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Customer's Loyalty of Indonesia Cellular Operators in The Pandemic of COVID-19

Indira Rachmawati
School of Economics and Business, Telkom University

Abstract. *The cellular operators business in Indonesia has significantly increased during pandemic of COVID-19 since the issuance of the government regulation regarding work from home and study from home. The increasing number of subscribers is getting higher along with the increasing high churn rate. The intention of the study was to determine the potential predictors of customer's loyalty to cellular operators. The findings show, First, user experience directly influences loyalty. Second, corporate image is revealed to strengthen the effect of user experience on switching barriers and subsequent impact on loyalty, which indicates that a good corporate image can increase customer loyalty. Third, satisfaction and switching barriers mediate the relationship between user experience and loyalty. This implies that if users perceive a good experience with their operators, they will satisfied and loyal to the current operator. In line with this situation, if there are too many barriers to switch to other operators and they believe getting value for money, they will remain loyal. The conceptual research framework proposed can be differentiated between users who perceived corporate image is high and those who perceived corporate image is low; they can be differentiated between pre-paid and post-paid cellular users. The contribution of this study lies in the fact that the path between the five dimensions of user experience to loyalty of cellular operator, the combination with the mediator of satisfaction and switching barrier to loyalty, the moderating role of corporate image which affects the direction and strengthen the relationship between user experience and switching barriers.*

Keywords: *Cellular operators, corporate image, COVID-19, loyalty, user experience*

Abstract. *Bisnis operator seluler di Indonesia mengalami peningkatan yang signifikan selama pandemi COVID-19 sejak dikeluarkannya peraturan pemerintah tentang bekerja dari rumah dan belajar dari rumah. Jumlah pelanggan yang semakin meningkat seiring dengan churn rate yang semakin tinggi. Tujuan dari penelitian ini adalah untuk menentukan prediktor potensial dari loyalitas pelanggan kepada operator seluler. Temuan menunjukkan, Pertama, pengalaman pengguna secara langsung memengaruhi loyalitas. Kedua, pengungkapan citra perusahaan untuk memperkuat pengaruh pengalaman pengguna terhadap peralihan hambatan dan dampak selanjutnya terhadap loyalitas, yang menunjukkan bahwa citra perusahaan yang baik dapat meningkatkan loyalitas pelanggan. Ketiga, kepuasan dan peralihan hambatan memediasi hubungan antara pengalaman pengguna dan loyalitas. Ini menyiratkan bahwa jika pengguna merasakan pengalaman yang baik dengan operator mereka, mereka akan puas dan setia kepada operator saat ini. Sejalan dengan situasi ini, jika ada terlalu banyak hambatan untuk beralih ke operator lain dan mereka yakin mendapatkan nilai uang, mereka akan tetap setia. Kerangka penelitian konseptual yang diusulkan dapat dibedakan antara pengguna yang mempersepsikan citra perusahaan tinggi dan yang mempersepsikan citra perusahaan rendah; mereka dapat dibedakan antara pengguna seluler prabayar dan pascabayar. Kontribusi penelitian ini terletak pada kenyataan bahwa jalur antara lima dimensi pengalaman pengguna ke loyalitas operator seluler, kombinasi dengan mediator kepuasan dan pengalihan penghalang ke loyalitas, peran moderasi citra perusahaan yang mempengaruhi arah dan memperkuat hubungan antara pengalaman pengguna dan peralihan hambatan.*

Kata kunci: *Citra perusahaan, COVID-19, loyalitas, operator seluler, pengalaman pengguna*

*Corresponding author. Email: indirarachmawati@telkomuniversity.ac.id
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Introduction

Competition in the mobile business is growing rapidly in Indonesia, and the impact is an increasing interest in and demand for mobile phones. This demand is not only for Subscriber Identity Module (SIM) cards but also for data service and internet access, which continues to increase significantly (Rayana, 2018). This competitive state of the market helps to ensure customers have a variety of options and alternatives when seeking to purchase their desired products or services (Kotler & Keller, 2012, 2016).

Each telecommunications company is therefore presented with an opportunity to maximise their competitive advantage in terms of providing excellent service to both new and existing customers in order to enhance their customers' loyalty and make as much profit as possible (Kotler & Armstrong, 2016).

According to the Media Works and Mobile Marketing Association (MMA) (as cited in Nurfarhana, 2012), among the Asia Pacific countries, Indonesia is one of the countries with remarkably high growth in mobile cellular usage, with a trend of up to 93.16% since 2000. This trend is in line with a prediction from market research agency International Data Corporation (IDC), which stated that from 2016, China, India, and Indonesia would lead the growth of mobile cellular within a period of five years. This condition is still ongoing until 2018, Indonesia is in the rank of 3rd with the most cellular users in Asia Pacific and in the rank of 6th with the most cellular users in the world (Galih, 2018).

As stated by Untari (2020), Telecommunications operator research reveals that internet usage has increased during the pandemic of COVID-19 worldwide. This condition is in line with the existence of physical distancing or even total lockdown policies implemented by several countries. The community conducts work, study and worship activities from home. So that the need for internet also continues to increase.

During the pandemic of COVID-19, several cellular operators change strategies to anticipate trafiic spikes. Some of the strategies as follows: the addition of long term evolution (LTE) base transceiver stations (BTS), adjustments to the areas to be optimized where network optimization priorities are based on the results of analytical data on monitoring of traffic anomalies that occur because of the COVID-19 pandemic, which is Jabodetabek and other major cities such as Bandung and Medan will be included in the priority plan, optimization is done by increasing bandwidth capacity and replacing antennas to expand network coverage, utilizing Mobile BTS to be placed in various hospitals currently treating Covid-19 patients such as referral hospital, emergency hospital, residential, and other strategic locations (Fauzan, 2020). In addition, Riadi (2020), stated that during the period of time the policy of working from home and learning from home, traffic to cellular services increased around 18 % to 20% of normal conditions.

