Customer Churn Analysis: Analyzing Customer Churn Determinants on an ISP Company in Indonesia

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ARTICLE INFORMATION

Received on 2 August 2021
Revised on 9 September 2021
Accepted on 11 September 2021

Keywords*:*
Customer churn
Internet Service Providers (ISP)
Churn determinants
Indonesia

A B S T R A C T

The growth of Internet Service Providers (ISP) in Indonesia has led Indonesia to be one of the world's fastest-growing telecommunications markets. This condition derives a number of internet service providers pushing the Indonesian market massively. One of them is HELOSEL (pseudonym). The intense competition among ISP companies creates a customer churn trend, one of the most pressing challenges in today's fast-paced and challenging telecom industry. The trend of customer churning in HELOSEL is increasing each month during the year 2020, with the average churn rate of each month was 6,48%. Hence, this research intends to analyze the Customer Churn determinants in HELOSEL, the relationship between each determinant, and its effect on HELOSEL. The determinants including *Service Quality*, *Switching Cost*, *Customer Satisfaction*, *Customer Loyalty*, and *Customer Churn*. This research used descriptive analysis and path analysis to analyze the data that obtained from 387 respondents of HELOSEL customer using convenience sampling. The results show that *Service Quality* and *Switching Cost* have no direct relationship to *Customer Churn*, which makes the *Customer Churn* only influence 47% by other variables. On the other hand, *Customer Loyalty* value is influenced 72.6% by *Service Quality*, *Switching Cost*, and *Customer Satisfactio*n variables.

1. Introduction

The growth of internet service providers in Indonesia has led Indonesia to be one of the world's fastest-growing telecommunications markets. This phenomenon is supported by the fact of extreme growth of technology that allowing people to do done all activities online. Therefore, the urge of using the Internet also thriving as people use internet on daily basis. The demand for the Internet is also increasing. This is proven by data collected by *Asosisasi Penyelenggara Jasa Internet Indonesia (APJII)*. APJII survey results on penetration and behavior of internet users in Indonesia 2019-2020 in Q2 recorded a total of 196.7 million internet users in Indonesia with 8.9% increase from last year. Those conditions emerge the great opportunity for internet service provider companies to grow rapidly in Indonesia. As a result, internet providers' fixed and mobile networks are seeing considerable traffic growth, necessitating increased network capacity investment (Gaivoronski, Nesse, & Erdal, 2017). This condition derives a number of Internet Service Providers pushing the Indonesian market massively, including HELOSEL. As a result, the competition in the ISP company in Indonesia is tighter and created the trend of churn. In most major mobile telecommunications service providers, the annual churn rate varies between 20% and 40% (Ahn, Han, & Lee, 2006). Customer churn is one of the most pressing challenges in today's fast-paced and challenging telecom industry. Due to the high cost of attracting new subscribers, the telecom industry's emphasis has turned to maintain existing customers (Amin, et al., 2017).

Accordingly, customer churn is the probem that many ISP companies in Indonesia faced due to the intense competition between internet service provider companies in Indonesia. Many internets service provider companies try to make new development of technology and alluring packaging with a competitive price causing the customer to sway from their current providers. In addition to the churning problem in the telecommunication industry, HELOSEL, as one of the biggest players in internet service providers in Indonesia, faced a similar condition. The trend of customer churn in HELOSEL is increasing, as shown in

figure 1 below. Based on HELOSEL's internal data, it is shown that the trend of churning of HELOSEL's customers is increasing from month to month during the year 2020. In March, the number of customers churning is rapidly growing through the year. It can be caused by the pandemic that requires to do their activity at home and consequently need and search the company that provides the internet that has better quality.

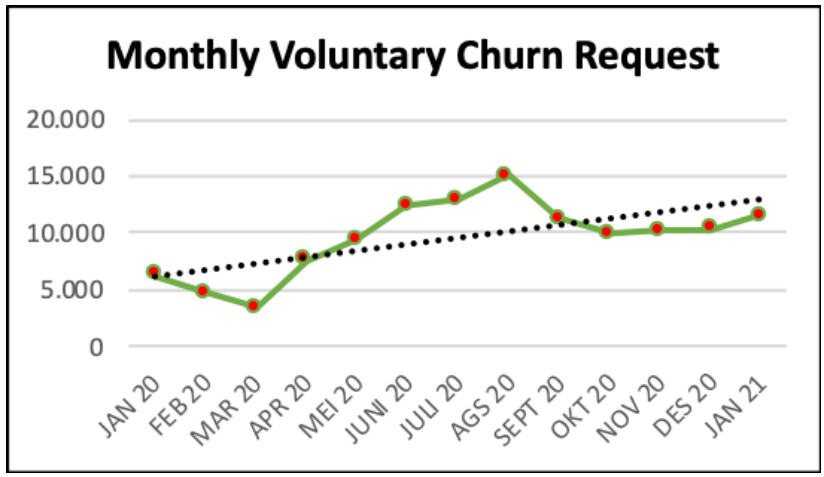

Figure 1. Monthly churn request of HELOSEL Company in 2020 (HELOSEL internal data, 2020)

