Studies on Computing Human Meal *Kansei*

Taki Kanda and Atsushi Sakamoto

Bunri University of Hospitality

311-1 Kashiwabarashinden Shimogawara, Sayama-city, Saitama-pref.350-1336), Japan

E-mail: Kanda@bunri-c.ac.jp

Abstract-We take meals every day and our meal tendencies, intentions or likings differ depending on individuals or households. Here it is considered that human meal tendencies are broadly divided into a convenience-oriented meal tendency, a health-oriented meal tendency and an earnest-oriented meal tendency and methods are studied to evaluate our meal intentions or likings to menus on home dining tables.

First, we consider a method to investigate how much individuals prefer convenience-oriented menus, health-oriented menus and earnest-oriented menus using the method of paired comparisons and the units of the scales obtained are the standard deviations of the standard normal distribution.

Next using use the method to give human meal *Kansei* with respect to menus so that the units of the scales for *Kansei* are the standard deviations of the standard normal distribution, which is already proposed, the evaluation of human meal *Kansei* with respect to menus on home dining tables and the evaluation of human meal intentions of individuals by the method discussing here are combined into a method to evaluate how much individuals like each menu. The evaluation of human likes obtained in this manner might be considered useful for food development or meal marketing.

Here the method to evaluate human preference to menus on home dining tables is described and numerical results are shown.

. Introduction

Kansei means human feelings about various kinds of things. Here human meal *Kansei* is studied considering that human meal tendency is broadly divided into a convenience-oriented meal tendency, a health-oriented meal tendency and an earnest-oriented meal tendency. An experiment on human meal *Kansei* is conducted about many usual menus on home dining tables in Japan to obtain *Kansei* evaluation data on menus and a method for evaluating human meal *Kansei* is proposed to investigate human meal tendencies.

Here evaluation of human meal tendencies is studied investigating how much we prefer convenience-oriented food, health-oriented food and earnest-oriented food conducting an experiment on *Kansei* evaluation by using the method of paired comparisons. A method has been already proposed to evaluate human meal *Kansei* to menus on home dining tables [1] based upon the data obtained from an experiment on *Kansei* evaluation. In the method the scales are obtained about how much we feel that a menu is convenience-oriented one, health-oriented one and

earnest-oriented one respectively and the units of the scales for *Kansei* to menus on home dining tables are the standard deviations of the standard normal distribution. It is here considered to combine the method to evaluate human meal *Kansei* to menus on home dining tables, which is already proposed, and the method to evaluate human meal intensions, which is to be studied here, into a method to evaluate how much individuals like each menu. To do this in the method discussing here the units of the scales for human meal intentions are made the standard deviations of the standard normal distribution.

Here the method to evaluate individuals' meal intentions is described and it is studied how to combine this with the method to evaluate human meal *Kansei* to menus to home dining tables into a method to evaluate individuals' likes to menus.

. Evaluation of Meal Intentions

A Experiment

An experiment by paired comparisons was conducted to obtain the data on individuals' meal intensions. In this case there are three stimuli, a convenience-oriented meal intention, a health-oriented meal intention and an earnest-oriented comparison. In the experiment subjects are asked which you have a convenience-oriented intention or a health-oriented intention, a health-oriented intention or an earnest-oriented intention and an earnest-oriented intention or a convenience-oriented intention, and how much we have the that intention. For the comparison of A and B subject choose an answer for the following 7 answers: "I like A much more than B", " I like A more than B", " I like A a little more than B", " I like A and B equally", " I like B a little more than A", " I like B more than A", " I like B much more than A. In order to evaluate human meal intentions the values for A and B are given to each answer using order statistics [2] as shown in Table 1. Order statistics are given from the standard normal distribution

Table 1 Values for answers

Answers	A	B
I like A much more than B	1.35	-1.35
I like A more than B	0.76	-0.76
I like A a little more than B	0.35	0.35
I like A and B equally	0.00	0.00
I like B a little more than A	-0.35	0.35
I like B more than A	-0.76	0.76
I like B much more than A	-1.35	1.35

B Numerical Results

Suppose a subject answer "I like health-oriented food much more than convenience-oriented food, I like health-oriented food a little more than earnest-oriented food and I like earnest-food and convenience-oriented food equally". In this case his/her convenience-oriented meal intention, health-oriented meal intention and earnest-oriented meal intention are evaluated to be -0.675 0.850 and -0.175 respectively as shown in Table 2. Total of the scales for the three meal intentions always becomes 0.

