CUSTOMER PREFERENCE ANALYSIS ON FASHION ONLINE SHOPS USING THE KANO MODEL AND CONJOINT ANALYSIS

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ABSTRACT

Online business or e-commerce is now very popular and is a growing industry in Indonesia. Although the growth is high with a 15% rise from 2011, it is found that only 57% of the Indonesians used the Internet for online shopping (MasterCard, 2012). To increase purchases through online stores, a study on customer satisfaction is needed. This study designs a preferred service for fashion online shops based on customer preferences, which would then increase customer satisfaction. By analyzing service attributes that enhance satisfaction for online customers, a suitable service for fashion online shops could be generated. The Kano model is used to classify which service attributes are important for improving and developing the quality of fashion online shops. To understand customer preferences for fashion online shops, conjoint analysis is used to calculate the preferences statistically.

Keywords: Conjoint analysis; Fashion online shop; Kano model; Online customer preferences

1.   INTRODUCTION

Online shopping is the form of shopping which enables customers to purchase goods through the Internet (Pabalkar, 2014). Online business or e-commerce entities are firms that provide consumer goods and market them online. There are many advantages for online shopping, such as the prices of the products are cheaper; a lot of information is provided which could lead to better purchasing decisions; and it does not take time and money to find other related product information. These advantages encourage people to do their shopping online, and this makes online business an attractive market.

In Indonesia, online business is a potential industry with an estimated US$ 0.9 billion for the e-commerce market (DailySocial & Veritrans, 2012). Online shopping is now widely used by a majority of the Indonesian customers, where MasterCard (2012) found that 57% of the Indonesians used the Internet for online shopping, while Ipsos (2012) also found that 69% of the Indonesians surfed the Internet to find the products they wished to buy online. These numbers are also rising very quickly with a 15% growth in 2012 for online purchasing (MasterCard, 2012).

Lifestyle products, such as fashion and cosmetics, are in the highest purchasing category in the Indonesian e-commerce market (DailySocial & Veritrans, 2012), where fashion products are found to be among the most purchased items by online consumers (MasterCard, 2012). This study focuses on the online purchase of fashion products, which is the biggest market in

Indonesia's e-commerce market.There is a significant number of firms in the fashion online business where countless fashion products are offered. These fashion products are mostly alike in terms of product description, even though they are sold in different shops, whereby customers can easily switch from one shop to another. This makes the service provided in their respective online shops an important aspect for each firm. Customer satisfaction is closely related to how well the company's services are highlighted to strengthen each firm's competitive advantage.

The calculation of customer preference is one way to measure customer satisfaction. Customer preference has three main aspects: completeness where customers could indicate which products are preferred; transaction where customers could say which they like better; and continuity where customers could rank their respective preferences. In order to understand customer preferences, customers are asked to see a product as a combination of several attributes, insofar they could have different perspectives for each one of the attributes. Each attribute would be designated a different importance level from the range of customers' responses based on their respective needs and desires. From these attributes, customers would build a brand image for each brand, and the satisfaction rate for each product could be differentiated based on their individual attributes. At the end of this process, customers are expected to choose brands differently through an evaluation procedure. This approach for understanding customer preference is used in this study to design a preferred service for fashion online shops, based on customer preference, which would then increase customer satisfaction.

2. METHODOLOGY

This study is conducted in four click-only firms based independent website shops, which use a business-to-customer transaction system. These website shops are located in Jakarta, Indonesia and they only deliver their products in Indonesia. A two-staged questionnaire was given to 30 respondents selected by using a quota sampling method. The respondents live in Jakarta or on the outskirts of Jakarta. Ranging from 17–25 years old, they have purchased a fashion product online. The first questionnaire is multiple- choice in order to find which of the attributes are preferred; while the second is more specific by rating combinations of attributes and levels. A Likert scale from 1 to 5 was used to rate the second-stage questionnaire.

By using the data gathered from the first-stage questionnaire, a Kano model is used to categorize the attributes of service and products based on how well each particular service or product could satisfy each customer (Widiawan & Irianty, 2004). The output from the Kano model shows how customers respond and how their response affects the customers. This Kano model categorizes each attribute into 'Must Be', 'One-Dimensional' and 'Attractive' categories. The 'Must Be' category shows the basic needs of the customer which must be covered. The 'One-Dimensional' or performance needs category, is where the performance of this attribute is parallel to customer satisfaction. The 'Attractive' or excitement needs category is when an attribute could significantly increase customer satisfaction, but if that attribute is not present, then it would not decrease customer satisfaction.

The results from the second-stage questionnaire use conjoint analysis to find the right composition for the product or service. Conjoint analysis calculates the right market segmentation based on the similarity of consumer preferences, based on product/service attributes (Green & Krieger, 1991). The results of the analysis show the utility value of each attribute, which is optimized using the Generalize Linear Model (GLM) and the part-worth function to generate the preference score for each attribute.

3.   RESULTS AND DISCUSSION

3.1. Kano Model

Eighteen service attributes are defined based on literature, which are used in the Kano model. From the data in the first-stage questionnaire, all service attributes would be then mapped out for the four firms selected, as shown in Table 1.

