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RESEARCH ON RELATIONSHIP BETWEEN CULTURAL IDENTITY AND PRODUCT PREFERENCE

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ABSTRACT

This research focuses on the investigation of design and application of cultural characteristics in Jhishanyen Cultural and Historic Park. The aim is to identify local culture and pursue its transformation for design application in symbolic images and commercial products. The research question is to find which cultural patterns are preferable, which characteristics results in easily-identified cultural patterns, whether those patterns applied to products are more or less preferable, and whether aesthetic experiences influence the other main factors of product preference. In order to meet these objectives, researcher's extracted further cultural factors by reviewing relevant literature, conducting interviews and administering questionnaires regarding local culture. Correspondence Analysis was used to identify cultural characteristics. According to cultural characteristics of design patterns, from among seventy-two patterns, designers chose nineteen patterns based on local cultural identity and aesthetic preference. Then researchers applied those patterns to sofa material and a handbag. Through Semantic Differential method, Factor Analysis, Cluster Analysis, and Regression Analysis, researchers found the results of preference opinions among study participants. Results showed that three factors significantly influenced preference for the sofa material and handbag: symbolic of local culture, aesthetic sense, emotional affinity. Aesthetic sense was the factor which resulted in most participants selecting higher values for "identify with" or "like" regarding the patterns applied to design of sofa material or handbags. Among these types of products, the factor of being symbolic of local culture did not strongly influence "like" rankings.

Keywords: *regional culture, cultural identity, pattern, design transformation, aesthetic*

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1. INTRODUCTION

Cultural industry is currently one of the important developments in the global economy. Emphasis on cultural identity is a key factor in elevating the competitiveness of products in the global market, as well as a prime strategy for attracting tourism and investment. Whether or not the products are culturally identifiable is a key factor in creating product distinction; only if products designed with cultural character are able to draw attention, affirmation and preference, can they survive the stiff competition. In this economic model, design becomes an essential parameter of competitiveness [1]. Through design, creativity and aesthetics speak to consumers; used in product marketing, this allows consumers to experience the new identity that emerges from the interaction between practice and environment [2].

For products to be distinguished as culturally distinct, they must, foremost, allow consumers to feel the inherent meaning they are created to convey. Hence, cultural symbolism emphasizes the features that the masses take for granted [3]. Applying local cultural totems is a direct design method that is one affirmation of cultural transmission [4]. However, as different regions possess different cultural characteristics, using these on diverse products may results in varied images. Due to varying education backgrounds or personal preferences, those viewing the products may have differing perceptions. Thus, to find factors that commonly result in agreed upon imagery and preference for specified cultural products relies upon how the designer makes use of cultural elements in product design.

Another point is that in the 21st century, there is an emphasis on design for feeling; rich aesthetic design has already surpassed the requirement for product function [5]. Wilson [6] also pointed out that aesthetics plays a very important role in judging whether a product is good or bad or what it conveys; moreover, it influences product evaluation [7]. Accordingly, this study hypothesizes: For products with applied image designs, as visual products, aesthetic experience is an important factor is product preference.

In recent years, Taiwan has been awakening to the value of its own culture due to its unique geography and history. The combination of cultural sites, historical buildings and ecological landscapes make Jhishanyen Cultural and Historic Park a prime candidate for this study. Extracting its cultural characteristics as ingredients for design elevates the inherent meaning and added value of image designs and designs applied to products. This paper will primarily address three questions. 1. Will images with high cultural identity applied to products result in stronger preference? 2. Is aesthetics another strong contributing factor influencing product preference? 3. Do images designed with cultural distinction applied to different products result in construction of different cultural images?

2. LITERATURE REVIEW

Li [8] classified culture into three levels: (1) Material culture or technical culture; (2) Social group and ethical culture; (3) Spiritual culture and expressive culture. Yang [9] extended these three levels into: Physical level, Middle level, and Metaphysical superior level. Based on the literature, in this study we define culture as "the overall response of living dimensions including knowledge, beliefs, art, morals, laws, customs, as well as the acquired abilities and habits of society members."

Identity consciousness also arises and with it categorization, which is a basic process of recognition [10]. Ho and Li [4] pointed out that strategies for design of products with local identity include: emphasis on heritage, uniqueness, innovation, and local life. From this, the inherent trait variation and distinguish ability of cultural identity can be seen. This research focused on application guidelines for image design that emphasized the cultural characteristics of Jhishanyen's uniqueness, innovation, local landscapes and humanities.

