

# Understanding the Mediating Roles of Satisfaction and Switching Barriers on User Experience and Loyalty Chain in Indonesia GSM Operators

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**Abstract**—At the moment, the number of Indonesia GSM operators has gradually increased since the issuance of the government regulation regarding the change of business cellular telecommunication competition from monopoly become oligopoly. This situation also give an impact on the decreasing in user loyalty which is shown by increasing of churn rate and stagnant user growth. This study has intention to support conceptually the relationship between user experience and loyalty in Indonesia GSM operators through satisfaction and switching barriers. The conceptual framework is tested empirically using 68 questionnaire items as research instrument and collected using self-administered online survey. The model is tested using PLS-SEM and the findings show that satisfaction and switching barriers mediate the positive and significant relationship between user experience and loyalty. It implies if users perceive good experiences in using their operators then they feel satisfy and stay loyal with the current operator. In line with the condition when there are too many barriers in switching to other operators and at the same time they get value for money, hence they will become loyal as well. In addition, this research model was fit to the context since in the criteria of high goodness of fit and predictive blindfolding.

**Keywords**—GSM; loyalty; satisfaction; switching barriers; user experience

## I. INTRODUCTION

The development of GSM operators industry in Indonesia is increased rapidly. In accordance with Mason analysis, the penetration ratio will escalate from 325 million in 2013 to 411 million in 2019 [1]. The phenomenon today is the competition among the GSM operators to get competitive advantage in keeping the existing user and enlarging the amount of new subscribers. It has been revealed that the existence of tariff war between operators aimed at obtaining new users in a region and creating competition in pricing, this will lead to the emergence of telecommunications operators who are not able to survive and will go bankrupt [2].

Cellular operators in Indonesia are 95% dominated by GSM operators and among the GSM operators in Indonesia, there are only a few operators that occupy the top four rankings based on market share, namely Telkomsel 45%, Indosat 21.6%,

Tri 14.4% and XL - Axiata 14% [3]. Based on data from the financial statements of the three largest GSM operators, the increased penetration of mobile users to reach 135 percent, did not affect the increase in average revenue per user (ARPU) [4]. This means that ARPU GSM operators in Indonesia tend to stagnate even as mobile user penetration increases. this also occurs in the number of customer growth that develops in a state of stagnant. GSM subscribers have a desire to have cellular operators that provide low prices for SMS, phone, data service, and internet access. Unfortunately, these things can't be fulfill by the operators hence causing users to move from one operator to another and this can lead to changes in the rise of the churn rate [5].

Most of previous researchers argue that loyalty is one of the important thing for the company to get the competitive advantage and survive in the tight competition. Loyalty can be attained if users feel satisfy to their operators based on their previous experience and likewise when they face barrier to switch is high experience [6-11]. It has been found that experience in the stage of cognition phase able to influence satisfaction and switching barriers in the stage of affection phase and loyalty in the stage of conation/action phase [9,11-16].

Customer loyalty as a response closely linked to a pledge or a pledge to uphold the commitment underlying the continuity of the relationship, and usually reflected in the ongoing purchase of the same service provider by both dedication and pragmatic constraints [6,13,17]. User experience is critical when it comes to customer's acquisition and retention. User experience will become the key brand differentiator. In which, good user experience becomes one of the most valuable and strong competitive advantage [18]. A good experience can refrain a user from switching to another provider. However, a negative experience may encourage a user to induce switching cost and move to other operator. Furthermore, user experience influences the decision to switch when viable competing exists on the market [19]. In addition, satisfaction is the comparison between people's perception and expectation. Perception about the performance level that they see or perceived and expectation about the importance level based on their needs and wants

[17,20]. If perception is higher than expectation, then they will satisfy.

Compared to several prior researches, this research has intention to investigate and examine the relationship between user experience and loyalty through satisfaction and switching barriers as mediators. User experience affects towards satisfaction as well as it affects towards switching barriers. So that, satisfaction and switching barriers are reflected as mediators between user experience and loyalty. This will be the contribution in this research.

## II. USER EXPERIENCE, SATISFACTION, LOYALTY

User experience is often defined as the achievement of a product or service that is considered to succeed or fail by its users before user has emotion about like/dislike or satisfy/dissatisfy, and then user will have the intention and action to be loyal [6,21]. Loyal customers in technology-based products/services were positively affected by user satisfaction based on the memorable experience. At the time, a product is being developed, people pay a great deal of attention to what it does. User experience is the other, often overlooked, side of the equation how it works that can often make the difference between a successful product and a failure. According to Garret, user experience is the experience from a product or service that is made for someone to use in the real world [22]. When products or services are developed, customers give much attention to them.

