International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 7, 2020
ISSN: 1475-7192

RELATIONSHIP OF SWITCHING COST TOWARDS SWITCH BARRIER IN TELECOMMUNICATION INDUSTRY IN JAKARTA

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Abstract---*The purpose of this research is to measure the role of switching cost and the switching barriers in the telecommunication industry. The competition in telecommunication industry is very tough that lead service provider to compete against the limited market. One of the way to increase market share is through getting customer from competitor through attractive offering. This is a quantitative research that using questionnaire to collect data. 250 questionnaires but response rate is only 80%. The data analysis indicates that search cost and move in cost is significant towards the switching barrier. Telecommunication industry should consider the result in developing their marketing strategy and promoting their package for postpaid and prepaid services. Service provider in the industry should think of something in order to attract new customer and lock them for a certain numbers of period.*

Keywords---*Switching costs, Switching barriers, Telecommunication industry*

I. Introduction

Telecommunication industry in any part of the world is almost at the maturity stage. Penetration rate reaching 100% and number of competitors increased that lead to fierce competition. In Indonesia there at five main telecommunication company as per the table below. Telkomsel is the giant in telecommunication with almost 200 million. Next to Telkomsel is XL Axiata and Indosat with around 50 million customers. The choice of which service provider depends on customer. They may have perceived that one service provider is better than the other one. The fact is each service provider need to put more effort to reduce the number of customer switch as they have choice with limited switching barriers.

Table 1: Main Telecommunication company in Indonesia

No	Service provider	Type of service provided	Subscribers
1	Telkomsel (Include previous Telkom Flexi network)	GSM-900/1800 (GPRS, EDGE) 2100 MHz UMTS, HSPA+ 900/1800/2100/2300 MHz LTE	196.3
2	XL Axiata (Include previous Axis network)	GSM-900/1800 (GPRS, EDGE) 2100 MHz UMTS, HSPA, DC-HSPA+ 900/1800 MHz LTE	56.61

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3	Indosat Ooredoo (Include previous Indosat, Satelindo and Star-One network)	GSM-900/1800 (GPRS, EDGE) 900/2100 MHz UMTS, HSPA, DC-HSPA+ 900/1800/2100 MHz LTE-A	53.31
4	3	GSM-1800 (GPRS, EDGE) 2100 MHz UMTS, DC-HSPA+ 1800 MHz LTE	38.0
5	Smartfren	850 MHz LTE, 2300 MHz TD-LTE	12.3

Recent survey on customer satisfaction indicates that Telekomsel champion in four categories which are video, speed, upload and latency experience. Smartfren however selected as the best 4G provider by the Indonesian during the survey end of 2019. The ranking indirectly is a message to other customer on which service provider actually offer the best service. It can be used by competitor to improve their service and compete in the healthy manner. The benefits are to customer where they can choose the best to their needs.

II. Literature review

Customer satisfaction

Customer satisfaction according to (Kotler, 2012) is the outcome of the overall customer experience. Satisfaction according to (Kilgour, 2006) is perceived by individual customer and it could vary from one to another. The level of satisfaction according to (Berry, Parasuraman, & Zeithaml, 1985) is subjective. High expectation from customer will lead to dissatisfaction at the end. In the telecommunication industry, customer may very have concerned about the service quality and the overall customer experience (Broetzmann, Kemp, Rossano, & Marwaha, 1995). The high competition in the industry caused more options to customer. Customer started to compare and evaluate the performance of each service provider.

(Maharjan & Khadka.Kabu, 2017) stated that customer will definitely choose the best service provider if they are allowed too. The implementation of Mobile Number Portability (MNP) enables customer to switch easily compared to previous time. (Sutherland, 2007) stated that satisfied customer will remain in the network and have more chance to increase usage. Satisfied customer may later become loyal after certain period of time.

It is important for the service provider to focused on customer satisfaction as each customer representing the dollar sign. In Telecommunication the Average Revenue Per User (ARPU) is very important. Industry will have compared the ARPU from one to another to know which operator have the high usage customer. Satisfied customer will not switch to another service provider. (McCloughan & Lyons, 2006) highlighted that satisfied customer may switch should the switching cost is low. (Liang, Ma, & Qi, 2013) however, highlighted that switching barrier may or may not lead to customer switch. (Mahendrawathi, Astuti, & Nastiti, 2015) highlighted that prepaid customer has lees loyal to the service provider thus have more access to switch compared to postpaid services.