Cultural elements stimulate original concepts of design. Zheng [11] divides cultural element applications into three types: Signal-to-Symbol Transformation, Real Role-Play Experience and Invisible Ideal Condition. The three different categories are divided into a more detailed classification with different methods. Signal-to-Symbol Transformation is not included in organic design in the natural environment. However, the environment influences the economic life of a society more than any other dimension [9]. Because the local environment affects a society's economic life and lifestyle, it forms particular cultural characteristics that are different from other societies. According to this concept, this study developed the following classification system: 1. Signal-to-Symbol Transformation: This refers to extracted elements of formulation, symbols, marks, colors, materials, heritage cultural technology, natural organic design and so on. 2. Real Role-Play Experience: This refers to the elements of transformational design from religions, historical legendary tales, folklore ceremonial activities, myths and customs. 3. Invisible Ideal Condition: This refers to application elements including historical role-play, symbols, psychological conditions and inherent relative meanings.

3. METHODS

There were three stages in this study（figure1）: first, extraction of cultural elements; second, design transformation and application; and third, survey and analysis of product images. Semantic Differential Method (SD Method), Factor Analysis, Hierarchical Cluster Analysis, and Regression Analysis were employed to analyze the product image data. The first two stages were processed according to the method previously described in detail by Tsai and Liao [12], so the details are not repeated here.

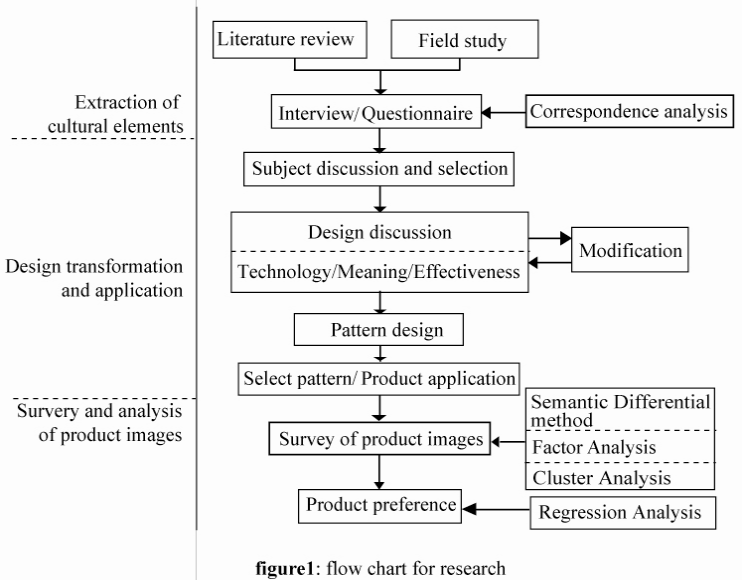

figure1: flow chart for research

3.1. Tranformational Design and Extract of Cultural Elements

Initial interviews were conducted among the residents of the neighbourhood around Jhishanyen Cultural and Historic Park in order to better perceive the dimensions of local culture. Moreover, data from the interviews became the basis for creating the subsequent questionnaire. Correspondence Analysis showed that Jhishanyen culture is based on the four dimensions of history, humanity, environmental landscape and natural ecology. The items representing these dimensions were laid out in a chart from which local residents selected categories. The researchers discussed the selection results with nine designers who then transformed the designs into seventy-two patterns. Following this path of analysis to extract cultural elements, we found that most of the transformations were created from considering natural world forms such as flora and fauna, as well as buildings and representative Signals to Symbols. Secondary were those created from Real Role-Play Experience of folk religion and historical legends. The fewest designs came from Invisible Ideal Condition transformation.

Among the seventy-two patterns, each of nine designers selected ten as the patterns they liked most and ten to represent the cultural characteristics of Jhishanyen. Furthermore, they expressed the reasons for their selections. The patterns that received three or more votes for each category totalled seventeen. In order to balance the themes, two more patterns were selected subjectively, bringing the total number of selected patterns up to nineteen. Then, the designers were asked to apply these patterns to handbag and sofa fabric. These products were selected for two reasons. First, creation of these patterns was done in part with textile production in mind. Second, these are both quite practical, not easily fading from fashion.