In the industry of Information & Communication Technology (ICT), user experience is known as a causative factor in the formation of satisfaction and loyalty. Oodan et al measured experience based on coverage quality, network quality, price, value added service, and service quality [23]. Cerejo introduced and conceptualized user experience into dimensions of functionality, information architecture, content, design, user input, mobile context, usability, trustworthiness, feedback, help, social, and marketing [24]. Most of previous researchers used dimensions of functionality, social, monetary, trustworthiness, and perceived service quality [9,25].

Functionality refers to the practical of technical benefits that users can obtain when using the provider [9,11]. Social is defined as the benefits that user can feel when they are connected to other users, especially in their community [26,27]. Monetary means how much the provider service is satisfactory considering the cost, time or effort spent in using the provider [25,28]. Trustworthiness can be viewed as trusting belief and trusting intention; trusting belief refers to the user's perception of attributes of provider & trusting intention describes the user's willingness or intention to depend on the trustee [9,29,30]. Perceived service quality is cognitive and thus followed by satisfaction [13], providing a high level of service quality is very important for service provider to gain the competitive advantage [31,32].

Satisfaction is determined by the overall feelings, or attitude, a person has about a product after it has been purchased. In other words, user engage in a constant process of evaluating the things they buy as they integrate these product/service into their daily use activities. Satisfaction has a real impact on loyalty and profitability [6,17,20].

Oliver defined satisfaction as customer's senses that consumption provides outcomes against a standard of pleasure compared to displeasure [12,13]. The recent studies found that perceived products/services quality influence customer satisfaction, which in turn results in increased profitability among companies who provide quality products [7-9,11]. Satisfaction is including positive and negative emotions. Positive emotions such as happiness, happy, and joy will increase user satisfaction. In contrast, negative emotions such as sadness, grief, regret, and anger can reduce the level of satisfaction [33].

In addition, Kotler & Keller determined that satisfaction is the comparison between people's perception and expectation [17,20]. Perception about the performance level that they see or perceived and expectation about the importance level based on their needs and wants. If perception is higher than expectation, so they will satisfy but in contrary, if perception is lower than expectation, so they will dissatisfy and move to other companies then the impact is churn rate increasing. Sumarwan concluded that attribute satisfaction happened when users are surprised by the results of the service whether it is better or worse than expected, the user tends to look at the reasons and the assessment of the reasons why they can affect satisfaction [34]. Moreover, user satisfaction is influenced by others. For example, another user reactions after using the product or service and the influence of other users' story about the experience upon the products (i.e.goods/services).

In 1997, Oliver divided behavior in two phase, which are conative and action phase. Loyalty to an intention and loyalty to action inertia are in the behavior phase [21,35]. Taylor et al. argued that customer loyalty (including behavioral loyalty and attitudinal loyalty) was positively related to satisfaction, value and resistance to change, affect, brand trust, and brand equity [36]. Loyalty is defined as re-purchase behavior, which is driven by a favourable attitude toward the products, including attitudinal loyalty and behavioral loyalty [8,13,36]. Attitudinal loyalty (behavioral intention) is a loyalty state about the commitment to re-buy or re-patronized the products, in the other words; conative phase is about the intention to do something. Behavioral loyalty is perceived as the action to re-buy or re-patronized the products [20]. In addition, loyalty as a deeply held commitment to re-buy or re-patronize a preferred products (goods or service) in the future despite situational influences and marketing efforts having the potential to cause switching behavior [13,20].

Babin and Griffin argued the benefits that would be obtained if the company has loyal customers among others: reduce marketing costs, reduce transaction costs, reduce customer turnover costs, improving cross-selling will increase the company's market share, word of mouth is more positive with the assumption that a loyal customer also means they are satisfied, and reducing the cost of failure (such as replacement costs, etc.) [37]. In this study, customer loyalty in Indonesian cellular operators become the dependent variable that is affected by user experience as the independent variable through user satisfaction and switching barriers as the mediators. Moreover, this study measures customer loyalty as customers' behavioral loyalty to continuously use their present cellular operator as a service provider.

According to Hutabarat's research, there is a relationship between user experience and satisfaction [38]. The aim of Hutabarat's research is to find out the influence of user experience on the Path users satisfaction in the city of Bandung in 2014. The result shows that there is an influence of the users experience to users satisfaction on Path social networking in Bandung in 2014. Satisfaction refers to the phase of affective evaluation in purchasing and using a product or service [11,39-41].

Users feel satisfy when their needs and wants are met. Consequently, they will continue to re-use the product or service [12,42]. When the users feel satisfy, it could be the results of emotional response based on their experience of the purchase and use of the product/service, or the cognitive evaluation between the level of expectation and the actual experience [11,12,37]. It can be concluded that satisfaction indicates to the customers' overall evaluation of a company that developed by the comparison between perception and expectation.

