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Exploring Experiential Value Categories for Product Use Through a Sentence Completion Test: Toward an Experiential Value Scale

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ABSTRACT

Existing UX evaluation scales are useful for quantitatively assessing predefined dimensions of product experience, but they do not necessarily capture the qualitative meanings and values that users derive from their experiences. To understand product-use experiences themselves more comprehensively, it is therefore necessary to clarify what kinds of experiential values can emerge from such experiences. This study aimed to inductively identify and categorize these experiential values as a basis for developing a scale specifically designed to assess experiential value in product use. A web-based survey was conducted with participants who had used at least one product continuously for six months or longer, and 438 valid responses were analyzed. Participants recalled a positive and memorable product-use experience and completed three types of sentence completion test (SCT) items. Using a qualitative analysis procedure based on the KA method, 1,316 experiential values were extracted and categorized through affinity diagramming. As a result, 30 intermediate-level categories were inductively identified and further organized into six higher-level categories. Many of the identified values corresponded to concepts addressed in existing UX research, whereas others, including relaxation, nostalgia, and integration into everyday life, were less explicitly represented in major UX evaluation scales. These categories provide a basis for developing an experiential value scale that captures the diverse values users derive from product-use experiences.

Keywords: User experience, Experiential value, Sentence completion test, UX evaluation

INTRODUCTION

Subjective evaluations are widely used in user experience (UX) design to assess users' experiences with products. In particular, subjective satisfaction and loyalty are often employed as evaluation measures. However, simply quantifying the degree of satisfaction or whether an impression is positive or negative does not necessarily reveal how users perceive and interpret the underlying experience. This issue also applies to widely used UX evaluation scales such as the User Experience Questionnaire (UEQ) (Laugwitz et al., 2008) and meCUE 2.0 (Minge et al., 2017). These scales are grounded in frameworks such as Hassenzahl's (2003) distinction between pragmatic and

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hedonic quality and the Components of User Experience (CUE) (Thüring & Mahlke, 2007), and quantitatively evaluate product-use experiences based on multiple predefined evaluation dimensions.

However, these scales are not primarily designed to capture, in a multidimensional and qualitative manner, the values that users derive from their experiences. For example, even when two users obtain the same Attractiveness score on the UEQ, the nature of what they find attractive in their experiences may differ. Thus, score-based evaluations alone may not sufficiently capture the values that users derive from product-use experiences.

Another approach to understanding user experience was proposed by Hassenzahl et al. (2010), who examined the factors underlying positive experiences from the perspective of psychological need fulfillment. In their study, factors related to psychological need fulfillment were deductively selected based on established theories, including self-determination theory, and were then examined through a questionnaire survey. However, because this approach is deductively structured on the basis of specific theoretical frameworks, it may overlook experiential values that are not anticipated by those theories. In this study, experiential value refers not to product attributes themselves, but to the value that users subjectively derive through their interactions with a product.

Given the difficulty of linking numerical scores to the qualitative content of an experience and the possibility that deductive approaches may overlook experiential values not anticipated by existing theories, we considered it necessary to categorize experiential values arising from product use through an inductive approach and, based on these categories, to develop a scale capable of evaluating the meanings and values that users derive from their experiences. As a first step toward such a scale, the present study aimed to inductively identify and categorize experiential values associated with product use.

METHOD

Participants

A web-based questionnaire survey was conducted with 1,000 participants who had indicated in a preliminary screening survey that they were currently using at least one product that they had used for six months or longer. All participants resided in Japan. As described below, participants were asked to select one product that met these criteria and to respond to a sentence completion test (SCT) concerning their experience with that product. Responses were excluded as invalid when the product name was not provided, the reported duration of use did not meet the specified criterion, or the written responses were uninterpretable. After these exclusions, 438 valid participants remained (mean age = 40.9 years; 219 men and 219 women). Informed consent was obtained through the web-based survey form before participation. The study was approved by the Research Ethics Committee of the Graduate School of Human Life and Ecology, Osaka Metropolitan University (approval number: 2026-02).

