

Relationship of Creativity and Experience Value in Chinese Consuming Context

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ABSTRACT

Creativity can bring more experience and more potential value for the consumers. In this article, the author explores the product creativity analysis model and develops a scale to measure the product creativity based on Chinese consuming context. The empirical tests demonstrate that the three elements of evaluating product creativity include affect factor, novelty factor and resolution factor. In addition, we explore the relationship of creativity and experience value. The empirical results show that in the Chinese market, the affect factor is the most important in the creativity evaluation and the novelty factor has the greatest contribution to the experience value, on the other hand, when the consumers evaluate the experience value, the role of the resolution factor is weakest. The conclusions are valuable to creative product design and marketing strategy.

Key Words: Creativity experience Value Chinese consuming context

Disclaimer: The views in this research are the views of the author and are not the expressed views of the Shanghai Dianji University.

1. INTRODUCTION

In the experience economy, customers tend to pursue enjoying the good feelings in emotion and physics arising from the consuming experience (Pine and Gilmore, 1998). In online games, animation, publishing, design and software industry, the consuming experience driven by the creativity is playing an increasing role in the creativity industry and academia research. The researches on the evaluation methods of product creativity and the relationship of creativity and experience value are also increasingly enriched. But the evaluation methods and scales to measure the product creativity are significantly different on account of the different culture and different consuming context, which influence the consumer perception of product creativity. Most scales of creativity are based on the western culture (Taylor and Sandler, 1972; Altsech, 1997).

In this paper, the author constructs the creative product analysis model and the scale to measure creativity in Chinese consuming context based on CPAM model and CPSS scale, and explores the relationship of the product creativity and the experience value.

2. THEORETICAL BACKGROUND

Measure of product creativity

Scholars develop different scales to measure product creativity based on different academic perspectives. Taylor and Sandler (1972) explored the CPI Scale (creativity product inventory) to measure the product creativity including seven dimensions: regeneration, updatability, originality, relevance, enjoyment, complexity and simplicity. Altsech (1997) build the four dimensions to measure the advertising creativity in Quasi experience Study, that is Originality, Appropriateness or Relevance, Liking, Excitement or Boredom. Amabile (1982) developed a CAT scale that made the subjective evaluation of tangible products from technical expertise, smell, taste, texture, color, shape and structure, decoration and other creative aspects. Horn and Salvendy (2010) performed two studies to research measurement of consumer perception of product creativity and indicated three main product creativity factors: Affect, Importance, and Novelty.

CPAM (Creative Product Analysis Matrix) model

is widely used in the evaluating the product creativity in the west and it is one of the most powerful models to analyze the product creativity (Besemer and O'Quin, 1999; Martinsen, 1993). Besemer and O'Quin developed the CPSS Scale Creative Product Semantic Scale based on CPAM and Taylor and Sandler (1972)'s CPI Scale, which evaluates the creativity in three dimensions: Novelty, Resolution, Elaboration and Synthesis (Besemer and O'Quin 1986, 1987, 1999; O'Quin & Besemer, 1989, 1999; Hsiao and Chou, 2004). Novelty measures the degree of novelty in product materials, processes, concepts and methods of manufacture; Resolution measures the features and operations of product; Elaboration and Synthesis describes synthetically the style elements of products. However, CPSS focuses more on the objective evaluation of product ideas instead of the innovation and human interaction. Actually, Consumers evaluate the product creativity not only according to the objective factors that affect the product creativity, but also according to their subjective evaluation such as personal preferences, interests, emotions, intuition and cogitation. In addition, creativity has closed relationship with the culture. The cultural factors are sensitive to the perception and evaluation of the creativity. In different cultural background, there are also significant differences in evaluation of the creativity. When these scales formed in the western cultural background applies to the evaluation of creativity in other cultural backgrounds, its validity needs to be further studied (Besemer, 1998). So, this paper will develop a product creativity scale to adapt to Chinese culture and consuming background.

