Archives of Business Research – Vol. 10, No. 8
Publication Date: August 25, 2022
DOI:10.14738/abr.108.12816.
Marui, J., & Jing, S. (2022). A Brand Concept Strategy Model of T-Shirts for Young People Using Selected Conjoint Analysis. Archives of Business Research, 10(8). 49-61.

A Brand Concept Strategy Model of T-Shirts for Young People Using Selected Conjoint Analysis

Junpei Marui
Department of Social Engineering, Nagoya Institute of Technology, Japan

Sun Jing
Department of Social Engineering, Nagoya Institute of Technology, Japan

ABSTRACT

Today's T-shirt market of young people is very competitive. As the brand of T-shirt, UNIQLO、GU、Nike、Adidas、AZUL are known. This paper aims to propose a method of designing an optimal brand concept for T-shirts. In the modern highly competitive business world, marketing strategies are required to meet the increasingly complex and diverse needs of customers. Therefore, it is very important for companies to have a brand strategy in order to increase their competitiveness in the market. On the other hand, a general decline in consumer confidence among young people has begun to appear since the early 2000s. The Nikkei Regional Industry Research Institute's "Youth Attitude Survey" also shows a decrease in the ownership rate of famous foreign brand clothing in 2007 compared to that of 2000. Kuga's analysis of the Ministry of Internal Affairs and Communications' "National Survey of Consumption" also indicates that young people's interest in fashion has declined. In 2017~2019 years, GDP of Japan was increasing. However, GDP decreases greatly in 2020 because of COVID-19. In the market of Japan, Young person's spending intention in recent years continues decreasing. In this paper, we consider the case of launching a new T-shirt brand for university students of Japan. Also, we study the marketing strategy of T-shirts for young people who are considered to have decreased their interest in fashion, taking into account the complexity and diversification of their needs, using a choice-type conjoint analysis.

Keywords: New product concept; Brand strategy; Fashion

INTRODUCTION

In recent years, the fashion retail industry in Japan has been expanding its business due to the globalization of the economy, with distributors from all over the world entering the Japanese market and opening new stores. Numerous companies have opened stores, ranging from world-famous haute couture brands such as Chanel, Yves Saint Laurent, and Christian Dior to fast fashion brands such as ZARA and H&M, which are popular among young people. On the other hand, UNIQLO, GU, UNITED ARROWS, BEAMS, etc. are developing their stores while creating their own originality. Thus, the battle in the fashion retail industry is intensifying day by day. The fashion retail industry is also undergoing major changes in marketing strategies, such as SNS-based advertising and online shopping. Therefore, it is important for a company's brand strategy to increase its competitiveness in the market. Especially in the global market,

marketing strategies are required to meet the increasingly complex and diverse needs of customers.

Under such circumstances, a general decline in consumer confidence among young people began to appear in the early 2000s. The Nikkei Research Institute for Regional Industry's "Survey of Youth Attitudes" also shows a decrease in the ownership rate of famous foreign brand clothing in 2007 compared to 2000.

Kuga's analysis focuses on the Ministry of Internal Affairs and Communications' "National Survey of Current Consumption" until 2009, and reports a decrease in expenditures on "clothing and footwear. However, he attributes this to the appearance of inexpensive products rather than a decline in young people's interest in fashion, as there were changes in the purchasing environment in the late 2000s with the arrival in Japan of foreign fast fashion brands such as H&M of Sweden in 2008 and Forever21 of the United States in 2009. In the second half of the 2000s, there was a change in the purchasing environment.

After Kuga's analysis, the 2014 results of the National Survey of Family Income and Expenditure were released. Looking at the changes in the average monthly amount of "clothing and footwear" in 1999, 2004, 2009, and 2014, the largest amount for single person households under 30 years old was 9,285 yen in 2009 for men, and the largest amount for women was 22566 yen in 2004. However, in 2014, the amount for men was 5124 yen and that for women was 9114 yen, showing a marked decrease compared to the previous three surveys. However, the consumer price index for "clothing and footwear" was 102.2 in 2014, when the base year was 2000 (100.0), showing no decline. In other words, Kuga's interpretation that there was an overall decrease in purchases is not valid, although there may have been a phenomenon in which prices fell due to the availability of inexpensive products in some areas. It is more reasonable to assume that young people's interest in fashion has declined [1].