Switching barriers

Telecommunication service is becoming a necessity for almost every people in the world. The penetration rate of mobile services has reached more than 100% in almost everywhere in the world (GSMA Association, 2014). People are not subscribing to only one service provider but more than that for a various reason (Izogo, 2016; Mannan, Mohiuddin, Chowdhury, & Sarker, 2017; Phong, Khoi, & Nhat-Hanh Le, 2018). The number of service provider available induce more choices to customer. (Jung, Qiu, & Kim, 2001; Nakamura & Chow-White, 2013) stated that customer have more bargaining

power compared to before. (Abd-elrahman, Hassan, El-borsaly, & Hafez, 2019; Liang et al., 2013) emphasis that services provided and prices are almost the same across the industry. Due to that situation, service provider highly dependable to customer in order to sustain (Hapsari, Clemes, & Dean, 2016; Octabriyantiningtyas et al., 2019; Shafei & Tabaa, 2016). In many cases, retaining customer is very important. To keep the customer and make them loyal is very challenging. Past research indicates that (M. Shamsudin et al., 2015) it is 20 times more expensive to acquire new customer rather than to keep the current one. As such keeping the current customer by providing the best services according to their demands is very crucial (Hassan & Shamsudin, 2019; Razak & Shamsudin, 2019; Mohd Farid Shamsudin, Esa, & Ali, 2019).

(M. F. Shamsudin, Nurana, Aesya, & Nabi, 2018; M. F. Shamsudin, Shabi, & Salem, 2018) claims that customer have the tendency to influences by the service provider performance before selecting the services. In Indonesia, Telkomsel have the highest market share in the industry but that doesn't good enough in order to sustain in the long term (Rohman & Bohlin, 2014a). Customer may also influence in terms of service provider growth and profitability (GSMA Association, 2014; Jung et al., 2001; Nakamura & Chow-White, 2013). The tough competition in telecommunications create a tense situation where service provider cannot make mistake or service failure as the price of it, if happened is too costly (Mihardjo, Sasmoko, Alamsjah, & Elidjen, 2019).

(Al-mutawkkil, Heshmati, & Hwang, 2009; Mahendrawathi et al., 2015; Rohman & Bohlin, 2014b) agreed that service provider faced tough challenges to keep customer due to intensifying competition. Every day, service provider need to find ways to attract new customer through continuous advertisements, roadshow and gimmick. Such situation according to (Anindito & Sutriadi, 2016; Chumaidiyah, 2012; Minarti & Segoro, 2014; Puspitasari & Ishii, 2016)opened up more choices to customer to select which service provider that can provide them the best services that suit to their needs and wants.

Subscribers according to (M. Shamsudin et al., 2015) is looking for convenience to them. Their bargaining power increased because of the competition (Abd-elrahman et al., 2019; Hapsari et al., 2016; Octabriyantiningtyas et al., 2019; Shafei & Tabaa, 2016). They also have a rapid change of needs and expectations due to the development of technology. Service provider at the same time were forced to accommodate the demand of customer in order to avoid them to switch or churn.

(Moon Koo Kim, Park, Park, Kim, & Kim, 2018; Koo, Yu, & Han, 2020; Minarti & Segoro, 2014; Temerak & El-Manstrly, 2019) stated that customer switch is one of the biggest challenge faced by telecommunication providers. The tendency to switch started to increased when there is more than one service provider. (Moon K. Kim, Park, & Jeong, 2004; H. Lee, Choi, & Koo, 2018; Dong H. Shin & Kim, 2007; Dong Hee Shin & Kim, 2008) stated that the introducing of Mobile Number Portability (MNP) have given the customer another opportunity to switch from one to another without losing the mobile number. (Dong Hee Shin, 2007; Gerpott, Rams, & Schindler, 2001; J. Lee, Kim, Lee, & Park, 2006; Maicas, Polo, & Javier Sese, 2009; Dong H. Shin & Kim, 2007; Dong Hee Shin & Kim, 2008) stated that before the MNP customer willing to stay with the service provider because they afraid that changing the service provider may cause them a lot of problems due to new mobile numbers. Customer reluctant to loss their communication contact number especially those who involved in business since changing mobile numbers may cause them trouble in communicating and informing about the changes. MNP allowed customer to change service provider with the same mobile number. (Calvo-Porral, Faíña-Medín, & Nieto-Mengotti, 2017; Stenbacka & Takalo, 2019; Tesfom, Birch, & Culver, 2016) claimed that customer may switched to other service provider without even other people know that they have changed the service provider.