The penetration of cellular services in Indonesia has exceeded the size of the Indonesian population itself. The penetration rate has reached up to 120%, meaning there are many customers using more than one mobile number (namely multiple SIM cards), which may either be from the same operator or from different mobile operators due to the lower prices (Husain, 2018). The phenomenon of customers using more than one cellular operator number cannot be separated from the telecommunications technology development and the smartphone industry growth, in addition to the changes in lifestyle and behaviour of customers in relation to using mobile phones and cellular operator services (Rayana, 2015, 2018).

The number of cellular users in Indonesia has continued to increase but there has also been a corresponding downward trend in customer loyalty due to the similarity of products and services offered by each cellular operator. This has led to a price war and encouraged greater levels of customer switching between different operators (namely customer churn; split customer, and switch customer).

Telecommunications customers that also known as users, will use more than one SIM card from the same or different operator if they are not satisfied with the one they are using and they find the barriers to switch are low. Market conditions are getting tougher, thereby creating a bad impact for the cellular operator due to the stagnant number of loyal customers (Rizal, 2015).

Based on these phenomena, it is important for cellular operators to investigate the loyalty level beginning with those users who have a good experience, which can lead to satisfaction and loyalty, also noting that loyalty is influenced by high switching barriers and good corporate image (Kotler & Keller, 2016; Rachmawati & Mohaidin, 2019).

A good experience, high satisfaction, and high switching barriers from the products or services of the existing company will make a positive contribution to the improvement of customer loyalty (Han & Hyun, 2012). Furthermore, customer retention can be built by maintaining the quality of services and enhancing the firm's corporate image in the minds of customers, so that customers are reluctant to switch to other providers.

Previous authors have also considered other factors that influence customer loyalty for telecommunications providers. These are based on user experience and belief, among others are: feature function, signal function, trust, price/monetary, peers/social, and service quality in complaint handling. It is also known that a company can build loyalty by satisfying the needs of users consistently over time (Cerejo, 2012; Oodan et al., 2009). Customers' satisfaction can be built based on the user experience they gained from the provider regarding the product; as such, it is affirmed that satisfaction is able to mediate the relationship between experience and loyalty (Astutik & Sulihyantoro, 2016; Boohene & Agyapong, 2011; Deng et al., 2010; Setyaningsih, 2014; Sugesti, 2012).

Customer loyalty is expected to arise when the quality of services provided by the cellular operator is good, because the customer not only considers the product to be good in terms of the monetary factor, but also that the product is superior as reflected in the good functionality offered in its features and strong signal, based on their experience. The other important thing that cellular operators must maintain is the quality of the service they provide to customers. In the cellular telecommunications service industry, customers are retained not only by maintaining the quality of service, but also by creating high barriers to switching that result in customers feeling reluctant to switch to other providers. To this end, switching barriers are considered as a mediator between experience and loyalty (Sugesti, 2012).

In accordance with Aydin et al. (2005), loyal customers have a lower tendency to switch providers. A company's technological changes and differentiation strategy can give rise to switching barriers and become an important factor for loyalty. A loyal customer will reduce their search for new providers, increase their response to switching barriers, and provide positive feedback to the company along with the high level of corporate image. As stated by Lukiarti (2014), the relationship between user experience and loyalty is moderated by corporate image. It implies that when users have a good image of the current service provider, this can strengthen their feelings of satisfaction and reluctance to switch, thereby leading them to become loyal to the provider (Rachmawati & Mohaidin, 2017).

Rayana (2018) affirmed that user experience of functionality can be assessed from a network of inadequate coverage, difficulties in the registration process, a not well-integrated function thereby causing delays in several activities. Elpita (2018) explained that humans as social beings need to communicate to others, so that the influence of peers or community is very high in their lives.

One of the problems of user experience in social is the influence of community to use the same operator so that they can be accepted into the community and improve their social status. Various types of providers are intensifying price differentiation and saving rates among fellow users, bonus internet usage at certain hours of credit bonus and also free call bonuses. But at this time the customer has begun to be critical in choosing the product to be used in accordance with the needs and facilities offered, customers will choose from several of these products. this causes the appearance of user perceptions of monetary (Elpita, 2018).

Surjandari and Hamdani (2009) strengthened that trustworthiness is very important in the experience of mobile operators, this can be assessed from their responses based on their experience, such as they believe their operators care about customers, always improve the quality of products and services, their operators are honest and transparent in terms of information. Perceived service quality can be seen from the time to resolve complaints too long, the number of steps to resolve the problem, and the lack of employees to follow up on problem solving. based on a survey conducted by Convergys, it was found that 48% of customers surveyed had experienced poor service to their operators (KompasTekno, 2012). Based on research conducted by the Frontier Marketing & Research Consultant, Telkomsel was chosen as the most trusted company. This proved that the company which built well corporate image was able to gain the highest market share. moreover companies that had a good image in the customers' mind, were relatively more acceptable to consumer (Movanita, 2019).

Therefore, the aim of this study is divided into three sections. Firstly, the study intends to examine the effect of user experience on loyalty. Secondly, the mediation effect of satisfaction and switching barriers on the relationship between user experience and loyalty. Thirdly, the moderation effect of corporate image on the relationship among user experience, satisfaction, switching barriers, and loyalty. This study examines whether loyalty of Indonesia cellular operators is related to variables such as user experience (functionality, social, monetary, trustworthiness, perceived service quality) and corporate image, along with the influences of satisfaction and switching barriers, by providing empirical evidence of the relationship among these variables. The variable of loyalty is reflected by the indicators of loyalty to intention, loyalty to action, and willingness to recommend to others. This is to fill the research gap generated by the fact that many previous studies have only studied up to the intention phase and/or have jumped to the action phase without looking at the intention phase, with only a few researchers having measured loyalty based on intention and action in one variable.