Based on the above background, we will study the marketing strategies of fashion brands to young people, whose interest in fashion is considered to have declined.

In this paper, we study the marketing strategies of fashion brands using a choice-type conjoint analysis. Selective conjoint analysis has been used in various studies. Conjoint analysis was developed in the field of quantitative psychology in the 1960s and has been widely used in the field of marketing since then. The reason for its popularity in the field of marketing is that it can estimate consumers' evaluations of the level of each attribute because it combines multiple attributes and levels of a product and can directly present a concrete image to consumers as a hypothetical situation in advance. In other words, this method is considered to be suitable for linking the needs for each level obtained from consumers to technology when companies are developing products.

In fact, selective conjoint analysis has been used in a wide range of research fields, such as estimating the brand power of fruit and vegetable production areas [2], examining the sequential effects of environmental risk information [3], evaluating multidimensional management of agricultural technology [4], and evaluating the attributes of rice produced in Hokkaido [5].

The most referenced previous study in this study is "A Study of Marketing Strategies for Late Entrants in the Tea Market Using Selective Conjoint Analysis" by Ouyangni [6].

The purpose of this paper is to consider the marketing strategy of T-shirts for young people who are considered to have decreased interest in fashion, taking into account the complexity and diversification of their needs, and using a choice-type conjoint analysis.

Therefore, in this paper, we consider a marketing strategy for a hypothetical case where a new T-shirt brand for students is to be launched.

The paper is organized as follows: Chapter 1 describes the social background, previous studies, and objectives of this study. Chapter 2 presents the mathematical model of choice-type conjoint analysis, the calculation method of marginal willingness to pay, and the orthogonal table. In Chapter 3, we describe the method of designing an optimal brand concept for T-shirts. In Chapter 4, a choice-type conjoint analysis is conducted based on the results of the questionnaire for choice-type conjoint analysis, and the utility values for each attribute level, the total utility value and choice probability for each product concept, and the marginal willingness to pay are calculated. In Chapter 5, marketing strategies are presented based on the results of the choice-type conjoint analysis conducted in Chapter 4. Finally, Chapter 6 provides a summary of this study.

MATHEMATIC MODEL

The mathematical model of choice-type conjoint analysis is shown below.
The total utility gained from the purchase of a given good is

$$U = \beta_1 Z_1 + \beta_2 Z_2 + \beta_3 Z_3 + \ldots + \beta_n Z_n + \varepsilon \qquad (1)$$

$Z_n (n = 1,2,3,\ldots)$ are the attributes of the goods, β is the coefficient parameter of the attribute, and ε is the stochastically varying error term.

Then, the total utility U_1 and U_2 of commodity 1 and commodity 2 with different attribute levels are

$$U_1 = \beta_1 Z_{11} + \beta_2 Z_{21} + \beta_3 Z_{31} + \ldots + \beta_n Z_{n1} + \varepsilon_1 \qquad (2)$$
$$U_2 = \beta_1 Z_{12} + \beta_2 Z_{22} + \beta_3 Z_{32} + \ldots + \beta_n Z_{n2} + \varepsilon_2 \qquad (3)$$

If y is a variable that takes 0 when product 1 is chosen and 1 when product 2 is chosen, then the relationship between the magnitude of utility and product choice is

$$y = \begin{cases} 0, & \text{if } U_1 \geq U_2 \\ 1, & \text{if } U_1 < U_2 \end{cases} \qquad (4)$$

$$y = \begin{cases} 0, & \text{if } \Delta U \geq 0 \\ 1, & \text{if } \Delta U < 0 \end{cases} \qquad (5)$$

In addition, ΔU is expressed as

$$\Delta U = \beta_1 (Z_{11} - Z_{12}) + \cdots + \beta_n (Z_{n1} - Z_{n2}) + (\varepsilon_1 - \varepsilon_2) \qquad (6)$$
$$\Delta U = \sum_{k=1}^{n} \beta_k \Delta Z_k + \Delta\varepsilon \qquad (7)$$