Relationship between creativity and experience value

In the current value-based economy, consumers pursue various value in their consuming, not only product value in use, also feeling of the experience and the sense of value identification. Experience value has been an essential factor of consumers evaluating products (Pralhad and Ramaswamy, 2004). Creativity reflects consumer preferences and has some social values. (Horn and Salvendy, 2006). Product creativity can bring more experience for the consumers through transforming or increasing product content, functionality, aesthetic characteristics, which provide consumers with more potential value. The consumer perception of product

creativity depends on the consumer preferences, and consumers who have the different preferences will make different evaluations to the same creative product from the perspective of its cultural value, artistic value, entertainment value or commercial value. Therefore, creativity is closely linked with the consumer experience. Consumers will have a good experience when they identify the creativity. (Horn and Salvendy, 2010). This paper will explore the relationship between product creativity and experience value based on constructing dimensions of creativity.

3. METHOD

In this paper, the "creativity" is measured mainly by the originality and imagination of the product design that can bring consumers a variety of experience. The research is carried out in two steps: First, the paper analyzes and explores the dimensions of creativity and develops the product creativity scale in the Chinese market environment on the basis of the CPAM model and CPSS Scale; Secondly, the research demonstrates the relationship between the product creativity and the experience value.

Product Selection

In China, the creative industry is in its infancy, and some consumers are unfamiliar with the creative products. When we determine the creative product, we request 30 students to select three kinds of tangible products and intangible products that they are most familiar with and they consider most innovative from the "China Creative Industry Development Report". Then, in the 180 kinds of products mentioned, according to the number of times mentioned, we select two tangible products and two intangible products that are mentioned most for the study. The tangible products include the iPhone and online games, and the intangible products include Taobao (Alipay) and Baidu products.

Pretest

Consulting the modified CPSS Scale (Altsech, 1995; Besemer and O'Quin, 1986, 1987, 1999; Horn and Salvendy, 2006) and other scales, we preliminarily build the original questionnaire including 28 items in accordance with the Chinese consuming characteristics. All items apply a seven-point Likert scale (1 = "strongly disagree," and 7 = "strongly agree"). Prior to data

collection, we conduct a pilot survey to ensure clarity, reliability and comprehensiveness of the questionnaire. First, 30 marketing ph.D. candidate are asked for completing the questionnaires and proposing the suggestion for the questionnaire. After the process, 15 items are retained. Then, we pretest the questionnaire with 75 students and ask them to comment on any item that they find ambiguous or difficult to understand. Based on the pretests, some items in the questionnaire are dropped and some scale items are reworded. Finally, we form 10 items to measure the product creativity. And we use Sweeney’s scale (2001) to measure the experience value.

Data collection

In the survey, we design questionnaires for tangible products (Product A) and intangible product (Product B). The questionnaires are same except the product category. The respondents are requested to choose one product that is consumed and considered most creative in the list and then answer the questions in the questionnaire.

Revised questionnaires were applied to carry on larger scale investigation. 320 questionnaires are send out , of which tangible products and intangible products are 160 each. And 241 valid questionnaires are

collected. Of the 241 questionnaires, questionnaires for Product A are 135 and for Product B are 106.

The sample characteristics are as follows: 54.3 per cent are male and 45.7 per cent are female; Average age of respondents is 29.3 years; 68.8 per cent of respondents have college education, and 18.7 per cent of respondents have graduate education.

4. RESULTS

The paper employs the SPSS16.0 and AMOS17.0 to analyze the data from the questionnaires.

Exploratory factor analysis

Generally, KMO below 0.5 is considered unsuitable for factor analysis. In this paper , the data analysis shows KMO is 0.782, according to Bartlett’s test of sphericity, spherical hypothesis is rejected, which indicates that the 10 items is very suitable for factor analysis.

We conduct exploratory principal component factor analysis by SPSS 16.0 and use the maximizing variance orthogonal rotation (Varimax). The results show there are three factors that eigenvalue is greater than 1 and factor loading is over 0.500. The three factors are affect factor, novelty factor and resolution factor. The affect factor has the highest interpretation power, closing to 30 percent. Three factors explain 59.54% of the total variance (Table 1).