Questionnaire Items

Participants were asked to recall their experiences with a product that they had been using for at least six months and were still using at the time of the survey. First, they were asked to think of a product with which they felt they had a positive and memorable experience. They then identified the product and described a particularly memorable episode from their overall experience with it, together with what they had felt at that time.

Next, three types of sentence completion items were developed, comprising a total of nine blanks to be completed. The sentence completion test (SCT) is a projective technique in which respondents subjectively complete blanks embedded in predefined sentences or contexts, with the aim of eliciting cognitions, emotions, and meanings that may be difficult to express through conventional structured questions. The SCT has also been used in UX research as a structured qualitative method for eliciting users' perceptions, feelings, and meanings associated with their experiences (Kujala et al., 2014). We considered the SCT suitable for the exploratory purpose of this study because it allows the context of responses to be partially controlled while, unlike existing evaluation scales, not restricting responses to predefined concepts. To capture the abstract concepts of user experience and experiential value from multiple perspectives, the SCT items were designed from the following three viewpoints.

The first viewpoint concerned temporal changes in the experience. Because UX encompasses a sequence of experiences extending from before use to during and after use, including subsequent reflection (Roto et al., 2011), the items addressed temporal changes such as initial expectations, outcomes after use, reasons for those outcomes, and perceptions after becoming accustomed to the product. The second viewpoint concerned impression formation. Although UX is often evaluated through multiple constructs (Laugwitz et al., 2008; Minge et al, 2017), attractiveness and overall impressions are generally regarded as important aspects. The items therefore asked about what was particularly memorable in the experience and about the product- or use-context-related factors that contributed to that impression. The third viewpoint concerned the meaning of the experience for the user. To capture reflective aspects beyond simple utility or attractiveness, the items asked about users' self-evaluations through the experience and the meaning that the experience held for them.

In all three types of items, the experience, rather than the product, was used as the subject of the sentence. This was intended to focus respondents on the experience itself rather than on evaluating product characteristics or impressions, in line with the motivation of this study. By asking about product-use experiences from these different perspectives, we aimed to elicit a broad range of experiential values, from practical aspects to emotional and reflective ones, without restricting responses to any specific value dimension. The original SCT items were presented to participants in Japanese; English translations are provided below.

1. Temporal changes in the experience

Regarding this experience, when I first started using the product, I thought _____. After using it, I found that _____. This was because _____.

As I became accustomed to using the product, I came to think that _____.

2. Reasons for a strong impression
This experience was memorable because _____.
This was because _____.

3. Experiential value and meaning
Through this experience, I _____ (e.g., did, felt, or thought something).
This was because _____.
For me, this experience means _____.

Data Analysis

To inductively derive hypothetical categories of experiential value from the product-use experiences described by the participants, the textual data obtained from the SCT were analyzed as follows. For each of the three SCT item types, the entire completed sentence set, including multiple blanks, was treated as one unit of analysis. First, experiential values interpreted from each unit were extracted following the procedure of the KA method (Asada, 2006; Ando, 2016). The KA method is a qualitative analysis approach in which (1) an event or fact obtained from observations, interviews, photo essays, or similar sources is identified, (2) the user's underlying thoughts or feelings are inferred, and (3) the experiential value that the user may derive is interpreted based on (1) and (2). In the present analysis, one experiential value was extracted from each unit in most cases. However, when multiple distinct experiential values were clearly expressed, more than one value was extracted; this occurred in two cases. At this stage, each experiential value was expressed as closely as possible to the specific content of the original response while reinterpreting it in terms of experiential value. Because the values were regarded as arising through experience, all extracted values were expressed using phrases that included a verb.

Next, experiential values with similar meanings were grouped using an affinity diagramming approach, and each group was assigned a label at a higher level of abstraction (intermediate-level category). For each intermediate-level category, experiential values that appeared semantically similar were first grouped provisionally, and their common characteristics were then used to assign a group label. The groups were repeatedly compared with one another, and categories were merged or divided when their level of abstraction was judged to be too narrow or too broad. Through this iterative process, categories of experiential value derived from product-use experiences were inductively generated from the SCT responses. All coding and analysis were conducted by the author.