In the present model, since the error terms are independent and identically distributed, the density function and distribution function of ε_n are respectively

URL: http://dx.doi.org/10.14738/abr.108.12816

$$f(\varepsilon_n) = e^{-\varepsilon_n} e^{-e^{-\varepsilon_n}} \quad (8)$$
$$F(\varepsilon_n) = e^{-e^{-\varepsilon_n}} \quad (9)$$

And $\Delta\varepsilon = \varepsilon_n - \varepsilon_i$ is the logistic distribution
$$F(\varepsilon_n) = \frac{e^{\varepsilon}}{1+e^{\varepsilon}} \quad (10)$$

then the selection probability is
$$P(j|C) = \frac{\exp(\alpha+\beta \boldsymbol{X}_j)}{\sum_{k=1}^{n} \exp(\alpha+\beta \boldsymbol{X}_k)} \ , \forall k \in C \quad (11)$$

When the multinomial logit model is applied to the brand selection model, the maximum likelihood method is usually used to estimate the parameters.

In the maximum likelihood method, the probability that product j is selected from among m products is first formulated as equation (11), and the results of n selections are assumed to have been observed. Let $y_j^t = 1$ if product j is selected on the t th selection opportunity, and $y_j^t = 0$ otherwise. Furthermore, let $\boldsymbol{X}_j^t$ be the marketing variable vector of product j at the t th selection opportunity, and let $P^t(j|C)$ be the selection probability in equation (11) accordingly. The likelihood L under which y_j^t and the corresponding marketing variable vector $\boldsymbol{X}_j^t$ are obtained is
$$L = \prod_{j=1}^{m} \prod_{t=1}^{n} P^t(j|C)^{y_j^t} \quad (12)$$

With y_j^t and $\boldsymbol{X}_j^t$ obtained, L in equation (12) is considered to be a function of the parameter vector β. The value that maximizes the likelihood function L of β is the maximum likelihood estimator of β.

The estimation method of the marginal willingness to pay is shown below.
Here, we consider the following main effect model for the utility function.
$$U_j = V_j(\boldsymbol{x}_j, p_j) + \varepsilon_j \quad (13)$$

$\boldsymbol{x}_j$ is the attribute vector of commodity j and p_j is the price of commodity j.
$$V(\boldsymbol{x}, p) = \sum_i \beta_i \boldsymbol{x}_i + \beta_p P \quad (14)$$

β is a parameter estimated by the multinomial logit.
Here, the total differentiation of equation (14) yields
$$\sum_i \frac{\partial V}{\partial \boldsymbol{x}_i} d\boldsymbol{x}_i + \frac{\partial V}{\partial p} dp = dV \quad (15)$$

Assume that the utility level is fixed at the initial level ($dV = 0$) and attributes other than commodity attribute $\boldsymbol{x}_1$ are also fixed at the initial level ($d\boldsymbol{x}_i = 0 \, , i \neq 1$). In this case, the marginal willingness to pay when commodity attribute $\boldsymbol{x}_1$ increases by one unit is
$$MWTP_{\boldsymbol{x}_1} = \frac{dp}{d\boldsymbol{x}_1} = -\frac{\frac{\partial V}{\partial x_i}}{\frac{\partial V}{\partial p}} = -\frac{\beta_1}{\beta_p} \quad (16)$$

The result can be obtained by the above equation.

RESEARCH DESIGN

In order to conduct a conjoint analysis, it is necessary to select the attributes and levels to be measured and to set the combinations to be evaluated. There are many ways to select attributes, but in this study, we conducted a questionnaire survey of students and set attributes and levels by referring to the results of the survey. The results of the survey are shown in Table 1 below.

