

A Study of Aesthetic Analysis on Modern Crafts

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Abstract. Based on the perspective of academic application and cultural dissemination, this study intends to explore the aesthetic value of Taiwan modern crafts. Through an approach of style analysis, this study examines the works selected from Taiwan Crafts Competition Award and Modern Crafts Yii Project. Both qualitative and quantitative methods are employed to explore the artistic essence and cultural reference of the creations. The study places the works in stylistic context to establish a theoretical framework of aesthetic analysis and criticism of Taiwanese modern crafts. A questionnaire is developed to obtain information required for style analysis. The data is analyzed using “Multidimensional Scaling” (MDS). The Consensus Assessment Technique (CAT) is employed in the study. A CAT questionnaire developed by Amabile is used to examine the performance of the works in three difference dimensions of creativity, technical goodness, and aesthetic appeal. Finally, a statistic technique of Multiple Regression Analysis will be employed to explore the significance of these three factors in each style of the works.

Keywords: Modern Crafts, Aesthetics, Style Analysis

1 Introduction

Starting from 2001, National Taiwan Craft Research and Development Institute (NTCRI) have held National Crafts Awards for 6 years, which was the most directional and representative crafts award in Taiwan. From 2007, National Crafts Awards was consolidated with Taiwan Craft Design Competition and found Taiwan Crafts Competition. This competition has been divided in two groups, including Traditional Crafts and Innovative Design; it is not only representing the most recent standard of Taiwan design industry but also reflecting the cultural significances of the modern time in Taiwan.

The design project, Yii, was conceived by NTCRI (National Taiwan Craft Research Institute) and TDC (Taiwan Design Center). It aims to combine traditional craftsmanship techniques and modern design concept, which not only successfully initiate a new page of craft style but also open up infinitive possibilities of crafts materials. Up to 2010, the manufacturing orders from the world have exceeded one hun-

dred million dollars. The traditional cognition on ‘crafts’ with the concept of ‘modern’ can evolve the diverse and abounding value which becoming the most successful example in the development of Taiwan creative industry.

This study focuses on analyzing the awarded champions in Taiwan Crafts Competition as well as the selected works from the digital exhibition of The Project Yii. Through quantitative analysis from diagnosis observation of experts, the objectives of this research can be achieved as follow:

1. To analyze the form of style to distinguish modern crafts.
2. To promote the aesthetic value of Taiwan modern crafts.
3. To establish a new aesthetic model for the development of Taiwan modern crafts.

2 Literature Review

2.1 Meaning of Modern Crafts

Shui-Long Yen, also known as the father of crafts in Taiwan, had suggested that crafts making artists should possess the correct understanding of the nation and society and create works which can capture people’s will and is able to employ as daily-used products, moreover, use best of the beauty of raw materials and modern life adaptations [10]. From the origin of craft making, human has made use of tools to solve their daily problems. When the basic life requirement is settled, crafts should sublimate into a tool for soul cultivation.

Recent craft has begun the growing emphasis of expressing cultural features and aesthetics performance, more and more consumers favor products that integrates with the beauty of craft. Norman, points out that a successful design must includes the aspects of usability, practicality, and aesthetics. He claims that the emotional side of design may be more critical to a product’s success than its practical elements [8]. In the 21st century, emotional design is in huge demands, which can be carried out through the aesthetic value of craft [6].

Based on Article 3 in the Law for the Development of the Cultural and Creative Industries, the “Cultural and Creative Industries” referred to the following industries that originate from creativity or accumulation of culture, which through the formation and application of intellectual properties, possess potential capacities to create wealth and job opportunities, enhancing the citizens’ aesthetic attainments and elevating living environment. Hereon, the citizen’s aesthetics accomplishment is advertised by the cultural and creative industries as non-economy achievements.. On the other hand, the raise of citizen’s aesthetics accomplishment is the fundamental gateway to open up the consumer market of cultural and creative industries.

In the article ‘Constructing the Value of Modern Craft’, Guo-Zhen Chen proposed the conceptual value of modern craft through the study of various international brands. She suggested many conceptual values of modern crafts: Highly value nature and humanity, respect traditional craftsmanship, integrate with science and technology, delightful living, express the local style, initiate a new fashion trend, and so on [3].

Jeff Dayu Shi claims that modern crafts are “a saleable product that possesses both aesthetics and artistry”, he stated that any design which lack aesthetic perception will lose its meaning [5]. This proves that modern crafts have strengthened its commercialization and modernization. Chian-Chi Lin has also pointed out that because modern aesthetic must possess popularization and navigability, modern should own high aesthetic sensitivity, which is the subtle difference that distinguishes itself from traditional crafts [5].

