Chakraborty, A., & Veigas, J. (2020). Biological connection to the feeling of happiness. *Journal of Clinical & Diagnostic Research*, 14(10), VE01-VE05. <https://doi.org/10.7860/JCDR/2020/45423.14092>
- Du, W. Y., & Xu, W.Q. (2014). The impact of power on conspicuous consumption under the circumstances of China: The mediating effect of face consciousness. *Nankai Business Review*, (5), 83-90.
- Edbring, E. G., Lehner, M., & Mont, O. (2016). Exploring consumer attitudes to alternative models of consumption: motivations and barriers. *Journal of Cleaner Production*, 123, 5-15. <https://doi.org/10.1016/j.jclepro.2015.10.107>
- Eiseman, L. (1998). Colors for your every mood: Discover your true decorating colors. Capital Books.
- Fan, H. (2022). The Dilemmas and Solutions in the Inheritance of Traditional Handicraft Culture. *Da Guan*, (03), 102-104. <https://doi.cnki:sun:dgl.0.2022-03-034>.
- Fan, Y., & Wang, L. (2023). Research on the application of zodiac culture in cultural and creative design. In *SHS Web of Conferences* (Vol. 162, p. 01016). EDP Sciences. <https://doi.org/10.1051/shsconf/202316201016>
- Fang, L. (2023). Ceramics of the spring and autumn and warring states periods. In *The History of Chinese Ceramics* (pp. 105-125). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-9094-6_4
- Fang, S., Muramatsu, K., & Matsui, T. (2015). Experimental study of aesthetic evaluation to multi-color stimuli using semantic differential method-towards the construction of an artificial kansei system. *Transactions of Japan Society of Kansei Engineering*, 14(1), 37-47. <https://doi.org/10.5057/jjske.14.37>
- Farrell, D., Gersch, U. A., & Stephenson, E. (2006). The value of China's emerging middle class. *McKinsey Quarterly*, 2(1), 60-69.
- Fernandes, A. S., & Feiner, S. K. (2016). Combating VR sickness through subtle dynamic field-of-view modification. In *2016 IEEE symposium on 3D user interfaces (3DUI)* (pp. 201-210). IEEE.

- Finch, W. H. (2020). Using fit statistic differences to determine the optimal number of factors to retain in an exploratory factor analysis. *Educational and Psychological Measurement*, 80(2), 217-241. <https://doi.org/10.1177/0013164419865769>
- Francesco, A. M. (2015). Confucian dynamism. In C. Cooper (Ed.), *Wiley encyclopedia of management* (p. 1-1). John Wiley & Sons, Inc.
- Frederick, M. S. (2020). William morris and interior design. In M. S. Frederick (Ed.), *The Routledge Companion to William Morris* (pp. 207-226). Routledge.
- Gaiardelli, P., Pezzotta, G., Rondini, A., Romero, D., Jarrahi, F., Bertoni, M., ... & Cavalieri, S. (2021). Product-service systems evolution in the era of Industry 4.0. *Service Business*, 15, 177-207.
- Galanis, P., Vraka, I., Katsiroumpa, A., Siskou, O., Konstantakopoulou, O., Katsoulas, T., ... & Kaitelidou, D. (2023). Predictors of second COVID-19 booster dose or new COVID-19 vaccine hesitancy among nurses: A cross-sectional study. *Journal of Clinical Nursing*, 32(13-14), 3943-3953.
- Gao, L. J. (2021). Analysis on the development pathway of luoyang tourism and culture creative products based on regional culture. *Journal of Luoyang Institute of Technology (Social Sciences Edition)*, (3), 91-96. <https://doi.org/10.3969/j.issn.1674-5035.2021.03.014>.
- Gaur, L., & Chandra, S. (2021). Product semantics: The emotional design language. In *Design for Tomorrow—Volume 1: Proceedings of ICoRD 2021* (pp. 607-618). Springer Singapore.
- Geng, M., & Duan, G. F. (2008). *Folk Purse*. China Light Industry Press.
- Gerson, K., & Damaske, S. (2020). *The science and art of interviewing*. Oxford University Press.
- Gil-Pérez, I., Rebollar, R., & Lidón, I. (2020). Without words: The effects of packaging imagery on consumer perception and response. *Current Opinion in Food Science*, 33, 69-77. <https://doi.org/10.1016/j.cofs.2019.12.006>
- Glaser, W. R. (1992). Picture naming. *Cognition*, 42(1-3), 61-105. [https://doi.org/10.1016/0010-0277\(92\)90040-O](https://doi.org/10.1016/0010-0277(92)90040-O)
- Gokarneshan, N. (2004). *Fabric structure and design*. New Age International.
- Guo, F., Liu, W. L., Cao, Y., Liu, F. T., & Li, M. L. (2016). Optimization design of a webpage based on Kansei engineering. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 26(1), 110-126. <https://doi.org/10.1002/hfm.20617>
- Guo, F., Qu, Q. X., Nagamachi, M., & Duffy, V. G. (2020). A proposal of the event-related potential method to effectively identify kansei words for assessing product design features in kansei engineering research. *International Journal of Industrial Ergonomics*, 76, 102940. <https://doi.org/10.1016/j.ergon.2020.102940>

- Guo, M., Lei, Y. D., Guo, Z. G., Jiang, Zh. H., & Song, J. T. (2023). Research Progress of Lu Embroidery in Shandong Intangible Cultural Heritage. *Shandong Textile Science & Technology*, (05), 39-43. <https://doi.cnki:sun:sdkj.0.2023-05-011>.
- Guo, Y., & Sun, M. G. (2016). The impact of cultural values on purchase intention of nostalgia products: The mediating effect of nostalgic aesthetics. *Journal of Zhejiang Gongshang University*, (3), 53-64.
- Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of marketing*, 46(2), 60-72.
- Habib, S., Hamadneh, N. N., & Khan, M. A. (2021). Influence of electronic word of mouth (Ewom) and relationship marketing on brand resonance: A mediation analysis. *Sustainability*, 13(12), 6833.
- Hader, K., Rumpf, M. C., Hertzog, M., Kilduff, L. P., Girard, O., & Silva, J. R. (2019). Monitoring the athlete match response: Can external load variables predict post-match acute and residual fatigue in soccer? A systematic review with meta-analysis. *Sports medicine-open*, 5(1), 48.
- Hai, M. (2018). The application of fiber art in interior design. *Architectural Design Management*, (3), 86-88. <https://doi.org/10.3969/j.issn.1673-1093.2018.03.019>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Ebscohost. (2019). *Multivariate data analysis* (8th ed.). Cengage.
- Hartati, N., & Yogi, H. P. S. (2019). Item analysis for a better quality test. *English Language in Focus*, 2(1), 59-70. <https://doi.org/10.24853/elif.2.1.59-70>
- Heckler, C. E. (2005). Applied multivariate statistical analysis. *Technometrics*, 41(4), 517. <https://doi.org/10.1198/tech.2005.s319>
- Helm, R., & Landschulze, S. (2013). How does consumer age affect the desire for new products and brands? A multi-group causal analysis. *Review of Managerial Science*, 7, 29-59. <https://doi.org/10.1007/s11846-011-0072-7>
- Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative Health Research*, 29(10), 1483-1496. <https://doi.org/10.1177/1049732318821692>
- Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization*, 10(4), 15-41. <https://doi.org/10.1080/00208825.1980.11656300>
- Hofstede, G. (1994). The business of international business is culture. *International Business Review*, 3(1), 1-14. [https://doi.org/10.1016/0969-5931\(94\)90011-6](https://doi.org/10.1016/0969-5931(94)90011-6)
- Holtzschue, L. (2012). Understanding color: an introduction for designers. John Wiley & Sons.

- Horak, S., Taube, M., Yang, I., & Restel, K. (2019). Two not of a kind: Social network theory and informal social networks in East Asia. *Asia Pacific Journal of Management*, 36, 349-372. <https://doi.org/10.1007/s10490-018-9602-z>
- Hu, Y. (2017). The value of fiber art in modern architectural space design. *Art Science and Technology*, (4), 50. <https://doi.org/10.3969/j.issn.1004-9436.2017.04.038>
- Huang, J. (2022). Color matching in children's room based on computer interactive experience. *Mathematical Problems in Engineering*, 2022, 7077711 . <https://doi.org/10.1155/2022/7077711>
- Huang, R., Yan, P., & Yang, X. (2021). Knowledge map visualization of technology hotspots and development trends in China's textile manufacturing industry. *IET Collaborative Intelligent Manufacturing*, 3(3), 243-251. <https://doi.org/10.1049/cim2.12024>
- Huang, Y., Chen, C. H., & Khoo, L. P. (2012). Products classification in emotional design using a basic-emotion based semantic differential method. *International Journal of Industrial Ergonomics*, 42(6), 569-580. <https://doi.org/10.1016/J.ERGON.2012.09.002>
- Human Resources And Social Security Department of Shandong Province. (2022). *The List of Craftsmen Artists in the Sixth Shandong Arts and Crafts Masters Exhibition*. <http://www.aq365.cn/zt/Gmds/index.html>
- Huo, F., Zhao, Y., Chai, C., & Fang, F. (2023). A user experience map design method based on emotional quantification of in-vehicle HMI. *Humanities and Social Sciences Communications*, 10(1), 1-10.
- Hytonen-Ng, E., Pihlainen, K., Ng, K., & Karna, E. (2022). Sounds of learning: Soundscapes-teacher perceptions of acoustic environments in Finland's open plan classrooms. *Issues in Educational Research*, 32(4), 1421-1440. <http://www.iier.org.au/iier32/hytonen-ng.pdf>
- Ibrahim, R. (2020). *Thinking Tools: Navigating a Three-Year Phd Journey*. Partridge Publishing Singapore.
- Inglehart, R. (1977). Values, objective needs, and subjective satisfaction among western publics. *Comparative Political Studies*, 9(4), 429-458. <https://doi.org/10.1177/001041407700900403>
- Inglehart, R. (2000). Culture and democracy. In E. L. Harrison & S. Huntington (Ed.), *Culture matters: How values shape human progress* (pp. 80-97). Basic Books.
- Jackson, J. B., Dewhurst, C. K., & Zhang, C. (2022). A survey of contemporary Bai craft Practices in the Dali Bai autonomous prefecture, Yunnan, China. *Museum Anthropology Review*, 16(1-2), 135-173. <https://doi.org/10.14434/mar.v16i1.34101>
- Jain, M. P., & Kabia, M. A. (2022). An Analytical Study On Consumption Values And Customers' Green Purchase Intention: A Case Of University Students In Haryana. *Journal of Positive School Psychology*, 9015-9022.