Today the switching barriers is almost not available (Ramsaran-Fowdar, 2013; Dong H. Shin & Kim, 2007; Vasudevan, Gaur, & Shinde, 2006). Switching barriers according to (Han, Back, & Barrett, 2009; Moon K. Kim et al., 2004; Yang, 2014) is the factor that may stop or discourage customer from changing service providers. Customer reluctant to switch because

they don't want to face the hassle or problems due to their decision to change or switch service provider. (Balabanis, Reynolds, & Simintiras, 2006; Li, 2018; Ndebele, Marsh, & Scarpa, 2019) claimed that customer today may change as many times as they wish and select the service providers that may offer them the best services according to their needs as the customer wish.

(Han et al., 2009; Moon K. Kim et al., 2004; Valenzuela, 2010; Yang, 2014) indicates that there are at least two categories of switching barriers which are switching cost and attractiveness of alternatives. The rapid development in technology (Y. W. Chang, Hsu, Huang, & Chen, 2019; Chuah, Rauschnabel, Tseng, & Ramayah, 2018; Tesfom et al., 2016) and fast changing in customer trends (Anouze & Alamro, 2019; Hauff, 2019; Dong H. Shin & Kim, 2007; Sultan, 2019), preferences and needs have forced service provider to follow the market trend in order to sustain and survive (Chuah et al., 2018; Hino, 2017; Koo et al., 2020; Minarti & Segoro, 2014). Service provider in 21st century have altered their business model not only according to customer needs but can be considered as the challenge in meeting the demands while at the same time maintaining the profit and growth level.

One of the way to curb the switching pattern is by introducing the contract services. Customer is offered with attractive packages consist of lower price value added services and bundled with other services such as free phone or easy payment scheme. In returns to that services, customer need to stay with the service provider for at least 24 months or depends on the options given. During the contract period, customer is not allowed to switch or need to pay high early termination cost.

Switching costs

According to (Qiu, Ye, Bai, & Wang, 2015) there are three categories of switching cost. The switching cost consist of procedural switching cost (risk cost, evaluation cost, learning cost, setup cost), financial switching cost (Benefit loss cost, monetary loss cost) and relational switching cost (personal relationship loss cost, brand relationship loss cost). All cost mentioned by (M. Shamsudin et al., 2015) is related to the cost that customer may need to faced when they decided to change, churn or switch to any other service provider.

Procedural cost is related to the risk cost that customer may need to face because of their decision to change service provider. The risk could be in terms of performance, service delivery and quality. Changing from one service provider to another involved such risk as customer may have no experiences dealing or subscribed to the services. There is also evaluation cost that customer need to faced. The challenged that customer need to go through in order to compare and study the strength and weakness of one to another.

(Hino, 2017; Moon Koo Kim et al., 2018; Minarti & Segoro, 2014) highlighted on the loss cost due to switching from one service provider to another. The loss cost can be derived from the penalty imposed due to the commitments under contract that the customer agreed during subscription. (Parry & Sarma, 2019) claimed that service provider will imposed certain amount of penalty for early termination. (Koo et al., 2020) stated that the penalty could be one of the measurement used by the service provider to lock the customer over certain of period. Customer who decided to switch during the contract terms may have to pay high cost of switching cost. (Liu, Guo, & Lee, 2011) most of the contracts subscription is from a postpaid service where customer agreed to subscribed for certain packages where they will have enjoyed certain benefits such as free phones or valued added services (Wu, Vassileva, & Zhao, 2017). The decision to switch or not is depends on the willingness of customer to absorb the cost.

Past research (Kenski & Stroud, 2006; Octabriyantiningtyas et al., 2019; Özer, Argan, & Argan, 2013) highlighted the effect of adaptation cost when customer decided to switch from one service provider to another. Adaptation cost in the context of telecommunication subscription is the cost that the customer need to pay due to change of devices or anything

related to the things that can enable the customer to enjoyed the services. The different type of service for example may lead customer to invest on another set of equipment's. (Giovanis, Zondiros, & Tomaras, 2014) stated that adaptation cost mainly related to change of equipment or devices that cannot be used due to the switch decision. The adaptation cost could be low or high depends on the new requirements of the new service providers. (Cen & Li, 2019; Li, 2018; Patterson & Smith, 2003) stated that there is service provider that only allowed certain devices to be used for their network. Some devices are exclusive to certain service provider only (Wang, Ou, & Chen, 2019).

According to (Thompson & Tuzovic, 2019) customer need to consider search cost before making decision to switch. Search cost is the amount of effort that the customer need to spend in searching the right product and services. In the case of telecommunication industry, the search cost is the effort of the customer to compare and seek the information before deciding to switch (Abd-elrahman et al., 2019; Hapsari et al., 2016). The search cost is also take into the consideration on time taken to complete the search (Santouridis & Trivellas, 2010). Customer could spend more time doing the search, price comparison, features and benefits. (Tesfom et al., 2016) highlighted that the search cost could include the mental effort undertaken by the customer during their process to gather information.

