Antecedents Variables of Intention to Use Service Innovation: An Empirical Study of E-Toll Card

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Abstract

Lack of consumer willingness to adopt electronic toll card in Jakarta triger the congestion at the toll gates. This congestion has been one of the critical factors that needs to be more focused by PT Jasa Marga as highway toll service company. The fact shows that only 5.88% of all the total transactions in the toll gates applied E-toll card facility. These facts provide evidence about the lack of consumer willingness to adopt E-Toll card. Therefore, the understanding of consumer behavior to adopt sevice innovation is necessary to solve these lack of consumer unwillingness. This study was developed by replicated the research of Lee (2012) that reveal the antecedents factors that affect the consumer intention to adopt service innovation. Respondents of this research were 217 students from a private university in Tangerang. Respondent were collected by using judgemental sampling based on their experience in using E-toll card. The survey instrument employed demographic background, consumer attitude, perceived ease of use, perceived price fairness, satisfaction with existing service, fashion consciousness, risk averseness and consumer intention to adopt service innovation. Structural equation modeling (SEM) was applied to analyze the data. Result indicated that consumer attitude, perceived ease of use, satisfaction with existing service, risk averseness, and fashion consciousness are the predictors of consumer intention to adopt service innovation. This research also provides the theoretical implication, managerial implication, and suggestion for future research.

Keywords

Introduction

Innovation is one of fundamental basis of competitiveness for firms (Ahmed & Shepherd, 2010). Innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003, p.11). Today, many big companies acknowledge the importance of innovation to their companies' survival (Morris, Kuratko, and Covin , 2011).

Many people identify innovation as a technology (Rogers, 2003, p.12). In other words, people and organizations often use the word innovation and technology as synonyms. Rogers (2003) cited that technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationship involved in achieving a desired outcome (Rogers, 2003, p.12). As technological capabilities expand, businesses are turning more and more to computer-assisted method to increase efficiency and provide a competitive edge such as electronic toll card (here after, E-toll card) system in Indonesia.

The first highway toll service was made by PT. Jasa Marga in 1978 (www.jasamarga.com). For almost 35 years the toll highways has spread in many cities in Indonesia. While the toll highways has been spreaded in many cities, the numbers of vehicles also raise, in 2010 the numbers of the vehicle was increased to 76.907.127 units (BPS, 2010). Since an increasing number of vehicles, the queues at the toll gate inevitably expected until 2014 (http://forum.kompas.com). In 2009 the firm found a system that can reduce the queues line in the toll gates, those system is called E-toll card (Mineski, 2012). Despite, E-toll card is very helpful in reducing congestion at toll gates; there are not many peoples who adopt this new system (Aliya, 2012). The fact has shown that there were only 5.88% of all the total transactions in the toll gates which has E-toll card fasility (Jasamarga, 2010, p. 20). Therefore, this study aimed to identify the antecedents factors that influence consumer attitude toward service innovation (Lee, 2012).

This study replicate a model of the consumer's intention to use service innovation which was developed by Lee (2012). In the specific, the model is applied to examine people intention to use E-toll card system as a service innovation. Replication is intertwined with the basic research and a necessary ingredient for knowledge advancement in any discipline (Easley, Madden, & Dunn, 2000). Furthermore, Epstein (1980, cited by Easley et al., 2000) pointed out that replication is a fundamental requirement in science.

Literature Review

Intention

Intention is defined as the strong purpose, which accompany with the desire to makes the expected result (Dyer, 2010). To make consumer intent to use a product or service, the firm needs to deliver on its value proposition, that is, the firm must first create a need-satisfying new product (Kotler & Amstrong, 2010). New products then will be considered by consumer in order to use it or not through the adoption process (Kotler & Amstrong, 2010). The adoption process is the mental process through which an individual passes from first learning about an innovation or new product to final adoption, and adoption as the decision by an inividual to become a regular user of the product (Kotler & Amstrong, 2010, p. 181).

There are eight product characteristic that influences consumer's intention to become a regular user (Kotler & Amstrong, 2010). Those characteristics involve relative advantage, compatibility, complexity, divisibility, communicability, ongoing cost, risk and uncertainty, and social approval. Furthermore, those characteristics also influence on rate of adoption of the new-product. Therefore, it is important for marketer to consider all these factors when developing the new

product and its marketing program (Kotler & Amstrong, 2010).

The technology acceptance model (TAM) is one of the most widely used predict consumer adoption of the new-product (e.g., Lule, Owansa & Waena, 2012; Suki, 2011; Suki & Suki, 2011; Šumak, Heričko, Pušnik & Polančič, 2011; Shroff, Deneen, & Eugenia, 2011; Sedana & Wijaya, 2010; Wang & Pho, 2009; Teo, 2009; Abdel-Wahab, 2008; Teo, Luang, & Sing, 2008; Jahangir & Begum, 2008; Eveleth & Stone, 2008; Ju, Hao-Fan, & Yu-Hsin, 2007; Gumussoy, Calisir, & Bayram, 2007). According to TAM, there are three factors influence consumer's intention to adopt technology: attitude, perceived ease of use, and perceived usefulness.

Attitude

Attitude is defined as a learned predisposition to behave in a consistently favorable or unfavorable way with respect to a given object (Schiffman, Kanuk, & Wisenbilt, 2010, p. 246). Attitude is one of the most influence factor on intention to purchase a product (Schiffman et al., 2010, p. 254). Therefore, understanding attitude is important for marketer in order to increase consumer intention to buy a product or service.