This study made several original contributions to the knowledge on the cognition-to-action loyalty phase framework. These include how the user experience and corporate image are considered in the cognitive phase. The user experience dimensions based on a taxonomy derived from several prior research studies consist of functionality, social, monetary, trustworthiness, and perceived service quality. Meanwhile, satisfaction and switching barriers are chosen in the affective phase. Furthermore, loyalty is considered in the conative and action phases that reflects users' intention and action to be loyal and to subsequently make a recommendation to others.

This study provided a conceptual model in the context of Indonesia cellular operators based on the viewpoint of network and service. This cognition-to-action loyalty phase framework is the underlying theory in this study, but the theoretical framework will be modified by the mediating effect of satisfaction and switching barriers on the relationship between user experience and loyalty, subsequently modified by the moderating effect of corporate image. Corporate image is chosen to moderate the relationship among the cognitive phase, affective phase, conative phase, and action phase.

The contribution for academicians interested in the same research topic is the conceptual model. Previous studies using the ICT industry as their object have used the same framework as this study, starting from the phase of cognitive, afterwards affective, subsequently conative, and finally action (Calvo-Porral & Levy-Mangin, 2015; Chang & Chen, 2008, 2009; Deng et al., 2010; Kim et al., 2016; Lopez-Miguens & Vazquez, 2017; Oliver, 1999).

There are several differences between this study and previous ones, which are explained as follows. The first difference is that the cognitive phase variable in this study is the user experience (namely the dimensions of user experience are functionality, social, monetary, trustworthiness and perceived service quality), while Chang and Chen (2008, 2009) chose to use customer interface quality. Deng et al. (2010), in contrast, chose trust, service quality, and perceived value. Calvo-Porral and Levy-Mangin (2015) used perceived service value, corporate image, and switching costs. Kim et al. (2016) chose device features and corporate factors, while Lopez-Miguens and Vazquez (2017) chose website quality.

The second difference is the variables used for the affective phase as mediators, which in this study are satisfaction and switching barriers, while Chang and Chen (2008, 2009); Calvo-Porral and Levy-Mangin (2015); Deng et al. (2010) chose satisfaction and switching costs rather than switching barriers. On the other hand, Kim et al. (2016) chose customer satisfaction and switching barriers. Lopez-Miguens and Vazquez (2017) chose e-satisfaction, e-trust, and switching barriers. The third difference is that the moderating variable used in this study is corporate image, which is able to strengthen the relationship among the variables of the cognitive, affective, conative, and action phases (to strengthen the relationship between user experience and loyalty; strengthen the relationship between user experience and satisfaction; and strengthen the relationship between user experience and switching barrier), while Gautam (2011), in contrast, chose corporate image as a moderator between perceived justice (cognitive) and recovery satisfaction (affective). Tarus and Rabach (2013) determined that corporate image moderates the relationship between the cognitive (service value, service quality and social pressure) and action (loyalty) phases. Ghalandari et al. (2013) chose corporate image as a moderator among perceived justice (cognitive), recovery satisfaction (affective), and repurchase intention (conative). Aisya (2016) chose corporate image as a moderator between service quality (cognitive) and trust (conative).

The fourth difference lies in this study's examinations of the direct relationship between user experience and loyalty, the indirect relationship between user experience and loyalty through satisfaction and switching barriers as mediators, and the subsequent examination of corporate image as the moderator among user experience, satisfaction, switching barriers, and loyalty. In the other words, Chang and Chen (2008) examined the direct relationship between customer interface quality and loyalty. Then, in 2009, Chang and Chen examined the indirect relationship between customer interface quality and loyalty through satisfaction and switching costs as mediators.

Deng et al. (2010) examined the direct relationship only between trust and loyalty, but the relationship among service quality, perceived value and loyalty was mediated by satisfaction. There was no relationship among trust, service quality and perceived value towards switching cost, so switching cost was not considered as a mediator even though there was a relationship between switching cost and loyalty.

Kim et al. (2016) examined the relationship among device feature quality, corporate factors and loyalty with satisfaction as the mediator. They found no relationship among device feature quality and corporate factors towards switching barrier despite the existence of a relationship between the switching barrier and loyalty.

The fifth difference concerns future research, where it is anticipated that the conceptual model will be tested in a different context (namely goodness in the same and/or different category) in order to determine whether the conceptual model can be generalised in different contexts.

Kim et al. (2016) affirmed if customer had have a good feeling, they would become a loyal customer, and if they had a bad feeling about the products, they will not be a loyal customer. $H_{1a,b,c,d,e}$*: User Experience (functionality, social, monetary, trustworthiness, perceived service quality) affects positively on Loyalty.*

Deng et al. (2010) confirmed ervice quality and perceived value (namely functional value, social value and monetary value) have an impact on satisfaction in the use of mobile instant messaging. $H_{2a,b,c,d,e}$*: User Experience (functionality, social, monetary, trustworthiness, perceived service quality) affects positively on Satisfaction.*

Loyal customers tend to make credible recommendations in their community. Customer satisfaction is one of the main antecedents of loyalty (Rachmawati & Mohaidin, 2019). H_3*: Satisfaction affects positively on Loyalty.* $H_{7a,b,c,d,e}$*: Satisfaction mediates the relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and loyalty.*

The more customers perceive difficulties or troubles in learning to use new providers, the greater they will perceive the switching barriers to be and thus have no intention to switch from the current provider. Besides, there are several reasons for customers to be loyal regarding the function of switching barriers (Kim et al., 2016). $H_{4a,b,c,d,e}$*: User Experience (functionality, social, monetary, trustworthiness, perceived service quality) affects positively on Switching barriers.*

Once people have started using a service from one provider, they come to perceive the switching barriers involved in changing to a new provider as being high; they will thus have higher customer loyalty (Chang & Chen, 2009). H_5*: Switching barriers affect positively on Loyalty.* $H_{8a,b,c,d,e}$*: Switching barriers mediate the relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and loyalty.*