Table 1: Results of the responses to the Attribute Questionnaire

	Very Important	Important	Sum
Price	42.47%	46.58%	89.04%
Easy to wear	32.88%	39.73%	72.60%
The quality and functionality of the clothes	24.66%	38.36%	63.01%
Be yourself	12.33%	41.10%	53.42%
Can be worn for a long time	20.55%	31.51%	52.05%
TPO	12.33%	39.73%	52.05%
Eyes from the opposite sex	9.59%	39.73%	49.32%
Don't stand out too much from the people around you	2.74%	43.84%	46.58%
Eyes from the same sex	6.85%	36.99%	43.84%
Don't Suffer with People	15.07%	21.92%	36.99%
word of mouth	5.48%	21.92%	27.40%
Being a trend	4.11%	23.29%	27.40%
Brand	2.74%	21.92%	24.66%
Brand Visibility	2.74%	20.55%	23.29%

The percentages of the responses selected as very important and important are shown here. The results of this survey were used to determine the attributes and levels as shown in Table 2 below.

URL: http://dx.doi.org/10.14738/abr.108.12816

Table 2: Attributes and Levels

Attribute	Level 1	Level 2	Level 3
Brand Visibility	Lesser-known	Well-known	
Price	1500	2500	3500
Quality	Very good	Good	Normal
Functionality	Fullness	Normal	Without
Assortment	Lot	Normal	Few
Sales Channels	Brick-and-mortar & online	Brick-and-mortar stores	Online
Wearing pattern	Lots of patterns	Has a pattern	No pattern
Design	Plain	Tip	Patterned objects

A conjoint card is a virtual product concept created by combining attributes and levels. Normally, there are 4374 possible combinations for 8 attributes and 2 to 3 levels, but in this case, the $L_{18}(2^1 3^7)$ orthogonal table was used to create the combinations. The results are shown in Table 3 below.

Table 3: Orthogonal Table Result

Card	Brand Visibility	Price	Quality	Functionality	Assortment	Sales Channels	Wearing pattern	Design
1	Lesser-known	1500	Very good	Fullness	Lot	Brick-and-mortar & online	Lots of patterns	Plain
2	Lesser-known	1500	Good	Normal	Normal	Brick-and-mortar stores	Has a pattern	Tip
3	Lesser-known	1500	Normal	Without	Few	Online	No pattern	Patterned objects
4	Lesser-known	2500	Very good	Fullness	Normal	Brick-and-mortar stores	No pattern	Patterned objects
5	Lesser-known	2500	Good	Normal	Few	Online	Lots of patterns	Plain
6	Lesser-known	2500	Normal	Without	Lot	Brick-and-mortar & online	Has a pattern	Tip
7	Lesser-known	3500	Very good	Normal	Lot	Online	Has a pattern	Patterned objects
8	Lesser-known	3500	Good	Without	Normal	Brick-and-mortar & online	No pattern	Plain
9	Lesser-known	3500	Normal	Fullness	Few	Brick-and-mortar stores	Lots of patterns	Tip
10	Well-known	1500	Very good	Without	Few	Brick-and-mortar stores	Has a pattern	Plain
11	Well-known	1500	Good	Fullness	Lot	Online	No pattern	Tip
12	Well-known	1500	Normal	Normal	Normal	Brick-and-mortar & online	Lots of patterns	Patterned objects
13	Well-known	2500	Very good	Normal	Few	Brick-and-mortar & online	No pattern	Tip
14	Well-known	2500	Good	Without	Lot	Brick-and-mortar stores	Lots of patterns	Patterned objects
15	Well-known	2500	Normal	Fullness	Normal	Online	Has a pattern	Plain
16	Well-known	3500	Very good	Without	Normal	Online	Lots of patterns	Tip
17	Well-known	3500	Good	Fullness	Few	Brick-and-mortar & online	Has a pattern	Patterned objects
18	Well-known	3500	Normal	Normal	Lot	Brick-and-mortar stores	No pattern	Plain
19	Well-known	1500	Good	Fullness	Lot	Brick-and-mortar & online	Has a pattern	Plain

Cards 1-18 are the product concepts created by the orthogonal table. Card 19 is the attribute level of UNIQLO's product concept, which was determined with reference to UNIQLO's products. Based on the conjoint cards, we made the present questionnaire and collected data for conducting a choice-type conjoint analysis.