Customer churn optimization is a big challenge for multinational telecommunications service providers, and it is becoming more of an issue as the industry matures (Ahn, Han, & Lee, 2006). Customer churn caused a negative effect on the company, as the company kept losing a number of customers as well as losing a significant pricing premium, possibly losing referrals from existing clients, and lead to decreasing profit margins. Hence, it is important to retain their existing customers as keeping loyal customers leads to increased revenue and lower marketing costs compared to the potential new customers (Ahn, Han, & Lee, 2006; Amin, et al., 2017). According to the HELOSEL internal data during 2020, the average churn rate of each month is 6,48%. To retain HELOSEL's customers, the company needs to know what kind of factors that could possibly affect the customer from churning. The importance of finding the customer churn determinants helps HELOSEL to create a preventive strategy to decrease the number of customer churn and increase customer loyalty toward HELOSEL.

Previous research has primarily focused on identifying a few specific factors related to customer churn (e.g., customer dissatisfaction, customer loyalty, etc.) rather than investigating and empirically testing a comprehensive model encompassing relationships between various constructs such as customer dissatisfaction, switching costs, service usage, and other customer-related variables (Ahn, Han, & Lee, 2006). In addition, according to van der Wal, Pampallis, & Bond (2002), marketers realized that in order sustain the competitive advantage that the company already has, quality product is not enough. Finding the customer churn determinants can be a guidance for the company to know what type of customer that most likely to churn. This research intends to analyze the customer churn determinants in HELOSEL, the relationship between each determinant, and its effect on HELOSEL. Hence, the initial goal of this study is to create a complete churn model and empirically test it using HELOSEL data and to test if there are significant relationships between each of customer churn determinants in HELOSEL.

2. Literature Review

This study used and adapted the customer churn model from several previous studies. This study outlines four key constructs that are thought to influence customer churn which the dependent variable are Customer Churn, Customer Loyalty, Switching Cost, and Customer Satisfaction. The independent variables are Service Quality and Switching Cost.

2.1. Customer Churn Determinants

Customer attrition, switching, turnover, customer loss, or defection are all terms used to describe churn. The loss of consumers transferring from one operator to another is referred to as churn. Customers leave their present mobile providers searching for better offers, or negotiate with them for better rates, and are otherwise threatened with their subscription being terminated (Uner, Guven , & Cavusgil, 2020). Companies need to thoroughly understand a customer's behavioral churn route and the variables that influence customer churn in order to manage customer churn properly; yet, these issues have not been thoroughly addressed in the literature (Ahn, Han, & Lee, 2006).

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2.2. ISP's Service Quality Dimension

Service quality refers to the degree and direction of divergence between customer preferences and expectations (Parasuraman, Zeithaml, & Berry, 1988). Parasuraman et al. (1988) created the SERVQUAL model to assess service efficiency, which includes five dimensions: tangible, responsiveness, efficiency, consistency, and empathy (Kuo, Wu, & Deng, 2009). However, according to previous research, customers' perceptions of stable and strong network quality, a ready-to-serve customer support team, informative website support, and a high level of security and privacy that customers trust are all factors in determining overall service quality in the telecommunications industry (Quach , Thaichon, & Jebarajakirthy, 2016).

The earlier study (Kim, Park, & Jeong, 2004; Gerpott, Rams, & Schindler, 2001) measures the service quality based on call quality, pricing structure, mobile devices, value-added services, convenience in procedures, and customer support in the mobile telecommunication services industry. Furthermore, when customers encounter issues with high-tech internet services, they frequently seek assistance and support from technical and customer care personnel. As a result, in order to fulfill their productivity targets and provide exceptional customer support, customer service teams are always under pressure to do their task efficiently, predictably, and according to established norms (Quach , Thaichon, & Jebarajakirthy, 2016). Based on the previous research, this research will derive the service quality as the variable to predict customer churn in HELOSEL. The measurement for ISP is similar to mobile telecommunication services. The service quality measurement used in this research including network quality, customer service, and price.

2.3. Switching Cost

Lee, et al. (2001) defined switching costs as the cost that incurs when customers decide to change their providers. Switching costs are the reasons that serve as roadblocks to consumers' ability to openly transfer service providers (Ahn, Han, & Lee, 2006). Based on Kim, et al. (2004), the switching cost including the cost of time, money, physiological cost, loss of performance-related, social when switching brand.

