

A Study on Design Preference and Satisfaction in Consumer Decision Making

- Focused on Alternatives Choice Processing in On-line Shopping

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Abstract: When consumers make a decision, they use various choice strategies to maximize their satisfaction and to minimize their regret. Four steps of consumer decision making process are setting up goal hierarchy, gathering information, evaluating and choosing alternatives, and feedback & learning. Design as one of the most important attributes affect to consumer's choice.

While the advantage of on-line shopping is to save time and effort, process of choice is restricted by the lack of information of the product. Consumers' satisfaction may be decreased after purchase, as they have to make a judgment by only small image. In this reason, various sub-informations like verbal expression, zoom-in image or 3D simulation are provided.

As the first step, the object of this review paper is to investigate possibility of importing to design field by study of consumer decision making theory in marketing and consumer behavior in cyber environment. In the second step as next study in coming year, the direction and scope of the study will be established by researching the case studies of design decision making in on-line shopping. In the last step, the factors which influence the choice of design will be extracted from former studies, and the hypotheses are tested by experiments.

Key words: *Consumer Decision Making, On-line Shopping, Emotion, Sensitivity, Kansei*

1. Introduction

Internet shopping malls are becoming one of the new shopping spaces nowadays. But on-line shopping has new problems which are differ from ones of off-line shopping. Though on-line shopping as non-store retailing has merit like saving time or easy of purchase, it has risk factor that goods are intangible. As consumers can get only limited information, they may meet that delivered product is different from expected. Furthermore they may feel difficulties to evaluate design quality from only tiny image and simple product information. Many internet

shopping mall make an effort to provide various visual information like product feature, multi-angled pictures and zoom-in pictures. If consumers disappoint delivered goods after decision from restricted information, they will return or distrust the information the internet shopping mall provide. On the contrary, if they think real goods are better than expect, their satisfaction is increasing but purchase intention itself on decision making step is decreasing. That's the reason why accurate information about goods is so important in on-line shopping mall.

It will be studied in this article how customers who have restricted information in on-line shopping situation recognize design quality, make a judgment and satisfy after taking real goods. There were studies that information search effort and reliance influence satisfaction in off-line purchase situation. (Chae 1995) Although There has been various researches on consumer decision making and on-line marketing, design hasn't been considered as a important product factor. In the first step, this paper examines as a review paper how to introduce consumer decision making theories into design field and offer design information from established research on on-line shopping

2. Consumer Decision Making Theories

Consumers use various decision making strategies to maximize their satisfaction and to minimize their regret. Consumer decision making processes are considered as 4 steps that setting up goal hierarchy, gathering information, evaluating and choosing alternatives, and feedback & learning. These steps affect each other and their interaction influence whole decision making, and sometimes they aren't processed in regular sequences. (Ha 2000) The predominance of information processing model which has developed since 1970's is that process is thought to be more important than result of decision and the framework explains these 4 steps on the whole.

Human beings are rational and the preference is absolute in economics. (March 1978) But the idea that preference is constructive is getting abroad in the judgment and decision making psychology. (Ahn 2000) Some papers, which concern human psychological procedure of consumer decision making in aspect of information processing model, examine human emotion and sensitivity.

Some consumer behavior papers introduced examples of the emotional factors which is directly related to decision making task (Bettman, Luce and Payne 1998; Luce 1998; Luce, Payne and Bettman 1999) Luce introduced if trade-off of decision making evoke seriously negative emotional difficulty, consumers tend to avoid choice. (Luce 1998) Luce, Payne and Bettman explore whether choice patterns are sensitive to the potential of relevant trade-offs to elicit negative emotion. (Luce, Payne and Bettman 1999) Overall, it appears that coping with potentially emotion-laden choice trade-offs is one factor influencing consumer choice strategies. Thus emotional trade-off difficulty is a factor that marketers should consider when attempting to predict and explain consumer choice patterns. These conclusions of this paper are consistent with recent research that argues that avoiding or otherwise coping with negative emotion is an important goal that guides decision behavior.

