

## Evaluation of Involvement and Multi-Dimensions for Cultural Creativity Products in Remote Districts

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**ABSTRACT** The main purpose of the study is to evaluate the product involvement and multi-dimensions evaluation for innovative and cultural creativity products of the remote districts in Taiwan. A total of 120 subjects divided into two groups (including local group and non-local group) participated in the investigation. In order to achieve the research objective, revised Personal Involvement Inventory designed by Zaichkowsky was applied to evaluate product involvement of the cultural creativity products with Pingtung image. In addition, this study adopted the multi-dimensions evaluation scale to assess four dimensions including the coincidence degree of the cultural image, utility, preference, and intention to purchase. Results showed that “the spice jar with the image of the Onion”, “the spice jar with the image of the Sisal”, and “the spice jar with the image of the Port” were relatively good cultural creativity products on the evaluations of the product involvement and multi-dimensions evaluation by local group and non-local group. Furthermore, it is expected that the research model can be expanded to other remote districts in Taiwan for the research and development of cultural creativity products and can be a model of cultural and creative industries with the combination or cultural creativities and economy to provide the highly valuable reference for industries, officials, and academic research.

### INTRODUCTION

Globalization is the process when the social life is re-assembled cross the boundary of time and space, departed from the society, and transmitted to the global societies, cultures, systems, and individuals through the media, generating the cross-correlations (Giddens 1990). Localization, on the other hand, is the interpersonal relationship and life style adopted by local citizens in a restricted space, where such daily life is taken for granted and is habitual and repeated cultural activities, in which people could freely exercise the rights of cultural autonomy without being interfered by external world (Featherstone 1993). Globalization is the way to develop of enterprises that how to remain the local characteristics in pursuing globalization becomes critical (Moalosi et al. 2004). In the wave of globalization, establishing personal cultural brands, enhancing technology, and covering creative design and humanistic concerns are the keys for Taiwan to master in the global economy; besides, they are the objectives of the Government to promote cultural and creative industries. Cultural factors are the primary indices of design evaluation. Under the competitive environment in the globalized market, cultural differences have become the trend to design a unique product in the

globalization. Such changes explain the important issue of developing design value for future design industries (Yair et al. 1999, 2001; Aydin 2013).

The idea of cultural industry was proposed by Adorno and Horkheimer of Flange Frankfurt School in the mid-twentieth century (Adorno 1975). In the beginning, the general scholars discriminated and criticized the elitism and popularization of culture. After the differentiation for a long period of time, the boundary was to some extent clarified, but directly resulted in some types of culture being the property of dignitary elites and high-level people. Throsby (2001) defined cultural industry as an industry which contained certain intellectual property rights and delivered symbolic cultural goods and services in the production process. Theoretically, cultural industry presents the characteristics of (1) industrial activities applying certain creativities in the production process, (2) industrial activities being regarded as the generation of symbolic meaning and related to communication, and (3) the products possibly containing certain forms of intellectual property rights. Creative industry was defined, in England, as an industry presenting creative wealth and employment potential when generating or developing intellectual property with the originally individual creativities, skills, and talent (Jones et al. 2004).

Cultural and creative industries in Taiwan have been considered as the key national development since 2002, that is, the core of economic development, which is an industrial development promoted and encouraged globally. The Executive Yuan in Taiwan proposed six emerging industries in May 2009, including bio-technology, green energy, medical care, exquisite agriculture, cultural creation, and tourism. The coverage of cultural and creative industries presents the emphasis of the Government. Cultural and creative industries is a creative industry combined with culture and economy and applying the integration of technology and humanities, proceeding creative transformation of culture contents to become an external expression of the products and promote the added value. In other words, the applications of cultural industry are the value of knowledge economy.

Culture could be the core power for economic development and the promoter of industry enhancement that aesthetic is not simply a creative idea and life philosophy, but the production principle; sense of beauty is not simply the essentials of artistic works, but the basic requirements of modern people toward consumer products. "Economic miracle" has been created in Taiwan; however, such advantages have been replaced by other developing countries because of the emergence of digitalization and globalization and the global flow of talents, capitals, and resources. In particular, under the strong competition in the globalized market during the era of knowledge economy, the integration of cultural creativities and technology and the investment in cultural and creative industries in Taiwan are worth expecting and encouraging. Domestic definition of cultural and creative industries refers to it of cultural industry or creative industry in other countries and considers the specialties of industrial development in Taiwan. In the Law for the Development of the Cultural and Creative Industries announced in the beginning of 2010, cultural and creative industries were defined as "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, enhance the citizens' capacity for arts, and elevate the citizens' living environment." Cultural creativities, as the source and thrust of cultural development, involve human cultural activities in the initial, updated, broad,

and wide ideas. Even with great differences among various cultures, the growth and expansion of culture require creative capabilities. According to the definition and spirit of cultural and creative industries, fifteen industries, such as visual arts, music and performing arts, applications of cultural assets and exhibition and performing facilities, craft, film, radio and television, publication, advertisement, product design, visual communication design, fashion design, architectural design, digital content, creative life, pop music, and cultural content, and other industries assigned by central competent authorities are covered.

Since people knew to produce living tools with stones, fire, and animal bones, such tools are products. With the act of trading, the products present economic values and become goods. Cultural products refer to re-inspect and reflect the cultural factors in the equipment, look for brand-new appearance with design, and find the spiritual satisfaction with the equipment that cultural products are different from general products. With the cultural identity, the cultural factors are covered in products through the styles, usage, management, and marketing. In fact, each country appears distinct history, specific culture, and unique representative imagery, such as Eiffel Tower in France, kangaroos and koalas in Australia, Statue of Liberty in the U.S.A., Mount Fuji in Japan, and Phra Phrom in Thailand. There are unique history and culture in Taiwan as well. To have the world understand the beautiful island and Taiwan present competitiveness in the world, it is necessary to develop products which could be identified by most people, presents symbols, represents local cultural image, could be identified by local citizens, and are worth cherishing by tourists. Local identity refers to individual experiences in the environment and activities, which are transformed into memories or share and being internalized into self-identity to become a part of self-experiences (Claval 1998; Msila 2013). Moreover, the development of cultural creativity products corresponding to local image allows inheriting and marketing the culture by using such cultural products, and further establishes representative cultural image (Lee 2010). In this case, it should be a common objective to explore the cultural elements in Taiwan and develop unique cultural products for culture inheritance.