Previous research has generally support the notions that the relationship between the five dimensions of user experience (functionality, social, monetary, trustworthiness, perceived service quality) was positively related to satisfaction [9,25]. Based on the above discussion, the hypothesis is conceived below:

***H<sub>1a,b,c,d,e</sub>: User Experience (functionality, social, monetary, trustworthiness, perceived service quality) affects towards Satisfaction.***

Customer satisfaction is reflected to be the antecedent of loyalty, arising out of direct prior experience [7,43-45]. Loyal customers are not certainly become satisfied customers but satisfied customers tend to be loyal customer [44]. It can be assumed that users who are satisfied with the provider will develop a positive attitude towards the provider and cultivate the intention and action to be the loyal customer.

Khan et al. and Taylor et al. found that there are positive and significant influences of customer experience quality (EXQ) and satisfaction on customer behavioral outcomes [36,46]. It validates that the customer evaluation is not only based on service encounters, but also includes every touch point with an organization. Result highlights a significant impact of customer satisfaction on loyalty and word-of-mouth, which means that providing pleasurable experiences to the customer makes a customer satisfied as well as generates positive word-of-mouth for the company.

Loyal customers are critical to the company because it costs less to keep existing customers rather than to attract new customers [11,47]. Having loyal customers allows company to apply price premium. Moreover, loyal customers tend to make credible recommendations in their community. Customer satisfaction is one of the main antecedents of customer loyalty [48-50]. A customer who is satisfied with a provider will tend to have higher loyalty toward that company. Therefore, the next hypothesis is postulated as:

***H<sub>3</sub>: Satisfaction affects towards Loyalty.***

***H<sub>5</sub>: Satisfaction mediates the relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and Loyalty.***

### III. USER EXPERIENCE, SWITCHING BARRIERS, LOYALTY

Switching barriers referred to a series of factors that make it difficult or expensive for a customer to switch to other providers [49,51]. Switching barriers has two indicators in term of external comparison and internal obstacle (i.e. lack of alternative attractiveness and switching cost). Alternative attractiveness refers to a level at which competitors draw the attention and interest of existing customers [11,49]. It means that if other providers are unable to provide different or better products and services, then customers will stay with their current providers [11,50,52,53].

Switching cost is "the costs that the consumer incurs by changing one service provider to another" [9,54], including the costs that can be measured in monetary terms, the psychological aspect of facing a new firm, and the time and effort involved in using a new service or product [50]. Since it pertains to time and psychological effort involved in facing the uncertainty of dealing with a new service provider, switching cost can be a barrier to changing service providers. Thus it can be confirmed as a mechanism to improve customer loyalty.

At the time of switching from one provider to the others, customers may have to learn a new system. Some may perceive the need to learn something that they are not familiar with a hassle and not worthwhile. The more they see difficulties or troubles in learning to use new smartphones, the higher they will perceive the switching cost. In addition, as consumers move from one smartphone manufacturer to another, they have to incur monetary cost in purchasing new devices. The more expensive the new smartphones are, the higher the perceived switching cost. If the switching cost is high, customers will tend to stay loyal and remain with the current provider [55-58].

Satisfaction with a company is not enough to explain customer loyalty [11,50]. In fact, a satisfied customer may not be loyal to a company and may leave the company at any time [59]. Switching barriers is another factor that might influence customer loyalty. Switching barriers refer to a series of factors that make it difficult or expensive for a customer to switch to another service provider [49,51,52]. Switching barriers can be developed by user experience and it able to increase user dependence on the existing provider [7,8,60].

High switching barriers are assumed to make it costly for customers to switch to the other providers. For example, the more they see difficulties or troubles in learning to use new providers, the higher they will perceive the switching cost and has no intention to switch from the current provider. Besides that, there are several reasons to be the loyal customer regarding to the function of switching barriers [9,11], such as:

- The users of other operators are less satisfied.
- The price offered by the current operator is more reasonable.
- Switching to other providers would cause too many problems.

- Switching to other providers would be too expensive.
- Switching to other providers would require too much learning.

According to Burnham et al. switching barriers can be simplified as three types: procedural, financial and relational switching costs [55]. Procedural switching costs mainly include economic risk costs, evaluation costs, setup costs, and learning costs; financial switching costs involve benefit loss costs and monetary loss costs; relational switching costs contain personal relationship loss costs and brand relationship loss costs [55]. According to this discussion, the hypothesis is suggested as below:

***H<sub>2a,b,c,d,e</sub>: User Experience (functionality, social, monetary, trustworthiness, perceived service quality) affects significantly towards Switching barriers.***

Previous studies tested the relationship between switching barriers, satisfaction, and loyalty. The findings indicate that switching barriers is an important factor in predicting customer loyalty [11,57,61-63]. Sugesti confirm that switching barriers influences loyalty on XL users that means the higher the level of switching barriers, the higher the level of loyalty [64]. Switching barriers positively affected towards the increasing number of customer loyalty in a company. Thus, the hypotheses are suggested as below:

***H<sub>4</sub>: Switching Barrier affects towards Loyalty.***

***H<sub>6</sub>: Switching barriers mediates the relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and loyalty.***

#### IV. THEORETICAL FRAMEWORK AND METHODOLOGY

Telecommunication industry competition is increasingly fierce with the increasing number of cellular operators. This makes the company conduct a variety of ways to attract customers by providing a different experience for its users. User experience will effect on customer loyalty. Customer loyalty is the phase of conative and behavior, anteceded by the phase of cognitive and affective [12,21,67]. Cognitive is formed by the users experience then continued with the phase of affective which is formed by user satisfaction and switching barriers [7-9,68].