- Jasmy, F. A., Redzuan, F., Majid, R. A., & Karim, N. A. (2021). Emotional responses in augmented reality based M-learning applications using Kansei engineering for secondary school students. *Indonesian Journal of Electrical Engineering and Computer Science*, 24(3), 1846-1854. <https://doi.org/10.11591/ijeecs.v24.i3.pp1846-1854>
- Jiang, L. (2020). The beauty of materials - Fiber art in public spaces. *Interior Architecture of China*, (12), 120-122. <https://doi.org/10.3969/j.issn.1672-2167.2020.12.041>
- Jiang, W., & Jie, W. (2023). Space color design of medical and nursing institutions based on adaptive aging characteristics. *Journal of Landscape Research*, 15(3), 13-26.
- Jiao, Y., & Qu, Q. X. (2019). A proposal for Kansei knowledge extraction method based on natural language processing technology and online product reviews. *Computers in Industry*, 108, 1-11.
- Júnior, J. R. D. O., Limongi, R., Lim, W. M., Eastman, J. K., & Kumar, S. (2023). A story to sell: The influence of storytelling on consumers' purchasing behavior. *Psychology & Marketing*, 40(2), 239-261. <https://doi.org/10.1002/mar.21758>
- Kanchanapibul, M., Lacka, E., Wang, X., & Chan, H. K. (2014). An empirical investigation of green purchase behaviour among the young generation. *Journal of Cleaner Production*, 66, 528-536. <https://doi.org/10.1016/j.jclepro.2013.10.062>
- Kao, B.B. (2015). The application of three-dimensional composition in fiber art design. *Popular Literature and Art*, (5), 104-105. <https://doi.org/10.3969/j.issn.1007-5828.2015.05.094>
- Kaufman, L., & Rousseeuw, P. J. (2009). *Finding groups in data: an introduction to cluster analysis*. John Wiley & Sons.
- Kazancoglu, I., Kazancoglu, Y., Yarimoglu, E., & Kahraman, A. (2020). A conceptual framework for barriers of circular supply chains for sustainability in the textile industry. *Sustainable development*, 28(5), 1477-1492.
- Kent, R. (2020). *Data construction and data analysis for survey research*. Bloomsbury Publishing.
- Keyanfar, A., Meh, L., & Rabbani, R. (2022). Application of intelligence in solving architectural problems in the field of housing. In *2022 IEEE International Conference on Electronics, Computing and Communication Technologies* (pp. 1-6). IEEE.
- Khattak, M. N. A., Khattak, S., Tauqeer, F., & Seemi, I. (2024). Threads of Swat: Rediscovering the Beauty of Islampuri Shawls. *International Journal of Human and Society*, 4(1), 224-231. <https://ijhs.com.pk/index.php/IJHS/article/view/381>

- Kim, I., Jung, H. J., & Lee, Y. (2021). Consumers' value and risk perceptions of circular fashion: Comparison between secondhand, upcycled, and recycled clothing. *Sustainability*, 13(3), 1208. <https://doi.org/10.3390/su13031208>
- Koşar, S. T. A (2015). From tapestry towards fiber art. Skira
- Krueger, R. A. (2014). Focus groups: A practical guide for applied research. Sage Publications.
- Kuckartz, U. (2019). Qualitative text analysis: A systematic approach. In G. Kaiser & N. Presmeg (Ed.), *Compendium for early career researchers in mathematics education* (pp. 181-197). Springer.
- Kusumaningrum, D. E., Sumarsono, R. B., & Gunawan, I. (2019). Professional ethics and teacher teaching performance: Measurement of teacher empowerment with a soft system methodology approach. *International Journal of Innovation, Creativity and Change*, 5(4), 611-624.
- Lassen, N., Josefsen, T., & Goia, F. (2021). Design and in-field testing of a multi-level system for continuous subjective occupant feedback on indoor climate. *Building and Environment*, 189, 107535. <https://doi.org/10.1016/j.buildenv.2020.107535>
- Lee, B., & Yau, O. H. (2020). Where has the Forbearance Gone? A Critique of the Contemporary Chinese Cultural Values Models. *Journal of Euromarketing*, 29, 104-115.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, 22(4), 557-584. <https://doi.org/10.1037/1045-3830.22.4.557>.
- Leech, N. L., & Onwuegbuzie, A. J. (2008). Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond. *School Psychology Quarterly*, 23(4), 587-604. <https://doi.org/10.1037/1045-3830.23.4.587>.
- Li, Ch. X. (2019). Research on the Existing Forms of Gu Embroidery, the Traditional Handicraft in Today's Market. *Journal of Zhejiang Fashion Institute of Technology*, (04), 87-91.
- Li, J., & Li, X. H. (2020). Discussion on fiber art and fiber products. *Home Drama*, (30), 163-164 + 194.
- Li, J., & Pan, S. R. (2023). Art history's "Metamorphosis": Professor Li Jun on intermedia art history. *Art panorama*, (4), 104-113. <https://doi.org/10.3969/j.issn.1002-2953.2023.04.017>
- Li, M. H. (2019). Reconstruction of Chinese Cultural Values in the Cultural Identity Crisis. *Journal of Taiyuan Normal University (Social Science Edition)*, (02), 77-86. <https://doi.cnki:sun:dsyz.0.2019-02-015>.

- Li, M., & Choe, Y. H. (2023). Analysis of the influence of visual design elements of regional traditional culture in human-computer interaction. In *International Conference on Human-Computer Interaction* (pp. 84-97). Springer Nature Switzerland.
- Li, Y. (2024). Exploration of Socialist Cultural Values with Chinese Characteristics in the New Era. *Theory Research*, (01), 14-17. <https://doi.cnki:sun:lbyt.0.2024-01-005>.
- Li, Z. R., & Li, H. J. (2020). Research on product innovation design based on cultural translation. *Idea Design*, (6), 49-53. <https://doi.org/10.3969/j.issn.1674-5159.2020.06.010>
- Liang, K. (2018). Three value orientations in the development of contemporary fiber art. *Yedi*, (20), 129-135. <https://doi.org/10.17484/yedi.446854>
- Lin, C. D. (2003). *The comprehensive dictionary of psychology*. Shanghai Education Publishing House.
- Lin, L., & Xue, C. (2019). Review of research and development of computer aided Kansei Engineering. *Frontiers of Mechanical Engineering in China*, 4(2), 125-128. <https://doi.org/10.1007/s11465-009-0023-z>
- Lindberg, E., Gärling, T., & Montgomery, H. (1989). Differential predictability of preferences and choices. *Journal of Behavioral Decision Making*, 2(4), 205-219.
- Ling, Y. P. (2010, 13 March). Yantai Rongxiu: Embroidering the first stitch of Chinese velvet embroidery. *Yantai Daily*, 006.
- Liu, M., Gu, Y. T., & Shen, L. M. (2019). On the current situation and application prospect of willow knitting technology and its products. *Design Research*, (3), 16-20. doi: CNKI: SUN: JCGS.0.2019-03-004.
- Liu, R. N. (2023). Pingdu Xinhe Intangible Cultural Heritage Handicraft IP Image Design Exploration. *Shoes Technology and Design*, (11), 93-95. <https://doi.org/cnki:sun:zwxe.0.2023-11-032>.
- Liu, S. Z. (2019). Design principles and application of fiber art in the field of modern interior decoration design. *Journal of Heihe University*, (8), 181-184. <https://doi.org/10.3969/j.issn.1674-9499.2019.08.068>
- Liu, W. (2023). The Present situation, problems and countermeasures of domestic textile design in China. *Highlights in Art and Design*, 3(1), 45-49. <https://doi.org/10.54097/hiaad.v3i1.9170>
- Livingstone, M. S., & Hubel, D. H. (1987). Psychophysical evidence for separate channels for the perception of form, color, movement, and depth. *Journal of Neuroscience*, 7(11), 3416-3468. <https://doi.org/10.1523/JNEUROSCI.07-11-03416.1987>
- Lokman, A. M., & Nagamachi, M. (2010). *Kansei engineering: A beginners perspective*. University Pub. Centre.

- Lu, X. (2005). On aesthetic elements influencing modern fibre art. *Journal of Zhejiang Vocational Academy of Art*, (4), 111-115.
- Lu, X. M. (2023). Research on the Innovation and Transformation of Shandong Folk Crafts under the Strategy of Rural Cultural Revitalization. *Journal of Suihua University*, (12), 33-36. <https://doi.cnki:sun:shsz.0.2023-12-011>.
- Lu, X. S. (2019). University display halls and the representation of virtualized objects in teaching. Zhejiang University Press
- Lunde, K. S. (2018). Ancient, Indigenous and Iconic Textile Motifs in Contemporary Fashion Case Study: Defining Concepts through Textile Designs: Appropriation, Collaboration, Provenance and Identity. *Textile Society of America Symposium Proceedings*. <https://digitalcommons.unl.edu/tsaconf/1093>
- Marin, G., & Gamba, J. R. (2003). Acculturation and changes in cultural values. Acculturation: Advances in theory, measurement, and applied research (pp. 83-94).
- Maslow, A. H. (1943). Preface to motivation theory. *Psychosomatic Medicine*, 5(1), 85-92. <https://doi.org/10.1097/00006842-194301000-00012>
- Mathur, K., & Seyam, A. F. M. (2011). Color and weave relationship in woven fabrics. In S. Vassiliadis (Ed.), *Advances in Modern Woven Fabrics Technology* (pp. 129-150). InTech.
- Mattson, R. E., Rogge, R. D., Johnson, M. D., Davidson, E. K., & Fincham, F. D. (2013). The positive and negative semantic dimensions of relationship satisfaction. *Personal Relationships*, 20(2), 328-355. <https://doi.org/10.1111/j.1475-6811.2012.01412.x>
- McCrossan, P., Nicholson, A., & McCallion, N. (2022). Minimum accepted competency examination: test item analysis. *BMC Medical Education*, 22(1), 400. <https://doi.org/10.1186/s12909-022-03475-8>.
- McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed methods and choice based on the research. *Perfusion*, 30(7), 537-542. <https://doi.org/10.1177/0267659114559116>
- McNeish, D., & Wolf, M. G. (2023). Dynamic fit index cutoffs for confirmatory factor analysis models. *Psychological Methods*, 28(1), 61-88. <https://doi.org/10.1037/met0000425>
- Meng, F. X., & Kang, Z. N. (2023). Postmodern art world: Heritage, technological art development, and art community construction. *Ethnic Arts Quarterly*, (1), 105-116. <https://doi.org/10.16564/j.cnki.1003-2568.2023.01.002>.
- Meylia, V. P., & Iskandar, I. (2022). Redesign Sanjai Chips Packaging Using Kansei Engineering Method. *International Journal of Information Engineering and Electronic Business*, 12(6), 37.

- Miguel, P. M., Pereira, L. O., Silveira, P. P., & Meaney, M. J. (2019). Early environmental influences on the development of children's brain structure and function. *Developmental Medicine & Child Neurology*, 61(10), 1127-1133. <https://doi.org/10.1111/dmcn.14182>
- Miller, M. C. (1997). *Color for interior architecture*. John Wiley & Sons.
- Minkov, M., & Hofstede, G. (2012). Hofstede's fifth dimension: New evidence from the World Values Survey. *Journal of Cross-Cultural Psychology*, 43(1), 3-14. <https://doi.org/10.1177/00220221110388567>
- Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, 9(4), 50-79.
- Mohd Lokman, A. (2010). Design & emotion: The kansei engineering methodology. *Malaysian Journal of Computing*, 1(1), 1-14.
- Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology*, 22(1), 129-152. <https://www.jstor.org/stable/2083427>
- Nagamachi, M. (1995). Kansei engineering: a new ergonomic consumer-oriented technology for product development. *International Journal of Industrial Ergonomics*, 15(1), 3-11. [https://doi.org/10.1016/0169-8141\(94\)00052-5](https://doi.org/10.1016/0169-8141(94)00052-5)
- Nagamachi, M. (2008). Perspectives and the new trend of Kansei/affective engineering. *The TQM Journal*, 20(4), 290-298. <https://doi.org/10.1108/17542730810881285>
- Nagamachi, M. (Ed.). (2010). *Kansei Engineering, 2 Volume Set*. CRC Press.
- Nartker, K., Annett-Hitchcock, K., & Hoque, S. A. (2022). Consumer perceptions and concerns regarding aesthetic attributes of textile-based assistive devices: a qualitative analysis of online retail product reviews. *Research Journal of Textile and Apparel*. <https://doi.org/10.1108/RJTA-01-2022-0005>
- Narver, J. C., Slater, S. F., & MacLachlan, D. L. (2004). Responsive and proactive market orientation and new-product success. *Journal of Product Innovation Management*, 21(5), 334-347. <https://doi.org/10.1111/j.0737-6782.2004.00086.x>
- National Bureau of Statistics. (2020). *Agriculture and Related Statistical Classification* - 2020. https://www.stats.gov.cn/xxgk/tjbz/gjtjbz/202012/t20201221_1810322.html
- Neha, P., & Aravendan, M. (2023). A review on sustainable product design, marketing strategies and conscious consumption of bamboo lifestyle products. *Intelligent Information Management*, 15(3), 67-99. <https://doi.org/10.4236/iim.2023.153005>
- Nimkulrat, N. (2009). *Paperness: Expressive material in textile art from an artist's viewpoint*. University of Art and Design.

