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A RESEARCH ON THE VISUALIZATION AND RECOGNIZING OF THE GAP IN EVALUATION BASED ON USERS' POSITION

–USING AN EVALUATION EXPERIMENT USING CHAIRS AS A CASE EXAMPLE–

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ABSTRACT:

This research project aims to clarify the gap in evaluation between three groups of users—designers, end users, and providers—and to identify those gaps and create a Quality Karte, a diagnosis & evaluation system aimed at facilitating better creation. The experiment involved ten chairs and the data collected showed significant gaps in a number of areas. It was also discovered that some of the gaps worked favorably for the chairs ("positive gaps"), while others worked adversely ("negative gaps"). Seeking the factors contributing to the gaps that came to light, we held a workshop at which designers and experts gave a variety of opinions.

1. EVALUATION EXPERIMENT

Ten chairs were chosen for the tests from a broad selection; from those designed by famous designers to ordinary chairs, and chairs made from various materials (Fig 1).

1.1 COMPILING EVALUATION SHEETS

For the experiment, we selected and used 40 items based on the target and methods from the indicators that we formulated in past research. Using evaluation sheets, respondents rated each item using a four-level answer system–"I agree" through to "I disagree", with an "I don't know" option if the respondent was unable to decide.

1.2 EXPERIMENT RESULTS

There were 91 valid responses in total, 25 from designers, nine from end users, and 57 from providers (Photo 1).

Photo 1: Respondents take the evaluation test

2. DATA ANALYSIS AND VISUALIZATION OF THE GAP

2.1 STATISTICAL ANALYSIS OF EVALUATION DATA

The gaps of the three groups were studied using two-way analysis of variance. It showed significant gaps in a total of 24 items for eight out of ten chairs (Fig 2).

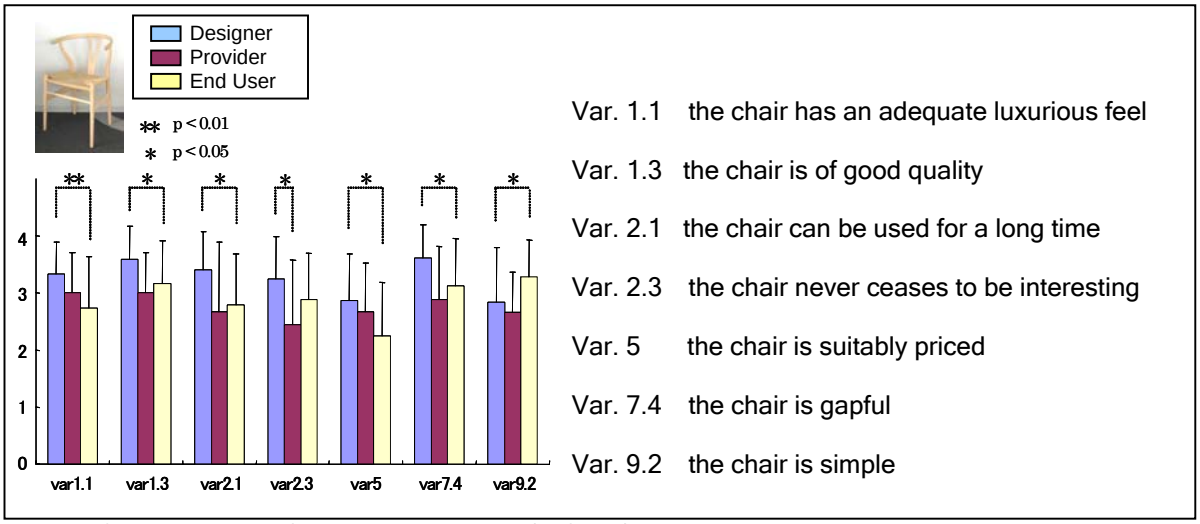

Figure 2: An example of the analysis results (Y Chair)

2.2 VISUALIZATION OF THE GAP

Gaps were identified by comparing the differences identified for each chair; through statistical analysis regarding favor, acknowledgment level, and necessity (Fig 3).

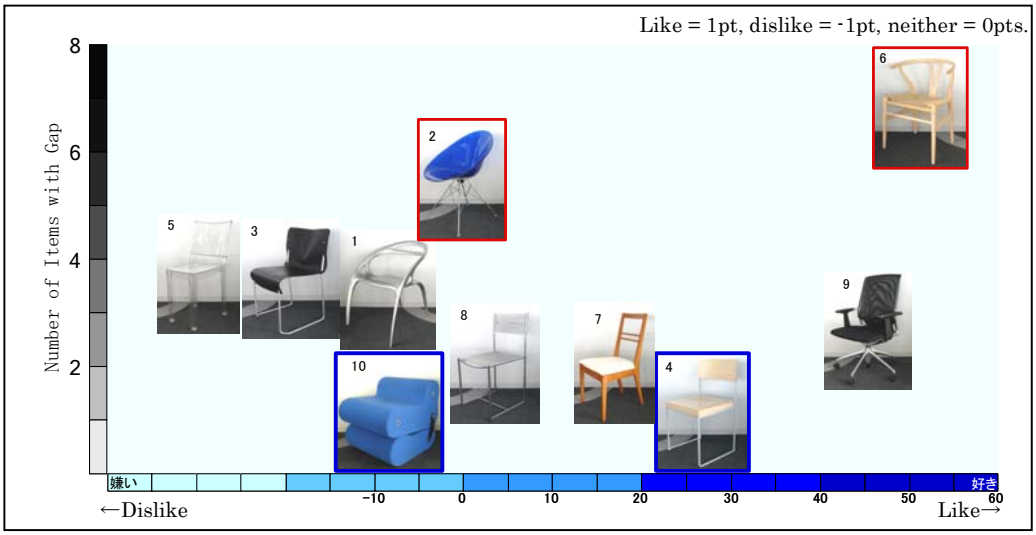

Figure 3: Relationship between favor and the gaps of evaluation

3. SOLUTION WORKSHOP

A workshop was held (Photo 2) in order to identify the factors causing the gaps and to suggest ideas for improving product quality. The workshop was attended by furniture designers and experts, who offered various opinions about the gaps identified.

Photo 2: Designers and experts at the workshop

4. CONCLUSION AND OBSERVATIONS

This research showed that chair known well had many evaluation gaps, while lesser known items had fewer. In other words, respondents had clear decision criteria to feelings, quality, and design from the experience for items they knew well and were therefore able to make clear evaluations. Having analyzed evaluation differences in light of personal favor, acknowledgment level, and necessity, some of the gaps worked favorably for the chairs (“positive differences”), while others worked adversely (“negative differences”). Thus, considering evaluation gaps together with other data is seen to give more practical results. While we were able to elicit useful opinions at the workshop, we discovered that improvement was needed in the types of data given to participants and the way in which they were presented. In the future, we aim to refine collected opinions and also incorporate methods other than workshops to reach optimal solutions.

This research was undertaken as outsourced work from the Ministry of Education, Culture, Sports, Science and Technology (science and technology advancement adjustment expense; commonly referred to as Super COE (Kyushu University User Science Institute) and is expected to be completed in 2008. In addition, some of the case studies for this research were made as part of the 21st Century COE Program (base for artificial environment design research based on sensory characteristics).

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