

FACTORS INFLUENCING CONSUMER BRAND SWITCHING BEHAVIOR
AMONG UNIVERSITY STUDENTS IN INDONESIA TELECOMMUNICATION
SERVICE PROVIDER

THESIS



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FACULTY OF BUSINESS AND ECONOMICS

UNIVERSITAS ISLAM INDONESIA

YOGYAKARTA

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is written and filed to accomplished final exam requirements in order to obtain a
bachelor's degree at Management International Program

Faculty of Business and Economics

Universitas Islam Indonesia



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DECLARATION OF AUTHENTICITY

Here in I declare the originality of the thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented anyone else's words, ideas, or expression without acknowledgement. All quotations are cited and listed in the bibliography of the thesis.

If in the future this statement is proven to be false, I am willing to accept any sanction complying with the determined regulation or its consequence.

Yogyakarta, March 30 2021

Author,

A 7000 Rupiah Indonesian postage stamp is shown. The stamp features the Garuda Pancasila emblem and the text "REPUBLIK INDONESIA", "7000", "METRAT", and "TEMPEL". The serial number "7D B2AJX358721254" is visible. A handwritten signature in black ink is written over the stamp.

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Yogyakarta February 11, 2021

Author,



Rifqi Isham Santoso



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ABSTRACT

Service quality and consumer switching behavior are factors that can influence market share and profitability of service companies. However, the research regarding this issue is still limited in Indonesia especially in the sector of telecommunication service. This research tried to uncover the factors that influencing consumer switching behavior in the context of telecommunication service in Indonesia. This research was conducted with service quality and perceived price as the independent variables, customer satisfaction and switching cost as mediating variable, and switching behavior as dependent variable. The research samples were obtained from customers of Indonesia telecommunication service provider, data collection being used was online questionnaire using Google form. The analysis was done using the Structural Equation Modeling (SEM) method and processed using AMOS software. The result of the analysis showed that service quality had significant negative influence towards customer satisfaction, while perceived price had significant positive influence towards customer satisfaction. Customer satisfaction had negative influence towards switching behavior, customer satisfaction has positive influence towards switching cost, and lastly switching cost had negative influence towards switching behavior.

Keywords: Switching behavior, service quality, perceived price, customer satisfaction, switching cost

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ABSTRAK

Kualitas jasa dan perilaku berpindah merek merupakan factor-faktor yang dapat mempengaruhi pangsa pasar dan keuntungan dari perusahaan jasa. Namun, penelitian mengenai isu ini masih terbatas di Indonesia terutama pada sektor jasa telekomunikasi. Penelitian ini berusaha untuk mencari tahu factor-faktor yang mempengaruhi perilaku berpindah merek dalam sektor jasa telekomunikasi di Indonesia. Penelitian ini dilakukan dengan kualitas jasa dan harga yang dirasakan sebagai variable bebas, kepuasan konsumen dan biaya perpindahan sebagai variable mediasi, dan perilaku berpindah merek sebagai variable tak bebas. Sample dari penelitian ini didapat dari pelanggan jasa telekomunikasi Indonesia, data dikumpulkan melalui Google form. Analisis diselesaikan menggunakan *Structural Equation Modeling* (SEM) dan dilanjutkan menggunakan program AMOS. Hasil dari analisis menunjukkan kualitas jasa memiliki efek negative signifikan terhadap kepuasan konsumen, sementara harga yang dirasakan memiliki efek positif signifikan terhadap kepuasan konsumen. Kepuasan konsumen memiliki efek negative terhadap perilaku perpindahan merek, kepuasan konsumen memiliki efek positif terhadap biaya perpindahan, dan biaya perpindahan memiliki efek negative terhadap perilaku perpindahan merek.

Keywords: Perilaku perpindahan, kualitas jasa, harga yang dirasakan, kepuasan konsumen, biaya perpindahan

CHAPTER I

INTRODUCTION

1.1. Background

In today's business environment the competition to reach and maintain consumers is getting tougher, including in telecommunication provider business environment. According to Indonesian Telecommunications Providers Association, there are seven providers of telecommunication service in Indonesia. They are, PT. Telekomunikasi Selular, Tbk, PT. Hutchison 3 Indonesia, PT. Indosat, Tbk, PT Sampoerna Telekomunikasi Indonesia, PT Smartfren Telecom, Tbk, PT. Telekomunikasi Indonesia, Tbk, and PT. XL Axiata, Tbk (Indonesia, 2020). Most of the Indonesian consumers knows all of the providers. With the big tree companies PT. Telekomunikasi Selular, Tbk (Telkomsel), PT. Indosat, Tbk (Indosat), and Pt. XL Axiata, Tbk (XL), with Telkomsel is leading the market share of the big tree by Q2 on 2019 with 168 million users, while XL and Indosat are having around 57 million users (Tamara, 2019).

Other than maintaining consumers from other competitors, companies have to maintain consumers because of disloyalty. According to Nielsen (2019), disloyalty is common in today's era, and only 8% of consumers consider themselves to be loyal to one brand. In telecommunication provider business, consumers are tending to switch from one brand to another. This can be proven by the data of average revenue per user that was published by Indonesian Team for Research and Development of Resources

and Equipment of Post and Information Technology. Average revenue per user from years to years are dynamic for the telecommunication provider industries. In year 2016, Telkomsel achieved Rp.44.948 average revenue per users for both prepaid and postpaid consumers. While in 2017 the average revenue decreased to Rp.42.739 (SDPPI, 2018). On the other hand, for Smartfren Telecom, in 2016 the average revenue per users for both prepaid and postpaid was Rp.19.400, while in 2017 the average revenue per users for both prepaid and postpaid increased to Rp.34.500 (SDPPI, 2018). From the data it can be concluded that some consumers may have moved from one brand to another brand of telecommunication providers, thus reducing one brand revenue while increasing the other.