3.2. Product Image Survey

Eighty people, aged 18 to 60, participated in the survey, 40 of whom are local residents around Jhishanyen, A seven-point Likert scales, was used to rate 19 handbags and 19 sofa fabrics using descriptive contrastive terms from the literature. Thirteen terms were selected; besides 'identify with – opposed to' and 'like – dislike'; the others are listed in both table 1 and table 2. Each of the 19 samples for each product were numbered and copied onto A4 paper. The participants were shown all 38 pages and checked their response for each description.

3.3. Product Image Analysis and Results

In order to discuss the key product structure elements, Semantic Difference results were further subjected to Principle Component Analysis. The data was first subjected to Kaiser Meyer Olkin (KMO) and Bartlett's Test of Sphericity, yielding KMO = 0.630 and 0.547, Bartlett's Test value = 248.779 and 249.395, significance = 0.000, 0.000, for sofa fabric and handbag, respectively, showing that this data is suitable for Factor Analysis. Principle Component Analysis extracted common elements, three of which achieved a cumulative variance of 88.990% for sofa fabric and 86.190% for handbag, both with an Eigenvalue of more than 1. Analytic results for these factors are shown in table 1 and table 2.

Table 1: Sofa Fabric Product Image Principle Component Analysis Results

No.	Descriptive Terms	Component		
		1	2	3
6	local trait – outsider trait	.949	.176	.085
7	old-fashioned – modern	.948	.201	.084
3	humane – commercial	.946	.158	.158
2	innovative – traditional	-.941	.139	.202
4	belief-preserving – atheistic	.831	-.330	.304
9	elegant – crude	.167	.956	.092
11	beautiful – ugly	-.271	.897	-.071
5	intimate – distant	.161	.864	-.295
1	natural -- man-made	-.073	.810	-.372
10	clean – complex	.148	.806	.098
8	unique – common	.146	-.138	.953
Eigenvalue		4.445	4.016	1.328
Variance		40.411	36.506	12.073
Cumulative Variance		40.411	76.917	88.990

As can be seen from the table above, the first primary component, composed of 'local trait – outsider trait', 'old-fashioned – modern', and so on, is called 'local culture image'. The second primary component, comprising 'elegant – crude', 'beautiful – ugly', etc, is called 'aesthetic experience'. The third primary component, constructed of 'unique – common,' which refers to one type of identification of locale, persons, events and things. This shows the concept of emotional affinity is constructed from the contrast of unique and common.

Table 2: Handbag Product Image Principle Component Analysis Results

No.	Descriptive Term	Component		
		1	2	3
3	humane – commercial	.984	.046	.062
6	local trait – outsider trait	.954	.100	.017
7	old-fashioned – modern	.954	-.060	-.213
4	belief-preserving – atheistic	.846	-.385	.187
2	innovative – traditional	-.682	.183	.652
11	beautiful – ugly	-.323	.898	.053
1	natural -- man-made	-.148	.843	-.051
9	elegant – crude	.146	.815	-.316
5	intimate – distant	.112	.773	-.327
8	unique – common	.264	-.201	.902
10	clean – complex	.139	.345	-.768
Eigenvalue		4.219	3.136	2.126
Variance		38.353	28.512	19.325
Cumulative Variance		38.353	66.865	86.190

The first primary component, 'local culture image', is composed of 'humane – commercial', 'local trait – outsider trait', and so forth. The second primary component, 'aesthetic experience', comprises 'beautiful – ugly', 'natural – man-made', etc. The third primary component, 'emotional affinity', is constructed of 'unique – common' and 'clean – complex'. The clean image can be interpreted as resulting from innovative techniques that might be another reason for uniqueness. Thus, this component can be interpreted as possessing the concept of emotional affinity as constructed from the contrast of unique and common.