There are three major components of attitude: cognitive, affective, and conative (Schiffman et al., 2010). Cognitive refers to the knowledge and perception that are aquired by a combination of direct experience with the attitude object. In other words, consumer consider the attributes of attitude object which guiding consumer into several outcomes such as perceptions and beliefs. On the other hand, affective refers to consumer's emotion or feelings about a particular product or brand. Furthermore, affective component is reflected by the individual rates the

attribute of attitude object as favorable or unfavorable. Connative component of attitude refers to the likelihood or tendency that an individual will undertake a specific action or behave in a particular way with regard to the attitude object. Thus, it can be stated that consumer's attitude starts from the believe to emotion, and end up on the intention to act (Schiffman et al., 2010).

In relating with service innovation, marketers should try to changes the consumer behavior that use existing services to apply new services. Therefore, marketers should know how to gain the positive consumer attitude toward the new service to makes consumer head to intention to adopt the new service (Lee, 2012; Schiffman et al., 2010). Research has shown that attitude that develop through direct experience (e.g., product usage) tend to be more effectively, more enduring, and more resistant to influence consumer attitude toward a new product than those developed via indirect experience (Schiffman et al., 2010, p. 258).

Consumers try and evaluate the product, they will feel that they may like or not like toward the product. When they like the product, it is likely that they will form a positive attitude toward the product and be more likely to purchase the product (Schiffman et al., 2010, p. 258). In other words, positive attitude may causes the consumer intention to use the product (http://people.umass.edu). Thus, the more favorable consumer attitude toward a new product, the more likely s(he) will intent to adopt new product. The following hypothesis is proposed:

H1:   Consumer attitude toward service innovation is positively related to consumer intention to adopt service innovation

Perceived Ease of Use

Perceived ease of use is defined as the degree to which persons believe that using the new product, innovation, or particular system will be free of effort (Davis, 1986 cited by alsajjan & Dennis, 2010). Perceived ease is one important factor that consumer consider when they use a new product (Lee, 2012). In other words, when consumer find the new product doesn't has a perceived ease of use, then the attitude toward a new product may fail.

Complexity is one characteristics of perceive ease of use a new product (Kotler & Amstrong, 2010). According to Kotler and Amstrong (2010), complexity is the degree to which the innovation is difficult to understand or use. For a new product, perception of usage complexity may cause consumers to delay purchase (Lee, 2012). Therefore, a new product should be a product that consumer perceive as easy to use. Consumer will develop positive attitude toward a new product when they find the product is easy to use. will have the intention to use a new product. Then, the following hypothesis is proposed:

H2: Consumer perceived ease of use of service innovation is positively related to consumer attitude toward service innovation

Perceived Price Fairness

Price is one of components of marketing mix (Kotler & Amstrong, 2010). Price is defined as the amount of money charged for a product or service (Kotler & Amstrong, 2010, p. 314). One concept in price is known as price fairness. Price fairness itself refers to consumer's assessment and associated emotions of whether the difference between a seller's price and the price of a comparative other party is reasonable, acceptable, or justifiable

(Xia, Monroe, & Cox, 2004). In addition, higher level of perceived price fairness were associated higher level of value perceptions. Value is accumulated feelings and priorities that individuals have about "things" and possessions (Schiffman et al., 2010). To deliver on its value preposition, the firm must decide how much the price will charge for the offering (Kotler & Amstrong, 2010). Furthermore, good pricing begins with a complete understanding of the value that a product or service creates for customers.

When people talk about good pricing, they are talking about a price which match with the value (Kotler & Amstrong, 2010). Therefore, the firm needs to set the price with the value based pricing technique which is setting price based on uses buyer's perceptions of value, rather than on the seller's cost, as the key to pricing (Kotler & Amstrong, 2010, p. 315). One pricing approach which firm may ussually apply is known as cost based pricing (Kotler & Amstrong, 2010, p. 315).

Cost based pricing is setting price based on the seller's cost (Kotler & Amstrong, 2010, p. 315). The differences between cost based pricing and value based pricing is, cost based pricing is product driven, which the company designs what it considers to be a good product, adds up the cost of making the product, and sets a price that covers cost plus a target profit (Kotler & Amstrong, 2010, p. 315). On the other hand, value based pricing reverse this process.

In value based pricing approach, the company first assesses customer needs and value perceptions, then sets its target price based on customer perceptions of value (Kotler & Amstrong, 2010, p. 315). Furthermore, the targeted value and price then drive decisions about what costs can be incurred and the resulting prouct design.

When the firm uses value based pricing, the firm begins with analyzing consumer needs and value perceptions, and price is set to match consumer's perceived value (Kotler & Amstrong, 2010).

It is not an easy task for marketers to set the price match with consumer's perceived value in service context. This is because of the intangibility of service that make difficult for consumers to evaluate the benefits and advantages before service consumption (Lee, 2012). Moreover, the characteristics intangible of service include cannot be touched, cannot be felt, and cannot be seen. Then, it will difficult to the firm to set the charge for service (Taleghani, Largani, & Mousavian, 2010). However, the firm still needs to charge the price of service innovation in a reasonable price. The higher consumer feels that the price of service innovation is reasonable, then the higher is positive attitude toward it, thus the likelihood of adopting service innovation will be higher (Lee, 2012). Therefore, the following hypothesis is proposed:

H3:   Consumer perceived price fairness of service innovation is positively related to consumer attitude toward service innovation.