Niosi, A. (2021). Introduction to consumer behaviour. BCcampus

Nithyaprakash, V., Niveathitha, S., & Thambidurai, A. (2023). Interventions in traditional clothing systems through anthropological perspective. In *Sustainability Challenges in the Fashion Industry: Civilization Crisis, Decolonization, Cultural Legacy, and Transitions* (pp. 203-227). Springer Nature Singapore.

Nobre, H., Kumar, A., Kastanakis, M. N., & Paul, J. (2023). Consumers' relationship with mass prestige brands and happiness. *European Management Review*, 20(2), 306-325. <https://doi.org/10.1111/emre.12538>

Oribhabor, C. B., & Anyanwu, C. A. (2019). Research sampling and sample size determination: a practical application. *Journal of Educational Research (Fudjer)*, 2(1), 47-57.

Osgood, C. E. (2019). *Explorations in semantic space*. De Gruyter Mouton.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning* (No. 47). University of Illinois press.

Pan, L. S. (2019, August 2). Values Lead Art Creation. *China Cultural Daily*. <https://www.rmsznet.com/detailReading/161119/>

Pan, Y., Gao, L., Zhang, X., & Wan, Y. (2014). Research on consumer values in the context of Chinese culture - Scale development and comparison. *Journal of Management World*, (4), 90-106.

Pang, T. (2016). Traditional skills of alxa carpet in the context of new urbanization. *Packaging Engineering*, (18), 49-52. <https://doi.org/10.19554/j.cnki.1001-3563.2016.18.013>.

Pang, Y. G. (2008). Application of color in interior environment design. *China Construction*, (6), 44-45. <https://doi.org/10.3969/j.issn.2095-2104.2014.01.0797>.

Pantano, E. (2011). Cultural factors affecting consumer behaviour: a new perception model. *Euromed Journal of Business*, 6(1), 117-136. <https://doi.org/10.1108/14502191111130343>

Parameswara, A., Saskara, I. A. N., Utama, I. M. S., & Setyari, N. P. W. (2023). Exploring cultural value and its sustainability of balinese handwoven textiles. *Textile*, 21(1), 174-197. <https://doi.org/10.1080/14759756.2022.2043517>

Paul, J., Ueno, A., & Dennis, C. (2023). ChatGPT and consumers: Benefits, pitfalls and future research agenda. *International Journal of Consumer Studies*, 47(4), 1213-1225.

Plass, J. L., Homer, B. D., MacNamara, A., Ober, T., Rose, M. C., Pawar, S., ... & Olsen, A. (2020). Emotional design for digital games for learning: The effect of expression, color, shape, and dimensionality on the affective quality of game characters. *Learning and instruction*, 70, 101194.

- Potter, J., & Wetherell, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. Sage Publications, Inc.
- Pozzo, B. (2020). Fashion between inspiration and appropriation. *Laws*, 9(1), 5.
- Puimège, E., & Peters, E. (2019). Learners' English vocabulary knowledge prior to formal instruction: The role of learner-related and word-related variables. *Language Learning*, 69(4), 943-977.
- Punch, K. F., & Oancea, A. E. (2014). *Introduction to research methods in education*. Sage Publications.
- Qi, X., & Ploeger, A. (2021). An integrated framework to explain consumers' purchase intentions toward green food in the Chinese context. *Food Quality and Preference*, 92, 104229. <https://doi.org/10.1016/J.FOODQUAL.2021.104229>
- Qin, Z., Song, Y., & Tian, Y. (2019). The impact of product design with Traditional Cultural Properties (TCPs) on consumer behavior through cultural perceptions: Evidence from the young Chinese generation. *Sustainability*, 11(2), 426.
- Quan, H., Li, S., & Hu, J. (2018). Product innovation design based on deep learning and Kansei engineering. *Applied Sciences*, 8(12), 2397. <https://doi.org/10.3390/APP8122397>
- Radermecker, A. S. V., & Brosens, K. (2023). Valuing European tapestry: from riches to rags. *Journal of Cultural Economics*, 47, 359-406. <https://doi.org/10.1007/s10824-023-09484-9>
- Rahman, M. S. (2017). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language "Testing and Assessment" Research: A Literature Review. *Journal of Education and Learning*, 6(1).
- Ramstedt, F. (2020). *The interior design handbook: Furnish, decorate, and style your space*. Clarkson Potter.
- Rao, S. (2008). Creative thinking in artistic design. *China Ceramic Industry*, (1), 52-53. <https://doi.org/10.3969/j.issn.1006-2874.2008.01.014>
- Rea, L. M., & Parker, R. A. (2014). *Designing and conducting survey research: A comprehensive guide*. John Wiley & Sons.
- Ren, J. (2014). On the performance and application of fiber art in the interior design. *Value Engineering*, (26), 311-312.
- Rivera, J. D. (2019). Focus group administration in disaster research: methodological transparency when dealing with challenges. *International Journal of Mass Emergencies & Disasters*, 37(3), 241-263.
- Robinson, J. (2019). *Focus groups*. Sage.
- Romesburg, C. (2004). *Cluster analysis for researchers*. Lulu Press.

- Rosenkranz, R., & Altinsoy, M. E. (2020). Mapping the sensory-perceptual space of vibration for user-centered intuitive tactile design. *IEEE Transactions on Haptics*, 14(1), 95-108. <https://doi.org/10.1109/TOH.2020.3015313>
- Rusu, A. A. (2011). Traditional textile art between sustainability and economic growth. *Review of Applied Socio-Economic Research*, 1(2), 160-166.
- Ryan, T. P. (2013). *Sample size determination and power*. John Wiley & Sons.
- Ryu, K., & Jang, S. (2008). Dinescape: A scale for customers' perception of dining environments. *Journal of Foodservice Business Research*, 11(1), 2-22. <https://doi.org/10.1080/15378020801926551>
- Samli, A. C. (1995). International consumer behavior: Its impact on marketing strategy development. Greenwood Publishing Group.
- Samuel, O., & Onyinyechi, O. (2019). Attitude to age and socio-demographic information reporting: The unseen challenges to sustainable development goals. *Humanities*, 7(2), 90-104. <https://doi.org/10.18488/journal.73.2019.72.90.104>
- Saunders, M., Lewis, P. & Thornhill A. (2012). *Research methods for business students*. Pearson Education.
- Schacter, D. (2011). *Psychology*. Worth Publishers.
- Shang, Y. H. (2018). Research on the development of cultural and creative tourism in Shandong Province —— Take tourism handicraft design as an example. *Modern Economic Information*, (20), 496. <https://doi.org/10.3969/j.issn.1001-828X.2018.30.416>
- Schertz, K. E., & Berman, M. G. (2019). Understanding nature and its cognitive benefits. *Current Directions in Psychological Science*, 28(5), 496-502. <https://doi.org/10.1177/0963721419854100>
- Schmidt, S., Zlatkin-Troitschanskaia, O., Roeper, J., Klose, V., Weber, M., Bültmann, A. K., & Brückner, S. (2020). Undergraduate students' critical online reasoning—Process mining analysis. *Frontiers in Psychology*, 11, 57627. <https://doi.org/10.3389/fpsyg.2020.576273>
- Schreiber, J. B. (2021). Issues and recommendations for exploratory factor analysis and principal component analysis. *Research in Social and Administrative Pharmacy*, 17(5), 1004-1011. <https://doi.org/10.1016/j.sapharm.2020.07.027>
- Schütte S. (2005). Engineering emotional values in product design: kansei engineering in development. Institute of Technology.
- Schwartz, S. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, 5(2-3), 137-182. <https://doi.org/10.1163/156913306778667357>

- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19-45. <https://doi.org/10.1111/j.1540-4560.1994.tb01196.x>
- Schwartz, S. H. (1999). A theory of cultural values and some implications for work. *Applied Psychology*, 48(1), 23-47. <https://doi.org/10.1111/j.1464-0597.1999.tb00047.x>
- Schwartz, S. H. (2014). Rethinking the concept and measurement of societal culture in light of empirical findings. *Journal of cross-cultural Psychology*, 45(1), 5-13. <https://doi.org/10.1177/0022022113490830>
- Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, 32(3), 268-290. <https://doi.org/10.1177/0022022101032003002>
- Shandong Development And Reform Commission. (2024). *Shanhua carpet: Show the unique Oriental beauty to the world*. http://fgw.shandong.gov.cn/art/2024/4/28/art_104864_10435302.html
- Shandong Provincial Department of Culture And Tourism. (2023). *Representative Provincial Intangible Cultural Heritage Projects of Shandong Province 2023*. https://www.shandong.gov.cn/art/2023/12/21/art_305277_10346638.html
- Shandong Provincial Exhibition Industry Development Association. (2022). *Summary of Shandong Province's Main Exhibition Venues in Use*. Huizhan BEN. <http://hz-ben.com/newsinfo/3092520.html>
- Shandong Provincial Bureau of Statistics. (2021). *Bulletin of the Seventh National Population Census of Shandong Province* (No. 1). http://tjj.shandong.gov.cn/art/2021/5/21/art_104039_10287484.html
- Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of business research*, 22(2), 159-170.
- Shi, D., Maydeu-Olivares, A., & Rosseel, Y. (2020). Assessing fit in ordinal factor analysis models: SRMR vs. RMSEA. *Structural Equation Modeling: A Multidisciplinary Journal*, 27(1), 1-15.
- Shi, W. Y. (2021). The use of ethnic art elements in contemporary fiber art design. *Dyeing and Finishing*, (7), 96-97.
- Shi, Y., Bettache, K., Zhang, N., & Xue, L. (2021). Constructing nostalgia in tourism: a comparison analysis of genuine and artificial approaches. *Journal of Destination Marketing & Management*, 19, 100488.
- Singh, S., Singh, N., Kalinić, Z., & Liébana-Cabanillas, F. J. (2021). Assessing determinants influencing continued use of live streaming services: An extended perceived value theory of streaming addiction. *Expert Systems with Applications*, 168, 114241.
- Smardzewski, J. (2015). *Furniture design* (p. 649). Springer.