Table 2 Calculation of meal intentions

Meal intention	C	H	E	Average
Convenience		-1.35	0.00	-0.675
Health	1.35		0.35	0.850
Earnest	0.00	-0.35		-0.175
			Total	0.000

As examples of calculation of the scales for the three meal intentions Tables 3,4,   , 9 show the scales for the convenience-oriented meal intention, the health-oriented meal intention and the earnest-oriented meal intention of subjects No.1, No.2,   , No.7 respectively.

Table 3 Scales for meal intentions of subject No.1

Meal intention	C	H	E	Average
Convenience		-0.27	-0.57	-0.42
Health	0.27		-0.57	-0.15
Earnest	0.57	0.57		0.57
			Total	0.000

Table 4 Scales for meal intentions of subject No2

Meal intention	C	H	E	Average
Convenience		0.27	0.27	0.27
Health	-0.27		0.27	0.00
Earnest	-0.27	-0.27		-0.27
			Total	0.000

Table 5 Scales for meal intentions of subject No.3

Meal intention	C	H	E	Average
Convenience		-0.27	-0.27	-0.27
Health	0.27		0.27	0.27
Earnest	0.27	-0.27		0.00
			Total	0.000

Table 6 Scales for meal intentions of subject No.4

Meal intention	C	H	E	Average
Convenience		0.57	-0.27	0.15
Health	-0.57		0.00	-0.29
Earnest	0.27	0.00		0.14
			Total	0.000

Table 7 Scales for meal intentions of subject No.5

Meal intention	C	H	E	Average
Convenience		0.00	0.27	0.14
Health	0.00		0.00	0.00
Earnest	-0.27	0.00		-0.14
			Total	0.000

Table 8 Scales for meal intentions of subject No.6

Meal intention	C	H	E	Average
Convenience		-0.27	-0.27	-0.27
Health	0.27		0.27	0.27
Earnest	0.27	-0.27		0.00
			Total	0.000

Table 9 Scales for meal intentions of subject No.7

Meal intention	C	H	E	Average
Convenience		-0.27	-0.27	-0.27
Health	0.27		-0.27	0.00
Earnest	0.27	0.27		0.27
			Total	0.000

Evaluation of Meal Likings

A Definition of Scales

The scales of meal likings of subject j are defined as follows. Let IC_j, IH_j and IE_j be the scales for the convenience-oriented meal intention, the health-oriented meal intention and the earnest-oriented meal intention respectively and FC_j, FH_j and FE_j be the scales for the convenience-oriented feeling, the health-oriented feeling and the earnest-oriented feeling to menu i. Then the scales for the meal likings of subject j to menu i are given by

$$L_{ij} = IC_j \times FC_i + IH_j \times FC_i + IE_k \times FE_k . \quad (1)$$

Here (1) is used to evaluate human meal intentions.

B Numerical Results

Using (1) the scale of the liking for each individual to a menu can be calculated. The scales for the likings to 38 menus for subjects No.1, No.2,   , No.7 are shown in Tables 10,11,   , 16 respectively. In those Tables first the scales for the convenience-oriented meal intention (IC), the health-oriented meal intention (IH) and the earnest-oriented meal intention (IE) of the subject are shown and next the scales for human convenience-oriented feeling (FC), human health-oriented feeling (FH) and human earnest-oriented feeling (FE) and the subject's liking to the menus are shown. In the tables the menus are listed according to the values of the scales for likings.