Satisfaction With Existing Service

Satisfaction is the degree of fulfillment provided by experiences in life, regardless of how frequently they are encountered (Oliver, 2010, p. 13). Thus, the satisfying products and services have the capacity to provide what is sought to the poin of being "enough". According to Oliver (2010), satisfying the consumers should be the ultimate goal of the firm. To maintain consumer's satisfaction firm should decided how to deliver the value proposition to the consumer to make consumers satsified with the product

(Kotler & Amstrong, 2010).

Consumer satisfaction depends on the product's perceived performance relative to buyer's expectations (Kotler & Amstrong, 2010). If the performance of the product exceeds the consumer expectation through the product, the consumer is highly satisfied or delighted (Kotler & Amstrong, 2010). On the other hand, if the product performance falls short of expectations, the consumer is distatisfied. From the mentioned explanation it can be conclude that to meet the consumer satisfaction, the firm should offers the highest customer-perceived value.

Customer perceived value is defined as the customer's evaluation of the difference between all the benefits and all the cost of a market offering relative to those of competing offers (Kotler & Amstrong, 2010, p. 37). When the customer perceive the value of the product, then the customer will head to customer satisfaction (Kotler & Amstrong, 2010). According to Oliver (2010), after the customer satisfied with the product, subsequently the customer will have the positive attitude toward it.

In the term of the post purchase behavior customer feels that the existing product or service statisfy their needs and wants, so that, they will not move to the other product or service (Lee, 2012). For the firm, it is necessary to makes the benefits that offered by the new product is greater than the existing product (Lee, 2012). Therefore, the customer will changes their old behavior to use the existing product into the youthful behavior to use the new product. As cited by Lee (2012), if the customer considers that the new product is not necessary and because customer satisfied with the existing product, consumer attitude toward the new product will descend. The following hypothesis is proposed:

H4: Consumer satisfaction with existing service is negatively related to consumer attitude toward service innovation

Fashion Consciousness

Fashion consciousness is equivalent to fashion involvement, that is, the desire for adopting up-to-date and fashionable clothing (Lertwannamit & Mandhacitara, 2012; Nam et al., 2007). Fashion consciousness shows one's main interest in his or her appearance (Nam et al., 2007).

Technology is produced with stylish designs nowadays. In other words, technology is not something rigid in performance nowadays. But it can be stated that fashion inspires technology. Furthermore, many new smart technology have been produced with a touch of stylish. Lee (2012) stated that fashion-conscious consumers emphasis on styles as their main consideration to buy something. Lee (2012) further pointed out that stylish service innovation products such as gadget or cards may have a special appeal for fashion- conscious consumers. In other words, fashion-conscious consumers have positive attitude towards stylish service innovation products. Therefore, hypothesis 5 is proposed as follows:

H5: Consumer's fashion consciousness is positively related to consumer attitude toward service innovation.

Risk Averseness

Risk averseness is the degree of uncertainty or fear about the consequences of a purchase that a consumer feels when considering the purchase of a new product (Schiffman et al., 2010, p. 468). Risk is one of the characteristics that influence the consumer rate of adoption (Kotler & Amstrong, 2010). Furthermore,

when consumer decide whether he/she will adopt the new product or not, s(he) will consider about the risk. However, consumer who perceive a little or no risk in the purchase of new product will be more likely to use the new product than the consumer who perceive great deal of risk (Schiffman et al, 2010, p. 468). In the context of this research consumer's risk can be classified in terms of economic risk, that is monetary loss from a buying decission; performance risk, that is when products or services purchased do not meet the consumer expectations (Alam & Yasin, 2010).

Marketers should deliver the product which has minimum risk to the consumer to meet the consumer satisfaction so that the consumer will have the positive attitude toward service innovation (Kotler & Amstrong, 2010). Previous research used risk as the variable which influence the consumer attitude toward service innovation (Lee, 2012; Schiffman et al., 2010, p. 468; Gewald, Wüllenweber, & Weitzel, 2006). The higher risk perceive by the consumer, the less is consumer attitude toward service innovation (Lee, 2012).

In the context of service innovation, there is the intangibility characteristic. Intangibility means that something cannot be touched, cannot be seen, cannot be felt, cannot be tasted. However, these factors increase the consumer risk averseness because consumer is not easy to evaluate service innovation before consumption (Lee, 2012). Lee (2012) cited that, because of the intangibility of service, there are many doubts within the service process, consumer usually cannot detect and evaluate the service quality before consumption, so a higher risk averseness would be expected. The following hypothesis is proposed:

H6: Consumer's risk averseness is negatively related to consumer attitude toward service innovation.

Figure 1 below shows a conceptual model of summarizing the research hypotheses concerning antecedent factors influencing adoption intention of service innovation.