In order to find the correspondence between product and image factors, the principal components points were plotted across each principal component, resulting in an image space; alongside Cluster Analysis results, the relationship between sofa fabric and image can be observed. Applying points derived from Primary Component Analysis to Ward's Minimum Variance Method resulted in four groupings, shown in figure 2 for sofa fabric and in figure 3. for handbag. The visual characteristics of the sofa fabric groups can be analyzed as: G1 is mostly derived from cultural elements of natural flora, transformed into hand sketches, brush strokes or geometric shapes that people experience as fresh, lovely, and finely elegant. So, this group is referred to as the Natural (flora) Series with elegant and beautiful style. G2, comprised of fauna shapes from the natural world using bold colors to create something new, is called the Natural (fauna) Series with innovative and unique style. G3 is derived from transforming man-made scenes and insects. The themes of Shepherd's Song and Brush and Red Carpet are expressed through abstract brush strokes, with the former in a repeating pattern of neat block and the latter in an abstract fashion. However, due to their bright colors, this is still referred to as the Natural (fauna) Series, but with neat and gaudy style. G4 comprises transformations of historical architecture, folk beliefs and life long ago. As it emphasizes local cultural traits, it is referred to as Historic Humanities Series with local folksy style. For the handbag, the visual characteristics of each group can be analyzed as: G1 is mostly derived from cultural elements of natural flora, transformed into brush strokes that are succinct, beautifully colored, and finely elegant. So, this group is referred to as the Natural (flora) Series with succinct and graceful style. G2, comprised of fauna shapes from the natural world using bold and lively colors, is called the Natural (fauna) Series with innovative and unique style. G3 comprises transformations of historical architecture, folk beliefs and life long ago, as it emphasizes local cultural traits. It is referred to as Historic Humanities Series with local and folksy style. G4 is derived from blending flora and fauna with life long ago, expressed through brush strokes, sketches, and computer drawings. As the colors and forms are fine and graceful, this is referred to as the Natural (fauna) Series with natural and refined style.

Figure 1: **Figure 2:** Sofa Fabric Plot

Figure 3: Handbag Plot

To better understand the 'identify with' and 'like' values for the products, an analysis was conducted of the cause and effect relationship for the valuation and image. First, 'identify with – opposed to' was treated as the dependent variable, with all the other descriptors as independent. Regression Analysis results are shown in table 3 for sofa fabric and table 4 for handbag. Following adjustment, R-square is 0.957 for sofa fabric and 0.900 for handbag, which are both very good model fits for the Regression Model. Moreover, the highly significant F-determinant for sofa fabric of 'beautiful' at $0.000 < 0.001$ and $0.003 < 0.005$ for 'elegant' shows that 'identify with' is constructed of 'beautiful', 'elegant' and others. As this is supported by the image clustering that groups 'beautiful' and 'elegant' together, the regression formula for 'identify with' among sofa fabric is determined to be: identify with = 0.656 × beautiful + 0.220 × elegant + 0.343. Meanwhile, on handbags, the highly significant F-determinant for 'beautiful' of $0.000 < 0.001$ and 0.001 for 'old-fashioned' shows that 'identify with' is constructed of 'beautiful' and 'old-fashioned'. Looking at the image clustering that groups 'beautiful' and 'nostalgic' together, the regression formula for handbags for 'identify with' is determined to be: Identify with = 0.683 × beautiful + 0.100 × old-fashioned + 0.556.

Table 3: Sofa Fabric Regression Coefficient for 'identify with'

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.401	.182		2.209	.041
	beautiful--ugly	.860	.056	.966	15.335	.000
2	(Constant)	.343	.142		2.416	.028
	beautiful--ugly	.656	.073	.736	8.993	.000
	elegant-Rude	.220	.063	.286	3.494	.003

a . Dependent Variable: identify with

Table 4: Handbag Regression Coefficient for 'identify with'

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.189	.207		5.743	.000
	beautiful--ugly	.594	.068	.904	8.723	.000
2	(Constant)	.556	.214		2.600	.019
	beautiful--ugly	.683	.054	1.039	12.765	.000
	old-fashioned	.100	.024	.335	4.113	.001

a. Dependent Variable: identify with

Next, 'like – dislike' was treated as the dependent variable, with all the other descriptors as independent. Regression Analysis results are shown in table 5 and table 6. Following adjustment, R-square is 0.971 for sofa fabric and 0.959 for handbag, which are both very good model fits for the Regression Model. Moreover, among sofa fabrics, the highly significant F-determinants for 'beautiful' and 'clean' of 0.000＜0.001 for both shows that 'like' is constructed of 'beautiful', 'clean' and others. As this is supported by the image clustering that groups 'beautiful' and 'sparing' together, the regression formula for 'like' with is determined to be: like = 0.832 × beautiful + 0.142 × clean + 0.085. For handbag, the highly significant F-determinant for 'beautiful' of 0.000＜0.001 shows that 'like' is constructed of 'beautiful' and other traits. The regression formula for 'like' with is determined to be: like = 0.817 × beautiful + 0.599.