Table 10 Likings of menus for subject No.1

Subject	C	H	E	
No.1	-0.42	-0.15	0.57	
Menu	C	H	E	L
Gratin	-0.35	-0.02	0.45	0.41
Western omelet	-0.37	0.06	0.40	0.37
Cooked rice and red beans	-0.49	0.26	0.36	0.37
Meuniere of fish	-0.42	0.22	0.30	0.31
Stew	-0.32	0.11	0.34	0.31
Steak	-0.18	-0.01	0.33	0.27
Boiled meat and vegetables	-0.5	0.41	0.22	0.27
Fish broiled with soy	-0.36	0.23	0.23	0.25
Yogurt	0.39	0.43	0.70	0.17
Mixed Rice	-0.20	0.20	0.13	0.13
Pizza	0.02	-0.21	0.17	0.12
Fried Cutlet	-0.09	0.09	0.09	0.08
Curry rice	-0.08	0.12	0.09	0.07
See food fried in a hot pan	-0.12	0.13	0.03	0.05
Spaghetti	0.06	0.01	0.04	0.00
Slices of sea food	-0.06	0.21	-0.01	-0.01
Beef fried in oil	-0.03	-0.05	-0.08	-0.03
Fried rice	0.07	0.12	-0.06	-0.08
Sandwiches	0.12	0.04	-0.11	-0.12
Mixed salad	-0.07	0.44	-0.22	-0.16
Miso soup	0.04	0.30	-0.21	-0.18
Hamburger	0.45	-0.33	-0.14	-0.22
Chow mein	0.41	-0.08	-0.26	-0.31
Vegetables fried in a pot pan	0.30	0.20	-0.36	-0.36
Kinds of bean curd	0.16	0.4	-0.43	-0.37
Marine algae salad	0.20	0.38	-0.45	-0.40
Salad using several kinds of vegetables	0.25	0.35	-0.47	-0.43
Bacon	0.52	-0.10	-0.41	-0.44
Rice ball	0.48	0.09	-0.45	-0.47
Boiled fish paste	0.44	0.10	-0.47	-0.47
Toast	0.58	-0.06	-0.50	-0.52
Stick salad	0.31	0.39	-0.58	-0.52
Corned-beef	0.60	-0.08	-0.50	-0.53
Milk Soybean milk Processed milk	0.28	0.55	-0.73	-0.62
Green fruit	0.49	0.35	-0.75	-0.69
Laver	0.61	0.25	-0.75	-0.72
Vegetables only	0.47	0.47	-0.87	-0.76

Table 11 Likings of menus for subject No.2

Subject	C	H	E	
No.2	0.27	0.00	-0.27	
Menu	C	H	E	L
Laver	0.61	0.25	-0.75	0.37
Vegetables only	0.47	0.47	-0.87	0.36
Green fruit	0.49	0.35	-0.75	0.34
Corned-beef	0.60	-0.08	-0.50	0.30
Toast	0.58	-0.06	-0.50	0.29
Milk Soybean milk Processed milk	0.28	0.55	-0.73	0.27
Rice ball	0.48	0.09	-0.45	0.25
Boiled fish paste	0.44	0.10	-0.47	0.25
Bacon	0.52	-0.10	-0.41	0.25
Stick salad	0.31	0.39	-0.58	0.24
Salad using several kinds of vegetables	0.25	0.35	-0.47	0.19
Chow mein	0.41	-0.08	-0.26	0.18
Marine algae salad	0.20	0.38	-0.45	0.18
Vegetables fried in a pot pan	0.30	0.20	-0.36	0.18
Hamburger	0.45	-0.33	-0.14	0.16
Kinds of bean curd	0.16	0.4	-0.43	0.16
Miso soup	0.04	0.30	-0.21	0.07
Sandwiches	0.12	0.13	-0.11	0.06
Fried rice	0.07	0.12	-0.06	0.04
Mixed salad	-0.07	0.44	-0.22	0.04
Beef fried in oil	-0.03	-0.05	-0.08	0.01
Spaghetti	0.06	0.01	0.04	0.01
Slices of sea food	-0.06	0.21	-0.01	-0.01
See food fried in a hot pan	-0.12	0.13	0.03	-0.04
Pizza	0.02	-0.21	0.17	-0.04
Curry rice	-0.08	0.12	0.09	-0.05
Fried Cutlet	-0.09	0.09	0.09	-0.05
Yogurt	0.39	0.43	0.70	-0.08
Mixes rice	-0.20	0.20	0.13	-0.09
Steak	-0.18	-0.01	0.33	-0.14
Fish broiled with soy	-0.36	0.23	0.23	-0.16
Stew	-0.32	0.11	0.34	-0.18
Meuniere of fish	-0.42	0.22	0.30	-0.19
Western omelet	-0.37	0.06	0.40	-0.21
Gratin	-0.35	-0.02	0.45	-0.22
Cooked rice and red beans	-0.49	0.26	0.36	-0.23