- Smith, J. (2021). *It Washes Through: Fibre Art and the Intertidal Zone in Contemporary Nova Scotia* [Unpublished doctoral dissertation]. Concordia University.
- Smith, T. A. (2014). *Bauhaus weaving theory: From feminine craft to mode of design*. University of Minnesota Press.
- Song, C., & Li, B. (2024). Strengthening the Consciousness of Chinese National Community among Contemporary Youth through Cultural Identity. *Youth and Adolescent Studies*, (01), 3-11+29. <https://doi.org/10.16399/j.cnki.qsnj.2024.01.001>.
- Song, Z. (2021). Interior textile design principles and trend —— review of interior textile design. *Hair Textile Technology*, (6), 108-109.
- Stake, R. E. (2013). *Multiple case study analysis*. Guilford press.
- Stathopoulou, A., & Balabanis, G. (2019). The effect of cultural value orientation on consumers' perceptions of luxury value and proclivity for luxury consumption. *Journal of Business Research*, 102, 298-312. <https://doi.org/10.1016/J.JBUSRES.2019.02.053>
- Steed, J., & Stevenson, F. (2020). *Sourcing Ideas for Textile Design: Researching Colour, Surface, Structure, Texture and Pattern*. Bloomsbury Publishing.
- Strauss, A. L. (1987). *Qualitative analysis for social scientists*. Cambridge University Press.
- Strauss, A. L., & Corbin, J. M. (Eds.). (1997). *Grounded theory in practice*. Sage Publications, Inc.
- Su, J., Su, K., & Wang, S. (2021). Does the digital economy promote industrial structural upgrading? —A test of mediating effects based on heterogeneous technological innovation. *Sustainability*, 13(18), 10105. <https://doi.org/10.3390/su131810105>
- Su, S., Sun, C., & Chen, R. (2013). Cultural value, perceived value, and consumer decision-making style in China: A comparison based on urbanization dimensi. *Nankai Business Review*, 16(1), 102-109. <https://doi.org/10.1108/NBRI-07-2013-0026>
- Subawa, N. S., Widhiasthini, N. W., Pika, P. A. T. P., & Suryawati, P. I. (2020). Hedonism on the behavior of consumer society as a global cultural transformation. *International research journal of management, IT and social sciences*, 7(2), 59-70.
- Sun, C. L. (2016). Feasibility study on the combination of Huangmei Picking Flowers and modern fiber art. *Home Drama*, (23), 180. <https://doi.org/10.3969/j.issn.1007-0125.2016.12.135>

- Suphasomboon, T., & Vassanadumrongdee, S. (2022). Toward sustainable consumption of green cosmetics and personal care products: The role of perceived value and ethical concern. *Sustainable Production and Consumption*, 33, 230-243.
- Sweeney, J. C., & Soutar, G. (2001). Consumer Perceived Value: The Development of a Multiple Item Scale. *J. Retail.* 7, 203–220.
- Tam, S., McKay, A., Sloan, S., & Ponsford, J. (2015). The experience of challenging behaviours following severe TBI: a family perspective. *Brain Injury*, 29(7-8), 813-821. <https://doi.org/10.3109/02699052.2015.1005134>
- Tan, Z. W. (2020). Color language expression in fiber art. *2020 Chinese Color Academic Paper Collection*, (10), 117-120. <https://doi.org/10.3969/j.issn.1005-555X.2020.10.026>
- Tao, F., Cheng, J., Qi, Q., Zhang, M., Zhang, H., & Sui, F. (2018). Digital twin-driven product design, manufacturing and service with big data. *The International Journal of Advanced Manufacturing Technology*, 94, 3563-3576.
- Thayer, R. E. (1996). The origin of everyday moods: Managing energy, tension, and stress. Oxford University Press.
- Tian, Z. B. (2012). The history of Chinese arts and crafts. Oriental Press.
- Tian, Y. (2021). Innovation and practice of traditional Chinese patterns in fiber art design. *Daguan Journal*, (5), 67-68. <https://doi.org/10.19554/j.cnki.1001-3563.2019.14.052>
- Tractinsky, N., Katz, A. S., & Ikar, D. (2000). What is beautiful is usable. *Interacting with Computers*, 13(2), 127-145. [https://doi.org/10.1016/S0953-5438\(00\)00031-X](https://doi.org/10.1016/S0953-5438(00)00031-X)
- Trejo, H. X., & Lewis, T. L. (2020). Evaluating New York raw fiber-to-retail. *Local Economy*, 35(8), 787-807. <https://doi.org/10.1177/02690942211007119>
- Tseng, C. H., & Wei, L. F. (2020). The efficiency of mobile media richness across different stages of online consumer behavior. *International Journal of Information Management*, 50, 353-364. <https://doi.org/10.1016/j.ijinfomgt.2019.08.010>
- Tzavlopoulos, I., Gotzamani, K., Andronikidis, A., & Vassiliadis, C. (2019). Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value and loyalty. *International Journal of Quality and Service Sciences*, 11(4), 576-587. <https://doi.org/10.1108/ijqss-03-2019-0047>
- Ulrich, K. T., & Eppinger, S. D. (2012). Concept selection. *Prod Des Dev 5th Ed Phila McGraw-HillIrwin*, 1, 145-61.

- Vieira, J., Osório, J. M. A., Mouta, S., Delgado, P., Portinha, A., Meireles, J. F., & Santos, J. A. (2017). Kansei engineering as a tool for the design of in-vehicle rubber keypads. *Applied Ergonomics*, 61, 1-11. <https://doi.org/10.1016/j.apergo.2016.12.019>
- Volli, U. (2022). Alimentation: A General Semiotic Model of Socialising Food. In S. Freymann (ed.), *Food for Thought: Nourishment, Culture, Meaning* (pp. 9-21). Scholastic.
- Vuong, Q. H. (2023). *Mindsponge theory*. Walter de Gruyter GmbH.
- Wang, B., Ji, T., & He, R. (2023). Empowerment or Disempowerment: The (Dis)empowering Processes and Outcomes of Co-Designing with Rural Craftspeople. *Sustainability*, 15(5), 4468.
- Wang, C. W. (2023). Research on innovative application of decorative materials in environmental design. *Shoes Technology and Design*, (7), 180-182. <https://doi.org/10.3969/j.issn.2096-3793.2023-07-060>
- Wang, C., Zhang, F., Wang, J., Doyle, J. K., Hancock, P. A., Mak, C. M., & Liu, S. (2021). How indoor environmental quality affects occupants' cognitive functions: A systematic review. *Building and environment*, 193, 107647. <https://doi.org/10.1016/J.BUILDENV.2021.107647>
- Wang, F. (2021). *Textile and clothing*. Industry weekly report.
- Wang, J. (2022). Analysis of the characteristics of intangible cultural heritage of traditional handicrafts and its value of exhibition space design. *Journal of Sociology and Ethnology*, 4(6), 131-135. <https://doi.org/10.23977/jsoc.2022.040619>
- Wang, J. M. (2021). The application of fiber art in modern interior soft decoration. *Residence*, (1), 23-24.
- Wang, X. C. (2022). Innovative application research of Yantai Rongxiu in soft furnishing design. *Residence*, (31), 75-77.
- Wang, Y. M. (2023). The application of Suzhou embroidery in cultural and creative products. *Culture and Design*, (13), 111-113.
- Wang, Y., & Zhu, Z. G. (2021). The influence of online word-of-mouth and observed learning on consumers' purchase intention for geographical indication products - The moderating effect of trust. *Jiangsu Agricultural Sciences*, (10), 223-230. <https://doi.org/10.15889/j.issn.1002-1302.2021.10.041>
- Wang, Z. Z. (2021). Research on diversified properties of fiber art materials. *Shanghai Arts and Crafts*, (2), 103-104.
- Ward, V. M., Bertrand, J. T., & Brown, L. F. (1991). The comparability of focus group and survey results: Three case studies. *Evaluation review*, 15(2), 266-283. <https://doi.org/10.1177/0193841X9101500207>

- Watt, J. C., & Wardwell, A. E. (1997). *When silk was gold: Central Asian and Chinese textiles*. Metropolitan Museum of Art.
- Weber, M., Martindale, D., & Neuwirth, G. (1958). *The city* (Vol. 93421). Free Press.
- Wen, J., Lu, X., Jiang, M., & Shao, X. (2022). Creativity of nanofiber materials and application in the expressive power of manual tie-dyeing process. *Advances in Materials Science and Engineering*, 2022, 9339362. <https://doi.org/10.1155/2022/9339362>
- Wibowo, A., Chen, S. C., Wiangin, U., Ma, Y., & Ruangkanjanases, A. (2020). Customer behavior as an outcome of social media marketing: The role of social media marketing activity and customer experience. *Sustainability*, 13(1), 189. <https://doi.org/10.3390/su13010189>
- Williams, C. (2007). Research methods. *Journal of Business & Economics Research*, 5(3), 65-72.
- Williams, R. (1985). *Keywords: A Vocabulary of Culture and Society*, revised edn. Oxford University Press
- Wormleighton, A. (2004). *Victoria: Decorating with a personal touch*. Hearst Books.
- Wu, Y. Y., & Yu, Y. (2020). *Fiber art design and practice*. China Light Industry Press.
- Xiao, Y. Q. (2021). Innovation and development of natural dyeing craft in space design styles - Tomorrow's Fashion. *Tomorrow's Fashion*, (12), 133-135.
- Xie, W. X. (2021). Methods and property analysis of biochar preparation from waste textiles. *Environmental Protection and Circular Economy*, (4), 17-20. <https://doi.org/10.3969/j.issn.1674-1021.2021.04.005>
- Xiong, J. X., Qi, R. W., Wan, L., & Zhu, Q. (2011). *New thinking on interior display and design*. Jiangxi fine arts publishing house CO. INC.
- Xu, F., Yang, X. D. & Zhao, J. (2013). Research on the development bottleneck of Hunan Embroidery in the modern industrial society. *Journal of Hunan Institute of Engineering*, (2), 119-123.
- Xu, G. L. (2022). What Does Handicraft Mean Today?. *Journal of East China Normal University (Humanities and Social Sciences)*, (04), 125-136+178-179. <https://doi:10.16382/j.cnki.1000-5579.2022.04.013>.
- Xu, J. (2012). *Fiber hand-knitting art*. World Publishing Corporation.
- Xu, J., Li, M., Huang, D., Wei, Y., & Zhong, S. (2022). A comparative study on the influence of different decoration styles on subjective evaluation of hotel indoor environment. *Buildings*, 12(11), 1777. <https://doi.org/10.3390/buildings12111777>
- Yanagisawa, H. (2011). Kansei quality in product design. In *Emotional Engineering* (pp. 289-310). Springer.

- Yang, N., Zang, X., & Chen, C. (2022). Inheritance Patterns under Cultural Ecology Theory for the Sustainable Development of Traditional Handicrafts. *Sustainability*, 14(22), 14719.
- Yang, Y. X., & Zhang, E. J. (2019). Research on the Development and Utilization of Handicraft Intangible Cultural Heritage Items from the Perspective of Consumers—Investigation and Reflection from Mianyang City, Sichuan Province. *Sichuan Drama*, (10), 159-162+168.
- Yao, P. (2022). Spatial expression of multifaceted soft decoration elements: Application of 3D reconstruction algorithm in soft decoration and furnishing design of office space. *Journal of Sensors*, 2022(4), 1-11. <https://doi.org/10.1155/2022/5345293>
- Yau, O. H. (1988). Chinese cultural values: Their dimensions and marketing implications. *European Journal of marketing*, 22(5), 44-57. <https://doi.org/10.1108/EUM0000000005285>
- Yi, S., & Jai, T. (2020). Impacts of consumers' beliefs, desires and emotions on their impulse buying behavior: application of an integrated model of belief-desire theory of emotion. *Journal of Hospitality Marketing & Management*, 29(6), 662-681. <https://doi.org/10.1080/19368623.2020.1692267>
- Yin, D. B., Shao, H., Kuang, H. Y., Wu, P. F, Hong, W. W., Xu, Y. Q., & Liao, Y. Y. (2016). *An Introduction Design*. Hunan science & technology press CO. INC.
- Yin, R. K. (2014). Case study research: Design and methods (applied social research methods) (p. 312). Thousand Oaks, CA: Sage publications.
- Yin, W., & Xu, B. (2022). Perceptual Evaluations of Plant-Dyed and Industrial-Dyed Cotton Fabrics Based on Kansei Engineering. *AATCC Journal of Research*, 9(1), 23-34.
- Yu, C. (2023). Credit card customers' data visualization. *Advances in Education, Humanities and Social Science Research*, 5(1), 336-336. <https://doi.org/10.56028/aehtsr.5.1.336.2023>
- Zhang, L. (2018). Straw woven technique in Pingdu. *Ming Ri Feng Shang*, (17), 97. <https://doi.org/cnki:sun:mrfs.0.2018-17-111>.
- Zhang, L., & Shi, J. (2022). Research on Inheritance and Innovation of Shandong Intangible Cultural Heritage from the Perspective of Traditional Handicrafts. *Journal of Guangdong Industry Polytechnic*, (04), 77-80. <https://doi10.13285/j.cnki.gdqgxb.2022.0059>.
- Zhang, M. X. (2006). An empirical comparative research based on the relationship between the chinese consumer purchase behavior and cultural values. In *Collection of Papers from the 2006 Annual Conference and the Fourth National Membership Representative Conference of the China Marketing Society* (pp.1453-1460)