Table 5: Table 5: Sofa Fabric Regression Coefficient for 'like'

		Unstandardized Coefficients		Standardized Coefficients		
	Model	B	Std. Error	Beta	t	Sig.
1	(Constant)	.184	.185		.993	.335
	beautiful--ugly	.953	.057	.971	16.647	.000
2	(Constant)	.085	.130		.655	.522
	beautiful--ugly	.832	.048	.847	17.295	.000
	clean – complex	.142	.032	.217	4.428	.000

a. Dependent Variable: like

Table 6: Table 6: Handbag Regression Coefficient for 'like'

		Unstandardized Coefficients		Standardized Coefficients		
	Model	B	Std. Error	Beta	t	Sig.
1	(Constant)	.599	.178		3.355	.004
	beautiful--ugly	.817	.059	.959	13.908	.000

a. Dependent Variable: like

Having employed ANOVA and Post Hoc test (LSD method) in examining 13 attributes of 19 samples on two products relatively, the results showed that all patterns had p＜0.001, indicating that there is significant difference between them. Among them, patterns 10, 12, 14 and 18 in construction of the local culture image, possessed the top five average values for humane, local trait and old-fashioned. However, while 12 was rated highly for 'like'; 10, 14 and 18 were rated opposite. It was found that pattern 3 placed third among average values for local culture image and first for 'like', 'identify with' and 'elegant'.

4. DISCUSSION AND CONCLUSION

Extraction of cultural characteristics applied to the design of sofa fabric revealed three primary components. First, 'local culture image', is constructed of images related to historical humanities. Second, 'aesthetic experience' is constructed mostly of images commonly related to aesthetics, such as elegant, beautiful, natural, clean, with the addition of intimate. Two of the images are comprised of elements extracted from nature images were likely interpreted as

having natural style, which is also one aesthetic standard. In other words, participants did not consider the ecological landscape elements as particularly representative of Jhishanyen. Third, 'emotional affinity' was primarily constructed of uniqueness, which is one type of identity with whatever historical humanity, ecology, geographic scene is reflected in the product image. The primary component analysis for the handbag yielded similar results, only in different orders.

Regarding product image, Cluster Analyses for the sofa fabric and handbag suggest that participants categorized themes into historical humanities and ecological landscape, the former including notable architecture, traces of historical life, beliefs, etc and the former comprising flora, fauna and natural geological landscapes. Looking at the characteristics of the clusters, four groups can be defined as flora, fauna, combined flora and fauna, and historic humanities. Among these, various styles were apparent: elegant and beautiful, innovative and unique, neat and gaudy, local and folksy, as well as natural and refined style. Only G3 of the sofa fabrics and G4 of the handbags were not so easily categorized, as the patterns were more diverse.

Comparing the pattern clusters for the two products, four patterns are found in the historical humanities group for both: 10 12 14 and 18, all revealing belief-preservation, local representative architecture, historical remnants and so on. These elements transformed into design patterns are better able to represent Jhishanyen culture with strong traits of identification and affinity. Although these patterns have strong identification with local culture, they didn't garner high values for 'like' on these products. From the ANOVA and Post Hoc test for the two products, pattern 3, with its third top ranking among average values for local culture image and first place ranking for 'like', 'identify with' and 'elegant' may be a model for images that express local cultural identity and are likable. This should be explored in further research.

The values of 'identify with' were composed of beautiful and elegant for the sofa fabric and of beautiful and old-fashioned for the handbag. As 'classic' includes beauty along with refined character associate with the essence and models distilled through the ages, 'old-fashioned' may be measuring nostalgic commemoration. It may be said to heighten the affinity for this type of visual product, as perception of beauty cannot be ignored in design, nor in the humanities.

For the values of 'like', for the sofa fabric, it was constructed from 'beautiful' and 'clean', and so forth, while for the handbag, it was mostly composed of 'beautiful'. Quite obviously, the beauty of images is primarily responsible for building like values for these types of products. Besides, as 'clean' can be understood as resulting from the innovative calligraphy, we infer that it influenced values for 'like', again illustrating the power of aesthetics.

These types of visual products, due to their structure and uncomplicated construction, presented on full image panels, were still influenced by visual perception. The size and position of the images influenced visual perception, reinforcing the importance of aesthetics, heightening the affect of the aesthetic element, which may have raised the values for 'like'. However, the same nineteen patterns were applied to the two products, so the effects should be minimal.

This paper does not address possible perception differences between the residents and non-residents, nor between those who have visited and not visited this park. They may have differing perceptions of local cultural identity, and differing affinities for local culture images. These or the use of other products may require investigation through other methods. Further studies may reveal models for designing products that are liked and culturally identifiable.

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