Research on the method of measuring a user's Taste-KANSEI

Consideration through the classification of a bench

Namgyu KANG , Toshimasa YAMANAKA

University of Tsukuba Institute of Art & Design1-1-1 Tennodai Tsukuba-shi Ibaraki 305-0006 JAPAN, rainkng1@hotmail.com
University of Tsukuba Institute of Art & Design1-1-1 Tennodai Tsukuba-shi Ibaraki 305-0006 JAPAN, tyam@geijutsut.tsukuba.ac.jp

Abstract: The city circumference environment is becoming adverse, the spaces for resting have been arranged in order to attract people. In the last few years the preference for this kind of places has been increasing. The bench of the park is a common used street furniture. The purpose of this research is grasping the taste sensitivity of the user when choosing a product. Therefore, a user's taste sensitivity is grasped by an experiment that classifies 50 different photographs of benches. This research examined sensitivity concerning the way consumers' heart works whenever they want to sit down. The experiment was divided into gender, blood type, and character, and the standard of the time concerning the classification, and the number of groups and classification which divided, the selected degree of concentration of a bench and taste sensitivity, etc. have been grasped by taxonomy. Classification was made considering: atmosphere, supplies, form, quality of the material and structure. It turns out through this research that the taste sensitivity of the users changes depending on the person. However, although the data based on gender did not show the tendency to have intercourse to taste sensitivity as a result of distributed analysis, it turns out that the blood type and character tend to affect taste sensitivity. This result is applied to product design development process, and if the average of usability prevents production of a not useful product beforehand and progresses, it is thought that it can contribute to creation of comfortable street rest culture.

Key words*: *KANSEI, Taste-KANSEI, KANSEI evaluation, classification, bench

1. Introduction

These days, there are many types of the same product (for example, stone bench, wooden bench, tall bench, short bench, etc.) and even products which overlap (a cell phone which also functions as a camera). One product has many different forms, colors and functions. Therefore, we don’t only choose products considering the performance or function, but also according to our taste. Choice by taste means that an individual sets one's own standard, classifies products by the standard and chooses the products. Emotion is the reaction of the natural and native character rather than the reaction of its will or intention. When you buy a certain product, KANSEI takes place in a consumer’s mind. For this study, we will use different kinds

of benches in order to understand a person's KANSEI and Taste – KANSEI (KODAWARI).

2. Purpose of Research

When a consumer chooses a product, they have several questions or concerns.

The consumer picks what suits their preference KANSEI or Taste-KANSEI(KODAWARI). It is said that Taste-KANSEI(KODAWARI). Depends highly on individual differences and it is hard to understand this academically. In this research, I would like to find what influences Taste-KANSEI(KODAWARI).. The purpose of this research is to understand these influences to help us design better products which will meet the demands and desires of consumers.

3. Method of research & outline of investigation

3-1. Bibliographic investigation

KANSEI is subjective and unexplainable. But, it is said that KANSEI is the interaction between intuition and intellectual activity. In research scientists use a logical method that defines matters as quantitative things. This is known as quantitative analysis. From the perspective of design, we say that KANSEI is the expression of a mixture of people's accumulated knowledge and experience. Thus, the definition of KANSEI is different according to the each individual.

Taste-KANSEI(KODAWARI) is dependent on a person's taste and preference. The mental capacity that affects preference is called preference sensitivity. Sensitivity of the mind is unexplainable. Sensitivity added to innate nature is known as recognition expression. Fundamentally, a principle and basis are based on the logical and actual system. So, in all cases, they should be constant, ubiquitous and trustworthy. Because people's preferences are so varied, we have to recognize them systematically. We have to find the principle values and criteria that are common in people's mentality.

Taste-KANSEI(KODAWARI) has features like these:

a. The motive of choice is one's own personality and sensitivity. As absolute value-criteria, the motive of selection is the objective and essential decision-making factor.
b. In a group, the character of preference sensitivity is made by the common aspects of each member's Taste-KANSEI (KODAWARI).
c. Specific Taste-KANSEI (KODAWARI) exists irrespective of specific groups or gender. Because it is a pure subconscious mentality, the extent of Taste-KANSEI (KODAWARI) doesn't change greatly. Taste-KANSEI (KODAWARI) means the strongest personal sensitivity that exists in one's subconsciousness. Compared with that, the self-related preference that expresses one's value, and the dignity-suggestion preference that makes someone prefer the brands are changeable as time passes by. The Taste-KANSEI(KODAWARI) is changeable to some degree by experience and surroundings.

d. The people who sympathize with the specific Taste-KANSEI(KODAWARI) can ignore other kinds of preference.

e. To every person, the Taste-KANSEI(KODAWARI) is unchangeable because it has existed for a long time.