In the well-developed international trade, cultural products could be the media for deliver-

ing cultural message. The distinctly economic traits of cultural and creative industries from manufacturing industry result in differently economic operation model from the originally industrial economy (Caves 2000). From the aspects of product design and brand, product design in various countries presents consistently internationalized style because of the trend of economic globalization and living global-village that the products are lack of individual characteristics and cannot present the local cultural traits. In recent years, consumer-oriented design has affected people tending to individualized or differential products and even looking for products with cultural identity or cultural characteristics. Design styles focusing on personal cultural characteristics are also developed globally (Lee 2004; Leong and Clark 2003).

The factors in the value of creative products, including originality, perceived worthiness, and integrity, are the specific performance of the creativities (Sobel and Rothenberg 1980). The new design, structure, or concept of a product could present the originality. The perceived worthiness of a product is expressed by the continuity, understanding, and effect as well as the visual stimulation or the emotional effects on the viewers. When both originality and perceived worthiness are presented, the creativities of the product would be extremely displayed. Furthermore, the value of product identity could be divided into customer-desired value and customer-received value. The former refers to the value which customers tend to acquire from the received products/services and the provided businesses; the latter, on the other hand, refers to the value acquired from actual experiences of the products/services (Flint and Woodruff 2001). To have customers experiencing the received value, inputting cultural elements into products would be an effective method, where the value of cultural products is established by the effect of inducing "symbol resonance". In this case, the possession of cultural differentiability, creativity, and symbolic knowledge would become the principal assets of cultural industries. Leong and Clark (2003) stated that a tangible product started from basic life to enhance the spirit or the orientation and demand of an article by connecting with social knowledge to be the value of the product being functioned. As a result, design would make culture be a valuable system, and the cultural factors in cultural objects would have the prod-

uct enhance the added value. Taiwan is entering an era where cultural creativities are driving aesthetic economy that cultural products being commercialized is a consequential characteristic in cultural and creative industries (Wu 2002). The combination of culture and design would become the trend in future design. Besides, the abstract of cultural elements and the transformation of creativity into the design of life necessities to deliver and understand the culture has become a primary issue.

This study expects to discuss the unique cultural elements in the remote districts in Taiwan through the development of cultural creativities, to develop cultural creativity products with the unique image of these remote districts by the integration of culture, creativity, art, and design, to understand, inherit, and market culture from the use of cultural products, and to appeal the public to emphasizing the cultural industries in the remote districts. Meanwhile, having creative product design to promote the development of local economy allows the traditional culture combining with innovative design, remaining the uniqueness of the remote towns, presenting the new appearance of the cultural content, and establishing the representative cultural image of the districts. With the example of remote districts in Pingtung County, this study aims to understand the historic background, local culture, traditional industries, local characteristics, and legends for exploring the cultural elements, transforming such elements with creativities, and further developing ideas to combine with potential living necessities. After evaluating the feasibility, those feasible ideas would be transformed into actual cultural and creative living products with cultural and creative equipment and further constructed 3D models with 3D CAD and high technological equipment, Rapid Prototyping 3D Printing System, to integrate the culture, creativity, design, and technology for a 3D model. In order to ensure the developed cultural creativity products being able to represent the cultural image and the feasibility of commodification in the remote districts, this study tends to evaluate the involvement and multi-dimensions in cultural products and the cultural image. It is expected to further understand the involvement of consumers in the developed cultural products so as to find out the cultural creativity products representing the local culture for the reference of future development of rele-

vant cultural and creative products. Furthermore, it is also expected that the research model can be expanded to other remote districts in Taiwan for the research and development of cultural creativity products and can be a model of cultural and creative industries with the combination of cultural creativities and economy to provide the highly valuable reference for industries, officials, and academic research.

### A Series of Cultural Creativity Products with Pingtung Image

This research followed the author's (Lee 2011) previous research which included five main research works described as follows:

- (1) Culture investigation in Pingtung County, Taiwan
- (2) Exploration of cultural elements
- (3) The creative transformation of the cultural elements and feasible idea assessment
- (4) Cultural creative product design
- (5) Construction of the 3D CAD model by rapid prototype system

The rapid prototype system (Dimension SST 768) was used to assist in making realistic 3D mockups. Regarding the operating process of the Dimension SST 768, seven steps were described as follows:

*Step 1:* Construct 3D models of the feasible idea of the cultural creativity products by 3D CAD software.

*Step 2:* Convert 3D file format to STL accepted by the rapid prototype system.

*Step 3:* Adjust the XYZ axis direction of the 3D model to the proper perspective and process the STL.

*Step 4:* Estimate the model and support material needed by the output model and allocate the 3D model file on the suitable position of the forming pad on the rapid prototype system.

*Step 5:* Confirm above correct steps and push the "start" button on the interface of the rapid prototype system to form the 3D mockup.

*Step 6:* Utilize the vise to separate model material from the support material.

*Step 7:* Utilize the ultrasonic cleaner to clean up the 3D mockup.

This study utilized the rapid prototype system (Dimension SST 768) to form the 3D models of the cultural creativity products for each Remote district in Pingtung County, Taiwan. The procedure for forming process of the rapid prototype system was shown as Figure 1. More detailed descriptions have been clarified in related researches (Lee 2010, 2011).