The fundamental theory that used in this study is the framework of Cognition-to-action loyalty phase [12]. This framework is developed based on Cognition-Affect-Conation (C-A-C) pattern model [67], Tricomponent model of attitude or Tripartite Affective-Behavior-Cognitive (ABC) model of attitude [35], Affective-Cognitive Consistency Theory [35]. The cognitive component is an evaluation of the entity that constitutes an individual's opinion (belief/knowledge) about the object [67]. Cognitive refers to the thoughts and beliefs an individual has about an attitude object [6]. Belief is information a person has about an object; information that specifically links an object and attribute [21]. Cognition phase can be based on prior or vicarious knowledge or on recent experience-based information [12]. The cognition phase in this study is user experience, suitable with the theory that stated the cognition was developed by people's belief, knowledge, perceived, experience.

The affective component is the emotional response towards an attitude object. An individual's attitude towards an object can't be determined by simply identifying its beliefs about it because emotion works simultaneously with the cognitive process about an attitude object [6]. The affective phase in this study is satisfaction and switching barriers. Satisfaction is about people emotion or feeling about like/dislike or satisfy/dissatisfy, though switching barriers is about the barrier to avoid people change their choice/switch to the product/service competitor. The behavioral component is a verbal/non-verbal behavioral tendency by an individual and it consist of actions or observable responses that are the result of an attitude object. The behavioral component divided into conative phase and action phase. Conative phase is about a state, intention, commitment to re-use, re-buy, re-patronize, re-purchase, etc. Action phase is the next stage from the conative phase, when people has the commitment to re-use the product/service then they do it or prove it by an action. The conative and action phase in this study is the loyalty. Based on the underlying theory, the theoretical framework of this research postulates that loyalty is dependent on user experience, satisfaction, and switching barriers. Satisfaction and switching barriers are competent to mediate the relationship between user experience and loyalty. Besides that, switching barriers also potential to reinforce the relationship between satisfaction and loyalty.

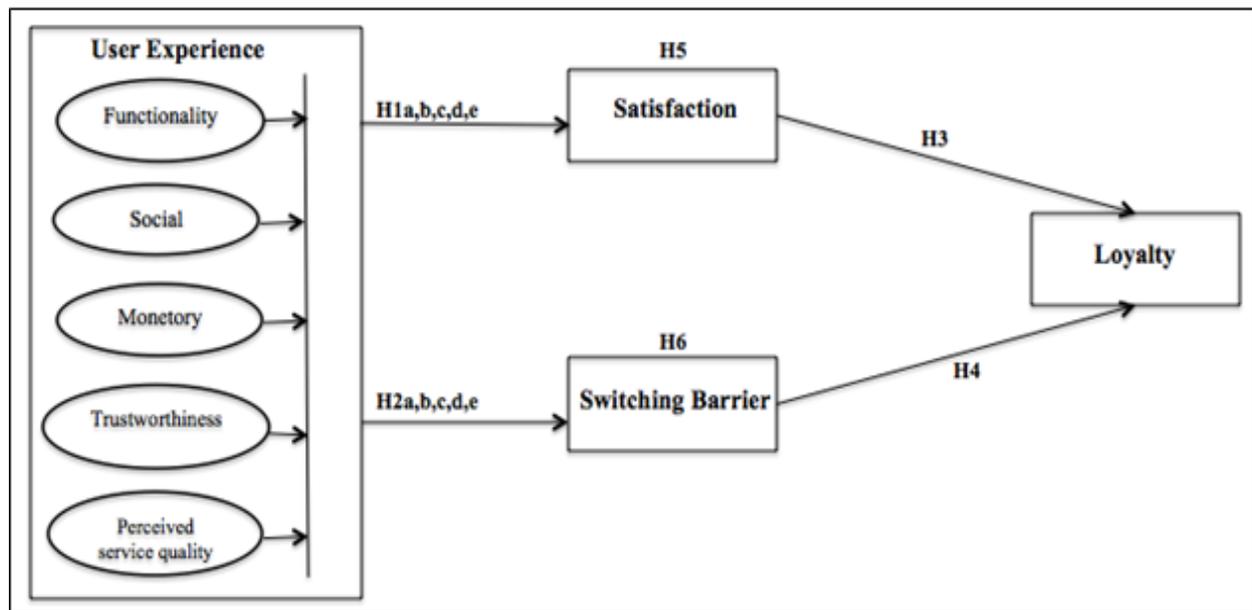


Fig. 1. Research model.