Figure 1. Model Representing Hypothesized Relationships among Key Variables
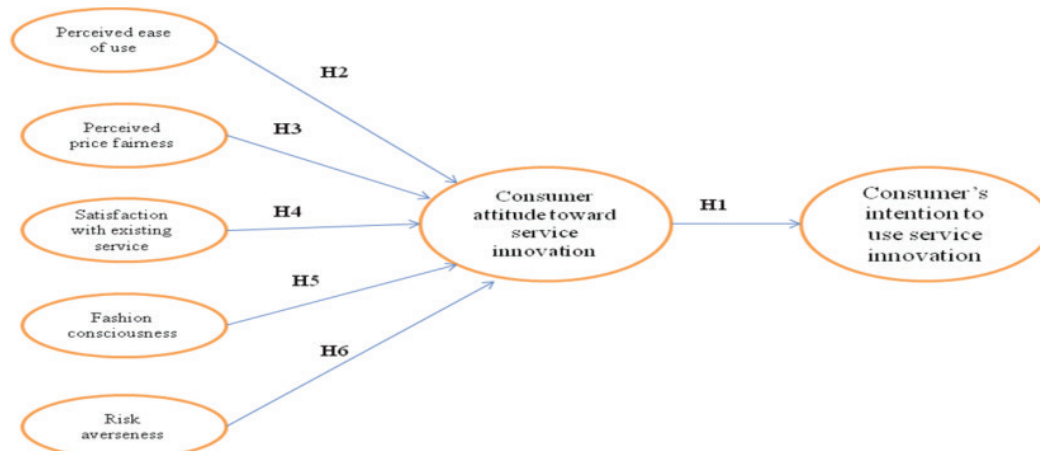
Source: Lee (2012)

Methods

Sampling and Data Collection

This research applied purposive sampling, that is, respondents of this research should have their own e-toll card. Furthermore, respondents of this research should students in XYZ University in Indonesia. There are three reasons for applying student samples. The first reason was that using one group such as a student group decreases the possibility of sample heterogeneity. In the specific, following Popper's falsifications philosophy of science, Calder, Phillips, and Tybout (1981, cited by Lynch, 1982, p. 226) stated that theories are never proven, but merely escape refutation. Therefore, convenience samples of relatively homogeneous subjects are desirable. This is because heterogeneity samples may inflates the error terms of statistical test of predictions and reduces the chance of detecting systematic violations of a theory when it is false. The second reason was that university students are an appropriate sample for this research. Many students are also using e-toll card in their daily life. The third reason is the convenience in recruiting the subjects. The self-administered questionnaire was then delivered to respondents by researchers. A pen as a "token appreciation" was given to respondents in order to appreciate their time in participating this research.

Survey Instrument

Multiple item indicators were adapted from previous research (e.g., Lee, 2012; Chou, 2012; Alam and Yasin, 2010; Namkung, Jang, Almanza and Ismail, 2009). According to Sekaran and Bougie (2013), whenever possible and appropriate, the measures used in the questionnaire should adapted from existing scales. This research measured six constructs: perceive ease of use, perceive proce fairness, satisfaction with existing service, fashion consciousness, risk averseness, and consumer attitude toward e-toll card. All items were measured using a five-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree).

A pilot test was conducted before actual data collection. The objective of the pilot test is uncover biased or ambiguous questions before they are administered at large (Sekaran and Bougie, 2013). Moreover, pilot test helps to validate all the variables selected and wherever necessary, to modify the scales intended to measure the variables.

Results

Description of the Sample

A total of 280 questionnaires was distributed and collected from students in XYZ university. Of these, 217 samples can be used for further analysis, which constitutes a 77.5 per cent usable response rate. Table 1 summarized the demographic information involved in this research. It is presented by 54.8% female and 45.2% male. In terms of age 84.3% belonged to the group 18 – 21, 13.4% belonged to ≥ 22 and 2.3% belonged to the group of <18. Furthermore, almost forty percents of the students from batch 2011, and more than fifty percent of samples spent money about 100,000 to 250,000 IDR for e-toll card in a month.

Table 1. Descriptive of the Respondents Demographic

Variable		Frequency	Precentage
Gender	Man	98	45.2
	Woman	119	54.8
Age	<18	5	2.3
	18 – 21	183	84.3
	≥22	29	13.4
Batch	>2008	15	6.9
	2008	5	2.3
	2009	22	10.1
	2010	63	29.0
	2011	86	39.6
	2012	26	12.0
Money Spent (IDR)	100.000 - 250.000	120	55.3
	250.001 - 500.000	71	32.7
	500.001 - 750.000	18	8.3
	750.001 - 1.00.000	8	3.7

Source: analysis of field data

Reliability and Validity

Reliability testing was conducted first by using the inter-item consistency measure of Cronbach Alpha. Researchers applied 0.7 as the minimum coefficient alpha and 0.3 as the minimum coefficent corrected item-total correlation (Sekaran & Bougie, 2013). Good reliability coeficeint were reporter as (1) Eause of use valued at 0.706; (2) Price fairness, valued at 0.745; (3) Satisfaction Existing Service, valued at 0.735; (4) Fashion consciosness, valued at 0.846; (5) Risk Averness, valuead at 0.720; (6) Attitutudes Toward Service Innovation, valued at 0. 864; (7) Intentiona to adopt Services Innovation valued at 0. 876

Having done the reliability tests, validity tests were performed to assess construct validity. Validity analysis was examined by an exploratory factor analysis (EFA). According to Hair, Black, Babin, and Anderson (2010), a valid EFA shows constructs in the same group and grouped into each component. Table 2 shows the EFA validity result that demonstrates convergent validity.