Tarus and Rabach (2013) described how corporate image moderates the relationship among service value, service quality, social pressure and loyalty; nevertheless, corporate image does not moderate the relationship between satisfaction and loyalty since satisfaction is in the affective phase. $H_{6aa,ab,ac,ad,ae}$*: Corporate Image moderates the positive relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and Satisfaction, such that the higher the corporate image, the stronger the positive effect.* $H_{6ba,bb,bc,bd,be}$*: Corporate Image moderates the positive relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and Loyalty, such that the higher the corporate image, the stronger the positive effect.* $H_{6ca,cb,cc,cd,ce}$*: Corporate Image moderates the positive relationship between User Experience (functionality, social, monetary, trustworthiness, perceived service quality) and Switching barriers, such that the higher the corporate image, the stronger the positive effect.*

Research Methodology

In this study, Positivism was chosen as the research philosophy, deductive and quantitative study were the research approach, the chosen research strategy was survey, time horizon was cross section, and questionnaire was used for data collection method. Positivism assumes that reality exists independently of the thing being studied. In practice this means that the meaning of phenomena is consistent between subjects (Neuman, 2014).

The deductive approach develops the hypotheses upon a pre-existing theory and then formulates the research approach to be tested (Sekaran & Bougie, 2016). The quantitative approach can be most effectively used for situations where there are a large number of respondents available, where the data can be effectively measured using quantitative techniques, and where statistical methods of analysis can be used (Indrawati, 2015). The cross sectional time horizon is one already established, whereby the data must be collected at a certain point (Flick, 2011). This is used when the investigation is concerned with the study of a particular phenomenon at a specific time. Primary data is that which is derived from first-hand sources. This can be historical first-hand sources, or the data derived from the respondents in questionnaire (Bryman, 2012).

In this study, the data collection was taken using non-probability sampling with snowball sampling technique because the samples were obtained through a rolling process from one respondent to another through the social media group platform (Neuman, 2014). The interval scale was chosen as the measurement scale due to its suitability for use with a research framework with multiple independent and dependent variables.

A numerical scale was considered as an instrument scale in this study since it is used to measure the attitudes of respondents that are arranged in a continuum line, with answers ranging from "strongly disagree" located at number 1 to "strongly agree" at number 7. The variable types in this study are independent or latent exogenous (namely user experience, contained 13 question items that related to functionality; five items related to social; eight items related to monetary; seven items related to trustworthiness; and seven items related to perceived service quality), mediating 1 (namely satisfaction contained nine items), mediating 2 (namely witching barriers contained 10 items), moderating (namely corporate image contained seven items), and dependent or latent endogenous (namely loyalty contained nine items).

The development of the survey instrument in this study was conducted using adapted well-tested items from prior research, expert opinion, back-to-back translation, and a pilot study (Takara et al., 2015). Expert opinion is necessary to collect feedback and comments pertaining to the modified measurement items, back-to-back translation is required to confirm that the measurement items in the English and Indonesian versions have identical meanings, while the purpose of the pilot study is to ensure that all of the questionnaire items are clearly understood by the respondents. The sample size required for a pilot study is between 15 and 30 (Malhotra, 2004).

The raw data was derived from research instrument, such as questionnaire distributed to 385 respondents. In accordance with the terms of quantitative research that the questionnaire items should be tested in construct validity and reliability (Cronbach's Alpha) to check the goodness of data. If the questionnaire items in pilot study are valid and reliable hence the items can be used for data collection, but in contrary if there is an item and/or several items that not valid and/or not reliable, subsequently the questionnaire items need to be revised and re-test before generate for data collection (Sekaran & Bougie, 2016). Statistical modelling of latent variables can be done either by means of first-generation multivariate analysis techniques such as multiple regressions, or using second-generation multivariate analysis techniques such as SEM. Since this study involves nine constructs in theoretical frameworks it is categorised in multivariate data analysis. Multivariate statistical methods analyse multiple variables or even multiple sets of variables simultaneously (Zikmund et al., 2009).

This study is considered to use dependence methods since there is one dependent variable and there are distinctions among the other variables as independent variables, dependent variables, mediating variables and moderating variables (Zikmund et al., 2009).

PLS-SEM was chosen since it features multiple independent and dependent variables (namely user experience as an independent variable; satisfaction and switching barriers as mediating variables; corporate image as a moderating variable; loyalty as a dependent variable). The next step is processing raw data with PLS (Partial Least Square) SEM that evaluate the assessment of measurement (convergent validity, discriminant validity, Cronbach's alpha, composite reliability). and assessment of structural model. The criterion in convergent validity are by observing outer loadings should be higher than 0.7, AVE score should be higher than 0.5, and p-values should be lower than 0.05. The criteria in internal consistency are established by observing Composite Reliability (CR) and Cronbach's Alpha. The criteria require that both of these should be in the range between 0.7 and 0.9 (Hair et al., 2018).

The criteria in discriminant validity are by observing at the Average Variance Extracted (AVE) root by Fornell-Larcker Criterion, cross loadings, and Heterotrait-Monotrait (HTMT). The criteria are that the AVE root score should be higher than latent variable correlation and indicator's loading should be higher than all of its cross loadings (Hair et al., 2017). Henseler et al. (2015) suggested a thresholds value of HTMT is 0.90 if the path model includes constructs that are conceptually very similar.

The criteria in assessment of structural model are as follows: t-value higher than 1.65, p-value lower than 0.05, R^2 indicates 0.75 (substantial); 0.50 (moderate); 0.25 (weak), Q^2 indicates good predictive for Q^2 higher than 0, SRMR lower than 0.10, and RMS-Theta lower than 0.12 (Hair et al., 2017; Henseler et al., 2015; Ramayah et al., 2018).