Zikmund stated that the sample is a part, or parts, of a larger population [69]. It is used when the population is large and researchers may not learn all that exists in the population because of, for example, limited funds, manpower and time. In this case research can use a sample taken from the population [70]. The sampling technique used in this study was non-probability sampling. The method used was convenience sampling, and the sample was taken from individuals who could be reached and met with [71]. The measurement scale chosen was the interval Likert scale with 400 respondents and a cross-sectional survey. Analysis of the data used in this research was through PLS-SEM. SEM is a family of statistical models that seek to explain the relationships among multiple variables. It examines the structure of interrelationships expressed in a series of equations, similar to a series of multiple regression equations. These equations depict all of the relationships among constructs (the dependent and independent variables) involved in the analysis [47].

As stated by Wijanto and Hair Jr et al. [72], The advantages of SEM is its ability to display a model of the comprehensive simultaneously with a smaller error rate (errors) and modification index of the resulting SEM provides more clues about the direction of research and models that need to be followed than in regression analysis.

The purpose of PLS-SEM is prediction the model a causal modeling approach that aims at maximizing the explained variance of the endogenous (or dependent) latent variables by estimating partial model relationship in an iterative sequence of ordinary least square regression [72]. Latent variables are

defined as the sum of the indicator (formative indicator can be seen in Figure 3.4). Results component scores for each latent variable based on the estimated weight indicator that maximizes explained variance for the dependent variable (latent, Observe or both). VB-SEM is also known as PLS-SEM and the software is Smart PLS.

PLS is a powerful analytical method since not based on many assumptions. Data does not have a multivariate normal distribution (with a scale indicator ratio can be used on the same model) because this is a non-parametric approach, the sample should not be large and the residual distribution. Although the PLS not only used to confirm the theory, but also can be used to explain whether there is any relationship between the latent variables [72].

## V. RESULTS AND DISCUSSION

Based on Figure 2, it can be seen that the outer loadings of 68 items are fulfilled the rule of thumb in convergent validity since the outer loadings are above 0.7. The value of path coefficient in inner model shows that there are 11 accepted hypotheses in direct effect from 12 hypotheses in direct effect model and there are 6 accepted hypotheses in mediator effect from 10 hypotheses in mediator effect model.

Table 1 delineates the value of discriminant validity in the criteria of valid. Table 2 portrays that cronbach's alpha, composite reliability, and AVE value are fulfilled the rule of thumb since cronbach's alpha and composite reliability are above 0.7 and AVE is above 0.5.