Table 1 Results of the Exploratory Factor Analysis

items	Affective dimension			Novelty dimension			Resolution dimension		
	product	Product	All	product	Product	All	product	Product	All
exciting-boring	.747	.818	.805	.211	.107	.146	.120	.049	.000
like-dislike	.788	.810	.802	.121	.058	.099	.039	.112	.046
pleasant-unpleasant	.794	.709	.756	.086	.187	.151	.159	.079	.008
fashion-unfashion	.690	.607	.628	.195	.305	.268	.241	.071	.240
desirable- undesirable	.597	.569	.586	.273	.227	.27	.110	.188	.151
original - unoriginal	.067	.124	.100	.780	.755	.781	.179	.011	.041
novel-ordinary	.312	.372	.303	.714	.711	.713	-.007	.093	.156
imaginative- unimaginative	.146	.123	.106	.727	.568	.628	.165	.531	.178
Comprehensible- Incomprehensible	-.073	.007	-.051	-.002	.242	.005	.704	.794	.715
useful-unuseful	.440	.176	.275	.057	.184	.260	.560	.729	.637
Eigenvalue	29.65	27.21	27.92	20.39	21.83	21.17	10.85	10.16	10.45
after rotation	Percentage	of variance							
	Cumulative			50.04	49.05	49.09	60.88	59.20	59.54
	Percentage								

Reliability analysis

We utilize the reliability coefficient (Cronbach Alpha) to

measure the reliability of the scale. Generally, Cronbach Alpha of each variable above 0.7 is considered to be accepted.

Table 2 Reliability Analysis of Product Creativity

Cronbach's Alpha	scale	Reliability test of dimensions		
0.812		Affect dimension	Novelty dimension	Resolution dimension
		0.886	0.831	0.779

Table 2 shows that the Cronbach's Alpha is 0.812, and the Cronbach's Alpha of the affect dimension, novelty dimension, resolution dimension is respectively 0.886, 0.831 and 0.779, which indicate the scale has perfect internal consistency.

5. CONFIRMATORY FACTOR ANALYSIS

Fitness analysis

Fitness analysis is used to evaluate the fitness between the model and observed data. This paper mainly employs absolute fit measures, incremental fit measures and parsimonious fit measures to evaluate the overall fitness of the model.

Table 3 Fitness Statistics

Fitness indicators	Reference Standards	results
P	<0.1	0.00
χ^2/df	≤ 5	3.682
GFI	≥ 0.9	0.916
RMSEA	≤ 0.05	0.01
AGFI	≥ 0.9	0.900
NFI	≥ 0.9	0.891
CFI	≥ 0.9	0.917
PNFI	≥ 0.5	0.865
PGFI	≥ 0.5	0.853

As showed in the Table 3, χ^2/df is 3.68, lower than the reference standards. Its goodness-of-fit index (GFI) is 0.916, adjusted goodness-of-fit index (AGFI) is 0.900 and root mean square error of approximation (RMSEA) is

0.01, meeting the reference standards. In incremental fit measures, AGFI, CFI are in line with the requirements of the recommended standard values. NFI is slightly lower than the recommended standard value of 0.9, still within an acceptable range, so the incremental model fitness results meet the requirements. At the same time, PGFI and PNFI are greater than recommended standard value of 0.5, which indicates the simplicity of the model is acceptable. In summery, these indexes indicate he model has an excellent level of fitness.

Validity test

Content validity and construct validity is concluded mainly in the validity test of the scale. The content validity has been tested when the scale is developed. We used AMOS17.0 to test the construct validity of the scale. Construct validity includes convergent validity and discriminant validity. Generally, confirmatory factor analysis and standardized factor loadings are used to measure the convergent validity. If the loadings are significantly greater than 0.5, the composite reliability (CR) for each dimensions are greater than 0.7 and the average variance extracted (AVE) for each dimensions are greater than 0.5, we will consider the scale has the good convergence validity. The results of confirmatory factor analysis show that the loadings of the items range from 0.632 to 0.823, which indicates high significance. And CR and AVE for each dimension achieve the requirement. Results indicate the scale has the excellent Convergent validity.