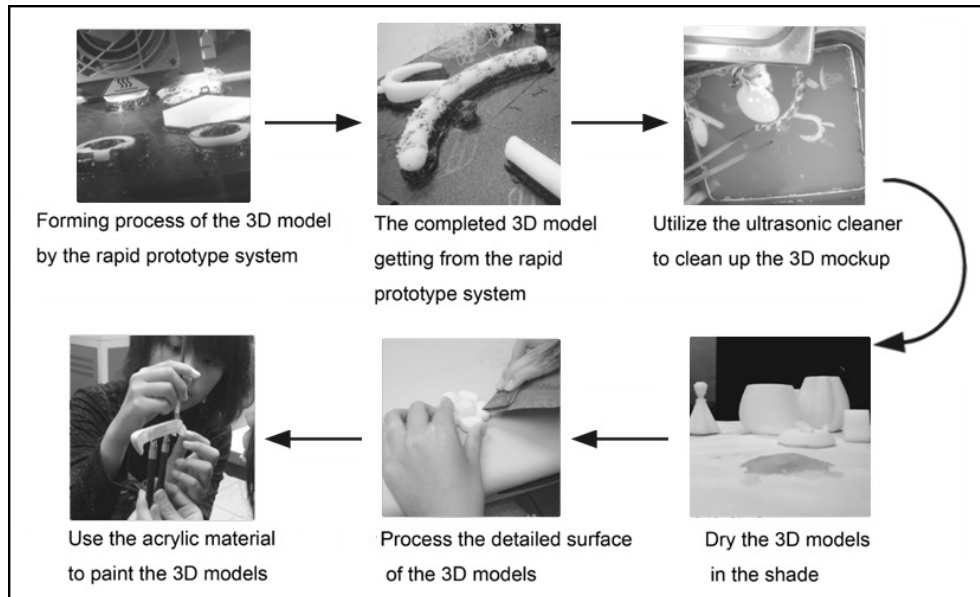


Fig. 1. Procedure for the forming process of the rapid prototype system

Considering the characteristics of the township, the main townships of the remote districts in Pingtung County were explored in this study included Fangshan, Shuangliu, Dafu, Hengchun, Dongyuan, Jiadong, Sandimen, and Wutai, etc. According to results proposed by Lee (2011), the main representative cultural elements for each township included “Irwin Mango” in Fangshan Township, “Hat Mountain” in Shuangliu Township, “Stone Vase” in Dafu Township, “Onion, Sisal, and Port Tea” in Hengchun Township, “Butterfly Ginger” in Dongyuan Township, “Sinensis” in Jiadong Township, “Wild Lily” in Sandimen Township, “Clouded Leopard and Eagle” in Wutai Township and so on. The cultural creativity products designed by this study were shown as Table 1.












**The Involvement Scale and the Multi-Dimensions Evaluation Scale**

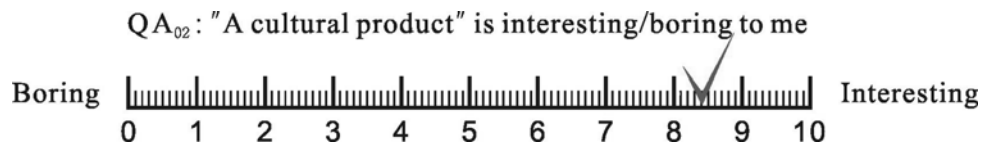
Aiming at the designed cultural creativity products, this study tends to evaluate the involvement and multi-dimensions and analyze the involvement differences in cultural products between local group and non-local group. The evaluation of involvement in cultural creativity products refers to Personal Involvement Inventory

(PII), proposed by Zaichkowsky (1986), which contains the dimensions of importance and value of products for consumers and the demand and interest of consumers in the product. With various reliability and validity tests, the scale could completely measure the involvement and can be applied to the different involvement evaluations. By responding to the opinions of various researchers, Zaichkowsky (1994) further revised the previous PII and deleted abundant questions for Factor Analysis. The scale was then condensed to ten questions, called Revised PII (Revised Personal Involvement Inventory), to measure the involvement of consumers in products or services.

Referring to Revised PII, this study revised the questions for being suitable for this research and semantized the questions to reduce the difficulties in answering (Table 2). Aiming at the designed cultural creativity products for the remote districts in Pingtung, the involvement in cultural creativity products was evaluated. The questions were evaluated by ticking “V” on the 100mm horizontal line for easy calculation and analyses. With the example of the second question (QA<sub>02</sub>) in the scale, the left of the scale represents “the cultural creativity product” being “interesting”, but “boring” on the right (Fig. 2). Such

**Table 1: A series of cultural creativity products with Pingtung County image**

Product ID	Product name	Cultural product	Cultural image	Remote district
P <sub>1</sub>	Shoe rack		Irwin Mango	Fangshan
P <sub>2</sub>	Candlestick		Hat Mountain	Shuangliu
P <sub>3</sub>	Bookshelf		Stone Vase	Dafu
P <sub>4</sub>	Spice jar		Onion	Hengchun
P <sub>5</sub>	Spice jar		Sisal	Hengchun
P <sub>6</sub>	Spice jar		Port Tea	Hengchun
P <sub>7</sub>	Perfume bottle		Butterfly Ginger	Dongyuan
P <sub>8</sub>	Perfume bottle		Sinensis	Jiadong
P <sub>9</sub>	Perfume bottle		Wild Lily	Sandimen
P <sub>10</sub>	Hook		Clouded Leopard	Wutai
P <sub>11</sub>	Hook		Eagle	Wutai



**Fig. 2. The involvement scale for evaluating cultural creativity products in remote district**

**Table 2: Ten evaluation items of the personal involvement inventory in this study**

<i>Evaluation item</i>	<i>Question</i>
Q <sub>A01</sub>	“ The cultural product” is important/unimportant to me
Q <sub>A02</sub>	“ The cultural product” is interesting/boring to me
Q <sub>A03</sub>	“ The cultural product” is relevant/irrelevant to me
Q <sub>A04</sub>	“ The cultural product” is exciting/unexciting to me
Q <sub>A05</sub>	“ The cultural product” is means a lot to me/means nothing to me
Q <sub>A06</sub>	“ The cultural product” is appealing/unappealing to me
Q <sub>A07</sub>	“ The cultural product” is fascinating/mundane to me
Q <sub>A08</sub>	“ The cultural product” is valuable/worthless to me
Q <sub>A09</sub>	“ The cultural product” is involving/uninvolving to me
Q <sub>A10</sub>	“ The cultural product” is needed/not needed to me

*Note:* Scale of 0-10 points (tick “V” mark on the in involvement scale)

an evaluation was called “Point estimation method” by Chameau and Santamarina (1987). The ten questions in Personal Involvement Inventory not only could understand individual value and demands for cultural products, but could compare the evaluating results, according to the involvement in cultural creativity products of different groups (local and non-local). T-test was applied to evaluating the differences.

In addition to evaluate individual involvement in cultural products, Multi-Dimensions Inventory was designed for evaluating the coincidence degree of the cultural image, utility, preference, and intention to purchase (Table 3). The questions were also evaluated by ticking “V” on the 100mm horizontal line. With the example of the first question (Q<sub>B01</sub>) in Multi-Dimensions Inventory, the left presented the cultural image contained in “the cultural product” being “extremely not corresponding to local culture”, while the right showed the cultural image in “the cul-

tural product” being “extremely corresponding to local culture”, Figure 3. This study further compared the evaluation of cultural creativity products in the four dimensions. T-test was also applied to evaluating the differences between local group and non-local group.