RESULT ANALYSIS WITH SELECTIVE CONJOINT ANALYSIS

Using the maximum likelihood method, we calculated the parameters for each attribute level. The parameters are shown in Table 4 below.

Table 4: Maximum Likelihood Method Results

Attribute	Level	Utility Value
Brand Visibility	Lesser-known	0.3844
	Well-known	0.4179
Price	Price	-0.0008
Quality	Very good	1.2201
	Good	-0.1241
	Normal	-0.2937
Functionality	Fullness	0.7524
	Normal	0.2938
	Without	-0.2440
Assortment	Lot	0.2940
	Normal	0.2733
	Few	0.2349
Sales Channels	Brick-and-mortar & online	0.4619
	Brick-and-mortar stores	0.0398
	Online	0.3006
Wearing pattern	Lots of patterns	0.5257
	Has a pattern	0.3919
	No pattern	-0.1153
Design	Plain	0.0859
	Tip	0.5097
	Patterned objects	0.2066
Constant	Constant	-0.8023

Let $\log L_{UR}$ be the log likelihood when maximized with respect to the parameters, and $\log L_R$ be the log likelihood when all parameters are assumed to be 0, McFadden's R^2 is

$$R^2 = 1 - \frac{\log L_{UR}}{\log L_R} \qquad (17)$$

The above equation is obtained. The actual result of McFadden's R^2 is $R^2 = 0.3$, so we can judge that the model fits well.

The parameters calculated using the maximum likelihood method are the utility values for each attribute level. The total utility values and selection probabilities for each product concept are shown in Table 5 below.

Table 5: Selection probabilities for each product concept

Card	Total Utility value	Purchase Probability
Card 1	2.555	80.9%
Card 2	0.600	37.5%
Card 3	-0.695	14.1%
Card 4	0.813	42.6%
Card 5	-0.247	20.5%
Card 6	-0.444	17.4%
Card 7	0.364	32.1%
Card 8	-2.006	4.2%
Card 9	-0.574	15.6%
Card 10	0.978	46.7%
Card 11	0.866	43.9%
Card 12	0.717	40.3%
Card 13	1.075	49.1%
Card 14	-0.832	12.5%
Card 15	-0.020	24.4%
Card 16	0.276	30.3%
Card 17	-0.386	18.3%
Card 18	-2.005	4.2%
Card 19	1.111	prbo(card19)

The marginal willingness to pay is estimated as shown in Table 6 below. The marginal willingness to pay is the value of an attribute other than price when it changes by one unit, and it represents the economic value of the attribute other than price in monetary units from the viewpoint of the survey respondents.

URL: http://dx.doi.org/10.14738/abr.108.12816

Table 6: Marginal Willingness to Pay

Brand Visibility	Lesser-known	493.21
	Well-known	536.29
Quality	Very good	1565.57
	Good	-159.25
	Normal	-376.84
Functionality	Fullness	965.51
	Normal	377.05
	Without	-313.07
Assortment	Lot	377.31
	Normal	350.72
	Few	301.46
Sales Channels	Brick-and-mortar & online	592.69
	Brick-and-mortar stores	51.13
	Online	385.67
Wearing Pattern	Lots of patterns	674.63
	Has a pattern	502.87
	No pattern	-148.01
Design	Plain	110.25
	Tip	654.07
	Patterned Objects	265.17

MARKETING STRATEGY RECOMMENDATIONS

First, we discuss the results of the analysis based on utility values and the results of the analysis based on each conjoint card. This time, we will consider a marketing strategy for the case of launching a new T-shirt brand for students.

As indicated by the utility values and the marginal willingness to pay, the quality is the most important factor for students when they purchase T-shirts. Therefore, it is necessary to manufacture T-shirts with particular attention to material, texture, and durability.

Another important factor to be considered is functionality. Warm, cool, and easy to dry are indispensable criteria for students to choose a T-shirt.