Table 4 Results of Confirmatory Factor Analysis

dimensions	items	loadings	CR	AVE
Affect dimension	Q11	0.823***	0.8847	0.6237
	Q12	0.736***		
	Q13	0.739***		
	Q14	0.812***		
	Q15	0.711***		
Novelty dimension	Q21	0.759***	0.8653	0.5981
	Q22	0.632***		
	Q23	0.743***		
Resolution dimension	Q31	0.796***	0.8597	0.5364

To test the discriminant validity, we compared square root of AVE for each dimension with the correlation

coefficient of the dimension and the other dimensions. The results indicate that the square root of AVE for each dimension is greater than the correlation coefficient between the dimension and any other dimension, which indicate the independence of the dimensions (Fornell and Larcker, 1981).

Table 5 Test of Discriminant Validity

	Affect factor	Novelty factor	Resolution
factor			
Affect factor	0.790		
Novelty factor	0.701	0.773	
Resolution factor	0.672	0.634	0.732

Structural equation modeling

We explore the relations between the experience value and the dimension of the product creativity employing the path analysis. The results indicate that the consumer perception of product creativity is in line with the perception of the dimensions of the product creativity. And the empirical result shows the affect factor, the novelty factor and the resolution factor have the significant relation with the experience value (Table 6).

Table 6 Path Analysis of the Creativity and experience Value

path	Standardized regression coefficient	T Value	Significant level
affect →creativity	0.86	19.100	0.000**
novelty →creativity	0.81	18.073	0.000**
resolution →creativity	0.63	7.123	0.002**
affect → experience value	0.66	8.100	0.000**
novelty → experience value	0.71	12.493	0.000**
resolution → experience value	0.53	5.324	0.001**
creativity → experience value	0.62	7.001	0.000**

**P<0.01

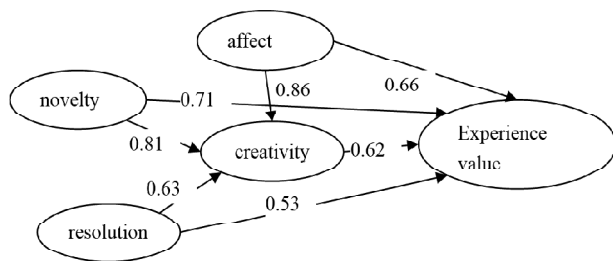


Figure 1 Structural equation modeling and path coefficients

As Table 5 and Figure 1, the three dimensions and the creativity are correlated significant, in which the path coefficient of affect factor to creativity is the highest

(0.86), followed by the novelty factor (0.81), and the path coefficient of resolution factor is lowest(.63). Creativity influence significantly the experience value and the path coefficient is 0.62. Of the three dimensions of the creativity, novelty factor has the greatest impact on the experience value and its path coefficient is 0.71, followed by the affect factor (0.66) and the resolution factor (0.53).

6. DISCUSSION

This paper explores the product creativity analysis model and the scale for evaluating the product creativity in Chinese consuming contest, and examines the relationship between the creativity and the experience value.

We propose the product creativity analysis model, which is composed of the affect factor, novelty factor and resolution factor to evaluate the product creativity. The model and scale are different from CPMA model and CPSS scale. First, to some extent, CPSS scale based on the CPAM model focuses on the objective evaluation to product creativity and ignores the innovation and the interaction between products and consumers. In our model, the affect factor, which reflects the consumer’s subjective evaluation plays an important role in the evaluation system of the product creativity. At the same time, the novelty factor and the resolution factor conduct the evaluation objectively, so the model makes up for lake of subjective evaluation of the CPMA model and obtains the balance between the subjectivity and objectivity of the evaluation. Secondly, the CPAM model is mainly used for the evaluation of tangible products, such as the measure of the product materials, processes, concepts, manufacturing methods, product features, style and other factors, but not for the measurement and evaluation of intangible products. However, with the rapid development of the network, the virtual product creativity is emerging continuously. The product creativity analysis model has been verified that it can be applied to the evaluation of physical creative products and virtual creative products, which expands the scope of application of the model.