In the ISP, the example of the switching cost that might occur is the availability of other ISPs. If customers want to change their ISP, they might consider the availability of other ISP in their area because in Indonesia, the distribution of ISP is still limited. Hence, if the customers decide to switch to another ISP, they will lose the cost of owning an ISP. As a result, the stronger the switching hurdle, the more likely a customer is to stay with their current carrier (Kim, Park, & Jeong, 2004).

2.4. Customer Satisfaction

Customer satisfaction is the consumer's fulfillment reaction, the degree to which the extent of fulfillment is good or unpleasant (Oliver, 1997, p. 28). Nevertheless, the company still pays little attention to its counterpart, namely customer dissatisfaction. This could be one of the reasons for the customer switching. When the company only focuses on improving customer satisfaction, they ignore the fact that that customer

satisfaction and dissatisfaction are two sides of the same coin. Accordingly, evidence of high customer satisfaction has been equated to evidence of low customer dissatisfaction (Chen, Lu, Gupta, & Xiaolin, 2014).

The previous studies present the variables that affect the customer satisfaction/dissatisfaction in the mobile communication services market which network quality and call quality are the key drivers (Gerpott, Rams, & Schindler, 2001; Lee, Lee, & Feick, 2001; Kim & Yoon, 2004; Kim, Park, & Jeong, 2004; Ahn, Han, & Lee, 2006). In the ISP, the variable of customer satisfacation/dissatisfaction can include the assessement of the overall service that was given by HELOSEL in accordance with Gerpott, et al. (2004).

2.5. Customer Loyalty

A customer's absolute attachment or dedication to a service provider is referred to as customer loyalty (Oliver, 1999; Lim, Widdows, & Park, 2006). Kim, et al. (2004) adopted the integrated theory of customer loyalty as it is a combination of favorable customer attitude and the behavior of repurchase. The favorable attitude covers psychological attachment, favoritism, and a positive attitude toward a product or service; meanwhile the behaviour of repurchase includs the frequency of purchase and possibility of purchase. According to Kim, et al. (2004), customer loyalty is particularly crucial in the case of Korean mobile telecommunication providers, given the rising customer churn rate as the industry matures. Therefore, the use of the customer loyalty variable in determining customer churn in Internet Service Provider (ISP) is important.

In the telecommunication industry, it is a common case when a loyal customers prefer to stick with their current service provider and recommend their service provider to their relatives or friends (Chen, Lu, Gupta, & Xiaolin, 2014). It goes the same with the case of Internet Service Providers (ISP). Customer loyalty in this research is defined as the degree to which customers refer an ISP to other customers and patronize the ISP on a regular basis (Chen, Lu, Gupta, & Xiaolin, 2014).