In a pre-survey, students were asked about their favorite brands, and the brand with the highest number of responses was UNIQLO. In fact, when we looked at UNIQLO's products, we found that they are made of materials that feel good against the skin and are durable. In addition, UNIQLO sells T-shirts that emphasize functionality, such as HEATTECH and AIRYTHM. The results of the analysis clearly show why UNIQLO is chosen as a favorite brand among students. UNIQLO is increasing its profits by selling high-quality, highly functional products at low prices. However, it would be difficult for a new fashion brand to achieve the same profit growth by

selling high-quality, highly functional products at low prices, so marketing strategies other than quality and function are considered to be important in order to differentiate from UNIQLO.

The first is the assortment. UNIQLO has a large assortment of products with many color variations. However, the results of the analysis show that there is not a large difference in the utility value by the change in the quantity of the product assortment. Therefore, it is considered important to reduce the manufacturing cost by reducing the color variations.

The second is the sales channel. The utility values of the sales channels are higher in the order of "actual store & internet", "internet only", and "actual store only", and only "actual store only" has a particularly low utility value. Although "physical store & internet" like UNIQLO is the most ideal sales channel, running a physical store involves many costs such as inventory cost, transportation cost, labor cost, rent, etc. Therefore, the utility of "only physical store & internet" is low for a while. Therefore, it is considered important to reduce costs and increase profits by selling products only through the Internet for the time being. In addition, this is an ideal sales channel under the current circumstances, since the impact of the Corona disaster on the outgoing sales can be kept to a minimum.

The third one is the example of the pattern of how to put on and off the clothes. As mentioned above, when a retailer does not have a physical store and sells its products only on the Internet, the examples of the patterns are very important to convey the image of the clothes to the consumers. Looking at the utility values, the utility value is negative when there are no examples of how to wear the clothes, and the difference in the utility values between the case with many examples of how to wear the clothes and the case with examples of how to wear the clothes is not so large. Therefore, it is considered that it is important to always give examples of how to dress any product, and especially to give many examples of how to dress a product that you want to sell.

The fourth is design. The utility value of one point is particularly high in the utility value of design, and this point can differentiate the products from those of UNIQLO and other apparel firms, which have many plain products.

Fifth, brand name recognition. Of course, a new fashion brand does not have brand name recognition. However, the utility value of brand name recognition shows that there is not much difference between the utility value when the brand is not well known and the utility value when the brand is well known. In other words, students do not pay much attention to the name of the brand when they purchase T-shirts. In other words, it is important to focus on the quality of the product rather than on the name of the brand.

Based on the above marketing strategy, a new product concept is considered.
New product concept

= brand awareness (not well known) + price (\2,500)
+ quality (very good) + features (extensive) + assortment (small)
+ sales channel (online only)
+ examples of wearing patterns (many available) + design (one point)

URL: http://dx.doi.org/10.14738/abr.108.12816

The utility values and choice probabilities for this proposed new product concept are shown in Table 7 below.

Table 7: Selection probabilities of proposed new product concepts

	Total Utility value	Purchase Probability
New Product Concept	1.980	70.4%

The purchase probability curve of the proposed new product concept is shown in Figure 1 below.

