Analysis Method Based on Impression Words for Impression Evaluation Method by Space

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ABSTRACT

This paper proposes an analysis method of the evaluation results obtained through the Impression Evaluation Method by Space (IEMS). The IEMS uses a plane containing impression words as the Kansei space. The impression of an object is specified by circling the areas matching the impression. The degree of matching the impression is expressed by painting color. The proposed analysis method focuses on the impression words in order to analyze the evaluation results obtained through the IEMS even if the impression words are moved. The numbers of the impression words circled in the evaluation are counted, and are spatially displayed. As impression words having similar impression are placed nearer than those having different impression in the Kansei space, the tendency of the impression of an object can easily be captured. The results of the analysis are reviewed to show the effectiveness of the proposed analysis method.

Keywords: Analysis Method, Impression Evaluation, Impression Space, Kansei, Vagueness

INTRODUCTION

In recent years, in addition to functions and convenience, Kansei topics such as design have become important. Kansei is a word that means how people feel. Because Kansei is vague, it is difficult to precisely capture and quantify it. Moreover, because Kansei differs for each person, it is difficult to evaluate.

The semantic differential (SD) method (Osgood, Suci & Tannenbaum, 1957) is often used to evaluate Kansei. Because the SD method digitizes impressions, it enables statistical processing and makes it possible to perform various analyses. However, to enable statistical processing, the evaluation is required to be performed in a predefined range. As a result, it is difficult to evaluate vague aspects of Kansei. A method enabling the evaluation of the vague-ness of Kansei is required. Although various research efforts concerning the expression of Kansei have been conducted (Choi & Okazaki,
such an evaluation method has not yet been established. An impression evaluation method considering the vagueness of Kansei has been proposed in order to overcome this issue (Akai, Hochin & Nomiya, 2012). The proposed method uses a plane containing impression words. The impression of an object is specified by circling the areas matching the impression. The degree of matching of the impression is expressed by the painting color. This method is called the Impression Evaluation Method by Space (IEMS).

An analysis method of the evaluation results of the IEMS has also been proposed (Akai, Hochin & Nomiya, 2013a; Akai, Hochin & Nomiya, 2013b). It shows average values and coefficients of variation of scores of the evaluation results spatially. By using this analysis method, the characteristics of the impression of objects and the dispersion among subjects could easily be obtained. The basic analysis method, however, has a restriction: the impression words in the impression space must not be moved. As the impression words can be moved and/or added in the IEMS, this restriction is very serious. Almost all of the evaluation results cannot be analyzed because the impression words are often moved and/or added.

This paper proposes an analysis method of the evaluation results obtained through the IEMS even if the impression words are moved. The proposed method focuses on the impression words. The numbers of the impression words circled are spatially displayed. This method enables us to visually capture the tendency of impression of objects because impression words having similar impression are placed nearer than those having different impression in the Kansei space. The results of the analysis are reviewed to show the effectiveness of the proposed analysis method.

This paper is organized as follows. Section 2 shows the IEMS, the impression evaluation system based on the IEMS, and the analysis method of the evaluation results for the baseline Kansei space. Section 3 proposes an analysis method of the evaluation results based on impression words. The proposed analysis method is tried to be applied to the evaluation results in Section 4. Section 5 gives some considerations. Finally, Section 6 concludes this paper.

IEMS AND BASIC ANALYSIS METHOD

Impression Evaluation Method by Space

The IEMS uses a Kansei space. The Kansei space is the space imagined in evaluating the impression of an object. For example, when the impression of a landscape is evaluated, it can be expressed with words such as “beautiful.” In addition, the degree of fitness to an impression word can also be expressed. It is believed that people have in their minds some impression expression items, and they compute the degree of fitness of each item to the impression of an object.

Impression words are usually used as impression expression items because words can easily express an impression (something considered by the authors to be very important) (Akai, Hochin & Nomiya, 2012). In the Kansei space, the more similar the impressions of two impression words are, the closer these impression words are. It is thought that the Kansei space changes according to experience and learning. The Kansei space depends on the person.

The IEMS uses a plane containing impression words as the Kansei space. The impression of an object is specified by circling the areas matching the impression. The degree of matching the impression is expressed by the painting color. In other words, the more closely the impression is matched, the darker the color that is used. The color gray is used for these areas. A special brush, which makes painted areas dark gradually, is used.

As it is difficult to create the Kansei space mentioned above from scratch, the IEMS provides to users a commonly used baseline Kansei space. Users can modify this baseline space as needed. The baseline Kansei space has been
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