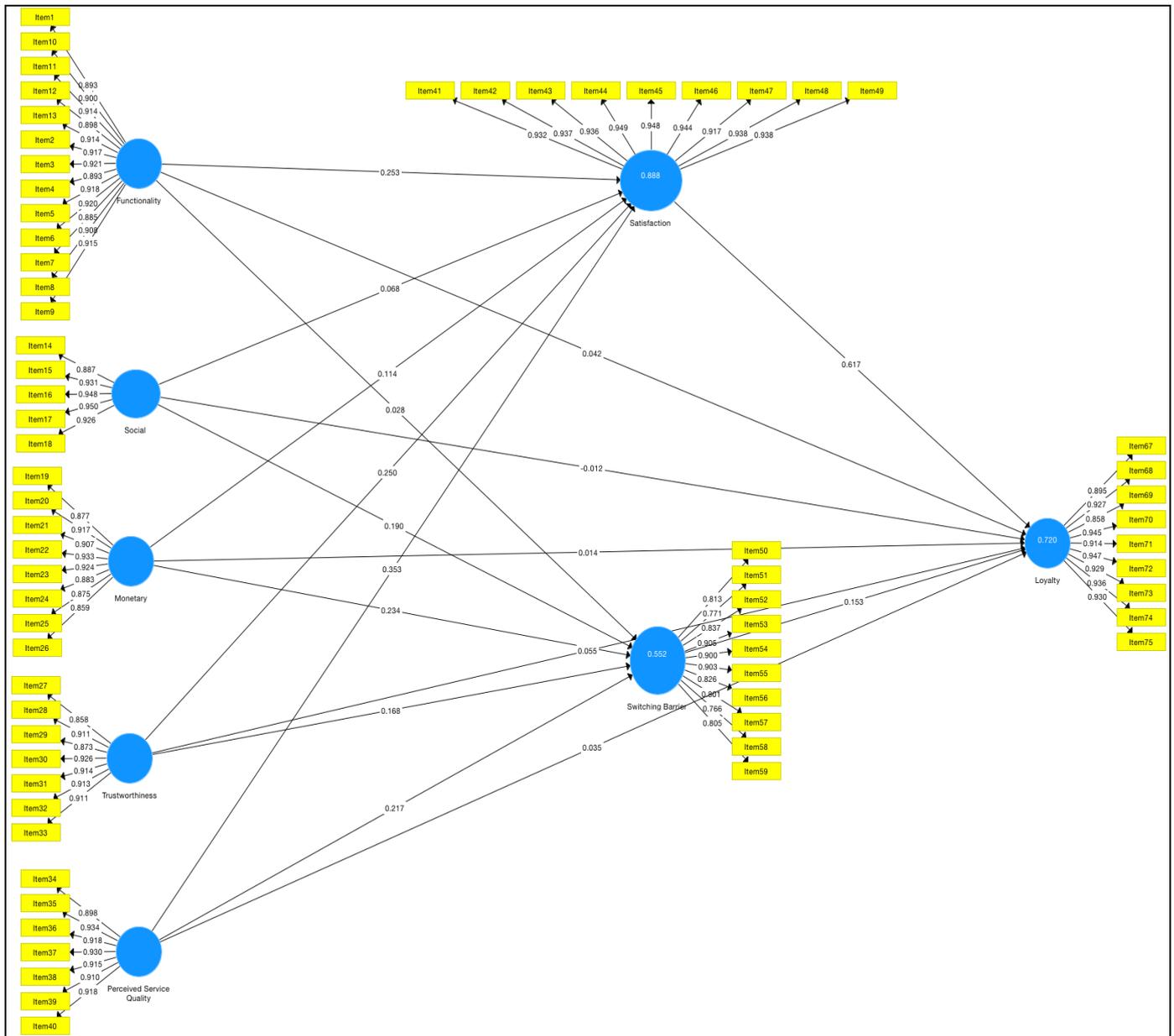


Fig. 2. Path Model-outer loading and path coefficient.

Table 3 describes the accepted hypotheses in direct effect model and mediator effect model. Table 4 indicates the value of  $R^2$ ,  $Q^2$ , SRMR, NFI. The rule of thumbs for  $Q^2$  is the model will be good prediction if the value above 0.00, SRMR means the model fit if the value below than 0.05, and NFI must be higher than 0.80. In this study, the value of  $Q^2$ , SRMR, NFI are accepted based on the rule of thumbs, it implicates that the model is fit and good prediction. The value of  $R^2$  for Loyalty means loyalty can be explained by user experience, satisfaction, and switching barriers by 72% in the criterion of moderate; The value of  $R^2$  for Satisfaction means satisfaction can be explained by user experience by 88.8% in the criterion of substantial; The value of  $R^2$  for Switching barriers means switching barriers can be explained by user experience by 55.2% in the criterion of moderate.

TABLE I. FORNEL-LARCKER CRITERION

	F	L	M	P	C	S	B	T
F	0,908							
L	0,730	0,920						
M	0,593	0,635	0,897					
P	0,811	0,772	0,652	0,918				
C	0,851	0,839	0,720	0,897	0,938			
S	0,712	0,671	0,641	0,731	0,774	0,929		
B	0,609	0,671	0,636	0,675	0,699	0,649	0,834	
T	0,785	0,773	0,734	0,862	0,889	0,783	0,696	0,901

F: Functionality; S: Social; M: Monetary; T: Trustworthiness; P: Perceived service quality; C: Satisfaction; B: Switching barriers; L: Loyalty

TABLE II. CRONBACH'S ALPHA, COMPOSITE RELIABILITY, AVE

Constructs	Cronbach's Alpha	Composite Reliability	AVE
Functionality	0,982	0,984	0,824
Loyalty	0,977	0,980	0,847
Monetary	0,965	0,971	0,805
Perceived Service Quality	0,969	0,974	0,842
Satisfaction	0,983	0,985	0,879
Social	0,960	0,969	0,863
Switching barriers	0,951	0,958	0,696
Trustworthiness	0,961	0,968	0,812

TABLE III. SUMMARIES OF ACCEPTED HYPOTHESES

	Path Coefficient	t-value	P-value
H <sub>1a</sub> : F → C	0.253	5.920	0.000
H <sub>1b</sub> : S → C	0.068	1.827	0.034
H <sub>1c</sub> : M → C	0.114	3.901	0.000
H <sub>1d</sub> : T → C	0.250	4.438	0.000
H <sub>1e</sub> : P → C	0.343	5.535	0.000
H <sub>2b</sub> : S → B	0.190	2.801	0.003
H <sub>2c</sub> : M → B	0.234	3.610	0.000
H <sub>2d</sub> : T → B	0.168	1.813	0.035
H <sub>2e</sub> : P → B	0.217	2.349	0.010
H <sub>3</sub> : C → L	0.617	7.022	0.000
H <sub>4</sub> : B → L	0.153	3.486	0.000
H <sub>5a</sub> : F → C → L	0.156	4.491	0.000
H <sub>5c</sub> : M → C → L	0.070	3.263	0.001
H <sub>5d</sub> : T → C → L	0.154	3.744	0.000
H <sub>5e</sub> : P → C → L	0.218	4.405	0.000
H <sub>6b</sub> : S → B → L	0.029	2.079	0.019
H <sub>6c</sub> : M → B → L	0.036	2.638	0.004