Another important search cost dimension that highlighted by (Sharma & Sharma, 2019) is the move in cost. The customer may need to invest in term of registration fees or any other equipment before they can proceed with the switch intention. Such thing could lead to a great challenge and barrier but according to (Calvo-Porral et al., 2017; Y. H. Chang & Chen, 2007; Lunn & Lyons, 2018) customer do switch although the move in cost is high. The move in cost is not subsidized by the service provider unless the customer select the contract options such as 24 months' contract for a certain amount of subscription fees with free phone. There are many ways that service provider tries to attract customer to avoid the move in cost (Basaure, Vesselkov, & Töyli, 2019). The move in cost is clearly a barrier for switching (Mutum, Mohd Ghazali, Nguyen, & Arnott, 2014).

III. Methodology

Data was collected using a set of questionnaire in order to measure the relationship between the variables. Two sets questionnaire was used in a different language. Respondent can choose to respond in English or Bahasa Indonesia. The translation was made by a professional translator and tested during the pilot test. Prior to the pilot test, the questionnaire was sent to 3 marketing experts from selected marketing and management faculty. Result from the face validation lead to some minor changes on sentences and used of vocabulary. This research targeted mobile service customer. 250 questionnaires were distributed and only 201 returns with a complete data. The result of indicates only 80% response rate. Self-administered survey method used and distributed within the selected service provider office in various location in major city. All questions were adapted from past research related to similar topic areas. Five-point Likert scale was used to measure all the items with 1= Strongly disagree and 5 = strongly agree.

IV. Data analysis and results

Table 2 below indicates the result of mean and standard deviation of the survey. Mean of each variables is as per stated in the table.

Table 2: Mean and standard deviation

Variable	Mean	SD
Loss Cost	3.27	0.72

Adaptation cost	3.52	0.73
Search cost	3.64	0.77
Move-in cost	3.12	0.86
Switching barriers	3.74	0.74
Customer satisfaction	3.61	0.71

Table 3 is the result of correlation analysis. From the result we can concluded that search cost and move in cost is highly related to switching barriers. Loss cost and adaptation cost is not significant based on the result. Another important result is the relationship between switching barrier towards customer satisfaction that was found significant.

Table 3: Correlation analysis

Independent variable	Dependent variable	Pearson correlation	Sig.
Loss Cost	Switching barriers	0.159	0.268
Adaptation cost	Switching barriers	0.166	0.023
Search cost	Switching barriers	0.316**	0.000
Move-in cost	Switching barriers	0.424**	0.000
Switching barriers	Customer satisfaction	0.414**	0.000

Note: **Correlation is significant at the 0.01 level (two-tailed)

Stepwise linear regression analysis was performed to test the relationship between variables of the study. The results are shown in Tables 4 and 5.

Table 4: Result of linear regression analysis

Dependent varia3ble	Variables	Adjusted R2	Standard β	*t*	Significance
Customer Satisfaction	Switching barriers	0.788	0.211	5.621	0.000
Switching barriers	Loss Cost	0.267	0.145	1.639	0.071
	Adaptation cost		0.026	0.479	0.741
	Search cost		0.325	4.366	0.000
	Move-in cost		0.175	2.961	0.001

Table 5: Analysis of variance for the regression models

	Sum of squares	df	Mean square	*F*	Sig.
Customer Satisfaction					
Regression	47.577	4	11.317	41.667	0.000
Residual	42.879	146	0.265		
Total	90.456	150			
Switching barriers					

Regression	23.105	4	9.165	273.111	0.000
Residual	66.342	147	0.485		
Total	89.447	151			

The result of stepwise linear regression indicates that search cost and move in cost is directly affecting the switching barriers with significant effect. The result also indicates that there is a significant relationship between customer satisfaction and switching barriers.

V. Discussion and conclusion

The result indicates that search cost and move in cost is among the two factors that customer give priority before making decision to switch. The search cost although seems easy at the edge of digital but may cause customer much effort in determining which service provider is actually giving the best service that can lead to customer satisfaction. At any point of time customer will not to chose any investment method before deciding to switch. The move in cost can be the effective barrier as customer do not want to burden themselves with additional cost in dollars before they are able to switch.

Service provider should have focused on the elements of switch cost and switch barrier. They may decide on a special package that may stop customer to switch unless it is due to concrete reason. Most of the service provider offered equivalent level of service quality but the difference can be derived from the area of coverage and the way service provider communicate and keep in touch with their customer for retention purposes.

The result can be used by the service provider to manage their future subscription plan so that they know what exactly stop or encourage customer from switch.

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