After the intermediate-level categories had been established, higher-level categories were created to organize and interpret their positions. These higher-level categories were not intended to inductively generate new experiential values; rather, they served as an interpretive framework for organizing the intermediate-level categories. Existing theoretical frameworks related to UX were therefore consulted when defining these higher-level categories.

RESULTS

The experiences collected in this study were based on products that had been used for at least six months. From the three SCT item types completed by 438 participants, a total of 1,316 experiential values were extracted. These values were grouped using affinity diagramming, resulting in 30 intermediate-level categories. The categories were organized so that their levels of abstraction were as consistent as possible and their meanings did not substantially overlap, while referring back to the original responses as necessary. The 30 intermediate-level categories were further organized into six higher-level categories: practical value, emotional and affective value, self-growth and intrapersonal value, value in the context of everyday life, social and relational value, and physical value. The 30 intermediate-level categories are presented in Table 1.

When examined by higher-level category, practical value included experiential values related to the functional benefits of product use, such as usability, trust and reassurance, time efficiency, and the removal of inconvenience. Emotional and affective value included direct emotional responses arising from the experience, such as enjoyment, being moved, comfort, and relaxation. These values were derived from descriptions of experiences involving positive emotions and accounted for approximately 30% of all extracted experiential values. Self-growth and intrapersonal value included reflective aspects of personal change through experience, such as learning, growth, self-understanding, and self-expression. Value in the context of everyday life included aspects such as integration into everyday life, attachment, new encounters and discoveries, and nostalgia. Social and relational value concerned relationships with others and included social connectedness, environmental and social consciousness, social recognition, and interpersonal warmth. Physical value concerned direct benefits related to the body and the senses, including satisfaction related to taste, personal appearance, and health.

Table 1: Experiential value categories identified through the SCT.

Higher-Level Category	Intermediate-Level Category	
	Label	**Experiential Value**
Practical value	Usability	The experiential value of being able to use a product easily and incorporate it into one's life without difficulty.
	Trust and reassurance	The experiential value of feeling reassured that a product can be trusted and used over time because of its reliable performance and quality.
	Value for money	The experiential value of feeling that the benefits received are sufficient relative to the cost.
	Time efficiency	The experiential value of reducing time and effort and thereby easing the burden of everyday tasks.
	Removal of inconvenience	The experiential value of being freed from previous inconveniences, constraints, or risks.
	Freedom of choice	The experiential value of having the freedom to choose what one wants, when and where one wants it, from a broad range of options.

(Continued)

Table 1: Continued.

Higher-Level Category	Intermediate-Level Category	
	Label	**Experiential Value**
Emotional and affective value	Enjoyment	The experiential value of becoming absorbed in fun or interesting experiences and gaining a sense of excitement in everyday life.
	Satisfaction and fulfillment	The experiential value of obtaining expected or better-than-expected outcomes and experiencing satisfaction and fulfillment.
	Emotional impact and surprise	The experiential value of experiencing strong emotion or surprise that exceeds expectations or challenges prior assumptions.
	Comfort	The experiential value of having discomfort removed and feeling physically or mentally refreshed and comfortable.
	Relaxation	The experiential value of releasing physical or mental tension and experiencing a calm and relaxing moment.
	Novelty	The experiential value of experiencing freshness through something new or through advances in technology.
Self-growth and intrapersonal value	Learning	The experiential value of acquiring new knowledge or insights and broadening one's perspectives or values.
	Personal growth	The experiential value of overcoming anxiety or difficulties and experiencing personal development or increased capability.
	Self-expression	The experiential value of expressing oneself by adapting choices to one's preferences or personal style.
	Self-efficacy	The experiential value of gaining confidence or a sense of competence by feeling capable or useful.
	Creativity	The experiential value of enjoying the process of devising or creating something oneself and gaining freedom of expression.
	Alignment with personal values and beliefs	The experiential value of making choices consistent with one's own values, beliefs, or principles and thereby engaging in personally meaningful consumption.
	Aesthetic sensibility	The experiential value of having one's aesthetic sensibility or appreciation stimulated and enhanced.
Value in the context of everyday life	Integration into everyday life	The experiential value of a product becoming an indispensable part of everyday life or an established daily habit.
	Attachment	The experiential value of developing affection for a product and wanting to continue using and caring for it over time.
	New encounters and discoveries	The experiential value of encountering previously unknown things, works, or information and satisfying one's curiosity.
	Nostalgia	The experiential value of recalling past experiences or nostalgic memories and experiencing a sense of warmth.