Results and Discussion

Table 1 shows Fornel-Larcker in the criteria of valid, since the AVE root score of each construct was higher than the correlation score of each construct. AVE root score of each construct, as follows: Image (I) was 0.929, Functionality (F) was 0.908, Loyalty (L) was 0.920, Monetary (M) was 0.897, Perceived Service Quality (P) was 0.918, Satisfaction (C) was 0.938, Sosial (S) was 0.929, Switching Barriers (B) was 0.834, Trusworthiness (T) was 0.901.

Based on Table 2, it can be seen that outer loadings, AVE, Cronbach's alpha, and composite reliability were fulfilled the rule of thumb since outer loadings higher than 0.7, Cronbach's alpha and composite reliability were in the range between 0.7 and 0.9, and AVE value was higher than 0.5 (Hair et al., 2017; 2018; Ramayah et al. 2018). Table 3 delineates that every value was below 0.90, hence it can be concluded that the HTMT values of nine constructs were valid.

Table 1.
Fornel-Larcker

	I	F	L	M	P	C	S	B	T
I	**0.929**								
F	0.812	**0.908**							
L	0.818	0.730	**0.920**						
M	0.601	0.593	0.635	**0.897**					
P	0.863	0.811	0.772	0.652	**0.918**				
C	0.876	0.851	0.839	0.720	0.897	**0.938**			
S	0.717	0.712	0.671	0.641	0.731	0.774	**0.929**		
B	0.710	0.609	0.672	0.635	0.675	0.699	0.649	**0.834**	
T	0.811	0.785	0.773	0.734	0.862	0.889	0.783	0.697	**0.901**

Source: Data Processed (2020)

Table 2.
Convergent Validity

Construct	Item	Loading	AVE	Composite Reliability	Cronbach's Alpha
Functionality (F)	F1	0.893	0.824	0.884	0.882
	F2	0.917			
	F3	0.921			
	F4	0.893			
	F5	0.918			
	F6	0.920			
	F7	0.885			
	F8	0.908			
	F9	0.915			
	F10	0.900			
	F11	0.914			
	F12	0.898			
	F13	0.914			
Social (S)	S1	0.887	0.863	0.869	0.860
	S2	0.931			
	S3	0.948			
	S4	0.950			
	S5	0.926			
Monetary (M)	M1	0.877	0.805	0.871	0.865
	M2	0.917			
	M3	0.907			
	M4	0.933			
	M5	0.924			
	M6	0.883			
	M7	0.875			
	M8	0.859			
Trustworthiness (T)	T1	0.858	0.812	0.868	0.861
	T2	0.911			
	T3	0.873			
	T4	0.926			
	T5	0.914			
	T6	0.913			
	T7	0.911			
Perceived Service Quality (P)	P1	0.898	0.842	0.874	0.869
	P2	0.934			
	P3	0.918			
	P4	0.930			
	P5	0.915			
	P6	0.910			
	P7	0.918			

Table 2. *(Continued)*
Convergent Validity

Construct	Item	Loading	AVE	Composite Reliability	Cronbach's Alpha
Satisfaction (C)	C1	0.932	0.879	0.885	0.883
	C2	0.937			
	C3	0.936			
	C4	0.948			
	C5	0.948			
	C6	0.944			
	C7	0.917			
	C8	0.938			
	C9	0.938			
Switching Barriers (B)	B1	0.813	0.696	0.858	0.851
	B2	0.769			
	B3	0.837			
	B4	0.906			
	B5	0.900			
	B6	0.903			
	B7	0.825			
	B8	0.801			
	B9	0.766			
	B10	0.806			
Corporate Image (I)	I1	0.911	0.862	0.878	0.873
	I2	0.936			
	I3	0.925			
	I4	0.929			
	I5	0.932			
	I6	0.923			
	I7	0.943			
Loyalty (L)	L1	0.895	0.847	0.880	0.877
	L2	0.926			
	L3	0.858			
	L4	0.945			
	L5	0.914			
	L6	0.947			
	L7	0.929			
	L8	0.936			
	L9	0.930			

Source: Data Processed (2020)

Table 3.
Heterotrait-Monotrait (HTMT)

	I	F	L	M	P	C	S	B	T
I									
F	0,830								
L	0,838	0,744							
M	0,613	0,600	0,648						
P	0,816	0,832	0,793	0,668					
C	0,813	0,818	0,832	0,734	0,832				
S	0,741	0,731	0,691	0,661	0,757	0,796			
B	0,734	0,627	0,694	0,664	0,700	0,721	0,677		
T	0.837	0.806	0.796	0.758	0.816	0.832	0.814	0.727	

Source: Data Processed (2020)

Table 4.
Summary of Supported Hypotheses

No.	Hypothesis Description	Relationships	Decision
H_{1c}	Monetary affects positively on Loyalty	M L	**Supported**
H_{2a}	Functionality affects positively on Satisfaction	F C	**Supported**
H_{2c}	Monetary affects positively on Satisfaction	M C	**Supported**
H_{2d}	Trustworthiness affects positively on Satisfaction	T C	**Supported**
H_{2e}	Perceived Service Quality affects positively on Satisfaction	P C	**Supported**
H_3	Satisfaction affects positively on Loyalty	S L	**Supported**
H_{4b}	Social affects positively on Switching Barriers	S B	**Supported**
H_{4c}	Monetary affects positively on Switching Barriers	M B	**Supported**
H_5	Switching Barriers affect positively on Loyalty	B L	**Supported**
H_{6cc}	Corporate Image moderates the positive relationship between Monetary and Switching Barriers, such that the higher the corporate image, the stronger the positive effect	Moderating effect M B	**Supported**
H_{7a}	Satisfaction mediates the relationship between Functionality and Loyalty	F C L	**Supported**
H_{7c}	Satisfaction mediates the relationship between Monetary and Loyalty	M C L	**Supported**
H_{7d}	Satisfaction mediates the relationship between Trustworthiness and Loyalty	T C L	**Supported**
H_{7e}	Satisfaction mediates the relationship between Perceived Service Quality and Loyalty	P C L	**Supported**
H_{8b}	Switching Barriers mediate the relationship between Social and Loyalty	S B L	**Supported**
H_{8c}	Switching Barriers mediate the relationship between Monetary and Loyalty	M B L	**Supported**