- Zhang, R. (2019). Consumer behavior toward decorative home textiles in the US market. North Carolina State University.
- Zhang, X. N. (2022, March 31). From Shandong Crafts to "Shandong Handicraft": Establishing the Connection between Traditional Crafts and Modern Life. *Pengpai News*. https://www.thepaper.cn/newsDetail_forward_17416605
- Zhang, X., & Dong, F. (2020). Why do consumers make green purchase decisions? Insights from a systematic review. *International Journal of Environmental Research and Public Health*, 17(18), 6607. <https://doi.org/10.3390/ijerph17186607>
- Zhang, Y. (2019). Library model for the protection of intangible cultural heritage documents: survey on the status of intangible cultural heritage literature resources in Zhejiang Province. *Journal of the library science society of Sichuan*, (6), 66-71.
- Zhang, Y. H., Liu, W. J., Xiao, D. R., & Tang, L. H. (2021). Research on innovative design of bamboo weaving based on organic design in Western Hunan Province. *China Forest Product Industry*, (2), 52-55. <https://doi.org/10.19531/j.issn1001-5299.202102012>
- Zhang, Y. T., Chen, Z. X., Fei, B. H., Wu, Z. H. & Chen, H. (2018). Development status of bamboo weaving process in different regions of China. *World Bamboo and Rattan*, (6), 37-41. <https://doi.org/10.13640/j.cnki.wbr.2018.06.009>.
- Zhang, Y., Yu, J., Zeng, J., & Zhao, Y. (2023). The evolution of fibre mural representation in public space. *Highlights in Art and Design*, 2(2), 94-101. <https://doi.org/10.54097/hiaad.v2i2.7036>
- Zhao, F. (2021). Chinese ancient loom and textile types. In *A New Phase of Systematic Development of Scientific Theories in China: History of Science and Technology in China* (pp. 205-255). Springer.
- Zheng, T. Z. & Wang, J. P. (2020). Perceptual research on printing pattern design for clothing. *Journal of Textile Research*, (8), 101-107. <https://doi.org/10.13475/j.fzxb.20191104407.12.27>
- Zhou, Y., & Liu, J. (2023). The predicament of Suzhou embroidery: Implications of intangible cultural heritage in China. *Textile*, 1-18. <https://doi.org/10.1080/14759756.2023.2228024>
- Zhu, H. (2009). The application of decoration skills in modern textile products. In *2009 IEEE 10th International Conference on Computer-Aided Industrial Design & Conceptual Design* (pp. 1705-1708). IEEE.
- Zhu, J. L. (2021). The application of graphic design techniques in textile pattern design. *Environmental Protection and Circular Economy*, (2), 13-14. <https://doi.org/10.3969/j.issn.1672-500X.2021.02.006>
- Zu, Q. (2017). Construction of consumer-oriented customer classification and evaluation system based on Kano model. *Acta Tabacaria Sinica*, (1), 122-129. <https://doi.org/10.16472/j.chinatobacco.2016.208>.

APPENDICES

Appendix 1

Ethical Approval



PEJABAT TIMBALAN NAIB CANSOLOR (PENYELIDIKAN DAN INOVASI)

OFFICE OF THE DEPUTY VICE CHANCELLOR (RESEARCH AND INNOVATION)

Rujukan kami : UPM.TNCPI.800-2/1/7

Tarikh : 27 June 2023

Dr. Sazrinee Binti Zainal Abidin
Department Of Industrial Design
Faculty of Design And Architecture
Universiti Putra Malaysia
Serdang, Selangor

Dear Madam/Sir,

**RESEARCH PROJECT: CONSTRUCTING THE CULTURAL VALUE ORIENTATION
FRAMEWORK IN FIBER ARTS CRAFTS FROM THE CONSUMER PERCEPTIONS FOR
CHINESE MODERN HOME LIVING**

REFERENCE NO: JKEUPM-2023-136

PRINCIPAL INVESTIGATOR : DR. SAZRINEE BINTI ZAINAL ABIDIN

**CO-INVESTIGATOR : ASSOC. PROF. DR. NAZLINA BINTI SHAARI, DR.
NORANITA BINTI MANSOR, WANG NA (STUDENT)**

The Ethics Committee for Research involving Human Subjects of University Putra Malaysia (JKEUPM) has studied the proposal for the above project and found that there were no objectionable ethical issues involved in the proposed study.

Please find the list of documents received and reviewed with reference to the study and committee members who reviewed the documents (as attached).

Notwithstanding above, we will not be responsible for any misconduct on the part of researcher in the course of carrying out the research.

Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

Thank you.

“WITH KNOWLEDGE WE SERVE”

Sincerely yours,

PROF. DR. ZAMBERI SEKAWI

Chair

Ethics Committee for Research involving Human Subjects
Universiti Putra Malaysia

**ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS
(JKEUPM)
UNIVERSITI PUTRA MALAYSIA**

Research title	: Constructing The Cultural Value Orientation Framework In Fiber Arts Crafts From The Consumer Perceptions For Chinese Modern Home Living Universiti Putra Malaysia.
Study Site	: Shandong Province, China.
JKEUPM Ref No.	: JKEUPM-2023-136
Principal Investigator	: Dr. Sazrinee Binti Zainal Abidin
Co-investigator	: Assoc. Prof. Dr. Nazlina Binti Shaari, Dr. Noranita Binti Mansor, Wang NA (Student)

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 1 dated 09/02/2023
2. Respondent's Information Sheet / Consent (English), Version 2 dated 13/03/2023
3. Proposal (English), Version 2 dated 19/05/2023
4. Questionnaire / Interviews (English), Version 1 dated 09/02/2023
5. Curriculum Vitae of:
 - a. Assoc. Prof. Dr. Nazlina Binti Shaari
 - b. Dr. Noranita Binti Mansor
 - c. Wang Na

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.

Decision by JKEUPM:

- ☒ Approved
- ☒ **Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research**
- ☐ Disapproved

Please note that the approval is **VALID UNTIL 27 JUNE 2024**

Researchers should comply with the following:

- I. Complete a Study Final Report upon study completion (Form 3.2).
- II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.
- III. Applicable for Clinical Trial Studies and Clinical interventional Studies only: Progress Report has to be submitted to JKEUPM at every 6 months from the date of approval (Form 3.1). Report occurrences of all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs) and Protocol Deviation/ Violation at all JKEUPM approved sites to JKEUPM. All serious adverse events (SAEs) detected or being notified should be reported

immediately to the sponsor except for those SAEs that the protocol or other document (e.g., Investigator's Brochure) identifies as not needing immediate reporting. The immediate reports should be followed promptly by detailed, written reports.

The required forms can be obtained from the Ethics Committee for Research Involving Human Subjects (JKEUPM) website (<http://www.tncpi.upm.edu.my/faildokumen>).

Date of Approval: 27 June 2023

Members of the JKEUPM who reviewed the documents:

- i. Primary Reviewer: Dr. Siti Sarah Binti Herman
- ii. Informed Consent Reviewer: Dr Norliza Binti Ahmad / Assoc. Prof. Dr. Rosliza Binti Abdul Manaf



PROF. DR. ZAMBERI SEKAWI

Chair

Ethics Committee for Research involving Human Subjects
Universiti Putra Malaysia

JKEUPM is recognised by The Strategic Initiative for Developing Capacity in Ethical Review (SIDCER) in collaboration with the Forum for Ethical Review Committees in Asia and the Western Pacific Region (FERCAP) for its compliance with the Declaration of Helsinki, International Conference on Harmonization (ICH) Guidelines, Good Clinical Practice (GCP) Standards, Council for International Organizations of Medical Sciences (CIOMS) Guidelines, World Health Organization (WHO) Standards and Operational Guidance for Ethics Review of Health-Related Research and Surveying and Evaluating Ethical Review Practices, EC/IRB Standard Operating Procedures (SOPs), and Local Regulations and Standards in Ethical Review.

Appendix 2

Sample of Consent Form for Focus Group Discussion



Project: Integrated Framework of Cultural Values and Customer Perception for Shandong Modern Fiber Art Crafts in China

题目: 整合中国山东的现代纤维艺术手工艺品的文化价值观和消费者感知的框架

Na Wang

Researcher/ PhD Candidate

Universiti Putra Malaysia (UPM)

Faculty of Design and Architecture

Email:gs58877@student.upm.deu.my /+86-13332052160

Please Initial Box/

请在方框内选择

1. I confirm that I have read and understand the information provided in the above study and have had the opportunity to ask questions. /

我确认, 我已阅读和理解了该信息表上的研究并有机会提出问题。 ☒

2. I acknowledge that my participation is voluntary, and I am aware that I can withdraw at any time without providing a reason/

我明白, 我的参与是自愿的, 我可以在任何时候自由退出, 而不给出任何理由。 ☒

3. I consent to participate in the above study./

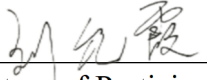
我同意参加上述研究。 ☒

4. I agree to the focus group discussion being audio and video recorded./

我同意采访/焦点小组/咨询是音频和视频记录。 ☒

5. I agree to the use of anonymised quotes in publications. /

我同意在出版物中使用匿名的引用。 ☒


Signature of Participant/参与者签名

Date/日期 2022 年 6 月 29 日


Signature of Researcher/研究员签名

Date/日期 2022 年 6 月 29 日

Appendix 3

Data Collections from FGD from NVIVO Applications

Experts Group	
Transcript	“...Each fiber art crafts is the embodiment of creators’ thoughts and spiritual culture. People can experience the philosophical thinking of ‘mastery in craftsmanship and unity between man and nature’ through fiber art crafts from China.” “...Traditional crafts showcase the harmonious relationship between humans and nature. The patterns and decorative materials used in traditional crafts are gifts from nature. Nature is the source of inspiration for human creativity and the embodiment of spiritual significance.” “...As a traditional craft, fiber art crafts reflect the harmony between humans and nature in terms of their craftsmanship and aesthetic ideas.” “...The cultural heritage of fiber art is also the bloodline, embodying the Chinese people’s identity and recognition.” “...The pursuit in the non-material aspect lies in the transformation of people’s ideas, which manifests in social interactions, consumption, and culture.”
Craftsmen Group	
Transcript	“...I believe that fiber art crafts carry positive energy.” “...People tend to prove their purchasing power and elevate their status through ‘mild luxury’ crafts.” “...Sales of fiber art crafts increase during traditional festive seasons.” “...New media further drives sales, with live streaming sales being popular.” “...The fiber art crafts industry needs influential figures, such as celebrity endorsements, to guide consumer choices.” “...Currently, fiber art crafts are often passed down within families or through apprenticeship.” “...Traditional crafts embody the spirit of craftsmanship and creativity, daring to break through and innovate in the trends of the times.” “...Fiber art creation exudes a sense of tranquility, emphasizing harmony with nature and conforming to its rhythm.” “...Some fiber art crafts can last for several decades or even centuries. These small crafts embody the dynamic succession of ideas and the continued development of Chinese culture.”
Designers Group	
Transcript	“...Under the spread and guidance of concepts such as domestic products, Chinese trends, and intangible cultural heritage, mass consumption is leaning towards mainstream culture, gradually merging with the recognition of fiber art culture by the audience.” “...Consumption of fiber crafts is mainly based on physical objects, especially home decor, embodying the ideal of ‘daily necessities are the way’.” “...By giving handmade fiber art crafts as gifts to friends, the form has a positive value transfer. The gift giver puts more thought into the gift’s selection and production, and the gift’s emotional significance goes beyond its cost. Thus, gift-giving returns to being the sincerest expression, to some extent fulfilling the role of social therapy.” “...Fiber art has become an option for many young people interested in crafts to cultivate sentiment.” “More and more young people purchase fiber art crafts because they value its lifestyle emphasizing freedom and individuality.”
Consumers Group	
Transcript	“...I feel that fiber crafts have low economic value compared to precious jewelry and metal crafts.” “...I believe some fiber crafts convey blessings and symbolize happiness and fulfillment.” “...I think each fiber craft is unique and distinctive.” “...Presenting homemade fiber crafts as gifts to family and friends is not only special but also thoughtful.” “...When choosing fiber crafts, I would do some comparative shopping.” “...For fiber crafts with similar functions, I would choose well-established brands that I have previously purchased.” “...When making purchasing decisions, I am not easily swayed by advertisements or salespeople, but rather follow my own thoughts and preferences.” “...When buying fiber crafts, I emphasize practicality and lack pursuit for transcendent value.”