Table 12 Likings of menus for subject No.3

Subject	C	H	E	
No.3	-0.27	0.27	0.00	
Menu	C	H	E	L
Boiled meat and vegetables	-0.50	0.41	0.22	0.25
Cooked rice and red beans	-0.49	0.26	0.36	0.20
Meuniere of fish	-0.42	0.22	0.30	0.17
Fish broiled with soy	-0.36	0.23	0.23	0.16
Mixed salad	-0.07	0.44	-0.22	0.14
Western omelet	-0.37	0.06	0.40	0.12
Stew	-0.32	0.11	0.34	0.12
Mixed Rice	-0.20	0.20	0.13	0.11
Gratin	-0.35	-0.02	0.45	0.09
See food fried in a hot pan	-0.12	0.13	0.03	0.07
Slices of sea food	-0.06	0.21	-0.01	0.07
Kinds of bean curd	0.16	0.40	-0.43	0.07
Milk Soybean milk Processed milk	0.28	0.55	-0.73	0.07
Miso soup	0.04	0.3	-0.21	0.07
Curry rice	-0.08	0.12	0.09	0.05
Fried Cutlet	-0.09	0.09	0.09	0.05
Steak	-0.18	-0.01	0.33	0.05
Marine algae salad	0.20	0.38	-0.45	0.05
Salad using several kinds of vegetables	0.25	0.35	-0.47	0.03
Stick salad	0.31	0.39	-0.58	0.02
Fried rice	0.07	0.12	-0.06	0.01
Yogurt	0.39	0.43	0.70	0.01
Vegetables only	0.47	0.47	-0.87	0.00
Beef fried in oil	-0.03	-0.05	-0.08	-0.01
Spaghetti	0.06	0.01	0.04	-0.01
Sandwiches	0.12	0.04	-0.11	-0.02
Vegetables fried in a hot pan	0.30	0.20	-0.36	-0.03
Green fruit	0.49	0.35	-0.75	-0.04
Pizza	0.02	-0.21	0.17	-0.06
Boiled fish paste	0.44	0.10	-0.47	-0.09
Laver	0.61	0.25	-0.75	-0.10
Rice ball	0.48	0.09	-0.45	-0.11
Chow mein	0.41	-0.08	-0.26	-0.13
Toast	0.58	-0.06	-0.50	-0.17
Bacon	0.52	-0.10	-0.41	-0.17
Corned-beef	0.60	-0.08	-0.50	-0.18
Hamburger	0.45	-0.33	-0.14	-0.21

Table 13 Likings of menus for subject No.4

Subject	C	H	E	
No.4	0.15	-0.29	0.14	
Menu	C	H	E	L
Hamburger	0.45	-0.33	-0.14	0.14
Yogurt	0.39	0.43	0.70	0.09
Pizza	0.02	-0.21	0.17	0.08
Chow mein	0.41	-0.08	-0.26	0.05
Bacon	0.52	-0.10	-0.41	0.05
Corned-beef	0.60	-0.08	-0.50	0.04
Toast	0.58	-0.06	-0.50	0.04
Steak	-0.18	-0.01	0.33	0.02
Gratin	-0.35	-0.02	0.45	0.01
Spaghetti	0.06	0.01	0.04	0.01
Beef fried in oil	-0.03	-0.05	-0.08	0.00
Rice ball	0.48	0.09	-0.45	-0.01
Sandwiches	0.12	0.04	-0.11	-0.01
Western omelet	-0.37	0.06	0.40	-0.02
Boiled fish paste	0.44	0.10	-0.47	-0.02
Fried rice	0.07	0.12	-0.06	-0.03
Curry rice	-0.08	0.12	0.09	-0.03
Fried Cutlet	-0.09	0.09	0.09	-0.03
Stew	-0.32	0.11	0.34	-0.03
See food fried in a hot pan	-0.12	0.13	0.03	-0.05
Vegetables fried in a hot pan	0.30	0.20	-0.36	-0.06
Mixed Rice	-0.20	0.20	0.13	-0.07
Slices of sea food	-0.06	0.21	-0.01	-0.07
Meuniere of fish	-0.42	0.22	0.30	-0.08
Laver	0.61	0.25	-0.75	-0.08
Fish broiled with soy	-0.36	0.23	0.23	-0.09
Cooked rice and red beans	-0.49	0.26	0.36	-0.10
Miso soup	0.04	0.30	-0.21	-0.10
Salad using several kinds of vegetables	0.25	0.35	-0.47	-0.12
Green fruit	0.49	0.35	-0.75	-0.12
Marine algae salad	0.20	0.38	-0.45	-0.13
Stick salad	0.31	0.39	-0.58	-0.14
Kinds of bean curd	0.16	0.40	-0.43	-0.14
Mixed salad	-0.07	0.44	-0.22	-0.16
Boiled meat and vegetables	-0.50	0.41	0.22	-0.16
Vegetables only	0.47	0.47	-0.87	-0.17
Milk Soybean milk Processed milk	0.28	0.55	-0.73	-0.21