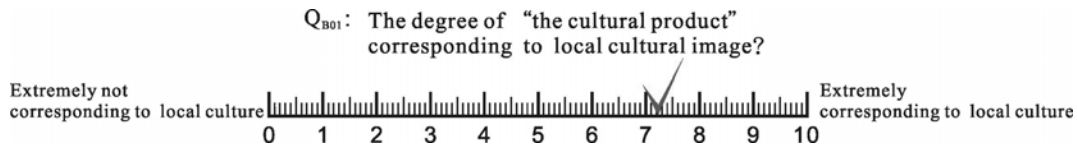
**METHODS**

The main objective of this study is to evaluate the involvement and multi-dimensions of a series of cultural creativity products with Pingtung image in Taiwan. In order to explore the involvement of the cultural creativity products and multi-dimensions evaluation and attain effective results, this study designed a questionnaire with revised Personal Involvement Inventory (Zaichkowsky 1994), involvement scale, cultural image evaluation scale and adopted the fixed random sampling for investigation in each remote districts including Fangshan, Shuangliu,

**Table 3: Four evaluation questions in multi-dimensions inventory**

<i>Evaluation question</i>	<i>Question</i>
Q <sub>B01</sub>	The degree of “the cultural product” corresponding to local cultural image?
Q <sub>B02</sub>	The utility of “the cultural product”?
Q <sub>B03</sub>	The subjective preference to “the cultural product”?
Q <sub>B04</sub>	The intention to purchase “the cultural product”?

*Note:* Scale of 0-10 points (tick “V” mark on the cultural image evaluation scale)



**Fig. 3. The multi-dimensions evaluation scale for cultural creativity products**

Dafu, Hengchun, Dongyuan, Jiadong, Sandimen, and Wutai Townships and so on.

### Subjects

A total of 120 subjects divided into two groups (including local group and non-local group) participated in this study.

#### *Local Group*

In the local group, 60 subjects living in Pingtung County participated in this evaluation experiment, 34 males and 26 females, with ages ranging from 28 to 68 (mean=40.2, SD=8.1), all have considerable familiarity of the Pingtung County's cultural changes, and all possessed a normal or after correction.

#### *Non-local Group*

In the non-local group, 60 subjects not living in Pingtung County participated in this evaluation experiment, 40 males and 20 females, with ages ranging from 20 to 55 (mean=33, SD=6.5). These subjects in this non-local group went to Pingtung County for sightseeing and all participants also possessed a normal or after correction.

### Apparatus/Stimuli

During the investigation, a notebook was used here to assist in the process of involvement evaluation. A high-resolution screen (15") on the notebook with 1366 (horizontal) × 768 (vertical) pixels resolution and 72HZ refresh rate was used to display the experiment stimuli. Stimuli used in the evaluation process were computer images of a series of cultural creativity products (including shoe rack, candlestick, bookshelf, three kinds of spice jars, three kinds of perfume bottles, and two kinds of hooks) with Pingtung County image in Taiwan.

### Procedure

Before the formal investigation, subjects were informed of the objective of this study, and then the subject was asked to evaluate involvement and multi-dimensions for a series of cultural creativity products. There are 11 cultural creativity products (shown in Table 1) in the investigation.

The 11 cultural creativity products to be evaluated randomly presented for each subject. In addition, subjects were asked to make ticks on a 100mm involvement scale in accordance to their assessment of the 10 evaluation items of the Revised PII (Revised Personal Involvement Inventory). After finishing evaluation, the ticks on the degree marked on the involvement scale were further quantified into 0 and 10 values (0 representing the left side of the scale and 10 the right side). At the ending of the experiment, data collected on the reaction of participants was further statistically analyzed.

In addition to assessment of personal involvement scale of cultural creativity products, this study further assessed multi-dimensions evaluation for a series of cultural creativity products. There are four dimensions including cultural image, utility, preference, and intention to purchase are evaluated by subjects. This scale in this study is called "Multi-Dimensions Inventory", as shown in Table 3. At this stage, the ticks on the degree marked on the multi-dimensions evaluation scale were still quantified into 0 and 10 values (0 representing the left side of the scale and 10 the right side).

## RESULTS AND DISCUSSION

The statistical analyses of this study were executed by STATISTICA software and analytic results were described as follows.












### **Involvement Evaluation of the Cultural Creativity Products**

In this study, results of the average involvement evaluation of the 11 cultural creativity products with Pingtung image for local and non-local groups were shown in Table 4.

#### *Results of the Involvement Evaluation for the Local Group*

This study would like to realize the importance of the ten evaluation items of the Revised Personal Involvement Inventory. Five product designers invited in this study discussed the importance of ten measure dimensions by the focus group method. The focus group method is often used for to appraise the users' demand by brainstorming of the group. More detailed descriptions and procedures about focus group method have been clarified in related research-

**Table 4: The average level of involvement for 11 cultural creativity products**

Evaluation item Group	A series of cultural creativity products in remote districts											
	$P_1$	$P_2$	$P_3$	$P_4$	$P_5$	$P_6$	$P_7$	$P_8$	$P_9$	$P_{10}$	$P_{11}$	
												
