

A RECOMMENDATION AND CONSUMER PREFERENCES FOR ADVERTISING MEDIA OF A RETAIL COMPANY PROMO PRODUCT ON A RIDER'S JACKET OF A RIDESHARING COMPANY USING CHOICE-BASED CONJOINT

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ABSTRACT

Consumer preference analysis is needed to know the advertising media that have a big influence on consumers in making decisions to buy a product, the advertising media applied to rider's jackets of a ridesharing company. Ride sharing services is a flexible type of advertising media. Flexible advertising media requires a product with fast turnover. Retail products are dominated by primary products with fast turnover. The Company's rider jacket has a position variable with three levels; bottom, top and separated. Mostly retail products are food, beverage, personal, and household needs. The retail products displayed on the jacket can be 1-2 product(s), 3-6 products, and more than 6 products. Using these attributes and levels, the objective of this study is to get the best design or the best level combination for advertising media of retail promo product on a ridesharing rider's jacket by consumer preferences. To get the best combination of consumer preferences, Choice Based Conjoint method is used with the amount of 106 data. The data obtained is the preference of 106 respondents who once had experience of using the taxibike feature from the ridesharing application. The results of this analysis show the best level of position attribute is the bottom position, the best level of product type attribute is the type of product mixed or alternating and the best number of products to be plotted are 1-2 products.

INTRODUCTION

Transportation needs to meet high community mobility affect the increase in private vehicle ownership. Based on the survey [1], the number of people in one vehicle is inefficient with an average value of 1.67. This problem can be overcome by applying ride sharing which has been proven to reduce traffic density and has been well received by the community [2].

Indonesia has a big ride sharing company that begins to dominate the ASEAN market. The company has an iconic jacket that has its logo on the back of the jacket. This jacket has big free space because it only

displays the company logo. The free space can be used as advertising media. Daily products are main needs that have big turnover ratio so they are good items for flexible advertising and there is a big retail company in Indonesia and it always has promo program every week that is delivered via catalog. The promo usually is foods, drinks, personal needs, and household needs.

Advertising media is a visual product then Choice-Based Conjoint, usually abbreviated as CBC, is a good method for a visual product [3]. Designing using Choice Based Conjoint applies several concepts in one Task [4]. The CBC method conveys several product concepts that have been predetermined to the respondent to choose the most desired concept of consumers and the concepts are divided into several tasks. Due to the free space on rider’s jacket and promo program from a retail company, the advertising media on ridesharing rider’s jacket for promo products of the retail company is suggested and the analysis for consumer preferences are needed. Choice Based Conjoint has a better approach than conventional conjoint where CBC gets more information, better utilities and interactions with more interactive real conditions [5]. CBC method on product development does not require complex product design because CBC aims to find efficient criteria [6]. The CBC method in this study is aimed to get the best level from each attribute using consumer preferences. The best combination of levels will be applied to the advertising media and the output of this study will be a ridesharing rider’s jacket that has a function as advertising media with the best level combination from CBC method.

METHODOLOGY

Observations were done to obtain retail product catalog and promotion data. It also was done to get information about business processes on the ridesharing feature of taxibike. The target of the observation is to get attributes and levels for Choice-Based Conjoint (CBC) survey. Generally conjoint analysis be presented by this formula [7]:

$$U(X) = \sum_{i=1}^m \sum_{j=i}^{k_i} a_{ij} x_{ij} \tag{1}$$

Where,

- $U(X)$ = Overall utility of an alternative
- a_{ij} = The part-worth contribution or utility associated with the j th level ($j = 1, 2, \dots, k_j$) of the i th attribute ($i = 1, 2, \dots, m$)
- k_i = Number of levels of attribute i
- m = Number of attributes
- x_{ij} = 1 if the j th level of the i th attribute is present = 0 otherwise.

Logistic regression analysis is used to determine the utility of the levels of each attribute that will be used for conjoint analysis. This analysis is done using IBM SPSS Statistics. Regression analysis is done in three stages with different attributes. The first stage uses attribute of position, the second stage uses attribute of product type and the third stage uses attribute of number of product. Each attribute logistic regression analysis has one level that is used as the dependent variable. Dependent and independent variable/level are flexible and able to be decided freely (no condition needed) because dependent variable is only as a comparison variable for other variables to determine the value of the influence of variables. The best jacket as advertising media is determined by combining levels with the best value and the attribute importance can be determined by accumulating the levels of each attribute.

$$I_i = [\max(a_{ij}) - \min(a_{ij})] \tag{2}$$

Where,

- I_i = Importance of attribute i
- $\max(a_{ij})$ = The highest level value of attribute i
- $\min(a_{ij})$ = The lowest level value of attribute i

RESULT AND DISCUSSION

The number of level from CBC is decided based on how many option company has to apply in this jacket and it also considers how many question is suitable for respondent. Less question will decrease research data validity and too many question will make respondent losing desire and not giving the right preference. This research has three attributes and ten level. The attributes are position, product types, and number of products. The levels are Below Logo, Above Logo, Separated Position, Food and/or Beverage, Personal Needs, Household Needs, Mixed, 1-2 Product(s), 3-6 Products, >6 Products. Level grouping based on attributes is shown in table 2. This research has 106 data from 106 respondents and this data is enough to be proceed because $(n \times t \times a) / c \geq 500$ where $n = 106$ (the number of respondents), $t = 8$ (the number of tasks), $a = 3$ (number of alternatives per task, not including the none alternative) and $c = 4$ (the highest number of level in one attribute). The test value of this data is $636 > 500$ so the research can be continued to analysis.

