
Investigating Consumer Preference in Banking Services: A Conjoint Analysis Study

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Abstract:

Purpose: This paper attempts to measure the consumer preference of banking services in Indonesia through the use of a conjoint analysis study. The study is expected to show kinds of combination of services and features that customers perceive to be important.

Design/methodology/approach: The paper used conjoint analysis to study consumer preferences towards Indonesian banking services. Twelve unique orthogonal profiles are generated to enable the preference measurement. The conjoint study design is comprised of eight attributes that each has two levels. A sample of 655 respondent was collected through an online survey.

Findings: Convenience of having transactions anywhere and anytime is the most crucial aspect of customers. That is, online banking facilities and ATM locations were found to provide the highest utility for customers. Meanwhile, supporting features such as information or notification is an attribute that customers are willing to trade off.

Practical implications: Practitioners could use the study to find the best service combinations that they could offer to customers. Practitioners could also know which attributes customers are willing to make a trade off in comparison to other factor utilities.

Originality/value: Testing customer preference in the banking industry is still relatively needed in the banking industry. Furthermore, the use of conjoint study is a valuable study that shows a new perspective of measurement in the service industry.

Keywords: Consumer preferences, conjoint analysis, banking industry, Indonesia.

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1. Introduction

The Indonesia banking sector continues to develop after years of expansion and is mainly stable and well capitalized. According to a survey by Otoritas Jasa Keuangan (2017), an Indonesian Financial Services Authority, total bank accounts in Indonesia have increased by about 35% for the last five years. The adoption of financial products has increased from 1.2 financial products per consumers in 2013 to 1.9 financial products per consumer in 2016. Consumers are increasing their awareness and understanding of financial products. The bank industry today offers several products and services to consumers. Digital banking is also better received by consumers, as the adoption of Internet banking and mobile banking in Indonesia is growing. Nowadays, consumers are not necessarily required to go to a bank branch or an ATM to make a transaction, as they can open a bank account with e-banking features. Nevertheless, conventional delivery channels are still popular with consumers. It can be seen that consumers have different preferences for various available banking products or services.

Lichtenstein and Slovic (2006) explained that preferences could be regarded as an individual's attitude towards a set of objects that are typically reflected in their explicit decision-making process. Fundamentally, recognizing an individual's preferences requires a set of alternatives that enable consumers to choose options that provide the most utility. Novemsky *et al.* (2007) explain preference fluency as the subjective feeling of ease or painful experiences in making decisions that are affected by two choices, deferral and compromise. Yoon and Simonson (2008) explain that strong preferences reflect greater confidence and stability and are resistant to change. Individuals with strong preferences are argued to be less likely to change over time, though stimuli mainly influence their original choice. That is, consumers will prefer the best product or service that can satisfy their needs.

Research on banking services has mainly centred on the development of user profiles and the exploration of broader economic issues corresponding to consumer demand. However, the theoretical foundation that investigated how consumers can prefer one service over another is still limited. Opeewal and Vriens (2000) explained that a quantitative approach, such as a multiple-item scale in service quality has no well-defined range between a best and the worst level of the dimension. George and Kumar (2014) suggested that investigations on how customers perceive performance based on the actual performance of a product or service are appropriate. Consumers need to choose the best option by eliciting the best choice for available products and services. Dhar and Gorlin (2013) described that preferences have an ordering that implies a definitive preference ranking by consumers between alternatives that allows them to evaluate whether one alternative is at least as good as the others. Kaynak *et al.* (1991) suggested that a study such as conjoint analysis is essential to investigate how customers make trade-offs among the variety of attributes in the banking industry.

Conjoint analysis is a method used in market research that helps determine how people value different attributes (feature, function, benefits) for the preference identification in multi-attribute decision making. Bridges *et al.* (2011) explained that conjoint analysis has the advantage to allow researchers control over the experimental stimuli used to generate the preference data. Accordingly, researchers can avoid problems of confounding, correlation, insufficient variation, and unobserved variables standard in the analysis of revealed-preference data. It allows a more realistic decision model for the population because it forces product/service evaluation as a whole, which is similar to their actual purchasing situation. This analysis manifests individual decision models for each subject and allows the formation of an aggregated decision model across all subjects (Dauda and Lee, 2016).

Even with this background, literature that investigates how consumers make trade-offs for banking services is still limited. It is difficult to find a study that highlights the Indonesian banking sector. Krisnanto (2011) showed insights for consumers' determinant factors for bank selection in Indonesia; however, it does not describe the empirical motivation on how consumers make choices on various available services in the market. Thus, the primary objective of this study is to investigate the preferences of Indonesian consumers on banking services by investigating the variance of consumers' behaviour concerning current banking products and service preferences. The primary research questions addressed in this study are:

1. What are the attributes that affect consumers' preferences for banking services?
2. What is the relative importance of these attributes in their overall preference of banking services?

