CHANGE IN AFFECTIONS
BY CONTINUOUS USE OF SKINCARE COSMETICS

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Abstract: When evaluating skincare cosmetics, not only the “Touch” but also the “Feeling” and “Affection” are important factors. Therefore, we have conducted studies to evaluate the emotional changes caused by the use of skincare cosmetics. Also, the actual period of use for a skincare cosmetic - moist lotion and milk lotion, for example, is usually 1 to 2 months or longer. This means that we must evaluate repeatedly in a certain span in order to develop skincare cosmetics. Accordingly, we have attempted to catch the affection which changes within the long-term use. When one uses skincare products for the first time, the “Touch” is the most important factor, whereas the factors change to the “Affection” or “Effect on skin”, etc., as time passes. This result suggests that an evaluator's criterion changes in a long-term use. It is considered that this is an important factor in developing not only cosmetics but all products. The evaluation of affection has great importance on the development of skincare cosmetics.

Keywords: Skincare cosmetics, Affection, Sensory evaluation, Principal component analysis

1. INTRODUCTION

In the product development, it is important to clarify the demanded quality from the consumer and the proposition out turn from the maker. The designed quality is composed from among these. However, it is actually difficult to include within the designed quality such qualities which do not directly correspond to the physical attributes. Kansei is related to these qualities.

Even if the result of sensory evaluation shows a product with a better quality when sensory evaluated, the consumer will not necessarily buy it. Some deeper psychological factors of the consumer, such as feelings, desire, motive, etc., affect the purchase action. It is important to consider such quality compositions in the development of Kansei products. Previously, we have tried to detect the psychological changes in a time series after the use of "washing cream," "moist lotion," "milk lotion" by the magnitude estimation method [1]. As a result, it became clear that the role of skincare cosmetics is not only to keep the skin clean, but also to compose the mind in a comfortable state [2].

The quality, which brings a certain specific feeling or affection, is what we call the “quality of affection”. It is necessary to clarify the physical attributes which make up this quality. For this, the measurement and evaluation of the relation between the affection and physical attributes are important. Affection is made up from the relationship between a person and an object. Therefore, as this relationship changes time accordingly, affections change as well.

Most commonly, skincare cosmetics are used in long terms. As this is the case, it is insufficient only to catch the momentary relationship between a person and an
object, and to measure and evaluate that affection. It is essential to catch the affection which changes during the long-term use. The purpose of this research is to obtain a clue for new product development by analyzing a series of change in the affection while using skincare cosmetics in the long-term.

2. METHOD

The samples used were skincare lotions in the middle of the development process. The skincare lotion is a representative item of the skincare cosmetics. It, in general is made of humectant, alcohol, antioxidant, a great variety of ingredients for beauty, perfume, water, etc.. The samples used were moist type skincare lotions made from the ingredients listed above.

There were 8 samples; A as the standard and B-H which the element composition has been slightly changed from that of sample A. All samples were put in the same container with the same amount.

38 women, ages ranging from their twenties to their fifties, were selected as evaluators. Each evaluator used three samples, All of which were used continuously for one week. The evaluators were asked to use the samples continuously as they ordinary use their skincare products and no specific directions for use was set.

The evaluators answered the evaluation sheet (Fig. 1), which consists of 22 items, to evaluate affection, sense, preference, etc. by using a seven-rating scale. These evaluations were conducted on the first and the final day of use.

Moreover, evaluators were instructed to write down anything they felt or thought in the course of their everyday use. Those feelings or thoughts were written down in a daily diary pad. Only the date was written on a ruled sheet (Fig. 2), and the evaluators wrote as they pleased.

3. RESULT AND DISCUSSION

The average value of each of the 22 evaluation items was obtained for all 8 samples. Results of the first and the final day were analyzed altogether. A variance-covariance matrix was calculated from the data matrix of 16 (8 samples each on the first and final day) by 22 (the evaluation items) and a principle component analysis was performed.

The result showed a contribution rate of 61.3% from the 1st and 2nd principal components. From the component loading of each evaluation term, the first principal component was able to be interpreted as "Haptic impression of refreshingness and Comfortableness", and the second as "Evaluation concerning the fragrance" (Table 1).

The average component scores of the 8 samples on the first day were plotted on a two dimensional graph (Fig. 3). It can be seen that all 8 plots were scattered which indicates that each sample differed in Haptic impression and Comfortableness. Next, we compared the results of
the first day with the final day (Fig. 4). In most samples, the evaluation on the first day greatly differed from that of the final day. This suggests that the criterion of the evaluation underwent a change during the one-week use. To make this point more clear, the contents written in the diary were analyzed. The written content of every sentence was decomposed into 6 categories; sense, effect on the skin, affection, preference, smell and others. These frequencies and ratios were calculated (Fig. 5,6). The result showed that there were many expressions...
concerning "Sense" on the first day, which indicates that the sample was evaluated analytically. Moreover, there were also many expressions concerning the "Smell". These two categories were considered as important factors which influence the first impression. However, the ratio of the usage concerning "Sense" related terms decreased, while the "Effect on the skin", "Affection", and "Others" increased day by day.