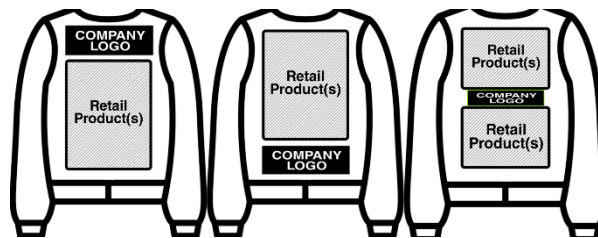


Fig. 1. The attributes for CBC are positions which are below logo, above logo, and separated, product types which are food and/or beverage, personal needs, household needs and mixed, and number of products which are 1-2 product(s), 3-6 products, and more than 6 products.

Table 1. Attribute and Level

Attribute	Level	ID
Position	Below Logo (A)	1
	Above Logo (B)	2
	Separated Position (C)	3
Product Types	Food and/or Beverage (D)	4
	Personal Needs (E)	5
	Household Needs (F)	6
	Mixed (G)	7
Number of products	1-2 Product(s) (H)	8
	3-6 Products (I)	9
	>6 Products (J)	10

Table 2. The number of levels chosen by each respondent

No	A	B	C	D	E	F	G	H	I	J
1	0	4	4	1	3	0	4	0	0	8
2	3	4	1	3	2	2	1	4	1	3
3	0	6	2	4	3	1	0	4	0	4
...
...
105	3	2	1	1	2	1	2	2	1	3
106	1	3	0	2	1	1	0	4	0	0

Table 2 presents how many time each respondent choose each level. This is obtained from the CBC survey and will be used for the next step to logistic regression analysis.

Level Utility

In this study utilities of levels is obtained from processing the CBC data using SPSS software. Logistic regression is statistic model to predict the coefficients with one dependent variable and two or more independent variables. This analysis is done by using data from table 2 which is done in group/model (model 1 is A,B,C; model 2 is D,E,F,G; model 3 H,I,J). This study has 3 model based on that this study has 3 attributes. The first level from each attribute is determined as the dependent variable.

Table 3. Utility of levels from each attribute

Model	Level	Utility
1	Below Logo	1.091
	Above Logo	-0.484
	Separated Position	-0.608
2	Food and/or Beverage	-0.174
	Personal Needs	-0.213
	Household Needs	0.167
	Mixed	0.219
3	1-2 Product(s)	0.986
	3-6 Products	-0.620
	>6 Products	-0.366

Level with the highest value from position attribute, product types, and number of products are below logo (1.091), mixed (0.219), and 1-2 product(s) (0.986).

Importance

The importance value of attributes is determined using equation 2 then it normalised using equation 3.

$$W_i = \frac{I_i}{\sum_{i=1}^m I_i} \tag{3}$$

Where,

- W_i = Normalised importance to ascertain its importance relative to other attributes
- I_i = Importance of attribute i
- m = The number of attributes

Table 4. Importances of Attributes

Attribute	Level	Utility	Ii	Importance (%)
Position	Below Logo	1.091	1.699	45.46
	Above Logo	-0.484		
	Separated Position	-0.608		
Product Types	Food and/or Beverage	-0.174	0.432	11.56
	Personal Needs	-0.213		
	Household Needs	0.167		
	Mixed	0.219		
Number of products	1-2 Product(s)	0.986	1.606	42.98
	3-6 Products	-0.620		
	>6 Products	-0.366		

Discussion

The best alternative to the ridesharing rider's jacket design as an advertisement can be determined by choosing levels with the highest utility values from each attribute. The highest utility values from each attribute are presented in table 3, it shows that below the company logo utility is 1.091, mixed utility is 0.219, and 1-2 product(s) utility is 0.986. So, the best design for advertising media on ridesharing rider's jacket for retail promo product is a jacket with 1 or 2 random product place below the company logo. The attribute importance is used to know how big an attribute has influence to the other so company can focus on the attribute with the highest influence.

CONCLUSION

An advertising media jacket of ridesharing company that displays retail promo products is recommended with three specific attributes. This advertising media jacket should put the advertisement below the ridesharing company logo. The product type that will have high interest from consumer is mixed. The number of products that has best preference is 1-2 products. So the best product of jacket as advertising media for ridesharing jacket has the promo displayed below the company logo, has the product type mixed (food and/or beverage, personal needs and household needs) and put only 1 or 2 products at a time.

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