Appendix 4

Question Form for Questionnaire



Faculty of Design and Architecture
UPM Universiti Putra Malaysia
43400 UPM SERDANG
Tel:03-89464090/4017. Faks:03-89467044/89464080

Researcher: Na Wang
Student ID: GS58877
Programme: DOCTOR OF PHILOSOPHY(PhD)
Project Title: Integrated Framework of Cultural Values and Customer Perception for Shandong Modern Fiber Art Crafts in China
Contact No: +86-13332052160
Email: gs58877@student.upm.edu.my
Purpose: This document needs to determine whether the questions in the questionnaire are reasonable.
目的: 本文件需要确定问卷调查中的问题设置是否合理。

You are being invited to participate in this research study and please read the questions. I would like to know whether the questions in the questionnaire are reasonable. If yes, please read through this consent form again and sign in the column provided. Thank you for the consent./

我想知道调查问卷中的问题是否合理。如果是, 请再次阅读本同意书, 并在所提供的栏中签字。谢谢你的同意。



(Signature of Participant)

Date: 2022 年 7 月 5 日



(Name of Researcher and Date)

Date: 2022 年 7 月 5 日

Appendix 5

Expert Evaluation Form



Faculty of Design and Architecture
UPM Universiti Putra Malaysia
43400 UPM SERDANG
Tel:03-89464090/4017. Faks:03-89467044/89464080

Researcher: Na Wang

Student ID: GS58877

Programme: DOCTOR OF PHILOSOPHY(PhD)

Project Title: Integrated Framework of Cultural Values and Customer Perception for Shandong Modern Fiber Art Crafts in China

Contact No: +86-13332052160

Email: gs58877@student.upm.edu.my

Purpose: The main aim of this research is to propose a theoretical framework. The contribution of this research is integration framework of the relationship between the cultural values and customer perceptions of fiber art crafts to help the development of our country's fiber industry. Your participation in this session to give an expert review of this framework is very much appreciated. Thank you for your cooperation and for helping us to participate in this session.

目的: 本研究的主要目的是提出一个理论框架。本研究的贡献是发展文化价值观与消费者感知关系的整合框架, 以帮助我国纤维艺术产业的发展。非常感谢您参加本次会议, 并对该框架进行专家审查。感谢您的合作, 并帮助我们参加此次会议。

You are being invited to participate in this research study and please read the questions.

SECTION A: PERSONAL INFORMATION/个人信息

Name/姓名: 刘允霞
Institution/机构: 允霞民间工艺品有限公司

Category/职业类别: Academician/科研人员 ☐
Textile maker/手工艺人 ☒
Designer/设计师 ☐
Art Activist/艺术家 ☐

Gender/性别: Male/男 ☐
Female/女 ☒

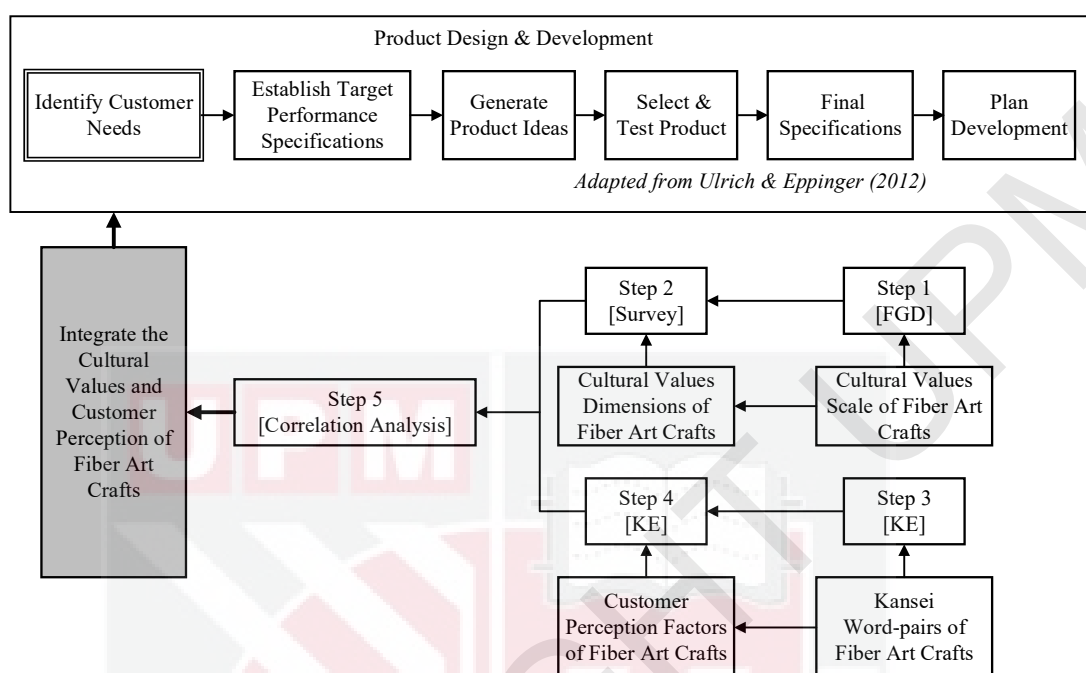
Education Level/教育程度: Diploma/专科 ☒
Degree/本科 ☐
Master/硕士 ☐
PhD/博士 ☐

Year experiences in field/从业年限: 30 years

SECTION B EXPERT REVIEW/专家评审

No	Items	Strongly Disagree/ 非常不同意	Disagree/ 不同意	Not Sure/ 不确定	Agree/ 同意	Strongly Agree/ 非常同意
1	The organization of content in this framework is clear/该框架的组织内容是清晰的.					√
2	This framework is relevant to revive the cultural value of fiber art crafts/该框架旨在复兴纤维工艺品的文化价值.					√
3	This framework provides the capability to easily support future textile needs/该框架的提出可以有效地支持未来的纺织需求.					√
4	This framework provides ability to support cultural value orientations understanding in the fiber maker/该框架为纤维制造提供了理解纤维工艺文化价值取向的能力.					√
5	This framework can help the designer to reproduce the fiber art crafts/该框架可以帮助设计师来再现纤维工艺的辉煌.				√	
6	This framework can help weavers maintain the original features of fiber art crafts/该框架可以帮助织工掌握纤维工艺的时代性.					√
7	This framework can help the designer identify the design features of the fiber art crafts/该框架可以帮助设计师识别纤维艺术手工艺品的设计特征.					√
8	This framework can help designers know the future and development of the fiber art crafts/该框架可以帮助设计师了解纤维工艺的未来发展趋势.				√	
9	This framework can help these designers identify the customer perception factors of the fiber art crafts/该框架可以帮助设计师识别消费者对纤维工艺品的感知因素.					√
10	This framework can help textile makers understand the value that exists in the process of making this fabric/该框架可以帮助纺织制造商理解在制造这种织物的过程中存在的审美价值.					√

SECTION C: The Cultural Values and Customer Perception Framework of Fiber Art Crafts （整合纤维艺术手工艺品文化价值观和消费者感知的框架）



The Cultural Values and Customer Perception Framework of Fiber Art Crafts

The development of this framework for the revitalization of fiber art offers a theoretical solution. This research contribution aims to establish a framework for integrating consumer cultural values and customer perception factors in order to support the growth of the Chinese fiber industry. Additionally, it is noted that interview analysis, data analysis, and document analysis were employed to uncover research findings.

这个理论框架的形成，为复兴纤维艺术提供了一个理论解决方案。这一贡献研究是最终建立了以整合消费者文化价值观和消费者感知因素关系的纤维艺术手工艺品的框架来帮助中国纤维工业的发展。除此之外，本研究还提到了访谈分析、数据分析和文档分析均被用于发现研究结果。

Appendix 6

Questionnaire 1 (English Version)



-NO. _____

CONSENT FORM OF PARTICIPANTS

Please make sure you agree with the following points clearly before answering the questionnaire:

- I understand the purpose and procedures of the study.
- I understand that completing the questionnaire does not benefit me.
- I understand that no personal identifying information like my name and address will be used.
- All information will be securely stored for 3 years before being destroyed.
- I understand that all of my responses are anonymous and will be kept in strict confidentiality by the researcher.
- I agree to participate voluntarily in these research study.

Signature: _____

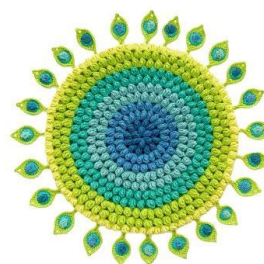
Date: _____

Dear Respondent,

This survey is a part of my PhD study at the Faculty Design and Architecture, University Putra Malaysia. The objective of the survey is “to investigate the cultural value orientations of Chinese consumers on fiber art crafts.” I would really appreciate if you could complete this (5 pages) survey. Any information obtained in connection with this study that can be identified with you will remain confidential. In any written reports or publication, nobody will be identified and only group data will be presented. Thank you

Section A: Respondents Background
(Please tick where is appropriate)

1. Sex: ☐ Man ☐ Women
2. Age: ☐ 18-25 ☐ 26-33 ☐ 34-42
☐ 43-50 ☐ 51-59 ☐ 60+
3. Academic qualification:
☐ Junior college and below
☐ University Degree
☐ Master/Phd
4. Occupation: ☐ Student ☐ Enterprise practitioners
☐ Self-employed ☐ Personnel of government agencies and public institutions
☐ Professional ☐ Other
5. Income (every month): ☐ Below the 3,000
☐ 3000 - 5,000 ☐ 5000 - 8,000
☐ 8000 -20,000 ☐ 20,000+



Section B: These pictures give you a more intuitive experience of fiber art crafts. Please indicate your level of agreement to the statement:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

		1	2	3	4	5
1.	I believe the practical value of fiber art crafts is more important to me than the cultural aspect.					
2.	I think fiber art crafts are highly practical in modern home life.					
3.	I believe that the decorative function of fiber art crafts is highly important in modern home decoration.					
4.	I think the usage rate of fiber art crafts in modern homes is gradually increasing.					
5.	When buying fiber art crafts, I will shop around and choose the best ones (price, quality, etc.).					
6.	When buying fiber art crafts, I will prioritize durable products.					
7.	I am not influenced by advertisements or salespeople when purchasing products.					
8.	I believe that the current forms of fiber art crafts should be diversified.					
9.	I believe that fiber art crafts should incorporate new technologies and concepts.					
10.	I believe that fiber art crafts can bring new surprises to life.					
11.	I pay more attention to the trendy cultural elements of fiber art crafts and like to purchase trendy products.					
12.	I think fiber art crafts can be given as gifts to friends and relatives.					
13.	I believe that self-made fiber art crafts are special, meaningful, and innovative.					
14.	The selection of fiber arts craft gifts is based on social status, relationships, and other criteria.					
15.	The warmth and simplicity of fiber art crafts maintain a warm connection between people.					
16.	The “mild luxury” has become a new positioning for crafts, and using fiber art crafts in modern home life has become a symbol of quality living.					
17.	People tend to use fiber art crafts to prove their purchasing power, enhance their status, and establish a sense of identity.					
18.	Being praised for having good taste when using fiber art crafts makes me feel confident and prestigious.					
19.	In my opinion, the regional popularity of fiber art crafts is gradually improving.					
20.	I believe that with increased publicity, people’s acceptance of fiber art crafts will also increase.					
21.	I expect guidance and recommendations from knowledgeable experts when purchasing fiber art crafts.					
22.	Follow most people’s choices can't go wrong when buying fiber art crafts.					
23.	There may be situations where I purchase fiber art crafts influenced by trends.					
24.	I tend to buy fiber art crafts during traditional festivals to create a festive atmosphere.					
25.	I believe that fiber art crafts are original and created purely by hand.					
26.	Using fiber art crafts can showcase my unique personality to others.					
27.	I think the fiber art crafts symbolize the pursuit of free and casual life concept.					
28.	I enjoy buying fiber art crafts with a solid historical and cultural atmosphere.					
29.	I like to keep fiber art crafts that hold significant memories.					
30.	I enjoy purchasing fiber art crafts with traditional symbolic meanings.					