Table 2. Exploratory Factor Analysis

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
SWE1				.906			
SWE2				.895			
SWE3				.585			
Att1	.831						
Att2	.845						
Att3	.731						
Att4	.788						
EOU2							.751
EOU3							.756
PF1						.598	
PF2						.816	
PF3						.819	
PF4							
FC1			.866				
FC2			.910				
FC3			.888				
FC4			.632				
RA1					.621		
RA2					.655		
RA3					.775		
RA4					.792		
Int1		.715					
Int2		.807					
Int3		.822					
Int4		.773					

Note: loadings that are 0.60 or less were not shown.
Source: analysis of field data

Pearson product-moment correlations among the study variables were computed in order to provide support for discriminant validity. Table 3 provides the full set of correlations among the constructs of interest in this research. The highest correlation occurred between attitude and behavioral intention to adopt service innovation (0.535) and reversely, the lowest correlation was found between attitude and satisfaction with existinh service (-0.290). The results provide support for the discriminant validity of the scale (Anderson & Gerbing, 1988).

Table 3. Correlation Analysis

	PF	EOU	SWE	FC	RA	Att	Int
PF	1						
EOU	0.298	1					
SWE	-0.152	-0.196	1				
FC	0.029	0.182	-0.730	1			
RA	-0.166	-0.92	0.019	0.073	1		
Att	0.348	0.384	-0.290	0.225	-0.201	1	
Int	0.471	0.344	-0.260	0.209	-0.227	0.535	1

Source: analysis of field data

Confirmatory Factor Analysis

A 28-items confirmatory factor analysis was employed. CFA testing allowed research model to give confirmation on the variables in measuring the analyzed factors. Researchers applied structural equation modeling by using statistical software called AMOS 18. The result of confirmatory analysis is shown in Table 4. The results suggested a good fit overall by GFI=0.859, AGFI= 0.817, CFI= 0.919, RMSEA= 0.0063, p-value= <0.05.

Table 4. Confirmatory Factor Analysis

Path	Standardized Regression Coefficient	Critical Ratio
EOU3 <--- ease of use	0.631	-
EOU2 <--- ease of use	0.713	5.412
PF3 <--- price fairness	0.649	-
PF2 <--- price fairness	0.793	8.107
PF1 <--- price fairness	0.682	7.690
SWE3 <--- satisfaction with existing service	0.434	-
SWE2 <--- satisfaction with existing service	0.882	6.369
SWE1 <--- satisfaction with existing service	0.922	6.246
FC4 <--- fashion consciousness	0.506	-
FC3 <--- fashion consciousness	0.871	7.775
FC2 <--- fashion consciousness	0.911	7.883
FC1 <--- fashion consciousness	0.844	7.686
RA4 <--- risk averseness	0.882	-
RA3 <--- risk averseness	0.619	7.084
RA2 <--- risk averseness	0.462	5.748
RA1 <--- risk averseness	0.446	5.584
Att4 <--- consumer attitude toward service innovation	0.816	-
Att3 <--- consumer attitude toward service innovation	0.745	12.048
Att2 <--- consumer attitude toward service innovation	0.889	15.213
Att1 <--- consumer attitude toward service innovation	0.850	14.395
Int4 <--- consumer intention to adopt service innovation	0.728	-
Int3 <--- consumer intention to adopt service innovation	0.782	11.058
Int2 <--- consumer intention to adopt service innovation	0.878	12.308
Int1 <--- consumer intention to adopt service innovation	0.820	11.592

Source: analysis of field data

Structural Equation Model

Structural equation modeling was applied to estimate parameters of the structural model. Table 5 results show that the overall acceptability of the overall model was acceptable (GFI= 0.901, AGFI= 0.871, CFI 0.973, RMSEA= 0.037).

Table 5. Structural Equation Model

	Hypothesized Relationship	Estimate	t-value	p-value	Conclussion
H1	Consumer attitude toward service innovation <--- ease of use	0.387	4.159	***	Supported
H2	Consumer attitude toward service innovation <--- price fairness	0.124	1.550	0.121	Not Supported
H3	Consumer attitude toward service innovation <--- satisfaction with existing service	-0.239	-3.292	***	Supported
H4	Consumer attitude toward service innovation <--- fashion consciousness	0.287	3.808	***	Supported
H5	Consumer attitude toward service innovation <--- risk averseness	-0.22	-3.053	0.002	Supported
H6	Consumer intention to adopt service innovation <--- consumer attitude toward service innovation	0.563	7.285	***	Supported

Source: analysis of field data

The first hypothesis predicted the positive relationship between perceived ease of use and consumer attitude toward service innovation. The result of the hypothesis (t-value = 4.159 and p < 0.05) is supported. The second hypothesis predicted the positive relationship between perceived price fairness and consumer attitude toward service innovation. The result of the hypothesis (t-value = 1.550 and p = 0.121) is not supported.

The third hypothesis, predicted the negative relationship between satisfaction with existing service and consumer attitude toward service innovation. This hypothesis has supported because of the result (t-value = -3.292 and p < 0.05). Researchers have also predicted the positive relationship between fashion consciousness and consumer attitude toward service innovation. This hypothesis was also supported because it fulfilled the cut-off value (t-value=3.808 and p < 0.05).

In the fifth hypothesis, researchers predicted there is a negative relationship between risk averseness and consumer attitude toward service innovation. The fifth hypothesis is supported with t-value = -3.053 and p = 0.002. Finally, sixth hypothesis proposed that the positive relationship between consumer attitude toward service innovation and consumer intention to adopt service innovation. It is supported with the t-value = 7.285 and p-value < 0.05.

