

An Analysis of Emotion Space of Bra by Kansei Engineering Methodology

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Abstract

In this study, the technique of Kansei engineering was used to assess the emotion space of bra. Sixty styles of Wacoal high-quality bra were regarded as stimuli. Fifteen pairs of adjectives and four pairs of phases on color, pattern, style, preference were selected to prepare the questionnaire according to the Semantic Differential method: “modern-classical”, “vulgar-noble”, “charming-charmless”, “intellectual-rustic”, “painted-refreshing”, “active-serious”, “restrained-inflated”, “luxury-frugal”, “lovely-unlovely”, “personality-popular”, “cumbersome-simple”, “sweet-not sweet”, “romantic-actual”, “mature-naive”, “sexy-not sexy”, “good color-bad color”, “good pattern-bad pattern”, “good style-bad style”, and “like-dislike”. Five scales were set for each pair of phase. The survey was conducted among the undergraduate college students from Xi'an Polytechnic University. The data from the survey were analyzed using factor analysis and cluster analysis. Four factors were extracted and labeled as “personality”, “age”, “taste”, “fashion”. The results also indicated that color was the most important factor when designing a bra, especially the base color of the bra, which decided the basic emotion of the bra.

Keywords: Emotion Space; Bra; Kansei Engineering; Semantic Differential Method; Factor Analysis; Cluster Analysis

1 Introduction

Kansei engineering, sometimes referred to as “emotional design” or “sensory engineering”, aims to translate consumers psychological feelings and impressions into perceptual design elements, allowing design and evaluation of products before launching them on the market. This technique, which was developed in Japan in the seventies by Professor Mitsuo Nagamachi, involves determining which sensory attributes elicit particular subjective responses from people, and then designs a product using the attributes which elicit the desired responses. [1] People's feelings are usually very different and complicated, so they need to be classified by using the method of semantic differential introduced by Osgood et al. [2] and by the factor analysis first devised by Spearman

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[3]. For example, if a female customer wants to wear a beautiful and graceful bra, we can produce a beautiful and graceful one from her estimation of several different bras and from analysis of these different materials. Kansei engineering could be used in any product design, especially in color research.

Kobayashi had developed three main dimensions of color emotions in his color image scale: warm-cool, soft-hard, and clear-grayish. These dimensions were found associated with the three color appearance attributes, hue, value and chroma respectively [4].

Li-Chen Ou et al. had studied color emotions for single-color and two-color, in which three factors were extracted by the method of factor analysis and were labeled “color activity”, “color weight”, “color heat” [5, 6].

In our previous study, some researches had been done by the method of Kansei engineering. The preference for two-color and three-color combinations was investigated and compared between Chinese and Japanese. It has been concluded that the color preferences for a few two-color combinations could change with the survey period, stimuli form and application of the combination to clothing. There were almost no differences in the manikin’s gender, but a few in the manikin’s nationality and age existed in some two-color and three-color combinations [7, 8].

Another research was about the visual impression of clothes. In that study, the visual impression for men’s stripe shirt with different width and color combination was surveyed, where three factors were extracted and labeled “activity”, “preference”, and “weight”. The results indicated that color combination played an important role and sometimes stripe width could change persons’ feeling [9].

Nowadays, there are only small quantities of bra companies, and they are weak in design. One of the reasons is that they do not know the feelings of consumers or cannot grow the consumer’s feelings into the product design. In this study, the emotion space of bra was surveyed.

2 Method

2.1 Stimuli and Questionnaire

In this study, sixty styles of Wacoal high-quality bra were selected. Some of these bras are pure color with different styles. Some of them have white or black or dim or vivid base color with different color patterns. The consumers will be moved and buy the product by the impression on color or pattern or style or the whole. These pictures of bras were made by PowerPoint presentation and regarded as stimuli.

The descriptive phases must be prepared for questionnaire. Some of the phases were searched from several famous fashion magazines, some were gathered from customers in bra shop, and the others were obtained from some fashion experts. Fifteen pairs of phases were decided to be shown in the questionnaire: modern-classical, vulgar-noble, charming-charmless, intellectual-rustic, painted-refreshing, active-serious, restrained-inflated, luxury-frugal, lovely-unlovely, personality-popular, cumbersome-simple, sweet-not sweet, romantic-actual, mature-naive, sexy-not sexy. Except for those, there were four pairs as preference: good color-bad color, good pattern-bad pattern, good style-bad style, and like-dislike. For each pair of phases, five scales were used. These emotional words and five scales were printed in answer sheets.