TABLE IV. R<sup>2</sup>, Q<sup>2</sup>, SRMR, NFI

	R <sup>2</sup>	Q <sup>2</sup>	SRMR	NFI
Loyalty	0.720	0.566	0.047	0.804
Satisfaction	0.888	0.726		
Switching Barriers	0.552	0.355		

It has been described that this study contains 22 sub hypotheses based on theoretical framework and the result shows there are 17 accepted sub hypotheses in direct effect model and mediator effect model. As can be seen in Table 4, the relationship between user experience (functionality, social, monetary, perceived service quality, trustworthiness) and satisfaction can be divided into several sequences from the highest up to the lowest rating, for instances: perceived service quality is found have the greatest influence towards satisfaction, the second is functionality, the third is trustworthiness, the forth is monetary, and the lowest is social.

Perceived service quality is the most important determinants of satisfaction which is consistent with the theory from Oliver that states customers' perception of service quality was the main factor predicting customer satisfaction [13]. Several empirical studies confirmed that a higher level of service quality was related to a higher level of customer satisfaction [9,10,15,32]. Quality of service assessments made by customers had a significant impact on both negative and positive customer satisfaction categories; assessments of other service attributes like customer care, information on tariffs and plans and billing clarity, only showed a significant statistical influence on positive categories of customer satisfaction [72].

There are numerous prior studies that support functionality affects positively on satisfaction. Sheth et al. argue that functionality provide researchers with ways to gain rich insights into consumers' experiential consumption of a product or service, since the elements of value identified in the practices directly or indirectly reflect the extent to which the consumer values that product or service for its ability to facilitate the practices and built satisfaction [73]. As a consequence, value perceptions can be generated without the product or service being bought or used, while satisfaction depends on experience of having used the product or service also state there is a significant effect on customer satisfaction derived from functionality and there is no significant effect on loyalty derived from functionality nevertheless thru satisfaction as a fully mediator [9,11,25,26].

User satisfaction at their cellular operator will be most significantly influenced by the high trustworthiness of cellular operator. When users find a trustworthiness to be high, they will form a high degree of customer satisfaction towards their operator. In accordance with Deng et al. [9], trust is always an important determinant of customer behaviour in electronic commerce and other mobile service research. When a customer trusts a service provider, they will expect to increase satisfaction and loyalty towards the vendor [32]. Lopez-Miguens and Vazquez state that trust precedes and causes a positive effect in satisfaction has been endorsed by most researchers in the electronic environment, when a user trusts in the provider to make transactions, they assume that the provider will meet their expectations and will act looking for a positive result [33].

Most of previous studies investigate to what extent monetary influences satisfaction, it has been determined that satisfaction in broadband service derived from the price paid for obtaining access and using the internet, since price is the monetary amount one has to pay to purchase a provider [28]. The statement is contrary with Kim et al. that find monetary (i.e. device price) is not positively related to satisfaction because the device price is divided into several segment based on the function, feature, and brand [11].

Deng et al. found that Social has no significant effect on customer satisfaction [9], this is in line with Andrews et al., who find social value is not significant on satisfaction. Mishra and Dash [27] state that social value is not the antecedent of satisfaction but the antecedent of usage pleasure in using smartphone, creating usage pleasure should be the prime aim of the smartphone manufacture by making a product that is usable as well as enhances social status. Based on the empirical findings, social affects towards satisfaction. That means, satisfaction can be built from sense of belonging among users, feeling acceptable in a group, feeling of enhance social status when using their cellular operator [6,17].

Switching barriers is built when users agree that there are not many other operators that would be more attractive, there will be too many problems when switching to other operator, there will take a lot of effort to change to other operator, switching to other operators would require too much learning, it will take a lot of time for changing to other operator, it will spent a lot of time searching for information about other

operators, and switching to other operator would be too expensive. Monetary is found to have the greatest effect towards switching barriers then the second influence is perceived service quality, the third is social, and the lowest is trustworthiness. This finding is consistent with previous study conducted by Kim et al. [50] where the study revealed that perception of loss in social performance when switching to other provider greatly influence switching cost felt by users. In which, the higher the loss the higher switching cost perceived by users.