Satisfaction can be affected by emotional factors as well as cognitive valuation about product's benefits. (Westbrook, 1987; Westbrook and Oliver 1991) Westbrook examines consumer affective responses to product/consumption experiences and their relationship to selected aspects of postpurchase processes. In separate field studies of automobile owners and CATV subscribers, subjects reported the nature and frequency of emotional experiences in connection with product ownership and usage. Analysis confirms hypotheses about the

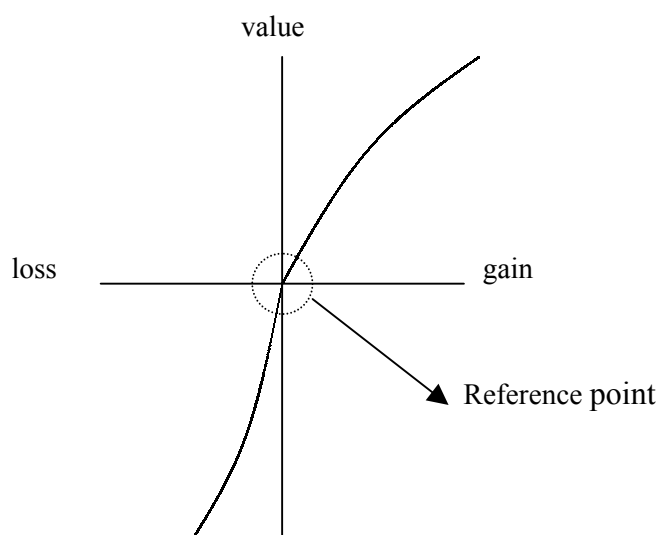
existence of independent dimensions of positive affect. Both dimensions of affective response are found directly related to the favorability of consumer satisfaction judgments, extent of seller-directed complaint behavior, and extent of word-of-mouth transmission. He focused that a growing number of conceptual and empirical studies of consumer affect, but most attention to date has been on its role in consumer prepurchase processes. He thought that Affects in postpurchase processes has been relatively neglected.

On the other hand, some papers about the emotional factors which affect indirectly were introduced in Korea (Kim Kwak 1998; Kwak & Lee 1998) For example, the emotional condition in the shop influence directly appraisal of product' benefit and consumer's sensibility. If the studies on emotion in consumer decision making can be imported to human sensitivity ergonomics (Kansei engineering in Japan) or design, the study on how design affects consumer decision making procedure can be possible.

Expectancy - disconfirmation model also tried to examine human emotional reaction and satisfaction. As this model consumers decide satisfaction from comparison between expectancy on product's benefits. (Oliver 1980; Yi 1990) Expectancy is consumers' prospect about forecasting product's benefits and it reflect how benefits will be. If product's benefit is better than expected - confirmation, satisfaction is high. On the contrary it is worse than expected - disconfirmation, satisfaction is low.

Framing effect after Thaler's mental accounting from Kahneman and Tversky's prospect theory is also worth to be considered as the same concept. (Kahneman & Tversky 1979; Thaler 1985) Value function is very important theory in consumer decision making field. Value function of prospect theory is very important in consumer decision making field. Kahneman & Tversky have proposed that the value function is (i) defined on deniations from the reference point; (ii) generally concave for gains and commonly convex for losses; (iii) steeper for losses than for gains. A value function which satisfies these properties is displayed in Figure 1. Note that the proposed S-Shaped value function is steepest at the reference point.

Fig.1 A value function (Kahneman & Tversky 1979)



Thaler explained consumer behavior based on Kahneman and Tversky's prospect theory. He explained that a new model of consumer behavior is developed using a hybrid of cognitive psychology and microeconomics. (Thaler 1985) The development of the model starts with the mental coding of combinations of gains and losses using the prospect theory value function. Then the evaluation of purchases is modeled using the new concept of

"transaction utility". The household process is also incorporated to complete the characterization of mental accounting. Several implications to marketing particularly in the area of pricing are developed.

Studies of framing effect are concerned with almost marketing factors like price, critic opinion (West and Broniarczyk 1998), advertising (Shiv, Edell and Payne 1997), consumer choice (Tversky and Kahneman 1991), display of products. (Hsee & Leclerc 1998) If design expectancy level is regarded on reference point, the factors which have effect on design satisfaction and dissatisfaction can be investigated through framing effect theory.