4-2. Experiment

4-2-1. The experiment concerning the classification of benches: subjects consist of 19 males and 23 females who have various jobs. Their ages are from 10 to 40.

4-2-1-1. Before the experiment, the Mosley - Personality Test and statistical investigation are carried out to collect subjects' characteristics. By the experiment, we can know the subjects' extroversion levels.

4-2-1-2. I used pictures of 50 benches for this experiment. Before the experiment, I removed all surroundings that could affect the subjects' decisions. Subjects classified 50 pictures which were on a board. Then they described in detail their standards of classification with free expression.

4-2-1-3. Subjects were directed to select a few benches (about 5) which they wanted to sit on. I monitored the time taken for selections and compared the results with the outcome of the experiment.

Fig.1 . Scenery of experiment

5. The result and Analysis of experiment.

5-1. Relation between preference-KANSEI and gender, character and a blood type.

Preference- KANSEI (KODAWARI) seemed to be related to gender, character, and a blood type. But, according to the result of 「analysis of variance」, compared with the relevance of gender, character, and preference-KANSEI having been weak. It compares with this, the P-value of a blood type and preference-KANSEI is 0.04145. This result show us that blood type relate with preference-KANSEI.

5-2. Relation between Taste-KANSEI (KODAWARI) and the divided numbers of groups, the selected degree of concentration.

Considering the preference-KANSEI (KODAWARI) over a bench, it can be assumed that it is regarded as multiplication relation between reasonable judgment and emotions-judgment. From an experiment result, reasonable judgment is the time concerning the classification and the number of groups. And, emotions-judgment is the degree of concentration. That is, Subjects consider the various fields which the bench has, so that Subjects divided many groups. On the contrary, Subjects consider about only favorite style and the favorite feature, so that the degree of concentration of the group to which the favorite bench belongs is high. Subject's preference-KANSEI (KODAWARI) is known by comparing these two elements.

Table1. Relation between a group, degree of concentration and KODAWARI

Moreover, Taste-KANSEI(KODAWARI) grasped by this method, a designer and an ordinary person show a different result.

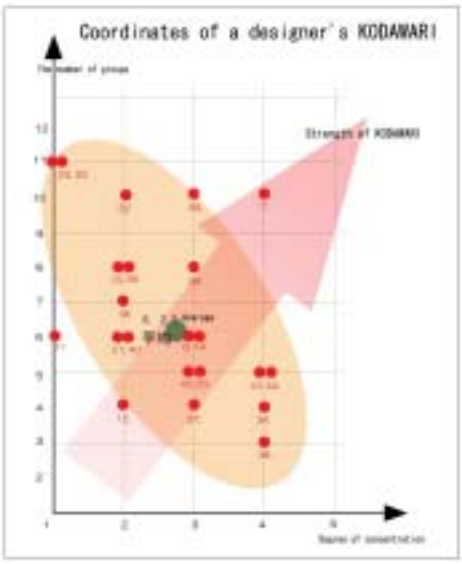

Table2. a designer's result.
Negative correlation (r < 0)

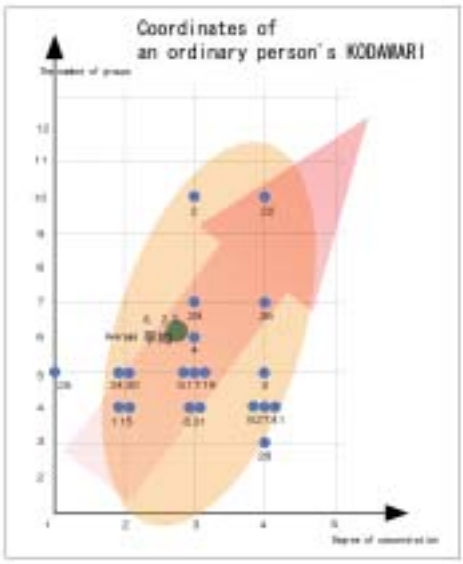

Table2. an ordinary person's result.
Positive correlation (r > 0)