Source: Data Processed (2020)

Table 5.
The Value of R^2, Q^2, SRMR, RMS-Theta

Latent Variable	R^2	Q^2	SRMR	RMS-Theta
Loyalty	0.748	0.586		
Satisfaction	0.902	0.737	0.047	0.113
Switching Barriers	0.611	0.392		

Source: Data Processed (2020)

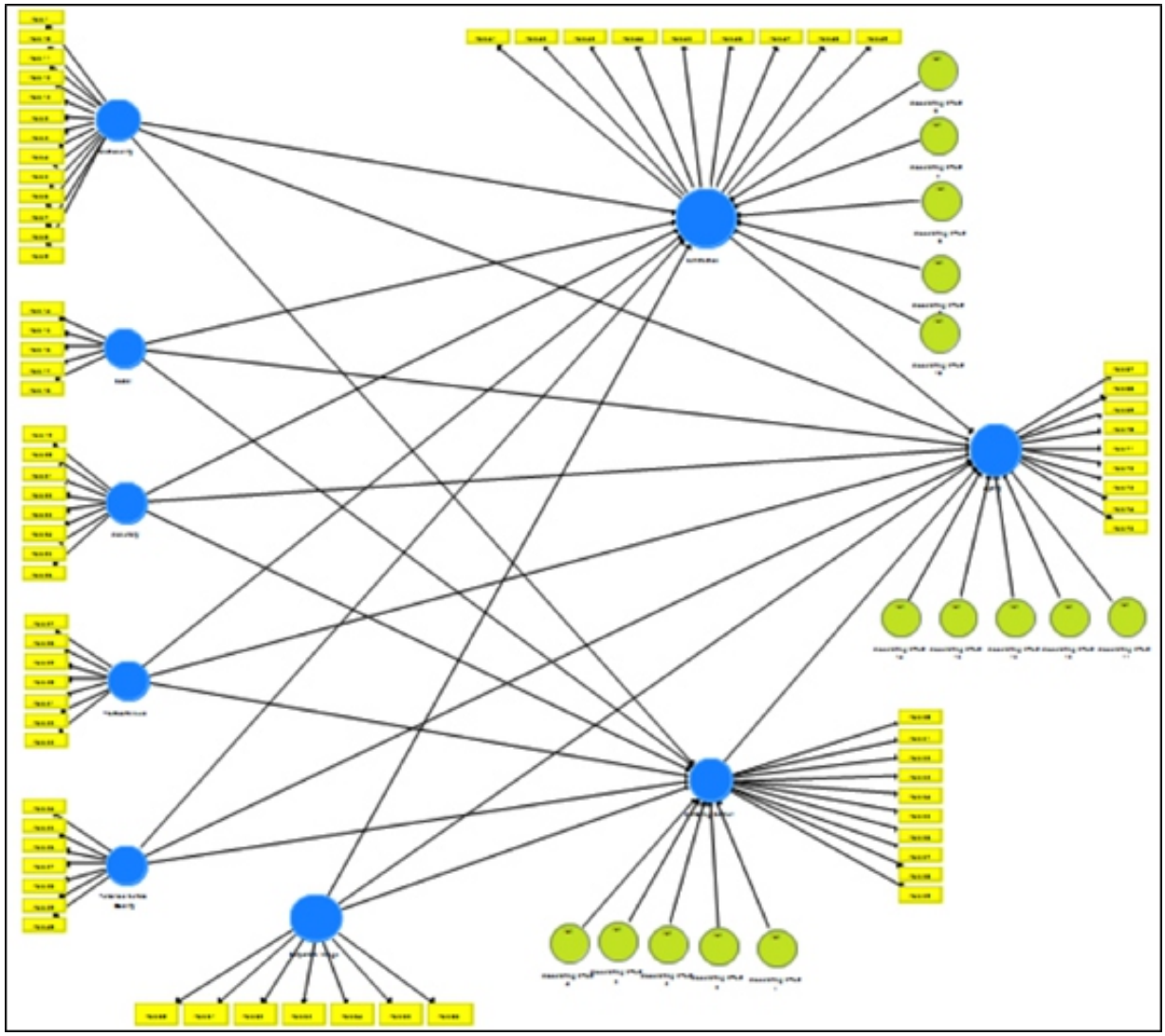

Figure 1.
Research Path Model
Source: Data Processed (2020)

Table 4 presents the summary of the results of direct effect model, indirect effect model, and moderating effect model of the eight highlighted constructs to loyalty. In this study, there were 42 research hypotheses based on the theoretical framework. The results for hypotheses testing showed that there were 16 supported hypotheses, consist of: nine supported hypotheses of direct effect model, six supported hypotheses of mediator effect model, and one supported hypotheses of moderator effect model.

Table 5 indicates the value of R^2, Q^2, SRMR, and RMS-Theta. In this study, the value of Q^2 for loyalty, satisfaction, switching barrier were good since the values higher than 0. The value of R^2 for loyalty and switching barriers were in the criterion of moderate since the values in the range between 0.5-0.75 while R^2 for satisfaction was substantial since it was higher than 0.75. The model were fitted since a value of 0.113 represents RMS-Theta thresholds for a well-fitted model along with a value of 0.047 for SRMR is an indication that model possess a sizeable good fit for saturated model SRMR.