Q A01 (important)	Local	5.3	8.1	7.6	8.3	8.2	8.4	7.3	7.3	7.9	8.2	7.5
	Non-local	6.3	8.3	7.6	8.5	8.5	8.4	7.4	7.8	8	8.5	7.6
Q A02 (interesting)	Local	6.2	8.1	7.3	8.7	8.5	8.3	8	8	8	7.8	7.2
	Non-local	6.5	8.3	7.5	9	8.7	8.3	8.2	8.3	8.2	7.9	7.5
Q A03 (relevant)	Local	5.9	7.8	7.3	8.9	8.8	8.8	7.8	7.8	7.8	7.7	7.5
	Non-local	6.8	8	7.4	8.9	8.8	9	7.8	8	7.9	7.6	8
Q A04 (exciting)	Local	6.6	8.2	7.4	8.8	8.8	8.7	8.2	8.2	8.2	7.6	7.3
	Non-local	7.5	8.2	7.4	8.8	8.8	8.7	8.2	8.3	8.6	7.8	7.4
Q A05 (means)	Local	5.5	7.7	7.5	8.2	8.2	8.6	8	8.5	8.4	7.5	7.5
	Non-local	6	8	7.6	8.5	8.9	8.6	8.5	8.9	8.5	8	7.6
Q A06 (appealing)	Local	6.6	8.3	7.6	8.7	8.9	8.8	8.2	8	8	7.5	7.5
	Non-local	7	8.5	7.4	8.7	9	9	8.2	8.1	8.1	7.7	8.2
Q A07 (fascinating)	Local	6.4	7.6	7.3	8.3	8.5	8.5	7.8	7.8	8	7.9	7.2
	Non-local	6.6	8.1	7.5	8.7	8.7	8.5	7.8	8	8.2	8.1	7.3
Q A08 (valuable)	Local	5.9	7.9	7.3	8.6	8.6	8.6	7.9	7.9	7.9	7.8	7.3
	Non-local	6.5	8.2	7.6	8.7	8.6	8.6	7.8	8.1	8.2	7.7	7.4
Q A09 (involving)	Local	6.2	8	7.9	8.3	8.3	8.5	8	8.1	8.1	7.7	7.7
	Non-local	7.1	8.2	8	8.5	8.4	9	8.2	8.2	8.1	7.9	8.2
Q A10 (needed)	Local	6.3	7.5	7.5	8	8.3	8.2	7.8	7.8	7.8	8	7.7
	Non-local	6.8	7.8	7.6	8.2	8.5	8.6	7.9	7.9	7.9	8.3	7.8
Mean	Local	6.09	7.92	7.47	8.48	8.51	8.54	7.90	7.94	8.01	7.77	7.44
	Non-local	6.71	8.16	7.56	8.65	8.69	8.67	8.00	8.16	8.17	7.95	7.70
Standard deviation	Local	0.44	0.27	0.19	0.30	0.26	0.20	0.26	0.31	0.19	0.22	0.18
	Non-local	0.43	0.20	0.18	0.23	0.19	0.25	0.32	0.31	0.23	0.28	0.33

es (Caplan 1990; Goldman and McDonald 1987; Greenbaum 1998; Krueger 1988, 1998a-c; Kruger and King, 1998; Morgan 1998). Through the process of discussions by focus group method, it can be concluded that the ten evaluation items were equally important. Afterward, analysis of variance (ANOVA) was conducted. Results showed that there was significant difference ( $p < 0.01$ ) among different cultural creativity products for the degree of involvement for the local group. Therefore, this study further conducted a pair-wise comparison test by using Scheffé Test. Results are shown in Table 5.

Analytic results in Table 5 showed that  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) are better than other eight cultural creativity products with Pingtung image. In particular, Onion, sisal, and port tea are the most important agricultural products in Hengchun. It can be deduced that the three products ( $P_4$ ,  $P_5$ , and  $P_6$ ) create more clear appearance than other cultural products and easily associate with the local cultural image. Besides, the mean evaluated value of the  $P_1$  (the shoe rack with the image of the Irwin Man-

go) is the worst for the evaluation of the local group.












#### Results of the Involvement Evaluation for the Non-local Group

For the subjects of the non-local group on the involvement evaluation, results also showed that there was significant difference among different cultural creativity products. This study further conducted a pair-wise comparison test and results were shown in Table 6.

The analytic results on average involvement of the creative creativity products for non-local group were similar to results for local group. From the results of the Table 6,  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) are significantly better than other eight cultural creativity products. Also, the mean evaluated value of the  $P_1$  (the shoe rack with the image of the Irwin Mango) is the worst for the evaluation of the non-local group. It maybe the appearance of the shoe rack is difficult to associate with the image of the Irwin Mango in thinking. Consequently, it is to be necessary for redesigning the cultural cre-














**Table 5: Scheffé Test on average involvement of the creative creativity products for local group**

	$P_1$ (6.09)	$P_2$ (7.92)	$P_3$ (7.47)	$P_4$ (8.48)	$P_5$ (8.51)	$P_6$ (8.54)	$P_7$ (7.90)	$P_8$ (7.94)	$P_9$ (8.01)	$P_{10}$ (7.77)	$P_{11}$ (7.44)
P <sub>1</sub> 		0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
P <sub>2</sub> 	0.000**		0.179	0.023*	0.011*	0.006**	1.000	1.000	1.000	0.998	0.110
P <sub>3</sub> 	0.000**	0.179		0.000**	0.000**	0.000**	0.238	0.130	0.035**	0.780	1.000
P <sub>4</sub> 	0.000**	0.023*	0.000**		1.000	1.000	0.015*	0.035*	0.130	0.000**	0.000**
P <sub>5</sub> 	0.000**	0.011*	0.000**	1.000		1.000	0.007**	0.018*	0.077	0.000**	0.000**
P <sub>6</sub> 	0.000**	0.006**	0.000**	1.000		1.000	0.003**	0.009**	0.043*	0.000**	0.000**
P <sub>7</sub> 	0.000**	1.000	0.238	0.015*	0.007**	0.003**		1.000	1.000	1.000	0.153
P <sub>8</sub> 	0.000**	1.000	0.130	0.035*	0.018*	0.009**	1.000		1.000	0.996	0.077
P <sub>9</sub> 	0.000**	1.000	0.035**	0.130	0.077	0.043*	1.000	1.000		0.941	0.018*
P <sub>10</sub> 	0.000**	0.998	0.780	0.000	0.000	0.000	1.000	0.996	0.941		0.658
P <sub>11</sub> 	0.000**	0.110	1.000	0.000**	0.000**	0.000**	0.153	0.077	0.018**	0.658	

( ): average involvement level for 11 cultural creativity products; \*: p<0.05; \*\*: p<0.01