In conclusion, to achieve the targets “to create wealth and job opportunities, to enhance the citizens’ aesthetic attainments, and to elevate the citizens’ living environment”, stated in the Law for the Development of the Cultural and Creative Industries, modern craft takes craftsmanship as a carrier, culture as a connotation, and intergrades with design skills, to not only explore the lifestyle of people, but by sculpting the attraction of branding, creating distinguish and stylish products in the commercialized process as the fruitful results of the creative industry.

2.2 The Quantitative Exploration of Craft Aesthetics Analysis

To take account of the characteristics of art research, this paper will be supporting the art work analysis with quantitative research and by taking advantage of “consensus assessment technique” (CAT), we can integrate the observations and feedbacks of academics and experts. CAT was developed by an American psychologist, Teresa M. Amabile, to evaluate creativity through industrial products. For centuries creativity has been regarded as a mental trait of mankind, Amabile suggests defining creativity from a “product” perspective [1]. Hao-Cheng Chiu indicated that the CAT proves to be a useful tool for evaluating various types of works, via the nearly year-long inspection of numerous research series. The evaluation range includes Chinese poetry, storytelling, and art creation, applicable targets are adults and children [4].

Amabile stated that the evaluation process should notice the following key points: First, the evaluator must possess a certain level of knowledge background of the assess work. Second, evaluator must not be influenced by other people during the evaluation process. Third, evaluator should evaluate the various index of one work at a time and not comparing a certain index with numerous works simultaneously. The principle of Amabile will be considered as an important reference during the actual execution of this research [2].

The scale that Amabile developed has experienced multiple corrections and improvements; in 1983, he not only designed 23 items in the scale of art domain, but also provided a descriptive definition for each evaluation item.

Through factor analysis, the 23 items from above can be categorized into three main groups, creativity, technique, and aesthetics, and by eliminating the items with low factor capacity, we remain with 17 factors divided into three attributions:

1. Creativity--creativity, novel use of materials, novel idea, effort evident, variation in shapes, detail, complexity.
2. Technique--technical goodness, organization, neatness, planning evident, representationalism, symmetry, expression.
3. Aesthetics-- liking, aesthetic appeal, display.

3 Methodology

3.1 Research Instrument

This study focuses on the awarded champions of “Taiwan Crafts Competition” and the current digital exhibition from classical works of “The Project Yii”. Via quantitative research to explore the styles of works, we first combine related literature reviews with interview data to draw up a scale for analyzing various craftwork styles. The results would be employed into multidimensional scaling (MDS) for analyzing. MDS is a data analysis for categorizing observation values, furthermore, to analyze the potential structure hidden behind the scenes [9].

Through the five point scale survey composed by 16 groups of polar adjectives chosen by professionals (Table 1), the research develop a modern crafts aesthetic semantic differential scale questionnaire, which was then taken into MDS for further analyzing.

Table 1. The 16 Groups of Polar Adjectives of Semantic Differential Scale











tactile-visual	freehanded-realistic	traditional-modern	material-expressive
novel-ordinary	classical-avant-garde	functional-nonfunctional	conflicting-harmonic
natural-artificial	linear-curvilinear	integral-compositional	geometric-organic
ethereal-steady	gorgeous-plain	conventional-creative	intuitive-deliberate

3.2 Research Object

As for the work selection process of the research object, the pieces are chosen from two portions, one selected from “Taiwan Craft Design Competition” and the other selected from “The Project Yii”. Selection principle for the Taiwan Craft Design Competition are to chose the first prize pieces, one from the Traditional Crafts and one from the Innovation Design, due to the reason which the competition has been enforced for four years since 2010, there will be a total of 8 pieces put into selection process; second prize will be selected when first prize is absent.

In addition, products from “The Project Yii” is chosen according to the introduction of the Yii brand and current product list announced by the National Taiwan Craft Research and Development Institute, which listed 58 series of modern crafts beginning from 2007 to 2009; 37 works are currently displayed on the official website [7]. After consulting and compiling the opinions of experts, this study has chosen 10 representative works from the two events as research objects: Taiwan Craft Design Competition (4 pieces), and The Project Yii (6 pieces).