5-3； Data based on main-ingredients analysis

However, since it turned out whether this data is truly reliable, main-ingredients analysis considered a subject's data. The data used for this analysis is data quantified. Data was the degree of concentration of the benches and the divided number of groups and the time concerning the classification. Consequently, it exceeds 82% with the 1st and 2 main ingredients, and this two data can explain the characteristic of the evaluation to a subject's bench. The 1st main ingredients require time for a classification, and since it becomes strong to both the things that degree of concentration becomes low so that there are many groups. The 1st main ingredients can be said that reasonable judgment is meant. Since the 2nd main ingredients become strong to both the things that the number of groups and degree of concentration become high at it so that time becomes short, this data can say that it is well shown by the characteristic of a subject's Taste-KANSEI(KODAWARI). If Taste–KANSEI(KODAWARI) is a strong subject, a classification does not take time and there are many divided groups. Moreover, the degree of concentration of the selected bench is high.

5-4； Quantification of Taste-KANSEI(KODAWARI) ; (KODAWARI coefficient)

How to quantify Taste-KANSEI(KODAWARI) from data is defined as follows.

$$\text{KODAWARI coefficient} = \left(1 - \frac{5(\text{It is a number although the subject was made to choose}) - \text{Degree-of-concentration coefficient}}{\text{The whole number of groups according to which it was classified}} \right)$$

「A degree-of-concentration coefficient」 means positioning of the bench which the subject chose. That is, as the group in which the bench which the subject chose is located decreases, a degree-of-concentration coefficient becomes higher. The degree-of-concentration coefficient is measured by the following formula.

$$\text{Degree of Concentration coefficient} = 5\left(\text{The number of the benches which a subject chooses}\right) - \text{The number of groups with which the bench which the subject chose belongs}$$

The Taste-KANSEI(KODAWARI) coefficient of the subjects who measured by the method is as follows.

Subject number	KODAWARI coefficient	Subject number	KODAWARI coefficient	Subject number	KODAWARI coefficient
1	0.25	15	0.5	29	0.71
2	0.8	16	0.6	30	0.4
3	0.8	17	0.6	31	0.5
4	0.67	18	0.57	32	0.7
5	0.6	19	0.6	33	0.64
6	0.5	20	0.6	34	0.75
7	0.9	21	0.5	35	0.63
8	0.67	22	0.9	36	0.67
9	0.75	23	0.64	37	0.5
10	0.8	24	0.4	38	0.75
11	0.33	25	0.56	39	0.8
12	0.25	26	0.86	40	0.5
13	0.75	27	0.75	41	0.8
14	0.5	28	0.67	42	0.8

Table4. KODAWARI coefficient

A lower table expresses this data in graph. If this is seen, the strength of individual Taste-KANSEI(KODAWARI) can be compared.