2.6. Proposed Model and Hypothesis Development

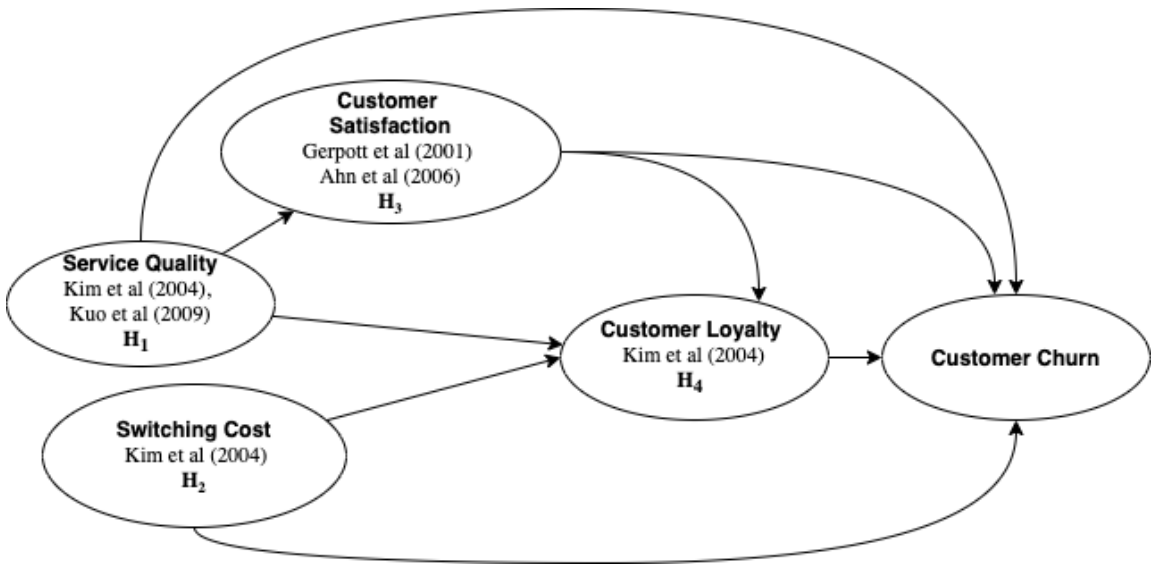

Figure 2. Conceptual model for customer churn determinats in HELOSEL

Ahn, et al. (2006) explained that it is important to investigate and empirically to test a robust model that includes relationships between different constructs of customer churn rather than finding specific factors related to the customer churn. Ahn, et al. (2006) present four customer churn determinants as well as the mediation effects of customer status that indirectly affect customer churn. They construct a conceptual model for customer churn with mediation effects from four determinants: customer dissatisfaction, switching cost, service usage, and customer status. This research use five variables in determining customer churn factors, including Service Quality, Switching Cost, Customer Satisfaction, Customer Loyalty, and Customer Churn.

Kim, et al. (2004) present that customer loyalty of customer satisfaction and switching barriers contributed to the factors in the Korean mobile explained that service quality positively influences customer satisfaction. Based on the previous research, service quality (network quality, customer support, and price) are significant factors of customer loyalty and determine customer churn (Quach , Thaichon, & Jebarajakirthy, 2016; Gerpott, Rams, & Schindler, 2001). In addition, Kim, et al. (2004) present that switching cost and loyalty are closely related with the customer churn determinants. Moreover, customer satisfaction is a precondition for customer loyalty, reducing customer churn and increasing retention, making it a significant driver of customer loyalty (Kim, Park, & Jeong, 2004). In the previous research, customer satisfaction is related to the consumers' own views of service quality or they define the service quality as the customers' satisfaction or dissatisfaction with the service as a result of their purchase and use of the service in their study (Kim, Park, & Jeong, 2004). This research developed 8 hypotheses, as shown below.

H1a. Service Quality is negatively associated with Customer Churn.
H1b. Service Quality is positively associated with Customer Loyalty.
H1c. Service Quality is positively associated with Customer Satisfaction.
H2a. Switching Cost is negatively associated with Customer Churn.
H2b. Switching Cost is positively associated with Customer Loyalty.
H3a. Customer Satisfaction is negatively associated with Customer Churn.
H3b. Customer Satisfaction is positively associated with Customer Loyalty.
H4. Customer Loyalty is negatively associated with Customer Churn.

3. Method

Correspondent to this research, quantitative is chosen considering this research uses a computational technique to analyze the data. Quantitative methodologies are used in business analysis to assess customer behavior, awareness, beliefs, and attitudes using quantitative data (Cooper & Schindler, 2013, p. 146). Following the quantitative design, this research uses descriptive and causal-comparative research in quantitative research design. Descriptive research aims to determine and characterize the features of the variables of interest in a situation (Sekaran and Bougie, 2010:105). In addition, causal-comparative research attempts to find cause-and-effect connections between the factors.

The object of this research is one of Internet Service Providers company in Indonesia namely HELOSEL (pseudonym). The population in this research are HELOSEL's customers who subscribe to HELOSEL regardless of whether they are active or non-active subscribers. Due to the limitation of resources and time constraints, not all of the population of HELOSEL's customer users data will be collected. Hence, this research will only use the sampe of the population using a cohran formulation that got 385 as the required sample size. This study uses a non-probability sampling technique when the elements in the population do not have any probabilities connected to their selection as sample subjects. The non-probability sampling method used is convenience sampling, which refers to gathering data from individuals of the population who are readily available to do so (Sekaran & Bougie, 2016, p. 247).

To ensure that the questionnaire was valid and reliable, the author included screening questions at the beginning of the questionnaire. Conducting a pilot test are some of the stages involved in creating effective questionnaire items. To begin, the author used and changed questionnaire questions from prior studies, including Lee et al. (2001); Gerpott et al. (2001); Kim et al. (2004); Ahn et al. (2006); Lim et al. (2006); Kuo et al. (2009); Quanch et al. (2016), that had been published in respectable international publications to undertake content validity testing. The pilot study is conducted to ensure that the items meet the construct validity and reliability requirements. Data from 30 respondents were utilized in the pilot test, which was analyzed using SPSS 24 software. The author utilized the Total Corrected Item Total Correlation (CITC) technique to conduct the validity test. It is suggested that the correlation coefficient be greater than 0.3. (Sugiyono, 2018). From the validity testing, the overall score of all items is greater than 0.3. Thus the items are considered valid. After the validity testing, reliability testing is utilized. Cronbach's Alpha is the most

frequently used technique for determining item dependability (Indrawati, 2015). Variables with a Cronbach's Alpha greater than 0.60 are considered trustworthy, according to Zikmund et al. (2009). The pilot study shows the reliability test has a score greater than 0.60. Hence the items are valid and reliable. The valid item scores are shown in Table 1.