From these results, the relationship between a person and an object can be explained as follows. In the beginning, the evaluator tried to evaluate the sample objectively. However, from continuous use, she came to evaluate the sample from the relation between herself and the sample. That is, she came to evaluate the sample focusing on how the object affected herself. It is considered that the change in the relationship is the cause of the increase in the ratio of the usage of "Affection" related terms.

There are the following features in skincare cosmetics.

- Is seldomly influenced by fashion.
- Once bought, it will be used every day.
- It takes one to two months or more to use up one product.

These features show that the consumer evaluates the skincare product thoroughly over many hours. When they are pleased with the product, there is the chance that they will purchase it repeatedly. In other words, skincare cosmetics liked by numerous consumers may become long-time best sellers.

There are many factors which constitutes skin care cosmetics. The information acquired visually, such as package design, brand name, company name, price, advertisement, and catch copy – all are influential when the consumer purchases the product. At this point the greatest influential factor is the appearance the “product = appearance”.

However, after purchase, the consumers attention switch to the product content which is the original purchase purposes, and the influence of the appearance become weak. Therefore, analytic evaluation of the contents are performed for a while after purchase. At this point, it can be said that “product = contents”.

When used continuously for a long time, wheter the caution is good or bad become less important. The consumers question themselves... “What benefit will it bring?” , “How will I become by using this?” “How do I feel by using this?” ... These are what become important. That is, the “product = effect”.

In order to make a product which attracts many consumers and become long-time sellers, it is necessary to consider these things. In cosmetic research, in the past the chief aim was placed on the research of the product itself, such as, contents, and the physical characteristic of the products. Now, the chief aim is placed on the relationship between the product and the consumer. It is
being begun to put big stress of the research has begun to
focus mainly on the physiological and psychological
effect, such as, "What effect do product bring about on
the consumer?" and "Consequently, how does the
consumer feel?"

Regarding the physiological effect, it has been
researched briskly up until now. The elucidation of the
generating mechanism of brown spots and wrinkles, etc.
are such examples. However, they are medical researches
in the field of dermatology.

On the other hand, research on the psychological
effect is also conducted. These are the psychological
effect of a scent or a color, or of makeup, etc.. However,
in most cases, these are also performed only as a
psychology research.

It is necessary to think as “cosmetics research” always
in accordance with both the physiological effect which
the product has, and the psychological effect that a
consumer receives. This is why we should consider the
relationship between the product and the consumer.

Furthermore, it is necessary to predict the situation
where the cosmetics are used and to actually repeat and
verify it in the experiment. It turns out that the relation
between the product and a consumer is not always is
fixed. It changes with various situations. It is essential in
the product development to discern this. The result
obtained from this experiment makes us realize once
and again the importance of this.

Moreover, it has become clear from the analytical
result of the diary that a consumer's feeling changes with
progress of time. The change is divided greatly into four
patterns (Fig. 7).

(1) Accept : the first impression is good, and even while
using, the affection increases and
comfortableness continues.
(2) Weariness : although the first impression is good, but
affection declines by the passage of time and
comfortableness discontinues.
(3) Practice : although the first impression is bad
unpleasant, comfortableness buds while
using.
(4) Refusal : the first impression is intolerably unpleasant
and it becomes unused.

The product itself cannot changed so it can be said that
these are the change which occurred in the relation
between product and consumer. The pattern (1) is ideal
when developing a product. This may be such that is
called a “kansei product”.

Figure 7: 4 patterns of consumer's feeling changes

(1) Accept
(2) Weariness
(3) Practice
(4) Refusal
4. CONCLUSION

The actual period of use for a skincare lotion is usually 1 to 2 months or even longer. One week of this experiment may be considered too short. However, the result obtained from this experiment indicates the same tendency, which can be seen in the long-term use.

First of all, an evaluator's criterion changes in a long-term use. Specifically, the content of the criterion changes from the evaluation on physical properties, centering on "Sense", to the evaluation consisting mainly on the "Effect on the skin" and that of Kansei centering on "Affection". This means that we must evaluate "diversely" and "repeatedly" in the development of a skincare lotion. It is considered that this is an important factor in developing not only cosmetics, but all types of products. Especially, to evaluate repeatedly is extremely important in the development of one's most favorite product that is bought for the thousandth time.

Also, the change of criterion differs in accordance with the sample. Some samples showed no change in the 1 week use, whereas some changed greatly. This suggests the possibility that the criterion, which changes when continuously used, can be controlled by the sample to greater or lesser degrees. In other words, there is great chance in developing the ideal product which constantly brings good impression to the consumer from beginning to the end. This is what we call the "Kansei product".

These results were clarified by the evaluation of Kansei, such as affection. This will not have been obtained only by the sensory evaluation, which relates directly to the physical characteristic of the product. The evaluation of Kansei, such as affection, will become one step in the development of the "Kansei product".

REFERENCE