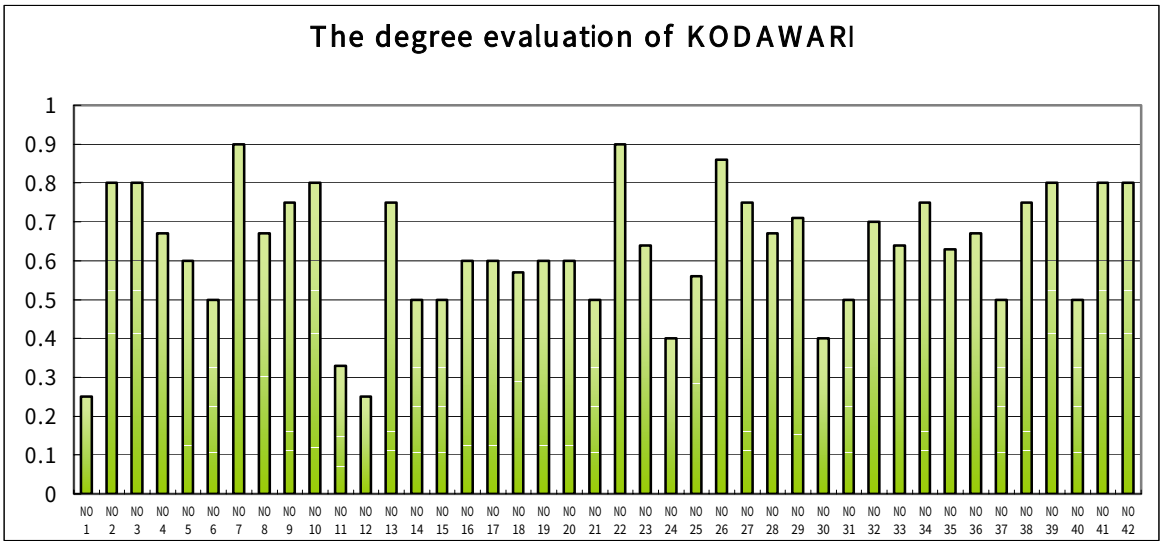

Table5. The degree evaluation of KODAWARI

Since it turned out whether this Taste-KANSEI(KODAWARI) coefficient is really appropriate, two correlation coefficients were measured for a main-ingredients score and Taste-KANSEI(KODAWARI) coefficient of the 2nd main ingredients.

Subject number	Main-ingredients analysis	Prejudice coefficient	Subject number	Main-ingredients analysis	Prejudice coefficient
1	-1.428	0.25	23	0.209	0.64
2	1.186	0.8	24	-0.977	0.4
3	0.421	0.8	25	-0.325	0.56
4	0.003	0.67	26	0.900	0.86
5	-0.447	0.6	27	0.224	0.75
6	-0.616	0.5	28	-0.423	0.67
7	2.139	0.9	29	0.425	0.71
8	-0.024	0.67	30	-0.780	0.4
9	0.224	0.75	31	-0.503	0.5
10	0.421	0.8	32	0.543	0.7
11	-1.170	0.33	33	0.097	0.64
12	-1.400	0.25	34	0.111	0.75
13	0.820	0.75	35	-0.132	0.63
14	-0.527	0.5	36	-0.198	0.67
15	-0.559	0.5	37	-0.672	0.5
16	-0.475	0.6	38	0.763	0.75
17	-0.250	0.6	39	1.411	0.8
18	-0.132	0.57	40	-0.470	0.5
19	-0.390	0.6	41	0.449	0.8
20	-0.193	0.6	42	0.449	0.8
21	-0.752	0.5	**Correlation coefficient**		**0.917**
22	2.054	0.9			

Table6. The correlation coefficient of main-ingredients analysis and a KODAWARI coefficient

As a result of measuring a correlation coefficient, two correlation coefficients were 0.917. It can be said that the Taste-KANSEI(KODAWARI) coefficient measured by time concerning the classification, the divided number of groups, and the number of groups with which the bench belongs is reliable.

6. Conclusion, and Assignment

Arranging and classifying products affects product design. Since all human beings are unique, everyone has a different classification method. The methods of choosing a product also differ. In short, people's Kansei about a classification of a product (in this case a bench) has large individual difference. Gender, blood type and character show the tendencies and features of Taste-KANSEI(KODAWARI). Moreover, the strength of Taste – KANSEI (KODAWARI) of the user by the KODAWARI coefficient can be grasped. The tendency or the feature of this Taste-KANSEI(KODAWARI) should not be disregarded in the product design process.

In the future, I would like to attempt to define which people have stronger Taste – KANSEI (KODAWARI). I would like to analyze and compare data between these users and others who are less affected and weighed down by this phenomenon. I would also like to make a positive hypothesis about a user's taste sensitivity through research not only on benches but other products as well.

References

1. Harada Akira ; [KANSEI Evaluation 1 (University of Tsukuba Project Research Organization report Collection 1997, Classified by Sensitivity Evaluation Structure Model Construction),] Maeda printing, 1997
2. Harada Akira ; [KANSEI evaluation 2 (University of Tsukuba project research organization report collection 1998, Classified by sensitivity evaluation structure model construction),] Maeda printing, 1998
3. Sato Kunio and Hirasawa Tetsuya ; Technique of KANSEI marketing 1996
4. Her Sung-choul , Harada Akira ; research on the KANSEI information processing which utilized the intuitive distance measure, University of Tsukuba