Figure 1 portrays research path model with (β)-value and R^2after bootstrapping. It can be seen that network quality derived from 5 questionnaire items, customer service derived from 5 questionnaire items, information quality derived from 3 questionnaire items, security and privacy derived from 3 questionnaire items, attitudinal loyalty derived from 3 questionnaire items, and behavioural loyalty derived from 2 questionnaire items.

It has been described that this study contains 42 hypotheses based on theoretical framework and the results show 16 hypotheses out of 42 hypotheses were supported. As can be seen in Table 4, it can be seen that from 17 hypotheses of direct effect, there were nine supported hypotheses with the criteria of one-tailed test which is as follows: path coefficient (β) > 0, t-value > 1.65, and p-values < 0.05.

It was shown by the results that the effect of (monetary) M L (β = 0.088, t-value= 1.790, p<0.05), (satisfaction) C L (β = 0.460, t-value= 4.658, p<0.05), and (switching barriers) B L (β = 0.114, t-value= 2.468, p<0.05) were highly positively statistically significant and influencing loyalty.

Moreover, with satisfaction as the dependent variable, the direct effect which exists is given as: (functionality) F C (β = 0.178, t-value= 3.995, p<0.05), (monetary) M C (β = 0.134, t-value= 4.096, p<0.05), (trustworthiness) T C (β = 0.247, t-value= 3.924, p<0.05), (perceived service quality) P C (β = 0.209, t-value= 3.096, p< 0.05) were positive and statistical significant suggesting its influence on satisfaction. In addition, with switching barriers as the dependent variable, the direct effect which exists is given as: (Social) S B (β = 0.157, t-value= 2.323, p< 0.05), (monetary) M B (β = 0.155, t-value= 2.245, p< 0.05) have positive and statistical significant influence on switching barriers.

In addition, the results that can be seen in Table 4 also shows that from 10 hypotheses of mediator effect, there were six supported hypotheses with the criteria of two-tailed test as follows: t-value > 1.96 and p-values < 0.05. The analysis of significant indirect effect of mediating analysis regarding satisfaction on the association between Independent variables (user experience dimensions) and loyalty include, FCL (β = 0.082, t-value= 3.485, p<0.05), MCL (β = 0.062, t-value= 2.808, p<0.05), TCL (β = 0.114, t-value= 2.794, p<0.05), and PCL (β = 0.096, t-value= 2.320, p<0.05). This study conducts mediating analysis so as to test the mediating effect of switching barriers on the relationship between Independent variables (user experience dimensions) and loyalty. Switching barriers have significant mediating effects namely, SBL (β = 0.018, t-value= 1.972, p<0.05) and MBL (β = 0.018, t-value= 1.989, p<0.05). Nevertheless, from 15 hypotheses of moderator effect, there was only one supported hypothesis, namely corporate image only has positive moderating effect on the relationship between monetary and switching barriers (β = 0.201, t-value= 2.776, p<0.05).

Based on the empirical findings in this study, cellular operators have to maximise user experience, corporate image, satisfaction, and switching barriers in order to enhance loyalty. User experience (monetary) was directly related to loyalty, which means that if users get good value for money, they will remain loyal, even if they do not feel satisfied or do not find switching barriers. User experience (functionality, social, trustworthiness, perceived service quality) was not directly related to loyalty, but was mediated by satisfaction and switching barriers; furthermore the relationship between user experience (monetary) and loyalty was also mediated by satisfaction and switching barriers.

This implies that if users are enjoying a good experience from their current cellular operator, they will feel satisfied that can lead to loyalty; moreover, if they feel there will be high barriers to switching afterwards they will become loyal. In addition, increasing loyalty is also accelerated by corporate image, if users have a good experience, specifically in terms of value for money, have a good image of the corporate, and feel that the switching barriers are too high or too many, hence they will become loyal.

Functionality, as the first dimension of user experience in this study, delineated that it had no positive relationship with loyalty. Several user-based functionality derived from this study based on the survey responses, for instances: First, the cellular operator must be simple to use since it is a daily necessity that is used frequently. Second, it should be easy to become a subscriber and the service should have good functions that enable users to accomplish their tasks more quickly and to feel very confident. Third, it must be well integrated and reliable in performance, stability, and good network quality. The second dimension of user experience was social, which obtained the same results as functionality, in that there was no positive relationship with loyalty, this indicated that social indirectly influences loyalty.

In line with Kim et al. (2016), the items that need to be highlighted were that the cellular operators should give users a sense of belonging to other users, to feel accepted in a group, and should help users have a good impression from other users by improving the way they are perceived, which can enhances their social status.

The third dimension was monetary, which was defined as having a positive and significant relationship with loyalty. Survey responses concerning monetary that should be concerned included the belief that cellular operator offered value for money, the service was worth what they pay for it, and they were pleased with the price paid. Moreover, the cellular operator must be vigilant with the price level (namely credit price and quota price) compared to the competitors in terms of being reasonable and economic. With regard to trustworthiness, as the fourth dimension, it is shown that it had no positive relationship with Loyalty.

Based on survey responses, it can be seen that trustworthiness increases when cellular operators provide value and care, are not opportunist, but are honest and trustworthy in the minds of users. Additionally, cellular operator should be secure service providers for sending personal information, so that users feel totally safe when providing sensitive information. The fifth dimension was perceived service quality; it was found that there was no relationship between perceived service quality and loyalty. In accordance with the survey responses, several items need to be considered by the operators, such as: the cellular operators must be reliable and innovative, reliable in complaint handling, offered consistently high quality, delivered excellent overall service, and delivered a superior value-added service in every way. These findings were supported by Deng et al. (2010).

In this study, the relationship between user experience dimensions and satisfaction can be divided into several sequences, from the highest up to the lowest ratings. For example, trustworthiness was found have the greatest influence on satisfaction, followed by perceived service quality, functionality, and finally monetary. Trustworthiness was found to have the greatest effect on satisfaction. It implies that user satisfaction with their cellular operator would be most significantly influenced by high trustworthiness in the cellular operator. When users believe trustworthiness to be high, they will form a high degree of customer satisfaction towards their operator.