Table 14 Likings of menus for subject No.5

Subject	C	H	E	
No.5	0.14	0.00	-0.14	
Menu	C	H	E	L
Laver	0.61	0.25	-0.75	0.37
Vegetables only	0.47	0.47	-0.87	0.36
Green fruit	0.49	0.35	-0.75	0.34
Corned-beef	0.60	-0.08	-0.50	0.30
Toast	0.58	-0.06	-0.50	0.29
Milk Soybean milk Processed milk	0.28	0.55	-0.73	0.27
Rice ball	0.48	0.09	-0.45	0.25
Boiled fish paste	0.44	0.10	-0.47	0.25
Bacon	0.52	-0.10	-0.41	0.25
Stick salad	0.31	0.39	-0.58	0.24
Salad using several kinds of vegetables	0.25	0.35	-0.47	0.19
Chow mein	0.41	-0.08	-0.26	0.18
Marine algae salad	0.20	0.38	-0.45	0.18
Vegetables fried in a hot pan	0.30	0.20	-0.36	0.18
Hamburger	0.45	-0.33	-0.14	0.16
Kinds of bean curd	0.16	0.40	-0.43	0.16
Miso soup	0.04	0.30	-0.21	0.07
Sandwiches	0.12	0.04	-0.11	0.06
Fried rice	0.07	0.12	-0.06	0.04
Mixed salad	-0.07	0.44	-0.22	0.04
Beef fried in oil	-0.03	-0.05	-0.08	0.01
Spaghetti	0.06	0.01	0.04	0.01
Slices of sea food	-0.06	0.21	-0.01	-0.01
See food fried in a hot pan	-0.12	0.13	0.03	-0.04
Pizza	0.02	-0.21	0.17	-0.04
Curry rice	-0.08	0.12	0.09	-0.05
Fried Cutlet	-0.09	0.09	0.09	-0.05
Yogurt	0.39	0.43	0.70	-0.08
Mixed Rice	-0.20	0.20	0.13	-0.09
Steak	-0.18	-0.01	0.33	-0.14
Fish broiled with soy	-0.36	0.23	0.23	-0.16
Stew	-0.32	0.11	0.34	-0.18
Meuniere of fish	-0.42	0.22	0.30	-0.19
Boiled meat and vegetables	-0.50	0.41	0.22	-0.19
Western omelet	-0.37	0.06	0.40	-0.21
Gratin	-0.35	-0.02	0.45	-0.22
Cooked rice and red beans	-0.49	0.26	0.36	-0.23

Table 15 Likings of menus for subject No.6

Subject	C	H	E	
No.6	-0.27	0.27	0.00	
Menu	C	H	E	L
Boiled meat and vegetables	-0.50	0.41	0.22	0.25
Cooked rice and red beans	-0.49	0.26	0.36	0.20
Meuniere of fish	-0.42	0.22	0.30	0.17
Fish broiled with soy	-0.36	0.23	0.23	0.16
Mixed salad	-0.07	0.44	-0.22	0.14
Western omelet	-0.37	0.06	0.40	0.12
Stew	-0.32	0.11	0.34	0.12
Mixed Rice	-0.20	0.20	0.13	0.11
Gratin	-0.35	-0.02	0.45	0.09
See food fried in a hot pan	-0.12	0.13	0.03	0.07
Slices of sea food	-0.06	0.21	-0.01	0.07
Kinds of bean curd	0.16	0.40	-0.43	0.07
Milk Soybean milk Processed milk	0.28	0.55	-0.73	0.07
Miso soup	0.04	0.30	-0.21	0.07
Curry rice	-0.08	0.12	0.09	0.05
Fried Cutlet	-0.09	0.09	0.09	0.05
Steak	-0.18	-0.01	0.33	0.05
Marine algae salad	0.20	0.38	-0.45	0.05
Salad using several kinds of vegetables	0.25	0.35	-0.47	0.03
Stick salad	0.31	0.39	-0.58	0.02
Fried rice	0.07	0.12	-0.06	0.01
Yogurt	0.39	0.43	0.70	0.01
Vegetables only	0.47	0.47	-0.87	0.00
Beef fried in oil	-0.03	-0.05	-0.08	-0.01
Spaghetti	0.06	0.01	0.04	-0.01
Sandwiches	0.12	0.04	-0.11	-0.02
Vegetables fried in a hot pan	0.30	0.20	-0.36	-0.03
Green fruit	0.49	0.35	-0.75	-0.04
Pizza	0.02	-0.21	0.17	-0.06
Boiled fish paste	0.44	0.10	-0.47	-0.09
Laver	0.61	0.25	-0.75	-0.10
Rice ball	0.48	0.09	-0.45	-0.11
Chow mein	0.41	-0.08	-0.26	-0.13
Toast	0.58	-0.06	-0.50	-0.17
Bacon	0.52	-0.10	-0.41	-0.17
Corned-beef	0.60	-0.08	-0.50	-0.18
Hamburger	0.45	-0.33	-0.14	-0.21