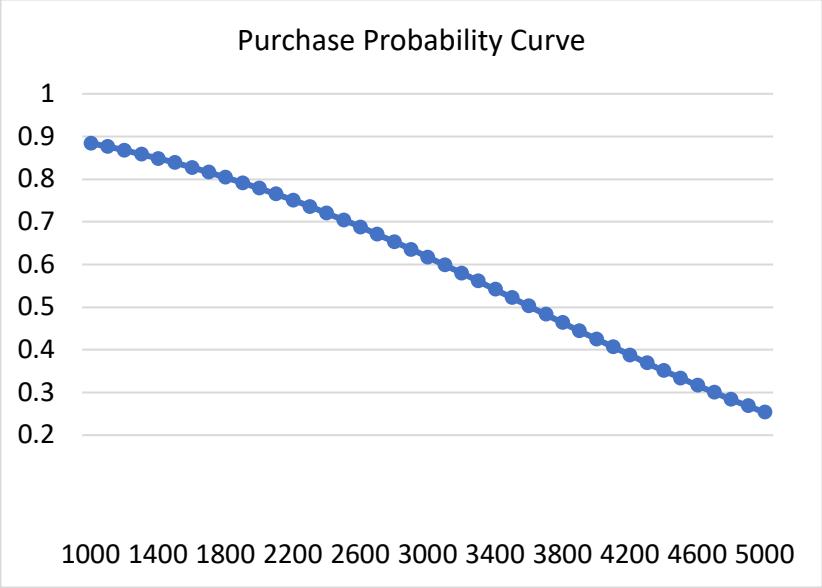


Figure 1: Purchase probability curve

When the price is 3500 yen, the selection probability is 52.2%, indicating that the high selection probability can be maintained even if the price is increased. Thus, since a high total utility value and a high selection probability are obtained, the proposed concept is considered to be appropriate as a new product concept.

SUMMARY AND FUTURE ISSUES

In this study, first, the mathematical model of choice-type conjoint analysis, the calculation method of marginal willingness to pay, and the orthogonal table are explained. Next, we conducted a research design, selected attributes and levels based on the questionnaire results, and created a conjoint card and a questionnaire for choice-type conjoint analysis. Then, based on the results of the choice-type conjoint analysis questionnaire, a choice-type conjoint analysis was conducted, and the utility value for each attribute level, the total utility value for each product concept, the choice probability, and the marginal willingness to pay were calculated. Finally, marketing strategies are proposed based on the results of the choice-type conjoint analysis.

In this study, we proposed an optimal product concept using a choice-type conjoint analysis. In doing so, we considered university students as one segment and discussed marketing strategies.

As a future project, we would like to conduct research on marketing strategies for fashion brands that target not only college students but also young people in general. Alternatively, we would like to develop a research design method to analyze the needs of college students in more detail.

References

[1]. Yuko Watanabe, Kinya Machida (2020), "College Students' Fashion Purchasing Attitudes and Behaviors and the Influence of Social Media," Surugadai Economic Review, Vol. 30, No. 1.

[2]. Yuji Oura, Keishin Kono, Hideo Gozaki, Kazunori Sato (2002), "Estimation of Brand Power of Fruits and Vegetables Production Areas by Selective Conjoint Analysis", Journal of Agricultural Management, Vol.40 No.1, 106-111

[3]. Yoshida, Kentaro (2003), "Verification of Sequential Effects of Environmental Risk Information by Selective Conjoint Analysis", Journal of Rural Planning, Vol.21, No.4, 303-312

[4]. Terufumi Naka and Takashi Fujimoto (2002), "Multidimensional Management Evaluation of Agricultural Technology by Selective Conjoint Analysis", Journal of Agricultural Management, Vol.40 No.1, 1-9

[5]. Kazuo Sato, Hiroyuki Iwamoto, Katsuhiko Demura (2000), "Evaluation of the attributes of Hokkaido rice by selective conjoint analysis", Journal of Agricultural and Forestry Research,Vol.35 No.4,242-245

[6]. Ouyangni, Tetsuhiro Inoue (2017), "A Study of Marketing Strategy for Late Entrants in the Tea Market Using Selective Conjoint Analysis", Graduate School of Business Administration, Keio University.

[7]. Koichi Kuriyama and Hiroshi Ishii (1999), "Environmental Value and Market Competitiveness of Recycled Products: Evaluation by Conjoint Analysis," Journal of Environmental Science, 12(1), 17-26

[8]. Akinori Okamoto, Tsuyoshi Moriguchi (2010), Data Analysis of Marketing, Asakura Publishing Co.

[9]. Akinori Okamoto, Masaaki Kijima, Tsuyoshi Moriguchi (2001), Mathematical Model of Marketing, Asakura Publishing Co.

[10]. Koichi Kuriyama,(2000), "Conjoints in Excel", Research Report of the Environmental Assessment Forum

[11]. Nobuhiko Terui, W.D. Dahana, Masataka Ban,(2009), Statistical Analysis of Marketing, Asakura Shoten

URL: http://dx.doi.org/10.14738/abr.108.12816