Table 1. Questionnaire Items

Variable	Item	Code
Service Quality (SQ)	I do not experience any disconnection from this ISP	SQ1
	The Internet uploading speed meet my expectations	SQ2
	The Internet downloading speed meet my expectations	SQ3
	HELOSEL Internet speed does not decrease regardless of times of busy usage	SQ4
	When any problem occurs, the telecom company can instantly cope with it	SQ5
	Customer service has many channels to complaints	SQ6
	Customer service personnel are knowledgeable	SQ7
	The price given is proportional to the overall quality provided as well (Network quality, CS quality, TV Box quality, etc.)	SQ8
	The price of the HELOSEL Package is affordable and economical based on the benefits/services provided in each package	SQ9
	HELOSEL often provides attractive price promotions for me which makes me subscribe to HELOSEL	SQ10
	HELOSEL has package prices that vary from the cheapest to the most expensive so that I have the convenience of choosing a HELOSEL service package	SQ11
Switching Cost (SC)	In general, it would be a hassle to change ISP	SC1
	For me, the costs in time to switch ISP are high	SC2
	For me, the costs in money to switch ISP are high.	SC3
	For me, the costs in the effort to switch ISP are high.	SC4
Customer Satisfaction (CS)	Overall I am satisfied with my decision to contract (or use) the services of my ISP	CS1
	Overall I am satisfied with the customer service that was given by my ISP	CS2
	My choice to contract my ISP was a wise one	CS3
Customer Loyalty (CL)	I consider myself to be a loyal patron of this ISP	CL1
	I would recommend this ISP to someone who seeks my advice	CL2
	I would say positive things about this ISP to other people	CL3
	I would continue to do business with my ISP if its prices increase somewhat	CL4
Customer Churn (CC)	In the future, do you intent to switch ISP?	CC1
	I'm interested in other ISP's offerings and qualities	CC2
	I feel that the service or benefit from HELOSEL now doesn't match my needs and desires	CC3
	I feel that I am no longer interested in the HELOSEL service method and want to change to another internet method (example: internet from a cellphone, portable modem, etc.)	CC4
	I find it easy to be persuaded by promotions from other ISPs	CC5

Source: Modified from Lee et al (2001); Gerpott et al (2001); Kim et al (2004); Ahn et al (2006); Lim et al (2006); Kuo et al (2009); Quanch et al (2016)

The data for this study is collected online using Google Forms and distributed through instant messaging systems, social media, researcher's friends utilizing a quantitative method. The location of this research is in Indonesia, where HELOSEL conducted the business. The data collection period was from June 2nd, 2021, to June 15th, 2021. This research is able to collect 387 respondents.

The data from the questionnaire is then analyzed. The questionnaire contains questions about the variable that might lead to customer churn. Each variable has a sub-indicator that uses the 5-Likert-scale

ranging from 1, which means "Strongly Disagree," to 5, which means "Strongly Agree". This research will assess five variables, including *Service Quality* with price, customer support, and network quality dimension, *Customer Satisfaction*, *Customer Loyalty*, and *Customer Churn.* The dependent variables are Customer Satisfaction, Customer Loyalty, Customer Churn. For the independent variables, the variables are Service Quality and Switching Cost. The data is then analysed using descriptive analysis.

In addition, path analysis is used to analyze the relationship between the dependent and independent variables that present in this research. Path analysis is a statistical method that allows users to look at effect patterns in a system of variables. In HELOSEL, this path analysis is used to look at the link between service quality, switching costs, customer satisfaction, and customer loyalty as it relates to customer churn. Path analysis combines several regression analyses with an overall assessment of the chi-square statistic (Singh & Wilkes, 1996). The path analysis was analyzed using the Smart PLS 3.3.3 application.

In figure 3 below, it is explained the research flow to conduct this study which started from problem identification. Then this research analyzes its research objectives, followed by the conceptual framework and hypothesis development. After that, this research developed the questionnaire continued to the data collection for the pilot study, which required 30 people. Then the pilot study is analyzed. If the data not is valid and not reliable, the stage return to the questionnaire development. In contrast, if the data is valid and reliable, then continue to collect the data then processand analyze the data using descriptive and path analysis. The final stage is the conclusion and suggestion.