31.	The craftsmanship and creative spirit of fiber art crafts closely follow the trends in modern home development.					
32.	I believe that the ideological concepts advocated by fiber art crafts embody the essence of moderation in culture.					
33.	Due to being purely handmade, fiber art crafts do not pursue large-scale production.					
34.	The current methods of inheriting fiber art crafts are through family traditions and apprenticeships.					
35.	I believe that the materials used in making fiber art crafts are environmentally friendly and sustainable.					
36.	Fiber art crafts can be reused, aligning with the values of green consumption.					
37.	I believe that fiber art crafts have high environmental attributes.					
38.	The visual elements of fiber art crafts draw inspiration from nature, displaying a simple beauty.					
39.	The layered textures and touch of fiber art crafts evoke a feeling of tranquility and leisure.					
40.	Fiber art crafts give a natural, soft, and warm feeling to people.					

Appendix 7

Questionnaire 1 (Chinese Version)

纤维艺术手工艺品的文化价值观取向调查

尊敬的女士/先生:

您好!非常感谢您能在百忙之中填写此问卷!

本次问卷调查旨在了解中国消费者对纤维艺术手工艺品的文化价值观取向。本次问卷匿名填写,所获结果仅用于学术研究,您不必担心泄漏您的隐私。所有问题均无对错之分,您真实的想法就是最好的答案。感谢您的支持!

纤维艺术手工艺品简介:

纤维艺术是在古老传统编织的基础上不断发展的一种新的艺术表现形式。现代纤维艺术以纺织艺术为背景,主要是软纤维材料,如棉花、丝绸、羊毛、人造纤维、合成纤维等。在本研究中的纤维艺术手工艺品是指艺术工作者用各种纤维材料,以美术工艺进行创作,制成的各种与实用相结合的并具有欣赏价值的物品,如织锦工艺品、刺绣、地毯、编结工艺品等。自2014年以来,伴随着中国纤维艺术的工业化面向生活的推广和发展,中国现代纤维艺术手工艺品在室内家居中的应用变得十分广泛。

下图可以使您更直观地感受纤维艺术手工艺品:



第一部分：基本信息

1. 您的性别：☐ 男 ☐ 女
2. 您的年龄段：☐ 18-25 岁 ☐ 26-33 岁 ☐ 34-42 岁
☐ 43-50 岁 ☐ 51-59 岁 ☐ 60 岁以上
3. 您的学历：
☐ 专科及以下
☐ 本科
☐ 硕士及以上
4. 您目前的职业：☐ 学生 ☐ 企业人员
☐ 个体经营者 ☐ 政府事业单位
☐ 自由职业者 ☐ 其他
5. 您的月可支配收入：☐ 3000 元以下
☐ 3000 - 5,000 元 ☐ 5000 - 8,000 元
☐ 8000 -20,000 元 ☐ 20,000 元以上

第二部分：

		很不同意				很同意
		1	2	3	4	5
1.	我认为相比文化层面，我更注重纤维艺术手工工艺品的现实价值。					
2.	我认为目前纤维艺术手工工艺品在现代家居生活中的实用性较高。					
3.	我认为纤维艺术手工工艺品在现代家居中装饰性功能是十分重要的。					
4.	我认为纤维艺术手工工艺品在现代家居中的使用率逐渐提高。					
5.	在购买纤维艺术手工工艺品时，我会货比三家，择优（价格、品质等）而定。					
6.	在购买纤维艺术手工工艺品时，权衡之下我会优先购买经久耐用的产品。					
7.	在选购产品时，我不会受到广告或售货员的诱惑。					
8.	我认为当下的纤维艺术手工工艺品的产品形式应该是多样化的。					

9.	我认为当下的纤维艺术手工艺品应该融入新的技术和理念。					
10.	我认为纤维艺术手工艺品可以给生活带来新的惊喜。					
11.	我认为纤维艺术手工艺品可以作为礼物赠送亲友。					
12.	我更关注纤维艺术手工艺品的流行文化元素，喜欢购买网红产品。					
13.	我认为通过自制纤维艺术手工艺品来表达心意，不仅特别，还很有心思。					
14.	我对纤维艺术手工艺品礼物的选择以社会地位、亲疏关系等作为评定标准。					
15.	我认为纤维艺术手工艺所具有的人情味和淳朴性，维系着人与人之间的温热。					
16.	“轻奢”成为手工艺品新定位，在现代家居生活中使用纤维手工艺品成为品质生活的象征。					
17.	人们倾向于通过“轻度奢侈”的纤维艺术手工艺品来证明自己的购买力、提升身份与认同感。					
18.	使用纤维艺术手工艺品会被人夸赞眼光好，让我觉得很自信，有面子。					
19.	我认为当下纤维艺术手工艺品的地域性知名度逐渐提高。					
20.	我认为随着宣传力度的提高，人们对纤维艺术手工艺品的接受度会提高。					
21.	我在购买纤维艺术手工艺品时会期望得到“懂行”人的指导与介绍。					
22.	在购买纤维艺术手工艺品时，跟随大部分人的选择不会出错。					
23.	在购买纤维艺术手工艺品时，会出现跟风购买的情况。					
24.	恰逢传统节日时，我会倾向购买纤维艺术手工艺品烘托节日氛围（例如春节购买中国结）。					
25.	我认为纤维艺术手工艺品是纯手工创作的，具有原创性和独特性。					
26.	使用纤维艺术手工艺品可以在他人面前展现我独特个性的一面。					
27.	我认为纤维艺术手工艺品象征着追求自由随性的生活理念。					
28.	我喜欢购买具有浓厚的历史人文气息的纤维艺术手工艺品。					
29.	我喜欢保留有纪念意义的纤维艺术手工艺品。					
30.	我喜欢购买具有传统寓意的纤维艺术手工艺品（例如带有吉祥寓意的产品）。					
31.	我认为纤维艺术手工艺品凝聚着工匠精神和造物精神，在现代家居的潮流中不断发展。					
32.	我认为纤维艺术手工艺品体现了思想观念的活态化传承和中华文化命脉的发展延续。					
33.	由于纤维艺术手工艺品是纯手工制作，导致其规模化生产程度低。					
34.	纤维艺术手工艺品目前的传承方式是家族传承、师徒传承的形式。					
35.	我认为制作纤维艺术手工艺品的材料是绿色的，生态的。					
36.	我认为纤维艺术手工艺品的加工工艺是环保无污染。					
37.	纤维艺术手工艺品是可以重复利用的，符合绿色消费的价值观。					
38.	我认为纤维艺术手工艺品的纹样元素源于自然生活。					
39.	纤维艺术手工艺品的材料是从大自然中提取的，是天然的。					
40.	透过纤维艺术手工艺品自带悠闲宁静之感，展现了我崇尚自然的心境。					

Appendix 8

Questionnaire 2 (English Version)



NO. _____

CONSENT FORM OF PARTICIPANTS

Please make sure you agree with the following points clearly before answering the questionnaire:

- I understand the purpose and procedures of the study.
- I understand that completing the questionnaire does not benefit me.
- I understand that no personal identifying information like my name and address will be used.
- All information will be securely stored for 3 years before being destroyed.
- I understand that all of my responses are anonymous and will be kept in strict confidentiality by the researcher.
- I agree to participate voluntarily in these research study.

Signature: _____

Date: _____

Dear Respondent,

This survey is a part of my PhD study at the Faculty Design and Architecture, University Putra Malaysia. The objective of the survey is "to investigate the Kansei word pairs of fiber art crafts." I would really appreciate if you could complete this (3 pages) survey. Any information obtained in connection with this study that can be identified with you will remain confidential. In any written reports or publication, nobody will be identified and only group data will be presented.

Thank you

Section A: Respondents Background
(Please tick where is appropriate)

1. Sex: ☐ Man ☐ Women
2. Age: ☐ 18-25 ☐ 26-33 ☐ 34-42
☐ 43-50 ☐ 51-59 ☐ 60+
3. Academic qualification: ☐ Junior college and below
☐ University Degree
☐ Master/Phd
4. Occupation: ☐ Student ☐ Enterprise practitioners
☐ Self-employed ☐ Personnel of government agencies and public institutions
☐ Professional ☐ Other

Section B: Select the suitable vocabulary to describe the feeling of fiber art crafts.



Embroidered Throw Pillow



Embroidered Ornament



Embroidered Jewelry Box



Embroidered Toy



Embroidered Painting



Embroidered Table Flag



Cashmere Carpet



Blended Carpet



Linen Tapestry



Knitted Seat Cushion



Woven Bamboo Lampshade



Woven Grass Seat Cushion



Woven Bamboo Food Cover



Woven Grass Toy



Bamboo Basket



Woven Straw Curtain

5. Your perceptual vocabulary description of fiber art crafts is (please select at least 32 pairs) [Multiple choice]

☐ Soft - Hard	☐ Modern - Antique	☐ Natural - Artificial
☐ Rhythmic - Gentle	☐ Delicate - Rough	☐ Practical - Not Practical
☐ Creative - Traditional	☐ Small - Big	☐ Simple - Fancy
☐ Smooth - Coarse	☐ Unique - Ordinary	☐ Elastic - Inelastic
☐ General - Individual	☐ Cheap - Expensive	☐ Durable - Nondurable
☐ Traditional - Modern	☐ Changing - Drab	☐ Lively - Dull
☐ Popular - Personal	☐ Like - Dislike	☐ Simple - Complex
☐ Flat - Solid	☐ Glossy - Dullish	☐ Sharp - Blunt
☐ Wild - Tender	☐ Childish - Mature	☐ Flamboyant - Inconspicuous
☐ Elegant - Tacky	☐ Luxurious - Plain	☐ Rational - Sensual
☐ Gorgeous - Awful	☐ Delicate - Strong	☐ Kind - Indifferent
☐ Noble - Mediocre	☐ Bright - Bleak	☐ Machine-made/Handmade
☐ Streamlined - Geometric	☐ Sparkling - Bland	☐ Light - Heavy

☐	Bold -Conservative	☐	Casual - Deliberate	☐	Innovative -Imitative
☐	Bright - Dim	☐	Young - Old	☐	Free - Bound
☐	Novel- Conventional	☐	Fresh - Stale	☐	Exaggerated - Restrained
☐	Cute - Calm	☐	Formal - Casual	☐	High quality - Low quality
☐	Tight -Loose	☐	Concrete - Abstract	☐	Comfortable - Uncomfortable
☐	Snug - Cool	☐	Blocky -Linear	☐	Complex - Simple
☐	Beautiful - Ugly	☐	Warm - Cold	☐	Indigenous - International
☐	Safe - Dangerous	☐	Harmonious - Messy	☐	Firm - Fragile
☐	Stain resistant - Non stain resistant				

Appendix 9

Questionnaire 2 (Chinese Version)