Discussion

The objective of this study was to examine the antecedents factors of consumer intention to adopt service innovation. The study found out that all constructs

in the model, except price fairness, were significant predictors of consumer attitude toward service innovation. As shown in Table 6, the most significant factor that influenced consumer attitude toward service innovation is perceived ease of use. Percieved ease of use relates to service process and interface process (Lee, 2012), Furthermore, if the consumer feel that the service innovation has user-orriented process and friendly interface system, it will be helpful for diffusion of service innovation.

These results may be interpreted as indicating the critical importance of software ease of use to gain user's attitude toward service innovation. If the service innovation is perceived easy to use, then it increases a consumer's confidence of abilities to use E-toll card (Eveleth & Stone, 2008). In addition, this result is also suported by the statement from Agosto and Abbas (2011, p. 98). Accordingly teenagers are tend to expect ease of use from the new technology. However, because of 84.3% of this research respondents are teenagers between 18–21 years old, as the result hypothesis one is supported. Previous researches also supported the positive relationship between perceived ease of use and consumer attitude toward service innovation (Suki, 2011; Suki & Suki, 2011; Teo, 2009; Teo, Luan, & Sing, 2008; Eveleth & Stone, 2008). Therefore, the firm should arrays that the service innovation is easy to use.

This research also found that satisfaction of the existing service has negative relationship with customer attitude toward service innovation. Consumer usually will not change his/her behavior into the new service innovation when s(he) feels that the existing service is already satisfied their needs. This research has 84.3% respondents who are in the teenager age.

Therefore, the respondent of this study tend to search new product which satisfy their needs. According to Leneman (1990, p. 312), teenagers are always searching for the personal satisfaction. Further, because teenagers were not satisfied with the exsisting service, they were trying to find the new service which gives them satisfaction.

This result in line with the findings of Lee (2012). The firm needs to affirm that the new service innovation has the reason for the consumer to changes their attitude toward existing service into the new service innovation. The firm needs to show the prominent benefit that offered by the new service innovation for the consumer which the existing service has overthrowed. Thus, the consumer will head for the new service innovation. The firm also needs to consider of the best time to lunch the service innovation seriously. Furthermore, the best time to launch the new service innovation is when the existing service failures on delivering benefit for the consumer.

The positive relationship between fashion consciousness and consumer attitude toward service innovation is observed in this research. The higher consumer's fashion consciousness, the more likely his/her attitude toward service innovation. Consumer who has a high fashion consciousness assume that the new service innovation will makes he/she trendy. In this study 54.8% of the resependents were female, however, females are tend to be more enjoy the pleasure of the fashion than men (Poindexter, Meraz, & Weiss, 2008, p. 98). Therefore the relationship between fashion consciousness and the consumer attitude toward service innovation is supported. The firm should understand this phenomenon because when the firm conceive the new service,

it is important for the firm to makes the new service favored. Thus, the high rate of customer positive attitude toward service innovation will acquire.

This research found that risk averseness has negative effect on consumer attitude toward service innovation. Due to the characteristic of intangibility and heterogeneity, service failure might occur anywhere (Lee, 2012). However, women tend to be more fearfull about the risk than men (Addington, 2010, p. 10). Thus, because of majority of the respondents of this study were female, therefore, this hipothesis was supported. The firm should design the new service innovation seriously and cautiously to avoid the risk which might happen. It is also important for the firm to have the countermeasures procedures for the failure of the service process. Therefore, the failure of the service process could be resolved.

Attitude was added in this research. The result shown that consumer attitude toward service innovation has positive effect on consumer intention to adopt service innovation. According to Ajzen and Fishbein (1975, cited by http://people.umass.edu), behavioral intention is the result of attitude. The more positive consumer attitude toward service innovation, the more likely he/she will intent to adopt service innovation. This result advocates the firm which provide service innovation to have more attention into consumer attitude toward service innovation before guiding consumer intention. The firm needs to shows the delivering benefit of the service innovation to establish consumer positive attitude. Therefore, consumer will intent to adopt the new service innovation and perhaps consumer will go through behavioral intention to use service innovation.

On the other hand, the positive relationship between price fairness and consumer attitude toward service innovation has been rejected. The result of this hypothesis was contrast with the previous research by Lee (2012). This hypothesis was rejected because of the research location was conducted. According to Fitriana (2012), Indonesian shopped level reached 118 points in the first quarter of 2012 and had become the third country to have the index rate shopping after India and Arab. This fact occured because of the society class most of Indonesian belonged to the middle-upper class, which has the consumtive lifestyle (Setiawan, 2012). This kind of lifestyle describes Indonesian did not put any much consideration about the price fairness of innovative products. Therefore, the price fairness is not the necessary factor that influenced consumer attitude toward service innovation. Thus, this hypothesis is rejected. If the consumer feels that the service innovation has the superior customer value, consumer will not have to much attention to its price. Based on the result of these hypothesis, for the firm, the price of the innovative product is not being a great deal. It can be stated that firms need to provide more superior customer value into new products rather than consider about the price of the product.

Limitations and Conclusions

This research contains a number of limitations that provide directions for future research. First, this research used non-probability sampling which purposive sampling may limit the ability to generalize the research finding. Second, this research used only several antecedents factors that influence consumer attitude toward service innovation such as: perceived ease of use, perceived price

fairness, satisfaction with existing service, fashion consciousness, risk averseness. Researchers suggest that future research could find other antecedents factors that influence consumer attitude toward service innovation such as perceived usefulness (David, 1989 cited by Teo, Luan, & Sing, 2008) and subjective norm (http://people. umass.edu). Third, this study is developed in Asian context, it is suggested that future research might examines research model into different context such as European context, African context, Australian context, or American context. The cultural differences is predicted to be the caused that this research could lead into different results.   The next limitation of this research is applying college student as a samples. Thus, this research cannot represents the whole E-toll card users in Indonesia. Future research could involve other samples who could represent the whole E-toll card users in Indonesia (e.g taxi drivers, bus drivers, etc). Finally, this research used E-toll card as an object to test the model from Lee (2012). Therefore, this research cannot be generalize into the other service innovations.