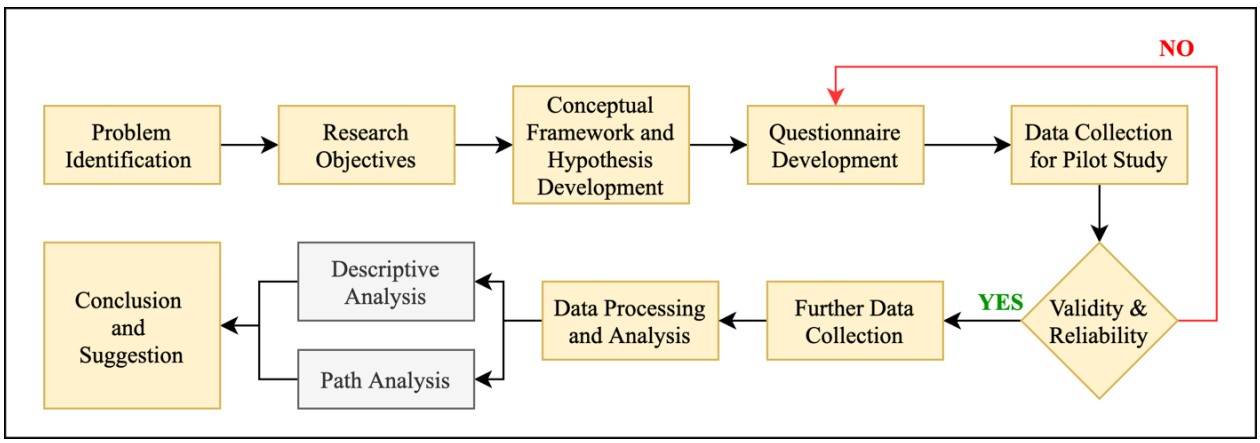

Figure 3. Research flow (created by author, 2021)

4. Result and Discussion

After spreading the questionnaire, this research obtained the respondents' profile and habits. The result shows that the respondents' gender is not dominated by one gender. The gender distribution is almost the same, with 56.30% male and 43.75% female. HELOSEL's customer is dominated by age around 16-25 years old, contributing 41.1% out of all respondents. HELOSEL's costumers' residents are dominated by six major provinces, namely West Java, Jabodetabek, East Java, Central Java, Sulawesi and Sumatra. This shows that HELOSEL has a wide coverage of the network as their customer is scattered throughout Indonesia. The customers' occupation is mainly an employee, with a monthly income between 5 million rupiah and 10 million rupiah. HALOSEL's customers mostly spend around 300 thousand rupiahs until under 500 thousand rupiahs in a month for the HALOSEL packages. The next step is to analyze the data using descriptive analysis to know the assesment of HELOSEL's customers towards the factors contributing to customer churn.

The consumer's assessment of HELOSEL's service quality was deemed adequate. It indicates that HELOSEL considers the service provided by HELOSEL to be neither satisfactory nor disappointing. This study's Service Quality Assessment has three dimensions: network quality, customer support, and price. The low score generated by the network quality dimension comes from SN1 item code that stated, "I do not experience any disconnection from this ISP". It can be indicated that the HELOSEL's consumers experience

the network disconnection caused by the company. The highest score is generated by SS7 item code, in which the costumers feel that customer service personnel are knowledgeable. It means that the consumer feels that the customer service personnel have good knowledge related products or service and the solution on how to handle an issue.

Switching Cost variable assessment generates a high score. It can be indicated that the respondents feel that if they switch to another ISPs, it will generate a high switching costs. The highest score comes from item SC1, which would be a hassle to changing ISP. This means the consumers prefer to stay with their current ISP because it is too troublesome to change an ISP. On the other hand, lowest score comes from the SC3 items, in which they feel the cost in money to switch an ISP is high. It means that if the consumer wants to change an ISP, money is the least factor that they would think about. They will consider other factors such as time and effort if they wish to change an ISP.

Customer satisfaction was rated as high by HELOSEL customers. It indicates that they are pleased with HELOSEL in terms of service, ISP selection, and other factors. Furthermore, the lowest score is 72.7% in the CS1 item code, indicating that they are pleased with their decision to use HELOSEL as their ISP. CS3 had the highest score, 73.59%, indicating that their selection to use HELOSEL as their ISP was sensible.

Customer Loyalty assessment is categorized as high. It means that the respondents feel that they are loyal customers of HELOSEL. They wish to use HELOSEL even if HELOSEL price increases, and they would say positive things about HELOSEL to other people. The lowest score is generated by SC4 item, in which they would do business with their current ISP (in this case is HELOSEL) even the price increases by 62.84%. The highest score in the customer loyalty, as shown in the green one, is generated by SC1 item which they consider to be the loyal patron of HELOSEL with 76.02%.

Customer Churn assessment is categorized as enough. It means that the tendency of HELOSEL's customers from churning is most likely to happen. The highest item score generated by CC2 item code, which they are interested to other ISPs offerings and qualities with 65,63%. The lowest score is generated by CC5 item code, indicating that they would be easily persuaded by promotion of other ISPs with 52.23%. Therefore, it can be concluded that the consumer of HELOSEL is interested in other companies' promotion and products offerings. which they are likely to consider switching to other ISP companies.