**Table 6: Scheffé Test on average involvement of the creative creativity products for non-local group**

	$P_1$ (6.71)	$P_2$ (8.16)	$P_3$ (7.56)	$P_4$ (8.65)	$P_5$ (8.69)	$P_6$ (8.67)	$P_7$ (8.00)	$P_8$ (8.16)	$P_9$ (8.17)	$P_{10}$ (7.95)	$P_{11}$ (7.70)
P <sub>1</sub> 		0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
P <sub>2</sub> 	0.000**		0.167	0.015*	0.006*	0.010*	1.000	1.000	1.000	1.000	0.693
P <sub>3</sub> 	0.000**	0.167		0.000**	0.000**	0.000**	0.284	0.019*	0.015*	0.481	0.999
P <sub>4</sub> 	0.000**	0.015*	0.000**		1.000	1.000	0.006**	0.144	0.167	0.002**	0.000**
P <sub>5</sub> 	0.000**	0.006**	0.000**	1.000		1.000	0.002**	0.074	0.089	0.001**	0.000**
P <sub>6</sub> 	0.000**	0.010*	0.000**	1.000	1.000		0.004**	0.105	0.123	0.001**	0.000**
P <sub>7</sub> 	0.000**	1.000	0.284	0.006**	0.002**	0.004**		0.998	0.997	1.000	0.835
P <sub>8</sub> 	0.000**	1.000	0.019*	0.144	0.074	0.105	0.998		1.000	0.984	0.221
P <sub>9</sub> 	0.000**	1.000	0.015*	0.167	0.089	0.123	0.997	1.000		0.978	0.192
P <sub>10</sub> 	0.000**	1.000	0.481	0.002**	0.001**	0.001**	1.000	0.984	0.978		0.946
P <sub>11</sub> 	0.000**	0.693	0.999	0.000**	0.000**	0.000**	0.835	0.221	0.192	0.946	

( ): average involvement level for 11 cultural creativity products; \*\*: p<0.05; \*\*: p<0.01












searchativity product corresponding with the image of the Irwin Mango.

**Comparisons of Two Groups on Product Involvement Evaluation**

In order to understand differences existed between local group and non-local group on

product involvement evaluation, the study further conducted the T-test for independent samples (Table 7). Results showed that there were not significantly difference existed among the cultural products by the two groups except for the evaluation of the shoe rack. Thus it can be seen that the consistence on the product involvement evaluation by the local group and non-local group.

**Table 7: Comparisons of two groups on product involvement evaluation using T-test**

Product ID	Product picture	Product name	Mean for involvement evaluation		P value
			Local Group	Non-local group	
P <sub>1</sub>		Shoe Rack	6.09	6.71	0.005**
P <sub>2</sub>		Candlestick	7.92	8.04	0.309
P <sub>3</sub>		Bookshelf	7.47	7.56	0.294
P <sub>4</sub>		Spice Jar	8.48	8.65	0.171
P <sub>5</sub>		Spice Jar	8.51	8.69	0.095
P <sub>6</sub>		Spice Jar	8.54	8.67	0.221
P <sub>7</sub>		Perfume Bottle	7.90	8.00	0.449
P <sub>8</sub>		Perfume Bottle	7.94	8.16	0.130
P <sub>9</sub>		Perfume Bottle	8.01	8.17	0.105
P <sub>10</sub>		Hook	7.77	7.95	0.131
P <sub>11</sub>		Hook	7.44	7.70	0.054

\*: p<0.05

**Multi-dimensions Evaluation**

**Results of the Multi-dimensions Evaluation for the Local Group**

This research further evaluated the multi-dimensions evaluation of the series of cultural creativity products. The measure dimensions of the multi-dimensions included cultural image, utility, preference, and intention to purchase. Results for

the multi-dimensions evaluation of the 11 cultural creativity products were shown in Table 8.

This study conducted ANOVA for multi-dimensions evaluations. Results showed that there are significantly difference existed among the 11 cultural creativity products for four evaluation dimensions (including cultural image, utility, preference, and intention to purchase). Therefore, this study further conducted a pair-wise comparison test (Scheffe Test adopted in this study) and results were shown in Table 9 and Figure 4.

**Table 8: The average level of the multi-dimensions evaluation for 11 cultural creativity products**

Evaluation item		A series of cultural creativity products in remote districts										
		P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>	P <sub>6</sub>	P <sub>7</sub>	P <sub>8</sub>	P <sub>9</sub>	P <sub>10</sub>	P <sub>11</sub>
Q <sub>B01</sub> (cultural image)	Local	6.1	8.2	7.1	8.5	8.3	8.2	7.5	7.6	7.5	7.8	7.4
	Non-local	6.3	8.4	7.5	9.0	8.8	8.7	7.8	7.8	7.7	8.0	7.8
Q <sub>B02</sub> (utility)	Local	8.7	6.3	7.2	8.2	8.0	8.4	6.6	6.7	6.8	8.3	7.8
	Non-local	9.1	6.1	7.1	8.3	7.9	8.5	6.7	6.9	6.9	8.4	7.9
Q <sub>B03</sub> (preference)	Local	6.8	6.3	5.4	8.0	7.9	8.0	7.5	7.6	7.7	6.0	6.1
	Non-local	7.0	6.4	5.3	8.0	7.9	8.0	7.6	7.7	7.8	5.9	6.2
Q <sub>B04</sub> (purchase intention)	Local	4.7	4.0	3.8	7.8	7.7	7.9	7.8	6.4	6.7	7.4	7.3
	Non-local	4.6	3.9	3.8	7.9	7.6	7.8	7.8	6.3	6.8	7.5	7.2

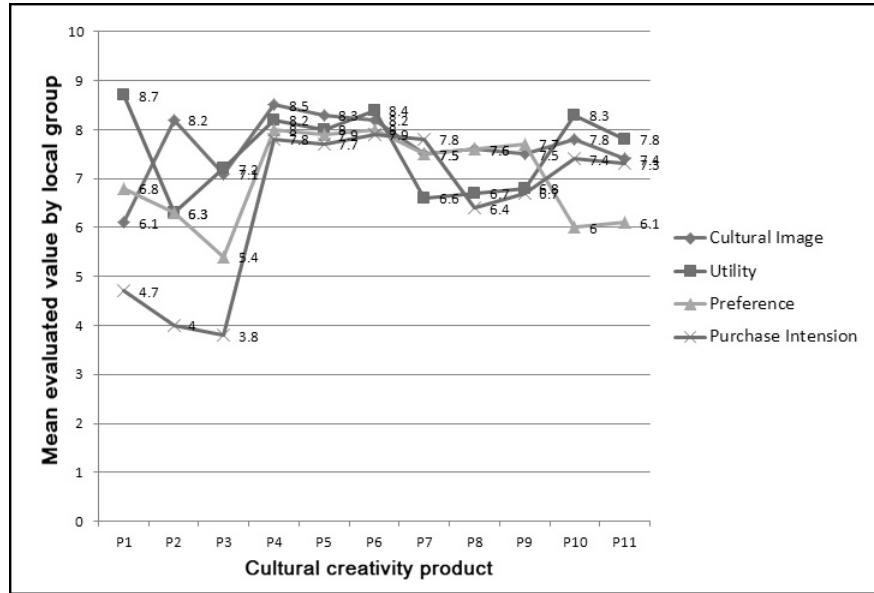


Fig. 4. Various evaluation dimensions assessed by local group

In Table 9, “İ%” represents that the cultural product is relatively good on some dimension than other cultural products, “3%” represents that the cultural product is acceptable on some dimension, and “s%” represents that the cultural product is relatively bad on some dimension than other cultural products.