Table 1 The attributes list based on the Kano model

Services Attributes	No	Firm 1	Firm 2	Firm 3	Firm 4
Provides open discussions/forums	4	Yes	Yes	Yes	Yes
Shipping service used	7	Tiki/JNE	JNE	Tiki	JNE
Provides a fast response customer service	7	Yes	Yes	Yes	Yes
Categorizing its products	8	Yes	Yes	Yes	Yes
Recommendation based on the last buyer	9	No	No	No	No
Adequate product search capabilities	10	Yes	Yes	Yes	Yes
Shipping Cost	10	Free for Jakarta	Based on weight	Based on weight	Based on weight
Easy to access the website	12	Yes	Yes	Yes	Yes
Transaction report	12	No	No	No	No
Options for ordering process	12	Yes	Yes	Yes	Yes
Provides information on fashion	13	No	No	No	Yes
Provides product Information	14	Yes	Yes	Yes	Yes
The website looks attractive	14	Yes	No	No	No
Privacy security	17	No	No	No	No
Provides Q&A with fashion experts	17	No	No	No	No
Payment method	18	Transfer	Transfer	Transfer	Transfer
Product variation	20	Yes	Yes	Yes	Yes
Product guarantee	23	Yes	Yes	No	No
New collection's update routine	23	Yes	Yes	Yes	Yes
Shipping speed (days)	27	2-4	3-6	3-6	7-10

The service attributes from Table 1 are then classified into either: 'Must be' or 'One-dimensional,' or the 'Attractive' category. The attributes chosen by the first $1-10$ respondents are categorized as 'Attractive;' attributes chosen by $11-20$ respondents are categorized as 'One-Dimensional;' and the attributes chosen by $21-30$ respondents are categorized as being in the 'Must Be' category. Attributes from all categories are tested because this model is applied to new firms that offer services which are intangible.

These service attributes from Table 1 are then screened-out based on three aspects: whether or not they are qualitative, whether they could be broken-down into some specific levels, and whether they are in the popular category. The service attributes that match these requirements are then further elaborated into the various levels shown in Table 2. First, five attributes were selected and second, these were broken-down into three levels based on observation and interviews.

Table 2 The selected attributes and their levels

Kano's Category	Service Attribute	Level(s)
Attractive	Shipping Cost	Charged per product quantity
		Based on the total weight of the product
		Fixed delivery cost
One-Dimensional	Payment Method	Transfer
		Credit card
		Cash on delivery
	Privacy Security	Company's privacy policy
		The website uses data security system
		The company cooperates with the legal entity
Must Be	Product Guarantee	Can be exchanged for the same product ONLY
		Can be exchanged for the same product OR refund
		Can be exchanged for the same product OR other same-priced-products
	Shipping Speed	Cost saving (Economic Fee): >5 days
		Regular Service (Standard Fee): 2-4 days
		Express (Premium Fee): 1 day

3.2. Conjoint Analysis

The data collected are built up into a full-profile for conjoint analysis, based on the level of each attribute. There were 22 combinations offered in the second-stage questionnaire. This data was then processed with SPSS 17 to find the utility and importance values of each attribute (Tables 3 and 4). The attribute level with the highest utility estimate value is chosen as the preferred service design.

Table 3 Utility value

Attribute	Level	Utility Estimate	Std. Error
Payment method	Transfer	.407	.029
	Credit Card	-.846	.029
	Cash on delivery	**.438**	.029
Shipping Cost	Charged per product quantity	-.035	.029
	Based on the total weight of the product	**.077**	.029
	Fixed delivery cost	-.042	.029
Shipping speed	Cost saving (Economic Fee): >5 days	-.005	.029
	Regular service (Standard Fee): 2-4 days	**.092**	.029
	Express (Premium Fee): 1 day	-.087	.029
Product guarantee	Can be exchanged for the same product ONLY	-.032	.029
	Can be exchanged for the same product OR refund	**.099**	.029
	Can be exchanged for the same product OR other same-priced-products	-.067	.029
Privacy Security	Company's privacy policy	-.085	.029
	The website uses data security system	-.062	.029
	The company cooperates with legal entity	**.147**	.029

Table 4 Importance value scores

Service Attribute	Importance Score
Payment Method	64.838
Shipping Cost	6.011
Shipping Speed	9.016
Product Guarantee	8.415
Privacy Security	11.721

4. CONCLUSION

The preferred service design for fashion online shops uses cash-on-delivery for their payment method. The shipping costs are calculated based on the weight. The shipping costs range from Rp 6,000.00/kg to Rp 7,000.00/kg for delivery in Jakarta and to the outskirts of Jakarta. The standard delivery time is 2–4 days. The product guarantee assures that the products will be returned and refunded, and the online shop must provide protection for customers' data, which is also protected by law. This service design format is for fashion online shops, but it could be adapted to suit online shops with other products. Some modifications must be made for application to other types of online shops, which could be the topic of future research.

5. REFERENCES

DailySocial, Veritrans, 2012. *eCommerce in Indonesia*. Presentation, DailySocial & Veritrans

Green, P.E., Krieger, A.M., 1991. Segmenting Markets with Conjoint Analysis. *Journal of Marketing*, Volume 55, pp. 20–31

Ipsos. 2012. *Interconnected World: Shopping and Personal Finance*. North America: News & Polis

Kotler, P., Armstrong, G., Saunders, J., Wang, V., 1999. *Principles of Marketing*. New Jersey: Prentice Hall

MasterCard. 2012. *Mobile Shopping Taking Root in Emerging Markets: MasterCard Online Shopping Survey*. Singapore: Press Release

Pabalkar, V., 2014. Drivers of eShopping Behaviour. *Procedia Economics and Finance*, Volume 11, pp. 600–608

Widiawan, K., Irianty, I., 2004. Pemetaan Preferensi Konsumen Supermarket dengan Metode Kano Berdasarkan Dimensi Servqual. *Jurnal Teknik Industri*, Volume 6, pp. 37–46 (in Bahasa)