If users had a good experience in monetary, i.e. they are pleased with the price that they paid for their cellular operator, so that it will increase switching cost and decrease switching behaviour [74]. Effects on monetary switching costs may be increased by operators' action to reward users for not switching by reimbursing their perceived monetary. As stated by Aydin et al, switching barriers is measured by perceived switching cost and perceived lack of alternatives [61]. Since monetary switching cost is one indicator of perceived switching cost hence there is a direct relationship between perceived monetary based on user experience and monetary switching cost. It has been investigated that functionality has no effect on switching barriers in the context of Wimax. But in contrast, Yen and Hornig explore the negative impact of trust on customer switching intention; it implies that the higher trust the lower switching barriers.

The result delineates that satisfaction is much related to customer loyalty, thus increasing the degree of customer satisfaction through improved user experience (i.e. functionality, monetary, trustworthiness, perceived service quality) is an effective tool to maintain customer loyalty. Lopez-Miguens and Vazquez define satisfaction has direct effect on loyalty in the context of online service, if user has a good response on the current service provider then it can increase their emotional value to become loyal rather than switch to others [33]. Chuah et al. illustrates the relationship between satisfaction and loyalty referred to theory of Oliver [13]. An increase in satisfaction could lead to an increase of loyalty, since emotional state of satisfaction in the affective stage positively influences loyalty in a variety of context, including mobile service. In addition, the finding that satisfaction serves as a predecessor of loyalty has been also acknowledged in the environment literature. As such, highly satisfied users with the cellular operator are likely to spread positive loyalty.

Based on users' responses, loyalty is not only affected by satisfaction but also can be affected by switching barriers. When users think that there is lack of alternatives attractiveness from other operators, switching to other operators can cause too many problems; it will take a lot of money-effort-time to change to other operators, so that they will stand loyal to the current operator. This finding is consistent with the several previous studies, Balabanis et al. state switching barriers as consumer perceptions of time, money, and effort associated with changing service providers [75]. It is also including the alternative attractiveness. The result shows that switching barriers has a positive effect towards loyalty even though the relationship between switching barriers and loyalty is lower than the relationship between satisfaction and loyalty. Pick and

Eisend find a positive direct effect of switching costs on customer loyalty that illustrates the higher the perceived costs of switching, the more likely the customer will stay with their current provider [76]. Chuah et al. demonstrate that loyalty behaviour of Gen Y customers is not only affected by their value perceptions, but also by the trade-off between switching cost and lack of alternative attractiveness.

In this study, satisfaction fully mediates the positive and significant relationship among functionality, trustworthiness, perceived service quality, and loyalty. It implies users will become loyal when they feel satisfy on their cellular operator that derived from functionality, trustworthiness, and perceived service quality. On the one hand, satisfaction partially mediates the positive and significant relationship between monetary and loyalty since the relationship between monetary and loyalty is also mediated by switching barriers. It indicates when users confirm their cellular operator offers the value for money and worth with the price they paid hence they will satisfy then become loyal, besides when users find that the barrier to switch is high at the same time they find the perceived value for money hence they will become loyal. Moreover, it has been found that switching barriers fully mediates the positive and significant relationship between social and loyalty. It implies users will become loyal when they have social bonds and encounter to many risky to switch to the other operators. On the other hand, switching barriers partially mediates the positive and significant relationship between monetary and loyalty since the relationship between monetary and loyalty is also mediated by satisfaction. It indicates when users find that the barrier to switch to the other operators is high at the same time they find the perceived value for money hence they will become loyal, additionally if they affirm their cellular operator offers the value for money and worth with the price they paid hence they will satisfy then become loyal.

## VI. CONCLUSIONS AND IMPLICATIONS

User experience affects towards satisfaction, which means users who perceived good experience in their cognitive phase will feel satisfy. It has been found that satisfaction to their cellular operator is derived from trustworthiness, perceived service quality, functionality, and monetary. User experience affects towards switching barriers that means users who perceived good experience in their cognitive phase will influence their response on switching barriers. It has been known that switching barriers is obtained from social and monetary.

Satisfaction mediates the positive and significant relationship between user experience and loyalty. Users who get good experience in functionality, monetary, trustworthiness, perceived quality will not become loyal directly since loyalty is obtained after they feel satisfy on user experience from their cellular operator.

Switching barriers mediates the positive and significant relationship between user experience and loyalty. Users who gain good experience in social and monetary will stay loyal since loyalty is achieved after they face there are too many switching barriers in monetary, effort, and time. Moreover, it

will take a lot of time and effort and moreover it would be take a lot of time to notifying their friends about these changes.

Implications for practioners are the company needs to maintain user's loyalty based on the user experience because if user have a good experience in functionality, social, monetary, trustworthiness, perceived service quality hence they will feel satisfy and response for switching barriers then they will become stay loyal. Implication for future researcher are adapted this model and make a consideration to put brand equity and customer equity in this model.

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