Table 2. Titles and Codes of 10 Representative Works of the Study

P1	P2		P3	P4	
					
<i>Hello</i>	<i>Taste of Memory</i>		<i>The Offering of the Blessing Boat</i>	<i>Zen Garden</i>	
P5	P6	P7	P8	P9	P10
					
<i>Lace Bowl</i>	<i>Moon Cup</i>	<i>World Cup: Black Lotus</i>	<i>Brick Plate</i>	<i>Cocoon project: Sofa</i>	<i>Bamboo Barstool</i>

4 Data Analysis

The study completed 92 effective questionnaires, covering different gender and three diverse educational backgrounds (craft and industrial design, design-related, non-design), the significant outcomes and discoveries are concluded as below:

4.1 MDS Analysis of Work Styles

The study begins with employing the MDS analysis to analyze the 10 selected pieces with the 16 groups of adjectives. According to the results of the two dimensional composition formed by MDS and the factor analysis between the selected pieces and the 16 groups of adjectives, this study has first completed the two dimensional distribution map of the 10 pieces. The map indicated that pieces such as no. 3 *The Offering of the Blessing Boat*, no. 10 *Bamboo Barstool*, no. 4 *Zen Garden*, and no. 5 *Lace Bowl* was distributed on the extreme positions of the X and Y axis (as shown in figure 1).

To explore the cognitive spatial position of each attribute, the research then applies the multiple regression analysis to calculate the included angle of each attribute located on the composition and created a cognitive map of the 16 attributes; we can see from the distribution map that the correlations coefficient between attribute 1 (Free-handed-Realistic) and attribute 14 is only .097, which means the relationship of the two attributes is practically uncorrelated, the included angle of the two attributes is approximately 90°, hence, is chosen for explaining the representative axis in the two dimensional cognitive space.

As you can see in fig. 3, p9 and p10 has landed in the first quadrant (Functional/Realistic); p2, p4, and p7 landed in the second quadrant (Functional/Realistic); the

third quadrant (Nonfunctional/Freehanded) landed p5 and p6; the fourth quadrant (Nonfunctional/Realistic) landed four pieces, including p1, p3, and p8.

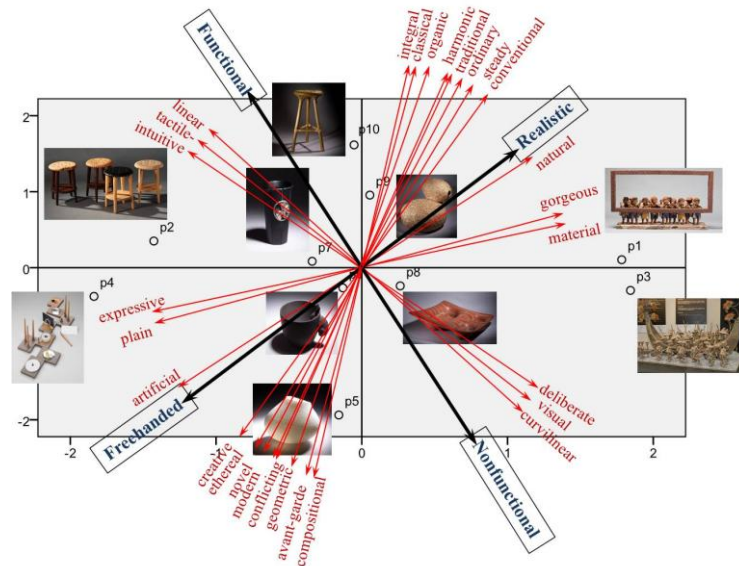












Fig. 1. The Cognitive Map of the 10 Selected Pieces and 16 Attributes

4.2 The CAT Analysis of the Evaluation of Works

This research analyzes the creativity of the 10 works by employing the CAT scale and evaluating these pieces by creativity, technique, and aesthetics dimensions (As shown in Table 3). The Kendall's coefficient of concordance was employed to verify whether if the 10 selected pieces possess consistency in the sequence of the three dimensions, the calculated outcome $W=0.736$ has achieved significant level ($p < .05$), the participant's evaluation shows that the works in the dimensions of creativity, technique, and aesthetics all possess a consistent ranking.

Table 3. The Ranking of Integral Expression

Works										
Mean	4.15	3.96	3.89	3.88	3.84	3.81	3.71	3.64	3.51	3.32
Ranking	1	2	3	4	5	6	7	8	9	10

In order to explore how participants opinions were affected by the educational background, An ANOVA test was conducted based on the evaluation data of four works derived from the outcome of MDS analysis. The selected works including

Blessing Boat, *Zen Garden*, *Lace Bowl*, and *Bamboo Barstool* were located on the extreme ends of the X and Y axis of the two dimensional distribution map.