Table 16 Likings of menus for subject No.7

Subject	C	H	E	
No.7	-0.27	0.00	0.27	
Menu	C	H	E	L
Cooked rice and red beans	-0.49	0.26	0.36	0.23
Gratin	-0.35	-0.02	0.45	0.22
Western omelet	-0.37	0.06	0.40	0.21
Meuniere of fish	-0.42	0.22	0.30	0.19
Boiled meat and vegetables	-0.50	0.41	0.22	0.19
Stew	-0.32	0.11	0.34	0.18
Fish broiled with soy	-0.36	0.23	0.23	0.16
Steak	-0.18	-0.01	0.33	0.14
Mixed Rice	-0.20	0.20	0.13	0.09
Yogurt	0.39	0.43	0.70	0.08
Curry rice	-0.08	0.12	0.09	0.05
Fried Cutlet	-0.09	0.09	0.09	0.05
See food fried in a hot pan	-0.12	0.13	0.03	0.04
Pizza	0.02	-0.21	0.17	0.04
Slices of sea food	-0.06	0.21	-0.01	0.01
Beef fried in oil	-0.03	-0.05	-0.08	-0.01
Spaghetti	0.06	0.01	0.04	-0.01
Fried rice	0.07	0.12	-0.06	-0.04
Mixed salad	-0.07	0.44	-0.22	-0.04
Sandwiches	0.12	0.04	-0.11	-0.06
Miso soup	0.04	0.30	-0.21	-0.07
Hamburger	0.45	-0.33	-0.14	-0.16
Kinds of bean curd	0.16	0.40	-0.43	-0.16
Chow mein	0.41	-0.08	-0.26	-0.18
Marine algae salad	0.20	0.38	-0.45	-0.18
Vegetables fried in a hot pan	0.30	0.20	-0.36	-0.18
Salad using several kinds of vegetables	0.25	0.35	-0.47	-0.19
Stick salad	0.31	0.39	-0.58	-0.24
Rice ball	0.48	0.09	-0.45	-0.25
Boiled fish paste	0.44	0.10	-0.47	-0.25
Bacon	0.52	-0.10	-0.41	-0.25
Milk Soybean milk Processed milk	0.28	0.55	-0.73	-0.27
Toast	0.58	-0.06	-0.5	-0.29
Corned-beef	0.60	-0.08	-0.5	-0.3
Green fruit	0.49	0.35	-0.75	-0.33
Vegetables only	0.47	0.47	-0.87	-0.36
Laver	0.61	0.25	-0.75	-0.37

. Final Remarks

In this paper we were concerned with human meal *Kansei* considering that human meal tendencies are broadly divided into a convenience-oriented meal tendency, a health-oriented meal tendency and an earnest-oriented meal tendency and a method was discussed to evaluate our convenience-oriented meal likings, health-oriented meal likings and earnest-oriented meal likings to menus on home dining tables.

First, a method was considered to evaluate our convenience-oriented meal intention, health-oriented meal intention and earnest-oriented meal intention and combining this method with the method to evaluate the three kinds of human meal feelings to menus on home dining tables, that is human convenience-oriented feeling. human health-oriented feeling and human earnest-oriented feeling to menus on home dining tables a method was studied to evaluate our convenience-oriented meal likings, health-oriented meal likings and earnest-oriented meal likings to menus on home dining tables.

The method discussed here might be useful to know our meal tendencies and able to apply to food stuffs development, production or marketing.

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