In conclusion, the result of this research has shown that there was a link between the predictors (perceived ease of use, satisfaction with existing service, fashion consciousness, risk averseness) with consumer attitude toward service innovation. This research also shown the link between consumer attitude toward service innovation and consumer intention to adopt service innovation. In contrast, the link between perceived price fairness and consumer attitude toward service innovation was not supported.

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References

Abdel-Wahab, A. G. (2008). Modeling students' intention to adopt e-learning a case from Egypt. *Turkish Online Journal of Distance Education, 9*(1), 157-168.

Addington, L. A. (2010). *Fear of Crime and Perceived Risk*. United States of America: Oxford Bibliographies Online Research.

Agosto, D. E. and Abbas, J. (2011). *Teens, Libraries, and Social Networking: What Librarians Need to Know.* United States of America: Libraries Unlimited.

Ahmed, P. K. and Shepherd, C. D. (2010). *Innovation Management Context, Strategies, Systems, and Processes.* London: Pearson Education Limited.

Alam, S. S. and Yasin, N. M. (2010). What factors influence online brand trust: Evidence from online tickets buyers in Malaysia. *Journal of theoretical and applied electronic commerce research, 5*(3), 78-89.

Aliya, A. (2012). *Dahlan kecewa penjualan eToll Card 'memble'.* Retrieved from: http://finance.detik. com/read/2012/03/21/071944/187 2824/4/dahlan-kecewa-penjualan-etoll-card-memble.

Alsajjan, B. and Dennis, C. (2010). Internet banking acceptance model: A cross-market examination. *Journal of Business Research, 63*, 148-2963.

Anderson, J.C. and Gerbing, D.W. (1988). Structural equation modeling in practice: a review and recommended two-step approach, *Psychological Bulletin*, May, 411-423.

Badan Pusat Statistik. (2011). *Laporan Bulanan Data Sosial Ekonomi.*

Botonaki, A., Natos, D. and Mattas, K. (2007). *Exploring convenience food consumption through a structural equation model.* 103rd I Mediterranean Conference of Agro-Food Social Scientist.

Calder, B.J., Phillips, L.W. and Tybout, A.M. (1981). Designing research for application. *Journal of Consumer Research*, 8, 197-207.

Chou, C. (2012). Influence of teachers' perceived e-portfolio acceptance on teacher evaluation effectiveness in Taiwan. *Australasian Journal of Educational Technology, 28*(4), 719-739.

Diehl, S., Mueller, B. and Terlutter, R. (2007). Skepticism toward pharmaceutical advertising in the U.S. and Germany. *Advance in International Marketing, 18*, 31-60.

Dyer, W. W. (2010). *The Power of Intention*. Hay House: United States.

Easley, R.W., Madden, C.S. and Dunn, M.G. (2000). Conducting marketing science: the role of replication in the research process. *Journal of Business Research,* 48, 83-92.

Epstein, S. (1980). The stability of behavior: II. Implications for psychological research. *American Psychologist*, 35, 790-806.

Eveleth, L.B. and Robert, W. S. (2008). Expectancy theory and behavioral intention to use computer applications. *Interdiciplinary Journal of Information, Knowledge, and Management, 3*, 135-146.

Ferdousi, B. and Levy, Y. (2010). Development and validation of a model to investigate the impact of individual factors on instructors' intention to use e-learning systems. *Interdiciplinary Journal of E-learning and Learning Objects, 6*, 1-21.

Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research.* Reading, MA: Addison-Wesley.

Fitriana, R. (2012). *Orang Indonesia Makin Konsumtif.* Retreived from: http://www.bisnis.com/articles/orang-indonesia-makin-konsumtif

Gewald, H., Wüllenweber, K. and Weitzel, T. (2006). The influence of perceived risks on banking managers' intention to outsource business processes – A study of the German banking and finance industry. *Journal of Electronic Commerce Research, 7*(2), 78-96.

Gumussoy, C.A, Calisir, F. and Bayram, A. (2007). Understanding the behavioral intention to use ERP systems: An extended technology acceptance model. *Industrial Engineering Department, Management Faculty, Istanbul Technical University.* p. 2024-2028.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010). *Multivariate Data Analysis: A Global Perspective.* New Jersey: Pearson Education.

Herman, A., Xia, L., Monroe, K. B. and Huber, F. (2007). The influence of price fairness on customer satisfaction: An empirical test in the context of automobile purchases. *Journal of Product & Brand Management, 16*(1), 49-58.

Jackson, S. L. (2010). *Research Methods: A Modular Approach*, 2nd ed. Retreived from: http://books.google.co.id/books?id=p9aoqIzcqWoC&printsec=frontcover&dq=jackson+research+method&hl=id&sa=X&ei=1DvQUPvOMojXrQeKnIGQDg&redir_esc=y

Jahangir, N. and Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African Journal of Business Management, 2*(1), 32-040.