Referring to the degree of the cultural product corresponding to local cultural image, analytic results in Table 9 showed that P<sub>4</sub> (the spice jar with the image of the Onion), P<sub>5</sub> (the spice jar with the image of the Sisal), and P<sub>6</sub> (the spice jar with the image of the Port Tea) are significantly better than other cultural creativity products.

Table 9: Results for four evaluation dimensions evaluated by local group

Product ID	Product Picture	$Q_{BO1}$ (cultural image)	$Q_{BO2}$ (utility)	$Q_{BO3}$ (preference)	$Q_{BO4}$ (purchase intention)
P <sub>1</sub>		×	•	Δ	×
P <sub>2</sub>		Δ	×	Δ	×
P <sub>3</sub>		Δ	Δ	×	×
P <sub>4</sub>		•	•	•	•
P <sub>5</sub>		•	•	•	•
P <sub>6</sub>		•	•	•	•
P <sub>7</sub>		Δ	×	•	•
P <sub>8</sub>		Δ	×	•	Δ
P <sub>9</sub>		Δ	×	•	•
P <sub>10</sub>		Δ	Δ	Δ	•
P <sub>11</sub>		Δ	Δ	Δ	•

∴ Relatively good; Δ: Acceptable; ×: Relatively bad

Furthermore,  $P_1$  (the shoe rack with the image of the Irwin Mango) is the worst cultural product regarding the correspondence to local cultural image evaluation.

With regard to the utility of the cultural product, results showed that  $P_1$  (the shoe rack with the image of the Irwin Mango),  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) were significantly better than other cultural creativity products. Moreover,  $P_2$  (the candlestick with the image of the Hat Mountain),  $P_7$  (the perfume bottle with the image of the Butterfly Ginger),  $P_8$  (the perfume bottle with the image of the Sinensis), and  $P_9$  (the perfume bottle with the image of the Wild Lily) were the worst cultural products regarding the correspondence to utility evaluation. In other words, the candlestick was not useful in our daily life, and the perfume bottles emphasizing the appearance were relatively not practical.

Regarding the subjective preference to the cultural product,  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea),  $P_7$  (the perfume bottle with the image of the Butterfly Ginger),  $P_8$  (the perfume bottle with the image of the Sinensis), and  $P_9$  (the perfume bottle with the image of the Wild Lily) were significantly better than other cultural creativity products. And then  $P_3$  (the bookshelf with the image of the Stone Vase) is the worst cultural












product regarding the subjective preference evaluation. It can be deduced that the better product appearance to conform to the local cultural image were fascinated by the people.

Finally, with reference to the intention to purchase the cultural product,  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea),  $P_7$  (the perfume bottle with the image of the Butterfly Ginger),  $P_9$  (the perfume bottle with the image of the Wild Lily),  $P_{10}$  (the hook with the image of the Clouded Leopard),  $P_{11}$  (the hook with the image of the Eagle) were relatively good, and then  $P_1$  (the shoe rack with the image of the Irwin Mango),  $P_2$  (the candlestick with the image of the Hat Mountain),  $P_3$  (the bookshelf with the image of the Stone Vase) were relatively bad about the purchase intention evaluation.

#### *Results of the Multi-dimensions Evaluation for the Non-local Group*

According to the same analytical procedure used for the local group, this study also conducted ANOVA for multi-dimensions evaluation by the non-local group. Analytic results also showed that there were significantly difference existed among cultural creativity products for four evaluation dimensions. This study further conducted a pair-wise comparison test and results were shown in Table 10 and Figure 5.

**Table 10: Results for four evaluation dimensions evaluated by non-local group**

Product ID	Product Picture	$Q_{B01}$ (cultural image)	$Q_{B02}$ (utility)	$Q_{B03}$ (preference)	$Q_{B04}$ (purchase intention)
$P_1$		×	•	Δ	×
$P_2$		Δ	×	×	×
$P_3$		Δ	×	×	×
$P_4$		•	Δ	•	•
$P_5$		•	Δ	•	•
$P_6$		•	•	•	•
$P_7$		Δ	×	•	•
$P_8$		Δ	×	•	Δ
$P_9$		Δ	×	•	Δ
$P_{10}$		Δ	•	×	•
$P_{11}$		Δ	Δ	×	•