纤维艺术手工艺品感性词汇筛选调查问卷

根据以下图片，以及你对纤维艺术手工艺品的感知程度，选择符合主观的形容词对。



刺绣抱枕



刺绣摆台



刺绣盒子



刺绣玩偶



刺绣挂画



刺绣桌旗



羊绒地毯



混纺地毯



亚麻挂毯



针织坐垫



竹编吊灯



草编坐垫



竹编食物罩



草编玩偶



竹编篮子



草编挂帘

◆基本信息

1. 您的性别是:

☐ 男

☐ 女

2. 您的年龄是:

☐ 18-25 岁

☐ 26-33 岁

☐ 34-42 岁

☐ 43-50 岁

☐ 51-59 岁

☐ 60 岁以上

3. 您的学历是:

☐ 专科及以下

- ☐ 本科
- ☐ 硕士及以上
4. 您的职业是: ☐ 学生 ☐ 教育人员
- ☐ 行政机关 ☐ 企业人员
- ☐ 其他



◆感性词汇：选出适合的形容词汇，描述对纤维艺术手工艺品的感觉

5. 您对纤维艺术手工艺品的感性词汇描述是（请至少选出 32 对） [多选题]*

☐	柔软的/刚硬的	☐	现代的/传统的	☐	天然的/人工的	☐	律动的/平缓的
☐	细腻的/粗糙的	☐	实用的/装饰的	☐	创新的/沿袭的	☐	舒适的/不适的
☐	独特的/普通的	☐	光滑的/毛糙的	☐	小巧的/大气的	☐	有弹性的/无弹性的
☐	流行的/怀旧的	☐	便宜的/昂贵的	☐	耐用的/易坏的	☐	古典的/摩登的
☐	变化的/单调的	☐	活泼的/呆板的	☐	大众的/个性的	☐	喜欢的/讨厌的
☐	简洁的/复杂的	☐	平面的/立体的	☐	光泽的/无光泽的	☐	趣味的/乏味的
☐	野性的/温柔的	☐	稚气的/成熟的	☐	艳丽的/素净的	☐	典雅的/俗气的
☐	花俏的/平实的	☐	理性的/感性的	☐	华丽的/朴素的	☐	精致的/粗陋的
☐	亲切的/冷漠的	☐	高贵的/平庸的	☐	光亮的/黯淡的	☐	科技的/手工的
☐	流线的/几何的	☐	闪耀的/平淡的	☐	轻盈的/厚重的	☐	大胆的/保守的
☐	随意的/刻意的	☐	创意的/模仿的	☐	明亮的/暗淡的	☐	年轻的/老成的
☐	自由的/束缚的	☐	新颖的/老套的	☐	清新的/陈旧的	☐	夸张的/内敛的
☐	高档的/低档的	☐	正式的/休闲的	☐	可爱的/沉稳的	☐	紧密的/松散的
☐	具象的/抽象的	☐	坚固的/脆弱的	☐	温暖的/凉爽的	☐	块状的/线条的
☐	雅致的/拙朴的	☐	美观的/丑陋的	☐	本土的/国际的	☐	耐脏的/不耐脏的
☐	和谐的/杂乱的	☐	单纯的/丰富的	☐	安全的/危险的	☐	温馨的/冷漠的

Appendix 10

Questionnaire 3 (English Version)



NO. _____

CONSENT FORM OF PARTICIPANTS

Please make sure you agree with the following points clearly before answering the questionnaire:

- I understand the purpose and procedures of the study.
- I understand that completing the questionnaire does not benefit me.
- I understand that no personal identifying information like my name and address will be used.
- All information will be securely stored for 3 years before being destroyed.
- I understand that all of my responses are anonymous and will be kept in strict confidentiality by the researcher.
- I agree to participate voluntarily in these research study.

Signature: _____

Date: _____

Dear Respondent,

This survey is a part of my PhD study at the Faculty Design and Architecture, University Putra Malaysia. The objective of the survey is “to investigate the consumers’ perceived demand for fiber art crafts.” I would really appreciate if you could complete this (18 pages) survey. Any information obtained in connection with this study that can be identified with you will remain confidential. In any written reports or publication, nobody will be identified and only group data will be presented.

Thank you

Section A: Respondents Background
(Please tick where is appropriate)

1. Sex: ☐ Man ☐ Women
2. Age: ☐ 18-25 ☐ 26-33 ☐ 34-42
☐ 43-50 ☐ 51-59 ☐ 60+
3. Academic qualification:
☐ Junior college and below
☐ University Degree
☐ Master/Phd
4. Occupation: ☐ Student ☐ Enterprise practitioners
☐ Self-employed ☐ Personnel of government agencies and public institutions
☐ Professional ☐ Other
5. What level of fiber art crafts do you choose to buy for personal use or gift? [single choice]
☐ Low grade ☐ Middle grade ☐ High grade
6. When you buy fiber art crafts, which factors do you think are important? [multiple choice]
☐ Ornament ☐ Originality ☐ Cultural features
☐ Pack ☐ Function ☐ Price ☐ Level

Section B

Please Instructions:

Please read the listed Kansei word pairs and indicate with circle (✓) based on the scale of this questionnaire.

To what extent you agree/disagree with the follow statement:

For example:

	1	2	3	4	5	
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Hard				✓		Soft
						This product gives me the feeling: Soft

Section B: i (Embroidery)

Embroidered Throw Pillow

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Embroidered Ornament

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Embroidered Jewelry Box

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Embroidered Toy

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Embroidered Painting

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Embroidered Table Flag

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Section B: ii (Carpet & Tapestry)

Cashmere Carpet

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Blended Carpet

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Linen Tapestry

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Knitted Seat Cushion

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Section B: iii (Bamboo Grass Weaving)

Woven Bamboo Lampshade

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Woven Grass Seat Cushion

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Woven Bamboo Food Cover

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Woven Grass Toy

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Bamboo Basket

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Woven Straw Curtain

		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	
1	Dislike	☐	☐	☐	☐	☐	Like
2	Hard	☐	☐	☐	☐	☐	Soft
3	Rough	☐	☐	☐	☐	☐	Delicate
4	Uncomfortable	☐	☐	☐	☐	☐	Comfortable
5	Antique	☐	☐	☐	☐	☐	Modern
6	Machine-made	☐	☐	☐	☐	☐	Handmade
7	Not practical	☐	☐	☐	☐	☐	Practical
8	Imitative	☐	☐	☐	☐	☐	Innovative
9	Low quality	☐	☐	☐	☐	☐	High quality
10	General	☐	☐	☐	☐	☐	Individual
11	Nondurable	☐	☐	☐	☐	☐	Durable
12	International	☐	☐	☐	☐	☐	Indigenous
13	Complex	☐	☐	☐	☐	☐	Simple
14	Casual	☐	☐	☐	☐	☐	Formal
15	Big	☐	☐	☐	☐	☐	Small
16	Heavy	☐	☐	☐	☐	☐	Light
17	Plain	☐	☐	☐	☐	☐	Luxurious
18	Cool	☐	☐	☐	☐	☐	Warm

Appendix 11

Questionnaire 3 (Chinese Version)

纤维艺术手工艺品感知需求调查

尊敬的先生/女士您好，感谢您参与此次的问卷调查。本次问卷通过调研消费者对纤维艺术手工艺品的评价差异性，以此确定消费者对纤维艺术手工艺品的感知需求。本次调查为匿名方式，您的回答仅用于研究分析，我们承诺不向外透露您的信息。

1. 您的性别: [单选题] ☐ 男 ☐ 女
2. 您的年龄段: [单选题] ☐ 18-25 岁 ☐ 26-33 岁 ☐ 34-42 岁
☐ 43-50 岁 ☐ 51-59 岁 ☐ 60 岁以上
3. 您的学历是 [单选题]
☐ 专科及以下
☐ 本科
☐ 硕士及以上
4. 您目前从事的职业: [单选题] ☐ 学生 ☐ 企业人员
☐ 自由职业者 ☐ 政府机构人员
☐ 教育人员 ☐ 其他
5. 您会选择购买哪个档次的纤维艺术手工艺品自用或赠人? [单选题]
☐ 低档次 ☐ 中档次 ☐ 高档次
6. 购买纤维艺术手工艺品时，您看中的因素有? [多选题]
☐ 档次 ☐ 价格 ☐ 功能 ☐ 包装
☐ 文化特色 ☐ 创意 ☐ 装饰

Section B: i

说明： 请阅读所列出的汉字单词对，选择贴切的形容词对，并勾选出您的感受程度：

例如：

1 非常 不同 意	2 不同 意	3 一般	4 同意	5 非常 同意
刚硬的			√	
				柔软的

这个产品给我的
感觉： 有点柔
软

刺绣抱枕

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的

厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

刺绣装饰摆台

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

刺绣珠宝盒

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

刺绣玩偶

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

刺绣挂画

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

刺绣桌旗

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

羊绒地毯

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

混纺地毯

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

亚麻挂毯

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

针织坐垫

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

竹编吊灯

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

草垫

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

竹编食品罩

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

草编玩偶

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
模仿的	☐	☐	☐	☐	☐	原创的
个性的	☐	☐	☐	☐	☐	大众的
低档的	☐	☐	☐	☐	☐	高档的
不耐用的	☐	☐	☐	☐	☐	耐用的
国际的	☐	☐	☐	☐	☐	本土的
复杂的	☐	☐	☐	☐	☐	简洁的
休闲的	☐	☐	☐	☐	☐	正式的
庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

竹篮

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
粗糙的	☐	☐	☐	☐	☐	精致的
不适的	☐	☐	☐	☐	☐	舒适的
传统的	☐	☐	☐	☐	☐	现代的
手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
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个性的	☐	☐	☐	☐	☐	大众的
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国际的	☐	☐	☐	☐	☐	本土的
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庞大的	☐	☐	☐	☐	☐	小巧的
厚重的	☐	☐	☐	☐	☐	轻盈的
朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

草编挂帘

	1 非常不同意	2 不同意	3 一般	4 同意	5 非常同意	
不喜欢	☐	☐	☐	☐	☐	喜欢
刚硬的	☐	☐	☐	☐	☐	柔软的
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手工的	☐	☐	☐	☐	☐	机制的
装饰的	☐	☐	☐	☐	☐	实用的
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朴素的	☐	☐	☐	☐	☐	华丽的
冷漠的	☐	☐	☐	☐	☐	温馨的

BIODATA OF STUDENT

Wang Na was born in Shandong Province, China in 1988. She received her studies with a Bachelor of Painting (Digital Media Art) in the Chinese Tianjin Academy of Fine Arts in 2011. She has been engaged in fiber art design and research from 2014 until now. Her works have won many awards in various significant competitions in China. In September 2020, she started her Ph.D. studies in Integrated Design Studies at Universiti Putra Malaysia. Her research interests are in fiber art, weaving, interior decoration design, and design studies.

LIST OF PUBLICATIONS

Journals

Wang, N., Abidin, S. Z., Shaari, N., & Mansor, N. (2023). Exploring Innovation in Visual Language of Modern Fiber Art within the New Media Landscape. *Asian Journal of Research in Education and Social Sciences*, 5(3), 177-183.

Wang, N., Abidin, S. Z., Shaari, N., & Mansor, N. (2024). Influence of Chinese Cultural Values on Consumer Decision-making: A PRISMA-based Systematic Review. *International Journal of Advanced and Applied Sciences*, 11(2), 9.

Wang, N., Abidin, S. Z., Shaari, N., & Mansor, N. (2024). Analysis of Consumer Perceived Needs of Fiber Arts and Crafts in the Internet Era with Perceptual Engineering as an Orientation. *Applied Mathematics and Nonlinear Sciences*, 9(1).

Conferences

Wang, N., Abidin, S. Z., Shaari, N., & Mansor, N. (2023). Exploring Innovation in Visual Language of Modern Fiber Art within the New Media Landscape. In *Proceedings of the 3rd International Virtual Conference on Education, Social Sciences & Technology 2023 (IVEST 2023)* (pp 133-140). Kuala Lumpur, Malaysia.