Consumer decision making on cyber environment is widely investigated as internet spread out and affect purchasing. Many studies assume that real consumer behavior at actual life is different from at cyber life. Hoffman and Novak developed Csikszentmihalyi's flow concept and explained marketing in hypermedia computer-mediated environments. (Hoffman & Novak 1996; Csikszentmihalyi 1990) They emphasize if users is getting into flow stage, they can visit often that site and happen to make a purchase.

Consumer's purchase intention in on-line environment is broadly investigated in Korea. One of studies on perceived risk in on-line shopping is Han & Park's paper that the overall risk which consumers perceive negatively affects their involvement construct and their buying intention. (Han & Park 2000) They explained user's flow, concentration and perceived risk among buying behavior factors in on-line environment highly affect involvement construct.

Perceived risks as negative factor in on-line shopping are different from ones in off-line shopping. Perceived risks in general marketing researches are financial risk, performance risk, physical risk, psychological risk, social risk and time risk. (Jacoby & Kaplan 1972) Otherwise perceived risks in on-line shopping are product quality risk, delivery & security risk, lack of information risk and inability of comparison risk (Lee & Choi 2000) Perceived risks during the internet shopping negatively affect buying intention of internet shopping, and most effective factors are product quality risk and inability of comparison. If consumer's perceived risk is decreased, customer loyalty as well as initial purchase can be increased.

Consumer's purchase intention, purchase result, benefit factor, risk factor were researched between experienced group and unexperienced group. (Kim & Park 1999) Though experienced group have higher relation to benefit factor, unexperienced group have it to risk factor. It means that purchase experience effect positively purchase intention. So it is explained that benefit of on-line shopping has to be emphasized to enhance purchase intention of unexperienced group.

But, there is the contrary sight of paper that purchase intention is influenced by perceived quality not perceived risk. (Park & Han 2001) Low perceived quality from difficulty of quality judgment is most important factor which disturb purchase in on-line shopping. So, it was remarked that the effort which make consumer perceive quality of product and service is necessary before reducing perceived risk. At this paper, because information quantity from internet shopping mall positively affect perceived quality, various and abundant information which is needed for purchase intention has to be provided. They introduced a virtual reality system as an example of special information.

Lee & Jung introduced that purchase intention can be improved from VRISA(Virtual Reality driven Shopping Agent) which provide reality, absorption, pleasure to users.. (Lee & Jung 2000) As this paper, navigation effort, compatibility and playfulness are more statistically significant for purchase intention in virtual reality system rather than in normal internet shopping mall. It may be meaningful to investigate what virtual reality system provides to consumers because every shopping mall cannot adopt it in actuality.

Decision making is influenced by the type of information and product in on-line shopping. (Nelson 1970; Kim 2001) The higher perceived information sufficiency, the lower perceived risk and no-choice option - to delay decision. As perceived information sufficiency is diversified by product types, search goods is influenced by concrete intrinsic information, and experience goods is affected by abstract extrinsic information. As the product, which is affected by design, is experience goods, we can investigate what kind of information about visual cue is appropriate.

Another study explained that the types of product are durable goods and nondurable goods according to durability; shopping goods, convenience goods and specialty goods according to shopping pattern; functional goods, hedonic utility and symbolic goods according to utility. (Kotler & Armstrong 2001; Suh et al. 2001) Particularly easy of product comparison and information of product appraisal are important at the step of evaluating alternatives. It was researched that important design factors tend to be reduced cognitively in digital environment rather than realistic environment. (Yun 2000)

3. Discussion

Consumers try to rationally make decision after appraisal of various product feature. But human beings don't judge by only reason and they are influenced by emotion. So we often see that emotional factor like design become important or dominant. It is significant to research how consumers recognize and appraise design as a product feature at various situations on decision making procedure. But design has so multifarious factor that design itself cannot be regarded as a simple feature of product. Many studies on value of design itself, which design is good design, are investigated in design field. It is necessary to import various consumer decision making theory to design field and to research deeply and realistically relation between procedures of expectancy and appraisal of design quality and satisfaction on next step.

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