Table 4 is a summary table of ANOVA for products evaluation by educational background. In the domain of creativity, the mean score of *The Offering of the Blessing Boat*, *Lace Bowl*, and *Bamboo Barstool* demonstrates significant variance due to educational background differences. In the domain of technique, aside from *Zen Garden*, the variation of the evaluation outcome indicates that due to the difference of the participant's educational backgrounds, the technical expression of the three other pieces, *The Offering of the Blessing Boat*, *Lace Bowl*, and *Bamboo Barstool*, reached significant level. In aesthetics domain, data analysis reveals that due to the difference of the participants' educational backgrounds, the evaluation variation of the aesthetic expression of *The Offering of the Blessing Boat* and *Bamboo Barstool* reached significant level. Finally, the variation of the evaluation outcome indicates that due to the difference of the participant's educational backgrounds, the evaluation variation of the integral expression of *The Offering of the Blessing Boat*, *Lace Bowl*, and *Bamboo Barstool* reached significant level.

Table 4. Analysis of Variance for Products Evaluation by Educational Background

Variables	Works	F	M			Scheffe's post hoc
			C&D	DR	ND	
Creativity	<i>Blessing Boat</i>	5.91**	3.88	4.25	4.39	3 > 1
	<i>Zen Garden</i>	0.14	3.34	3.31	3.31	1 > 2
	<i>Lace Bowl</i>	4.39*	4.54	4.08	4.21	
	<i>Bamboo Barstool</i>	6.94**	4.13	3.54	3.51	1 > 2, 1 > 3
Technique	<i>Blessing Boat</i>	5.94**	3.81	3.84	4.24	3 > 1, 3 > 2
	<i>Zen Garden</i>	0.51	3.51	3.29	3.39	
	<i>Lace Bowl</i>	4.87*	4.22	3.71	4.11	1 > 2
	<i>Bamboo Barstool</i>	5.5**	4.11	3.75	3.54	1 > 3
Aesthetics	<i>Blessing Boat</i>	5.78**	3.47	3.45	4.13	3 > 1, 3 > 2
	<i>Zen Garden</i>	0.08	3.21	3.31	3.21	
	<i>Lace Bowl</i>	2.27	4.45	3.95	4.04	
	<i>Bamboo Barstool</i>	5.87**	4.14	3.54	3.28	1 > 3
Integral Evaluation	<i>Blessing Boat</i>	6.76**	3.72	3.85	4.25	3 > 1, 3 > 2
	<i>Zen Garden</i>	0.04	3.35	3.30	3.30	
	<i>Lace Bowl</i>	3.87*	4.40	3.91	4.12	1 > 2
	<i>Bamboo Barstool</i>	7.29**	4.12	3.61	3.44	1 > 2, 1 > 3

*p < .05, **p < .01, C&D: Craft and industrial design, DR: Design-related, ND: Non-design

4.3 The Multiple Regression Analysis of Work's Preference

To explore how the three creative indexes affect the preference of products, this study took a further step and processed the multiple regression analysis, taking the dimensions of creativity, technique, and aesthetics as independent variables and the participant's preference towards the product as the dependant variable, the following are the results of the four examined products (Table 5).

Table 5. Three Indexes to Predict the Preference of the Works

Works	Predictor variables	B	r	β	t
<i>Blessing Boat</i>	Creativity	.152	.577***	.091	0.922
	Technique	.300	.626***	.167	1.619
	Aesthetics	.637	.766***	.601	6.634***
		R=.785	R ² =.617	F=47.248***	
<i>Zen Garden</i>	Creativity	.133	.660***	.096	0.905
	Technique	.071	.670***	.048	0.436
	Aesthetics	.775	.828***	.722	7.678***
		R=.833	R ² =.694	F=66.432***	
<i>Lace Bowl</i>	Creativity	.341	.716***	.226	2.910**
	Technique	.229	.692***	.156	2.024*
	Aesthetics	.588	.836***	.587	7.931***
		R=.872	R ² =.760	F=92.952***	
<i>Bamboo Barstool</i>	Creativity	.129	.686***	.090	0.878
	Technique	.299	.679***	.191	2.011*
	Aesthetics	.614	.809***	.611	6.582***
		R=.828	R ² =.686	F=64.120***	

*p < .05, **p < .01, ***p < .001

By looking at the work of *The Offering of the Blessing Boat*, F value of the integral regression model is 19.872, achieving significant level ($p < .001$), therefore, the score can be established as the basis for preference prediction. In the regression formula, the outcome shows that the aesthetics dimension reveals the highest significance ($\beta = .601$, $p < .001$).