2. Literature Review

In the first step of the conjoint study, a literature review helped to identify what factors a consumer considers when evaluating banking services. First, previous studies show how online banking facilities, such as mobile banking and Internet banking, have made an impact towards customer adoption for banking services (Chong *et al.*, 2010; Nasri and Charfeddine, 2012). These delivery channels enable consumers to complete banking transactions online. Laukkanen (2007) explains that customers have positive value perceptions of Internet and mobile banking because of its efficiency, convenience, and safety. Makanyeza (2017) shows that mobile banking is perceived to be useful and has a relative advantage for consumers. Accordingly, consumers are expected to prefer banking services with the online facility. Therefore the research hypothesis is:

H1: Banking services with online facilities are more preferred.

Second, network location is essential to influence consumer choice in banking. According to Gerrard and Cunningham (2004), there are geographical and time

conveniences in the banking industry. The proximity of bank branches or ATM facilities affects geographical convenience for consumers. Wang and Ching (2016) demonstrate how geographical convenience is essential to consumers, as they feel that banks that are closer to home or office are more favourable. Honka *et al.* (2017) explained that customers would likely to choose a bank that is closer to their home or working area despite the availability of online banking. This implies that having a branch location closer to a consumer home is more preferred than the workplace.

H2: Banking service that is closer to home is more preferred.

Third, ATM locations are also considered to provide geographical convenience to consumers. ATMs are a convenient way for consumers to perform most financial and many non-financial transactions 24 hours a day. Olorunniwo and Hsu (2006) show that bank accessibility can be measured by using the ubiquity of ATMs as the indicators. Previous studies suggest that ATM availability and convenient location is considered to be a significant factor for consumers in selecting bank (Tucker and Jubb, 2018). Therefore, this study implies that the number of convenient ATM locations should be more favourable than limited ATM locations.

H3: Banking service with ubiquitous ATM location is more preferred.

Fourth, waiting time is also postulated to affect consumer preferences towards bank service. In an early study, Oppewal and Vriens (2000) showed that queuing at money tellers and counters was not the most preferred attribute in the perceived service quality. Dauda and Lee (2016) demonstrated that waiting time was found to be a significant attribute for consumers in banking service quality in Nigeria. Naturally, consumers are expected to prefer faster banking services to slower banking service.

H4: Banking service with lower waiting time is more preferred.

Reliability could be perceived as the degree to which measures are free from errors and, therefore, yield consistent results. This is demonstrated in several studies to adapt transaction error in order to measure bank reliability (Chavan and Ahmad, 2013). Akhtar (2011) explains that intense customer satisfaction is affected by error-free banking services. Dauda and Lee (2016) demonstrated that the reliability of banking could be determined by online transaction error. Accordingly, consumers are expected to prefer banking services with lower transaction error.

H5: Banking service with less transaction error is more preferred.

Sixth, consumers are concerned with the operational days and hours in selecting bank services. Oppewal and Vriens (2000) found that opening hours have a positive impact on consumer preference. Specifically, consumers prefer banking service that has weekend banking or Saturday availability. Almosawi (2001) explored this

attribute and showed that this rudimentary concept leads us to a hypothesis to incorporate operational time of banking service in the study. Accordingly, banking services with longer opening days are expected to be more preferred.

H6: Banking service with more extended branch working days is more preferred.

Seventh, the development of the banking sector enables bank notifications to be more proactive for the consumer. Cohen *et al.* (2006) discussed that in the current banking environment, it would not be unusual for consumers to have payment orders to a wide variety of banking activities. Hence, this attribute allows consumers to monitor their banking activities. Ülengin (1998) demonstrated that proactive reminders have high importance for consumer preference. Kim (2005) included prompt notification in indexing online customer satisfaction. That is, proactive automatic transaction notifications should be more preferred.

H7: Banking service with automatic notifications is more preferred.

Lastly, this study investigates that reward programs in banking could encourage consumer preference towards choosing a banking service. In an early study, Ülengin (1998) found that the loyalty program that covers all the transactions of a customer was the most crucial attribute in bank selection decisions. Customers feel that rewards from the transactions they have made are essential to encourage them in selecting a bank service. Keh and Lee (2006) explain that reward programs enhance loyalty and can enhance the value proposition instead of merely on repeat purchases. Accordingly, consumers are expected to prefer banking services with a more beneficial reward program.

H8: Banking service that covers all products and services is more preferred.

The methodology of this paper focuses on the measurement of consumer preferences for attribute level variables and makes no assumptions about the nature of the relationships between the attributes and the dependent variable (Kotri, 2006). Throughout the expanse of designed profiles of the product and service attributes, consumers will make trade-offs to decide the most preferred service that can satisfy their needs.

H9: Consumers have more favourable choices to a specific combination of banking attributes.