The finding meant that satisfaction was highly related to customer loyalty, so increasing the degree of customer satisfaction through improved user experience (namely functionality, monetary, trustworthiness, perceived service quality) is an effective tool for maintaining customer loyalty. Customer satisfaction is an intervening variable that mediates on the relationship between service quality and loyalty; when users perceive that the service quality of their operator is high, they will have increased satisfaction, which will in turn lead to a higher loyalty.

According to the findings, loyalty was not only affected by satisfaction but can also be affected by switching barriers, such as: when users perceived that there was lack of alternatives attractiveness from other operators, switching to other operators can cause too many problems, it would take a lot of money-effort-time to change to other operators, and there were no more alternative attractiveness, so that they would remain loyal to their current operator. Switching barriers were created when users agreed that there were few other operators that would be more attractive, there would be too many problems if switching to another operator hence it would involve a lot of effort to change to another operator, switching to another operator would require too much learning and it would take a lot of time to switch to another operator, it would take a lot of time to search for information about another operator and switching to another operator would be too expensive. Social was found to have the greatest effect on switching barriers, followed by monetary. The direct relationship between the other user experience dimensions (functionality, trustworthiness, and perceived service quality) and switching barriers was not found positive, this is possibly because the link among functionality, trustworthiness, and perceived service quality are completely affect on satisfaction. Switching barriers fully mediate the relationship between social and loyalty. This implied that users would become loyal when they had social bonds and perceived too many risks in switching to another operator. On the other hand, switching barriers partially mediate the relationship between monetary and loyalty, since the relationship between these is also mediated by satisfaction. This indicated that when users found that the barriers to switching to another operator were high, and at the same time perceived the service to be value for money, they would become loyal. Additionally, if they believed that their cellular operator offers value for money and was worth with the price paid, they would be satisfied and became loyal

In addition, survey responses on corporate image described that it was considered good, as they agreed that they had a good image of their cellular operator, their cellular operator was forward-looking, they had a good image of their operators' products and functions compared to other operators, and they had a good impression of their cellular operator. In line with Tarus and Rabach (2013), corporate image moderates the relationship between monetary and switching barriers, such that users who received corporate image in high value along with their believed about value for money, would affirm that there were too many barriers to switch to another operator.

Conclusion

The scope of this study is to investigate the effect of user experience on loyalty of Indonesia cellular operators. Moreover, this study investigates the mediating effect of satisfaction and switching barriers on the relationship between user experience and loyalty. Furthermore, this study investigates the moderating role of corporate image on the relationship among user experience, satisfaction, switching barriers, and loyalty.

The findings confirmed that user experience affects positively on loyalty. This means that users who had good experiences in their cognitive phase were directly loyal to their cellular operators. In this study, monetary was one dimension of user experience that affects positively on loyalty, which implied that when users had a good experience with regard to value for money, they would become loyal. Moreover, loyalty was achieved when users felt satisfied with their current operator and faced too many barriers to switching to other operators, whereas satisfaction and switching barriers were acquired from user experience (functionality, social, monetary, trustworthiness, perceived service quality).

Additionally, user experience affects positively on satisfaction, which means that users who had a good experience in their cognitive phase would feel satisfied. It has been found that satisfaction with their cellular operator was derived from trustworthiness, perceived service quality, functionality, and monetary. Then, user experience affects positively on switching barriers, which means that users who had a good experience in their cognitive phase would be influenced in their response to switching barriers. It has been established that switching barriers derived from social and monetary.

Furthermore, satisfaction affects positively on loyalty. It implies that loyalty was built when users felt satisfied with their current provider, which takes place when they thought they did the right thing by subscribing to their cellular operator, and by using its services frequently. They also believed these services fit their needs, agreed that their cellular operator was close to the ideal operator and a wise choice, satisfied with their current operator, and thought their cellular operator met their expectations. Satisfaction mediates the relationship between user experience and loyalty. Users who had a good experience in terms of functionality, monetary, trustworthiness, and perceived quality would not directly become loyal, since loyalty was achieved after they felt satisfied with their user experience with their cellular operators.

Besides, Switching barriers also affect positively on loyalty. This means that loyalty was increase if switching barriers were high, which happens when users did not find the other operators more attractive, switching from their current operator would cause too many problems, they must take a lot of effort and time to change to the other ones, and it would be too expensive and took a lot of money to switch. Switching barriers mediated the positive relationship between user experience and loyalty. Users who had a good experience in social and monetary would stay loyal, since loyalty was achieved after they realise there are too many switching barriers in terms of monetary. Moreover, it would take a lot of time and effort, including notifying their friends regarding their new cellular number.

Finally, Corporate image moderates the positive relationship among user experience (monetary), switching barriers, and loyalty, meaning that users who perceived value for money based on their experience would be influenced in their response to switching barriers, which is also strengthened by a good corporate image, which subsequently has an impact on loyalty. While, corporate image was not found to moderate the positive relationship among user experience, satisfaction, and loyalty. It indicated that users satisfaction with their cellular operator would be built on their experience, even though there was no moderating role of good corporate image.

The results of this study showed that improvements in user experience dimensions and corporate image can enhance satisfaction, switching barriers, and loyalty. Some dimensions of user experience, on the other hand, were found to have an insignificant influence on these three areas, which should be further investigated. The findings showed that corporate image only moderates on the relationship between monetary (one of the user experience dimensions) and switching barriers, hence its role of as moderator can be separated based on median value by performing multi-group analysis between users who perceived corporate image in the category of high and users who perceived corporate image in the category of low. In addition, the relationships among variables can be moderated by the types of users (namely pre-paid and post-paid) and examining the differences between two groups by multi-group analysis.

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