According to the quantitative analysis results, we can obtain the following conclusions and management implications:

First, in the three dimensions of the product creativity evaluation, the affect dimension is the most important

factor in Chinese consuming contest, followed by the novelty factor and resolution factor. In Chinese consumers view, the perception of product creativity come initially from the consumer's psychological feelings to the creative product, such as whether the creative product is fashionable, exciting, desirable or attractive, which demonstrate the subjective evaluation of the consumers. Certainly, the consumers also evaluate the creativity according to the originality, novelty and usefulness. But, the role of these two factors is far lower than the affect factor. This finding is different from the CPAM model, which considers the novelty is the most important in evaluating the product creativity, followed by the resolution, elaboration and synthesis. This difference may be due to the fact that Chinese consumers' perceive the product creativity depending on more the emotional or affective experience during purchasing and consuming the creative product. Affect factor has the close relation with the feelings, emotion, cognition and judgment, which is effected not only by the personal traits, lifestyle and values, but also by the shopping environment, shopping atmosphere and consumers' emotions and feelings in the purchase. So, when the enterprises promote the creative product, they should integrate kinds of marketing methods such as the advertising, consumer experience design, interaction between the sales staff and customers to arouse consumers pleasant emotion, improve consumers involvement in the experience, to stimulate consumer affect factors and improve their affective perception of creativity.

Second, in the Chinese market, the novelty factor has the greatest contribution to the experience value and the resolution factor has the weakest impact. As the empirical results indicate, the affective factor impact the creativity evaluation mostly, yet the novelty factor impacted the experience value mostly, which discovers that Chinese consumers emphasize the positive emotions deriving from creativity when they evaluated the creative product, but what bring the direct experience value is the novel, original, imaginative factor from the creativity product. Therefore, creative product design should aim to reflect the novelty and uniqueness that match the style of the consumers in order to create more experience value in consuming. However, there is a question to be paid attention to about the novelty factor. Although novelty factor can bring more experience value for the consumers, there still should be a reasonable degree of

the novelty. If the novelty is beyond the acceptable scope for the consumers, they will feel confused or have difficulty to understand the creativity, which will weaken the perception of the creativity and decrease the consumers experience value.

Third, resolution factor supply the objective evaluation for the product creativity evaluation system, but empirical results indicate that its contribution to the consumer experience value is limited. Consumers prefer enjoying more pleasant experience feeling to obtaining the basic utility provided in the consumption of the creative product. So, enterprises should weaken the resolution of the creative product in a degree in creative product promotion.

Further Research

First, Chinese culture factor will be taken into the product creativity scale in the future research. The process of creativity evaluation is complex, combining the consumers' subjective and objective evaluation, rational cognitive and emotional experience. In Chinese culture context, consumers' values, aesthetic standards and the awareness of innovation are distinctive, different from the western culture. There will be more factors indicating the Chinese consumer characteristics of values, cognitive and emotion in the product creativity evaluation system. The future research will focus on more Chinese culture factors to discover the new dimensions in creativity evaluation, and develop the scale correspondingly and conduct related empirical research.

Second, further research will focus on developing respectively tangible product and intangible creativity evaluation system. Although we distinguish the tangible product and intangible product when we select the products in empirical research, the differences of creativity evaluation in tangible product and intangible product don't be discussed in the paper. We don't differentiate the creativity evaluation scales for the tangible product and intangible product in current research. In fact, the creativity evaluation of tangible product and intangible product is different in emotion experience, novelty cognitive and so on, which presents a fascinating area for future research. The researches on distinguishing the tangible product and intangible product will make the product creativity evaluation system more meticulous. Expanded testing in catalog is also recommended to explore the specific dimensions of the tangible product and intangible product.

Third, future research will explore the relationship between the product creativity and the consumer behavior. This paper verified the relations of the dimensions of product creativity and the consumer experience value, and didn't test the relationship between these variables and the consumer behaviors. Some scholars believe that product creativity is associated with consumer behavior (Horn and Salvendy, 2010). And positive consumer experience can strengthen the emotional connection between the consumers and enterprise (Gentile, Spiller and Noci, 2007). What we concern is whether the product creativity will lead to the consumer satisfaction and consumer purchase behavior, and whether there is a mechanism that connects the product creativity and consumer loyalty, which direct the future research areas.

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