(Continued)

Table 1: Continued.

Higher-Level Category	Intermediate-Level Category	
	Label	Experiential Value
Social and relational value	Social connectedness	The experiential value of deepening interaction and sharing with family, friends, or the wider world and experiencing a sense of connection.
	Environmental and social consciousness	The experiential value of engaging in socially meaningful behavior through consideration for environmental or social issues.
	Social recognition	The experiential value of gaining pride or a sense of superiority through recognition or praise from others.
	Interpersonal warmth	The experiential value of receiving kindness or consideration from others and experiencing gratitude or emotional warmth.
Physical value	Health	The experiential value of experiencing clear improvements in physical or mental health and well-being.
	Gustatory pleasure	The experiential value of enjoying taste and flavor and experiencing sensory satisfaction.
	Personal appearance	The experiential value of improving one's appearance and enhancing one's perceived attractiveness.

DISCUSSION

An overview of the experiential values inductively identified in this study revealed that many were related to concepts discussed in previous research. Practical value was associated with Hassenzahl's (2003) pragmatic quality, the Perspicuity and Efficiency scales of the UEQ, and Module I of meCUE 2.0. Emotional and affective value was related to Hassenzahl's (2003) hedonic quality and Modules II and III of meCUE 2.0. Self-growth and intrapersonal value was associated with Jordan's (1998) ideo-pleasure and the concepts of autonomy and competence in self-determination theory. Physical value was related to Jordan's (1998) physio-pleasure, while social and relational value was associated with Jordan's (1998) socio-pleasure and ideo-pleasure. In particular, aspects such as convenience, usability, trust, social connectedness, novelty, attachment, pleasure, and autonomy are already well represented in existing UX-related scales and frameworks.

On the other hand, several intermediate-level categories represented aspects that are not explicitly addressed in major existing UX evaluation scales. These included relatively calm forms of experiential value, such as relaxation, which differ from enjoyment; values related to nostalgia and memories of past experiences; and values related to becoming integrated into everyday life. These aspects have not been prominently treated as independent dimensions in conventional UX evaluation. Their emergence may be partly attributable to the present study's focus on experiences accumulated through continued product use over time, rather than on impressions of the product itself. This suggests that the analysis captured values formed as products

become embedded in everyday life and acquire meaning in relation to users' past experiences and broader life contexts.

The experiential value categories identified in this study could provide a basis for developing a scale that assesses the extent to which particular values are experienced during product use. Such a scale would make it possible to examine not only the level of satisfaction or impressions of the product, but also the specific types of value that emerge from the experience itself. In future work, multiple candidate scale items will be developed based on the experiential value categories identified in this study, particularly the 30 intermediate-level categories, and these items will be used to construct an experiential value scale.

Finally, several limitations of this study should be noted. The experiences collected in this survey were limited to products that participants regarded as having provided good experiences. The resulting categories were therefore derived primarily from memorable and positive product-use experiences, and negative experiences were not sufficiently examined. In addition, all participants were Japanese and resided in Japan, and possible cultural differences or differences in product markets were not considered. Accordingly, the experiential value categories identified in this study cannot be regarded as comprehensively covering the entire domain of UX. Furthermore, all coding and categorization in this study were conducted by a single researcher.

CONCLUSION

This study conducted a sentence completion test focusing on experiences with products that had been used continuously for at least six months and inductively derived 30 experiential value categories from the responses of 438 participants. In addition to values related to concepts discussed in existing UX research, the resulting categories included aspects such as relaxation, nostalgia, and integration into everyday life, which have not been sufficiently addressed in major conventional UX evaluation scales. These categories provide a basis for capturing the values that users derive from product-use experiences from multiple perspectives and may contribute to the future development of an experiential value scale.

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