After knowing the consumer's assessment of the customer churn determinants model, this research analyzes the path analysis. To establish the measurement's fitness of the model, there are two different testing models conducted in this research, namely outer and inner model. The outer model is used to analyze the validity and reliability or see how well the indicators can explain the hidden variable. Average Variance Extracted (AVE) is used to test the validity of the indicators. Then the reliability test is conducted using the Internal Consistency Reliability Test, which consists of Cronbaach's Alpha (CA) and Composite Reliability (CR). According to Indrawati (2015), the AVE value for a decent model must be more than 0.5. In addition, the CA Coefficient of at least 0.7 or higher indicates that the questionnaire is reliable. Moreover, a variable can be said to fulfill CR if the CR value is ≥ 0.7. A good CR implies that the construct indicators are combined and measure the construct properly. Hence Table below shows the AVE, CA, and CR of this research.

Table 2. AVE, CA, and CR scores

Variable	AVE	CA	CR
Service Quality	0.509	0.902	0.919
Switching Cost	0.766	0.898	0.929
Customer Satisfaction	0.751	0.887	0.923
Customer Loyalty	0.846	0.909	0.943
Customer Churn	0.688	0.887	0.916

Source: Author (2021)

From the table, the AVE scores of each variable that is used in this study are all above 0.5, which indicate all variable are valid. For the CA and CR, it can be seen that all the variables generate a score higher than 0.7, ranging from 0.887 until 0.943, which fulfil the criteria of CA and CR. Based on the validity and reliability tests that were conducted, it was determined that all of the indicators and variables in this study are valid and reliable. As a consequence, the data may be used to serve an outer model.

After obtaining the outer model, the inner model is conducted. Inner model is used to test the significance of each latent variable to another latent variable. This research calculates the p-values in order to answer the hypothesis testing in this research. In this study, the value of *t*-Value and the value of *p*-Values were used to test hypotheses. This research use a significance level of 5%. The research hypothesis can be accepted if the *p*-Values < 0.05 *t*-value > *t* table (1,960) as the results show in table 3 below.

Table 3. Hypothesis Testing

Variable	Path Coeffienct	*t* Values	*p* Values	Outcomes
SQ → CC	0.086	1.398	0.113	H1 Rejected
SQ → CL	0.269	5.549	0.000	H1 Accepted
SQ → CS	0.574	39.815	0.000	H1 Accepted
SC → CC	0.043	1.130	0.180	H1 Rejected
SC → CL	0.089	2.884	0.004	H1 Accepted
CS → CC	-0.375	3.971	0.000	H1 Accepted
CS → CL	0.328	6.709	0.000	H1 Accepted
CL → CC	-0.465	6.951	0.000	H1 Accepted

Source: Author (2021)

According to the path coefficient, *t*-Value, and *p*-Values on the table indicate that Service Quality (SQ) has a positive influence on Customer Loyalty (CL) and Customer Satisfaction (CS). It can be implied that if the service quality that the HELOSEL provides is good in the customer prespectives, the customer will satisfied and it will increse their loyalty toward HELOSEL. In addition, Switching Cost (SC) have a positive influence on Customer Loyalty (CL). It is indicated that if the switching barriers faced by a customer when they decide to switch brand is high, they will cosider to stay with their current brand and becoming loyal. From the table, Customer Satisfaction (CS) is positivly associated with Customer Loyalty (CL). It is indicated that the higher number of customer that satisfied it will increase the customer loyalty in HELOSEL.

Moreover, CS and CL are negatively associated with CC. It means that if the number of customer satisfaction is high, the least likely that customers will churn. The same goes with customer loyalty. The higher number of customer loyalty generated by customers, the customer is not likely to churn. In contrast, there are 2 hypotheses that are rejected, in which SQ and SC are negatively associated with CC. A further investigation is taken to analyze the situation, using the former customer of HELOSEL.

For the SQ that have no relationship with CC case, customers feel that the service quality that HELOSEL provide is actually good. From the churn model and hypothesis, SQ positively affect the CS and CL. It implies that if the SQ provided by HELOSEL is good, the customer will satisfied and derive them to become loyal. A good service quality does not necessarily negatively impact the CC because the SQ given must be in line with the CS and CL. Therefore, there is no direct relationship between SQ and CC. From a further investigation by interviewing the former of HELOSEL's customer that experience of churning from HELOSEL to another ISP. From their testimonials, they feel like HELOSEL's service quality is quite good. But they feel their product quality is lacking, so they feel dissatisfied although the product itself has many value added, such as the availability of add-ons and rewind and pause features. The more service quality

given by HELOSEL meets the needs and wants of customers, the more satisfied they will be and the least likely they will churn.