Jakarta 2014 akan Macet Total? Ibukota Mau Dipindahin? (2012). Retrieved May 15, 2012, from http://forum.kompas.com/nasional/85605-jakarta-2014-akan-macet-total-ibukota-mau-dipindahin.htmlJasamarga. (2010). *Inverstor Summit & Capital Market Expo 2010*. Jakarta: Jasa Marga Update.

Ju, T. L., Hao-Fan, C. and Yu-Hsin, C. (2007). *Factors that affect user intention toward e-learning system – Integrating information quality, system quality and habitual domain with TAM*. IADIS International Conference e-Learning.

Kinsella, J. and Caulfield, B. (2011). An Examination of the quality and ease of use of public transport in Dublin from a newcomer's perspective. *Journal of Public Transportation, 14*(1), 69-81.

Kotler, P. and Amstrong, G. (2010). *Principles of Marketing*, 13th ed. New Jersey: Pearson Edition.

Lee, B. C. Y. (2012). The determinants of consumer attitude toward service innovation – The evidence of ETC system in Taiwan. *Journal of Services Marketing, 26*(1), 9 – 19.

Leneman, H. (1990). *Bar/bat Mitzvah Education: A Sourcebook.* United States of America: A.R.E. Publishing, Inc.

Lule, F., Owansa, T.K. and Waena, T.M. (2012). Application of Technology Acceptance Model (TAM) in M-Banking adoption in Kenya. *International Journal of Computing and ICT Research*, 6(1), 31-43.

McBurney, D. H. And White, T. L. (2010). *Research Method*, 8th ed. *Cengage Learning*. United States of America: SAGE Publications.

Mineski. (2012). *E-Toll Card Solusi Kemacetan di Indonesia*. Retreived from: http://sky1fans.blog.ugm.ac.id/index.php/2012/03/ep/

Morris, M. H., Kuratko, D. F. and Covin, Jeffrey G. (2011). *Corporate Enterpreneurship & Innovation*, 3th ed. United States: South-Western Cengage Learning.

Namkung, Y., Jang, S., Almanza, B. and Ismail, J. (2009). Indentifying the underlying structure of perceived service fairness in restaurants. *International Journal of Contemporary Hospitality Management, 21*(4), 375-392.

Oliver, R. L. (2010). *Satisfaction A Behavioral Perspective on the Consumer*. United States of America: M.E Sharpe.

Poindexter, P., Meraz, S.and Weiss, A. S. (2008). *Women, Men and News: Divided and Disconnected in the News Media Landscape.* New York: Routledge.

Rogers, E. M. (2003). Diffusion of Innovation 5th Edition. New York: Free Press.

Schiffman, L.G., Kanuk, L. L. and Wisenblit, J. (2010). *Consumer Behavior*. New Jersey: Pearson Education.

Sedana, I Gusti Nyoman and Wijaya, S.W. (2010). UTAUT model for understanding learning management system. *Internetworking Indonesia Journal, 2*(2), p. 27-32.

Sejarah dan Jejak Langkah Perseroan. (n.d.). Retrieved from: http://www.jasamarga.com/annual_report/ar2008/indonesia/04.html

Sekaran, U. and Bougie, R. (2013). *Research Methods for Business A Skill Bulding Approach,* United Kingdom: John Wiley & Sons.

Setiawan, B. (2012). *Kelas Menengah: Konsumtif dan Intoleran.* Retreived from: http://nasional.kompas.com/read/2012/06/08/11204529/Kelas.Menengah.Konsumtif.dan.Intoleran

Shroff, R.H., Deneen, C. C. and Eugeina, M. W. Ng. (2011). Analysis of the technology acceptance model in examining students' behavioural intention to use an e-portofolio system. *Australian Journal of Educational Technology, 27*(4), 600-618.

Suki, N. M. (2011). Factor affecting Third Generation (3G) mobile service acceptance: Evidence from Malaysia. *Journal of Internet Banking and Commerce, 16*(1), 1-12.

Suki, N. M. and Suki, N. M. (2011). Exploring the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention toward using 3G mobile services. *Journal of Information Technology Management, 22*(1), 1-7.

Šumak, B., Heričko, M., Pušnik, M. and Polančič, G. (2011). Factors affecting acceptance and use of moodle: An empirical study based on TAM. *Informatica, 35*, 91-100.

Taleghani, M., Largani, M. S. and Mousavian, S. J. (2011). The investigation and analysis impact of brand dimensions on service quality and customers satisfaction in new enterprises of Iran. *Contemporary Marketing Review, 1*(6), 1-13.

Teo, T. (2009). Evaluating the intention to use technology among student teachers: A structural equation modeling approach. *International Journal of Technology in Teaching and Learning, 5*(2), 106-118.

Teo, T., Luan, W. S. and Sing, C. C. (2008). A cross-cultural examination of the intention to use technology between Singaporean and Malaysian pre-service teachers: An application of the Technology Acceptance Model (TAM). *Educational Technology dan Society, 11*(4), 265-280.

Usluel, Y.K., Askar, P. and Bas, T. (2008). A structural equation model for ICT usage in higher education. *Educational Technology & Society, 11*(2), 262-273.

Wang, J. and Pho, T. (2009). Drivers of customer intention to use online banking: An empirical study in Vietnam. *African Journal of Business Management, 3*(11), 669-667.

Xia, L., Monroe, K. B. and Cox, J. L. (2004). The price is unfair! A conceptual framework of price fairness perceptions. *Journal of Marketing, 68*, 1-15.