3. Research Methodology

The dimension of bank service is often unclear to the consumer because service characteristics are intangible and may be perceived differently. Conjoint analysis can provide a better realistic decision for consumers because they are forced to evaluate the set of alternatives as a whole, which is similar in real life. The design of this

study uses full profile conjoint analysis to measure consumer preferences towards the banking service. The procedure of data collection and analysis is a literature review, survey design, pilot experiment, data collection, and data analysis. This study employed an online survey as the data collection tool. A literature review helped to identify eight attributes that consumer considers while evaluating banking services. This conjoint analysis design is comprised of eight attributes, each of which has two levels of attributes. Table 1 shows the attributes and attribute levels used in the study.

Table 1. Attributes and attribute levels used

Attribute	Attribute Level
Online Facility	Bank has online facility (e.g. Mobile Banking, E-Banking)
	Bank does not have an online facility
Bank Location	Near home
	Near office/school
ATM Location	Available at bank branches and other places
	Only available at bank branches
Waiting Time	Under 10 Minutes
	Above 10 Minutes
Transaction Error	0%
	3%
Branch Working Day	Monday to Friday
	Monday to Saturday
Transaction Notification	Bank provides notifications automatically
	Consumer finds notifications manually
Reward Program	Covers all product and services
	Only covers some of the products and services

Source: Developed by authors.

In full profile conjoint analysis, the number of profiles might be too many to conduct for respondents to evaluate. The number of profiles in this study can reach to 28 factorials of banking services, which equals to 256 profiles. Previous studies (Ulengin, 1998; Rao, 2014) suggest the use of orthogonal design to reduce total profiles. According to Rao (2014), the orthogonal design is efficient and enables estimation of all main effects of the attributes. This study employed SPSS software to help design choice sets orthogonally. Twelve profiles are generated from the software. Respondents are asked to rank 12 banking profiles from best (1) to worst (12) according to their preference. All 12 profiles and response fields are placed on one-page survey design.

4. Results

This study collected 655 respondents. Table 2 shows the profile of the respondents in the study. The age of the respondents was comprised of 54% aged 18-35 and 46% aged 36 and older, undergraduate and master education respondents combine to 65%, and 47% are male. All respondents need to have a banking account to be

eligible to fill out the questionnaire. In the data, 235 respondents had one bank account, 163 had two bank accounts, and 257 respondents had more than two bank accounts. This means that 64% of the respondents had at least two bank accounts in their arrangement.

Table 2. Respondents profile

Age		Occupation	
18-25	162	Civil	106
26-35	194	Private	215
36-45	164	Entrepreneur	147
46-55	102	Homemaker	42
> 55	33	Student	145
Education		Monthly Spending	
High School	146	IDR 0-2.500.000	154
Undergraduate	240	IDR 5.000.000-7.500.000	225
Master	191	IDR 5.000.000-7.500.000	171
Doctorate	78	Above IDR 7.500.000	105
Gender		Total Bank Account	
Male	310	Single Account	235
Female	345	Multiple Account	420

Source: Developed by authors.

Table 3 shows Pearson's R and Kendall's Tau coefficients, which illustrated the correlation between the design and received the sample data. A significance value of Pearson's R and Kendall's Tau indicates the proportion of the expected preference explained by the actual preference. High coefficients of both indicators show that the measurements for the investigated profiles are assimilated to the cumulative model of the analysis. According to the results, the conjoint model was statistically significant (Pearson's R= 0.924, $p < 0.001$ and Kendall's Tau= 0.725, $p \leq 0.01$). This means that values generated from the data analysis were significantly different.

Table 3. Correlation level

	Value	Sig.
Pearson's R	0.924	0.000
Kendall's tau	0.697	0.001

Source: Developed by authors.

Table 4 shows the importance level of the consumer's preference. Accumulated importance values in this Table are equal to one. This study found that online facilities had the highest importance for the consumers' preferences. From the set of attributes, having an online facility had a 13.9% importance level from the eight attributes. On the other hand, transaction notification was the least important, with only 11% importance level. However, it is interesting to see that the importance value levels for each attribute were quite close to each other. The highest (13.839) and the lowest (11.464) had only a 2.3% marginal difference.

Table 4 also shows the utility estimate of the study. This study used a ranking approach in the data collection with one (1) as the best profile and twelve (12) as the worst profile. Hence, banking facilities that had an online facility with mobile and internet banking with a 0.163 utility estimate means the highest preferred attribute for consumers. On the other hand, a bank that did not have an online facility was not preferred by consumers. This finding suggests that H1 was supported. These findings could imply in the respondents' profile, where 80% of the respondents were using online facilities, and 97% were using ATMs. Accessibility and convenience were the essential attributes in consumer preferences. The finding showed that consumers were emphasizing the distribution channel of the facility as an essential preference factor.