For the SC that has no relationship with CC case, further investigation can conclude that the customer of HELOSEL is choosing an ISP based on good service quality (including network and pricing). Hence if the service quality that was given does not meet their expectation, the customer will switch brands even though it will cost them their time and effort. They also prefer other ISPs that have a better service quality with a competitive price, instead of staying at their current ISP with bad service quality. In conclusion, customer do not mind switching brands if the service quality did not meet their expectation even though it will cost them.

Aside from the t-value, the variance percentage, which is R^2 for the latent dependent variable, must be considered. R^2 values of 0.67, 0.33, and 0.19 suggest that the model is "Good," "Moderate," and "Weak," respectively (Indrawati, 2015). The Coefficient of Determination (R^2) is a measurement of how much the independent variable affects the dependent variable. Based on table 3 below, it can be seen that the R-Square value for the *Customer Churn* variable is 0.470, which means the *Customer Churn* variable is 47% influence by *Service Quality, Switching Cost, Customer Satisfaction,* and *Customer Loyalty* variables which the model is "Moderate". In the other hand, the R-Square value obtained by the *Customer Loyalty* variable is 0.726, which means *Customer Loyalty* is influenceed 72.6% by *Service Quality*, *Switching Cost,* and *Customer Satisfactio*n variables. In conclusion, the model is indicated as a "Good" model.

Table 3. Hypothesis Testing

	R Square
Customer Churn	0.470
Customer Loyalty	0.726

Source: Author (2021)

5. Conclusion

Based on the data and analysis of this research, the author makes a conclusion correlated with the research objectives of this research. This study's primary objective is to develop a comprehensive churn model and empirically test it using HELOSEL data, as well as to see if there is any significant link between each of the customer churn drivers in HELOSEL. There are 8 hypotheses developed in this research using five variables, including the dependent variables, namely *Customer Satisfaction, Customer Loyalty, Customer Churn,* and independent variables, namely *Service Quality* and *Switching Cost.* The results show that *Service Quality, Switching Cost, Customer Satisfaction* is positively influence *Customer Loyalty* with the score of path coefficients are 0.269, 0.089, 0.328, repectively. Moreover, *Service Quality* also has a positive influence on *Customer Satisfaction* with the path coffient score of 0.574.

For the influence towards *Customer Churn*, it is proven that *Customer Loyalty* and *Customer Satifcation* negatively influence towards *Customer Churn* with -0.375 and -0.465 path coeffient value respectively. It is indicated that the more people satisfied, the more loyal customer will be and the least likely they will churn. However, there are two hypotheses that are rejected:the negative influence of *Service Quality* on *Customer Churn* and the negative influence of *Switching Cost* on *Customer Churn*. In theory, if the switching barriers are high, the customer prefers to stay at their current ISP and most not likely to churn. In contrast, in the case of HELOSEL, the customer feel that the high switching barriers are not their main reason to switch brand. In the case of *Service Quality*, it have no direct relationship with the *Customer Churn* because in order to decrese the possibility of *Customer Churn* the *Service Quality* must positevly affected the *Customer Satisfaction* and *Customer Loyalty* first then negatively affect the *Customer Churn.* In addition, the proposed model of the *Customer Churn* model generates 47%, a "Moderate" result. This can happen because the *Service Quality* variable has no direct relationship with *Customer Churn* variable and the *Switching Cost* variable. In addition *Custome Loyalty* model generate 72.6% which indicated as a "Good" model. It means

that *Customer Loyalty* value influence 72.6% by *Service Quality, Switching Cost,* and *Customer Satisfactio*n variables.

For further suggestion, the assessment of *Service Quality* can be divided based on ISP's service quality dimension. This action is taken because the service quality has many dimensions, and the investigation can be more precise on which dimension affects the customer churn. Moreover, removing the direct relationship between *Service Quality* and *Switching Cost* relationship to *Customer Churn* variable will likely generate a "Good" model. In addition, lesson learned and strategic implication from this research is that an ISP company in Indonesia should have a differentiation strategy in terms of price to generate switching cost that will make the consumer likely to stay and the improvement of service quality. The customers can be easily to be attracted by better price offerings and network quality. Hence if the company has no high switching barriers for customers, the customers will likely churn. In conclusion, a company should develop a switching barrier that will likely to increase costuomers' loyalty, such as refferal program and price promotion offerings for those who already subscribe to a provider. Moreover, an improvement of service quality is needed to increase customers' satisfaction, such as the improvement of network quality of an ISP. The more satisfied the customers, the more likely they will stay and not likely to churn.

6. Ackwnoledgement

The authors expressed gratitude to all the people that contributed and helped the authors finished this research. The author also would like to thank the people who gave insightful advice, guided the whole process, helped the author get the data, and all the people who supported the authors finish this research.

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