∴: Relatively good; Δ: Acceptable; ×: Relatively bad

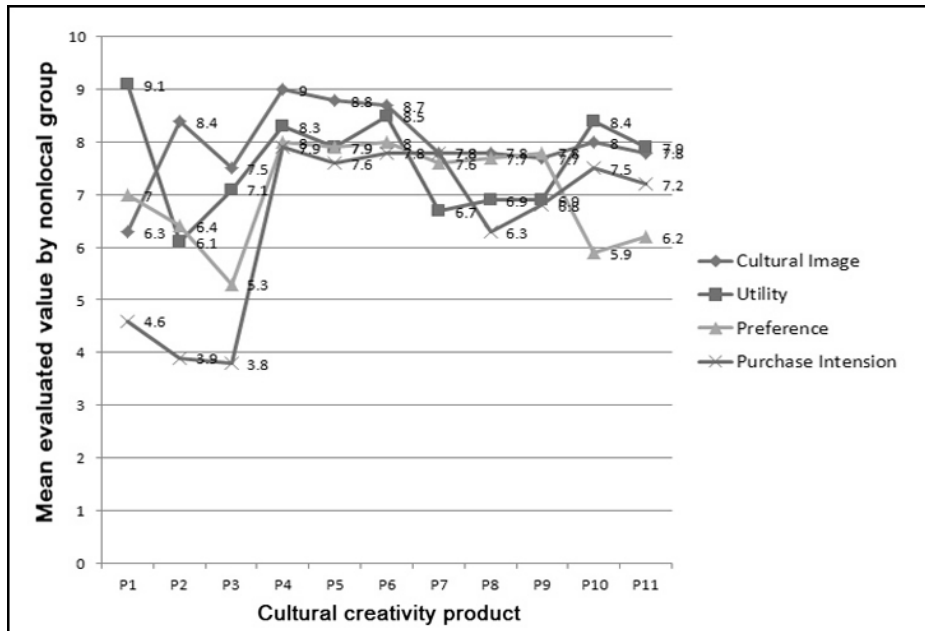


Fig. 5. Various evaluation dimensions assessed by non-local group

With regard to the degree of the cultural product corresponding to local cultural image, results also showed that P<sub>4</sub> (the spice jar with the image of the Onion), P<sub>5</sub> (the spice jar with the image of the Sisal), and P<sub>6</sub> (the spice jar with the image of the Port Tea) were significantly better than other cultural creativity products. Additionally, P<sub>1</sub> (the shoe rack with the image of the Irwin Mango) was the worst cultural product regarding the cultural image evaluation.

Regarding the utility, results showed that P<sub>1</sub> (the shoe rack with the image of the Irwin Mango), P<sub>6</sub> (the spice jar with the image of the Port Tea), and P<sub>10</sub> (the hook with the image of the Clouded Leopard) were significantly better than other cultural products. Besides, P<sub>2</sub> (the candlestick with the image of the Hat Mountain), P<sub>3</sub> (the bookshelf with the image of the Stone Vase), P<sub>7</sub> (the perfume bottle with the image of the Butterfly Ginger), P<sub>8</sub> (the perfume bottle with the image of the Sinensis), and P<sub>9</sub> (the perfume bottle with the image of the Wild Lily) were the worst cultural products regarding the utility evaluation.

Referring to the subjective preference, P<sub>4</sub> (the spice jar with the image of the Onion), P<sub>5</sub> (the spice jar with the image of the Sisal), and P<sub>6</sub> (the spice jar with the image of the Port Tea), P<sub>7</sub> (the perfume bottle with the image of the Butterfly Ginger), P<sub>8</sub> (the perfume bottle with the image of

the Sinensis), and P<sub>9</sub> (the perfume bottle with the image of the Wild Lily) were significantly better than other cultural creativity products. And then P<sub>2</sub> (the candlestick with the image of the Hat Mountain), P<sub>3</sub> (the bookshelf with the image of the Stone Vase), P<sub>10</sub> (the hook with the image of the Clouded Leopard), and P<sub>11</sub> (the hook with the image of the Eagle) were relatively bad about the subjective preference evaluation.

Finally, with reference to the intention to purchase the cultural product, P<sub>4</sub> (the spice jar with the image of the Onion), P<sub>5</sub> (the spice jar with the image of the Sisal), and P<sub>6</sub> (the spice jar with the image of the Port Tea), P<sub>7</sub> (the perfume bottle with the image of the Butterfly Ginger), P<sub>10</sub> (the hook with the image of the Clouded Leopard), P<sub>11</sub> (the hook with the image of the Eagle) were relatively good, and then P<sub>1</sub> (the shoe rack with the image of the Irwin Mango), P<sub>2</sub> (the candlestick with the image of the Hat Mountain), P<sub>3</sub> (the bookshelf with the image of the Stone Vase) were also relatively bad about the purchase intention evaluation.

**Comparisons of Two Groups on Multi-dimensions Evaluation**

For the sake of understanding if the evaluation differences existed between local group and












non-local group on multi-dimensions evaluation, the study further conducted the T-test for independent samples (Table 11). Results showed that there were not significantly difference existed among the cultural products by the two groups on multi-dimensions evaluation except for the cultural image evaluation. Regarding the degree of the cultural product corresponding to local cultural image, analytic results in Table 11 showed that there were significantly difference for  $P_2$  (the candlestick with the image of the Hat Mountain),  $P_4$  (the spice jar with the image of the Onion), and  $P_{11}$  (the hook with the image of the Eagle) by two groups on the cultural image evaluation. Furthermore, there were not statistical significance existed in other eight cultural creativity products. Additionally, no significant difference existed between two groups on the other three dimensions including utility, preference, and purchase intension.

### CONCLUSION

This research evaluated the product involvement and multi-dimensions evaluation of the 11 cultural creativity products with Pingtung image

in Taiwan. With regard to the product involvement for local group, results showed that  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) were better than other eight cultural creativity products. Furthermore, regarding the involvement evaluation for the non-local group,  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) were significantly better than other cultural products. Also, the mean evaluated value of the  $P_1$  (the shoe rack with the image of the Irwin Mango) was the worst for the involvement evaluation of the local group and non-local group. Moreover, referring to multi-dimensions (including cultural image, utility, preference, and intention to purchase) evaluations, the evaluated results of the local group are different from the non-local group. Overall, according to results of the product involvement and multi-dimensions evaluations in this study,  $P_4$  (the spice jar with the image of the Onion),  $P_5$  (the spice jar with the image of the Sisal), and  $P_6$  (the spice jar with the image of the Port Tea) are also relatively good products.

**Table 11: Comparisons of two groups on multi-dimensions evaluation using T-test**

Product ID	Product picture	Product name	P value of the multi-dimensions evaluation for two groups			
			Cultural image	Utility	Preference	Purchase intention
$P_1$		Shoe rack	0.144	0.107	0.500	0.818
$P_2$		Candlestick	0.016*	0.630	0.749	0.777
$P_3$		Bookshelf	0.252	0.773	0.660	1.000
$P_4$		Spice jar	0.038*	0.628	1.000	0.714
$P_5$		Spice jar	0.105	0.754	1.000	0.791
$P_6$		Spice jar	0.105	0.673	1.000	0.714
$P_7$		Perfume Bottle	0.264	0.660	0.722	1.000
$P_8$		Perfume Bottle	0.355	0.535	0.714	0.660
$P_9$		Perfume Bottle	0.388	0.749	0.696	0.628
$P_{10}$		Hook	0.131	0.660	0.722	0.673
$P_{11}$		Hook	0.008**	0.660	0.714	0.736

\*:  $p < 0.05$ ; \*\*:  $p < 0.01$

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