Table 4. Summary of group statistics

Attribute	Importance	Rank	Attribute Level	Utility Estimate
Online Facility	13.839	1	Have online facility	0.163a
			Do not have online facility	-0.163
Bank Location	11.68	7	Near home	-0.030
			Near office/campus	0.030
ATM Location	13.437	2	Bank branches and other places	-0.355
			Only at bank branches	0.355
Waiting Time	12.423	4	Under 10 Minutes	0.099
			Above 10 Minutes	-0.099
Transaction Error	12.967	3	0%	-0.091
			3%	0.091
Branch Working Day	11.954	6	Monday to Friday	0.165
			Monday to Saturday	-0.165
Transaction Notification	11.464	8	Automatic notification	-0.023
			Manual notification	0.023
Reward Program	12.136	5	All product and service	0.175
			Some product and service	-0.175
(Constant)				6.5

Source: Developed by authors.

Consumers were found to favour faster banking services since they preferred to wait less time during a transaction. The attribute level that was preferred by consumers were transaction waiting times that were under 10 minutes with a utility estimate of 0.099. The findings indicate that geographical location and time convenience were important for consumers. Besides convenience, consumers also preferred a more beneficial reward program. The finding shows that a reward program that covered all products and services had a utility of 0.175, which implies a more preferred attribute. This finding shows that H4 and H8 were supported. Several findings in this study were empirically different from previous studies. First, although several studies mention that consumers prefer a network that is closer to home (Devlin and Gerrard, 2005; Honka *et al.*, 2017), this study found otherwise. Bank location was shown to have a -0.030 utility estimate for a location near the home. This means that

consumers preferred a bank that was located near their office rather than their home, which had a 0.030 utility estimate. The fact that a location closer to the workplace was more preferred is supported by the fact that consumers also preferred a bank branch that was open Monday to Friday. This finding suggests that H2 and H6 were not supported. This finding also suggests that consumers preferred to complete their banking transactions within their working hours. Moreover, this study suggests that consumers feel automatic notification was unfavourable with -0.023 utility estimate. Thereby, H7 was not supported.

This study found that consumers preferred an ATM location that was only located in bank branches instead of other places. This finding suggests that consumers may perceive ATMs outside of bank branches as uncertain and risky. Min and Melachrinoudis (2001) found that consumers avoid making banking transactions at the locations that were perceived to be uncertain and risky. However, this study also found that higher transaction errors were found to have a higher utility. Customers chose to have a bank service with a 3% transaction error. It is suspected that a spurious loyalty occurred in this preference. Consumers treat a specific bank poorly because of familiarity or habit, inertia, passivity, or lack of other alternatives, but they do not have a corresponding positive relative attitude (Filip and Anghel, 2009).

5. Summary and Conclusions

The evidence found in the study shows that online facilities and ATM location have the highest utility for consumer preference. This implies that consumers perceive geographical and time convenience as the most crucial attribute in their preference. Hence, it is expected that consumers prefer banks that provide online facility since it enables them to complete banking transaction wirelessly. Although ATM locations in several places may provide better accessibility, this study suggests that consumers perceive ATMs located outside bank branches to be less secure. Thereby, consumers prefer to make a banking transaction that is convenient and safe for them.

Further findings suggest that consumers prefer to have bank service that has less waiting time and acknowledge all transactions in reward programs. Wang and Ching (2016) demonstrate that consumers value the proximity of a branch's location to both home and workplace almost equally; however, this study suggests that consumers prefer a location that is closer to their workplace. Higher utility on Monday to Friday banking implies that consumers prefer to make banking transactions during their office hours, supporting their preference for branches close to their workplace. Some findings are compelling enough to be investigated further. The finding shows that consumers prefer bank services with 3% transaction error, which imply that a spurious loyalty occurs in the preferences. Finally, this study suggests that consumers do not prefer automatic bank notification. Consumers may feel uncomfortable being flooded by transaction notifications so that they prefer to find the information independently. This finding implies that automatic notification can be perceived as a spam message.

From the practical viewpoint, managers can make use of this study by considering the utility level and relative importance in the findings. Salim *et al.* (2018) explained that service quality does not directly affect customer loyalty. Instead, it needs mediation from customer satisfaction. Practitioners could devise the best service combination that can be designated to yield the highest utility. This study suggests that consumers prefer banks with electronic banking facilities and ATM locations, implying that accessibility and convenience are essential to consumer preference. Commercial or workplace areas could be highlighted since consumers prefer to make banking transactions during weekdays and closer to their office. Banks also need to provide quick and efficient service, as longer waiting times are not favourable. Consumers could tolerate a small amount of transaction error, but they prefer a reward program that covers all their transactions. Lastly, managers could consider allowing consumers to access notifications or information quickly and possibly a customized notification that allows them to manage their preferred notification, given that consumers do not prefer automatic notifications.

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