Looking at the work, *Zen Garden*, the F value of the integral regression model is 66.432, achieving significant level ($p < .001$), therefore, the score can be considered as the basis for preference prediction. In the regression formula, the aesthetics dimension reached significant level ($\beta = .722$, $p < .001$).

The F value of the integral regression model is 92.952 for the work of *Lace Bowl*. The score can be considered as the basis for preference prediction ($p < .001$). In the regression formula, the outcome shows that the aesthetics dimension reveals the highest significance ($\beta = .587$, $p < .001$), followed by creativity dimension ($\beta = .226$, $p < .01$), and finally the technique dimension ($\beta = .156$, $p < .05$), all three dimensions have all achieved significant level.

The F value of the integral regression model is 64.120 for the work of *Bamboo Barstool*. The score can be considered as the basis for preference prediction ($p < .001$). In the regression formula, the outcome shows that the aesthetics dimension reveals the highest significance ($\beta = .611$, $p < .001$), followed by technique dimension ($\beta = .191$, $p < .05$), and finally the creativity dimension, the first two dimensions have both reached significant level.

5. Conclusions and Recommendations

5.1 Discussion of findings

This research focuses on the grand prize winners of “Taiwan Crafts Competition” and classical works from “The Project Yii”. Through the induction of research outcome, the conclusions are acquired as below.

MDS analysis of works style. The study employs MDS analysis to the champion works of “Taiwan Crafts Competition” and the current digital exhibition from classical works of “The Project Yii”, a total of 10 pieces of works process for style analysis, also employing realistic-freehanded and functional-nonfunctional attributes as independent dimensions, establishing four potential structures of work styles:

1. Functional/Realistic orientation: the cognitive images include integral, classical, organic, harmonic, traditional, ordinary, steady, and conventional.
2. Functional/Freehanded orientation: the cognitive images include linear, tactile, focus on expression, plain, and artificial.
3. Nonfunctional/Freehanded orientation: the cognitive images include creative, ethereal, novel, modern, conflicting, geometric, avant-garde, and compositional.
4. Nonfunctional/Realistic orientation: the cognitive images include natural, gorgeous, focus on material, deliberate, visual, and curvilinear.

In accordance with data analysis, the number of works was evenly distributed in the four quadrants; two works were located in the first quadrant (Functional/Realistic), works including *Cocoon project: Sofa* and *Bamboo Barstool*; three works were located in the second quadrant (Functional/Freehanded), works including *Taste of Memory*, *Zen Garden*, and *World Cup: Black Lotus*; two works were located in the third quadrant (Nonfunctional/Freehanded), works which includes *Lace Bowl* and *Moon Cup*; in the fourth quadrant (Nonfunctional/Realistic) includes three pieces, *Hello*, *The Offering of the Blessing Boat*, and *Brick Plate*.

CAT analysis of works' expression. The research results indicates the participant's evaluations towards the creativity, technique, and aesthetics dimension of each work, the sequence holds a consistent order. That is, when a work acquires a higher integral evaluation, the average performances in the creativity, technique, and aesthetics dimensions will also show better outcome.

Multiple regression analysis of works preference. Research findings show that the three dimensions and work's preference both holds a positive correlation, the overall regression model all achieved significant level, thus, the three dimensions can be established as the basis for preference prediction, as for the participants, the aesthetics dimension is easier to influence the work's integral preference.

5.2 Recommendations

Synthesizing the above results, this study provides suggestions concerning relative modern crafts development issues, the advice are listed as below:

1. To improve the national craft competition and reward system, it is suggested to integrate the evaluation of government, artists, and academics, by discussing and carefully planning the program.
2. Thorough technical training is the foundation of promoting the entire industry, educational institutes should emphasize the importance of craft education development, thus, the institutes should take on a more positive attitude and action towards providing students with competition award opportunities.
3. The aesthetics dimension is the easiest mean to influence a work's integral preference, aside from enhancing the aesthetics training of professionals, how to increase crafts appreciation of average consumer through education is the critical factor for facilitating national craft development.
4. To manage international market and create international brands are the main targets for the development of modern crafts, it is crucial for cultural administrative units and educational institutes to process interdisciplinary collaborations by implementing scholarship programs, providing grants and opportunity for outstanding gifted students to visit and engage in advance study abroad.

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