Asia Pacific consumers have the highest brand switching tendency, with 47% of consumers are eager to switch brands or try something different (Nielsen, 2019). Indonesia as one of the countries in Asia Pacific, there were around 38% of consumers saying that they tended to switch brand from one to another, while 50% tended to stick with brand that they already known (Sutianto, 2019).

Asia Pacific is the only region that think higher quality as the determinant of brand switching behavior. With 42% of consumers said high quality is their main concern in determining brand purchasing decisions, followed with 40% of consumers are affected by value for money as their consideration (Nielsen, 2019). Indonesia as one of the countries located in Asia may be categorized as a country that considered quality as the main concern of determining brand in purchasing decision.

Research regarding brand switching behavior has already been done in several developing countries in Asia Pacific such as China, Pakistan, and India with similar results of one another. They are perceived price, service quality, customers satisfaction, and switching cost. Service quality was the most mutual reason why consumers switch their telecommunication service. With the important product of telecommunication service providers being mobile phone service, service failure is fundamentally a failure in product quality (Liang, Ma, & Qi, 2013).

The second most shared reason is price. According to Kotler and Armstrong (2010) price was one the key factor in brand switching. Just like the data that provided above, generally 32% of consumers are affected by price factor to decide to purchase on which brand (Nielsen, 2019). Consumers may dissatisfy when a company charge more than what they deliver. It was proven that price could have played significant role in consumer switching behavior (Shujaat, Syed, & Ahmed, 2015).

According to research done by Rao, V.C.S.M.R and Gundala (2016) majority of the consumers that dissatisfied were unwilling to talk about their dissatisfaction to the company that provide the service. Satisfaction can make customer loyal to a brand. Satisfied consumers are tending to be loyal and may not switch to another brand (Rao, V.C.S.M.R, & Gundala, 2016). From a research that was done by Shah, Husnain, and Zubairshah (2018) resulting that one of the factors of consumer loyal within one brand was consumer satisfaction that can be attained by guaranteeing that their consumers are satisfied with the products and services given. Therefore, satisfaction can be the determinants whether a consumer switched or not.

In addition to customer satisfaction, customers that already satisfied may have second thought on switching to another brand. This behavior may be influenced by customer's switching cost. Study conducted by Edward and Sahadev (2011) had results that recommend companies to manage customer satisfaction. With increasing customer satisfaction, the customers switching cost would also increase, forcing the customers to stay loyal and not switch to another brand.

The research of consumer switching behavior in Indonesia is still limited. As an example, the research that was conducted by Hidayat et al (2019) with title Factors Influencing Indonesian Customer Satisfaction and Customer Loyalty in Local Fast-Food Restaurant was one of the research that discussed about consumer switching behavior in Indonesia. The result was with the increase of service quality, the customer satisfaction level would also increase as well as customer loyalty, and it can even attract new customers for the company. Second example, is a research by Ningsih and Segoro (2014) with topic the influence of customer satisfaction, switching cost, and trust in a brand on customer loyalty. The result was consumer loyalty would increase if the consumer satisfaction also increased. Third example is a research by Arianto (2013) with title Effect of Product Attributes, Prices, Needs to Find Variation and Consumer Dissatisfaction Towards Brand Switching Decisions from Samsung Galaxy Series in Malang City. The result was product quality, variant product, and dissatisfaction are influencing brand switching behavior on Samsung products. It can be concluded that consumer that is satisfied would be not likely to change from one brand to another.

The research that was done in Indonesia before was mainly done with one brand of service or product. This study tries to cover that limitation. In general, this research tries to replicated from Liang et al (2013) by changed the independent variables into service quality, and perceived price while added customer satisfaction and switching cost. This study planned to add more research regarding the factors that influence brand switching behavior in Indonesia. This research also tries to cover broader area that encompass in telecommunication service provider. By knowing the factors that influence brand switching behavior, it can help Indonesian companies to retain the consumers and help them thrive in the competitive market.

1.2. Research Problem

Based on the background, the research problem in that will be solved are:

1. Does service quality have positive influence towards consumer customer satisfaction?
2. Does perceived price have positive influence towards consumer customer satisfaction?
3. Does customer satisfaction have negative influence towards switching behavior?
4. Does customer satisfaction have positive influence towards consumer switching cost?
5. Does switching cost have negative influence towards consumer switching behavior?

1.3. Research Objective

1. To investigate whether service quality have positive influence towards customer satisfaction
2. To investigate whether perceived price have positive influence towards customer satisfaction
3. To investigate whether customer satisfaction have negative influence towards switching behavior
4. To investigate whether customer satisfaction have positive influence towards switching cost
5. To investigate whether switching cost have negative influence towards switching behavior

1.4. Theoretical Benefits

The results of this study are expected to contribute to enriching literature in context of brand switching behavior in Indonesia. Since switching behavior in Indonesia mainly focused on one product, this study tried to cover broader area specifically in telecommunication service provider.

1.5. Practical Benefits

From this research, it could help companies that are currently operating in mobile service telecommunication to retain their current customers or may increase their potential customers. With the factors that proved as the switching behavior of consumers also can help other companies to get a hold on what causing the customers switch to another brand.



CHAPTER II

LITERATURE REVIEW

2.1 General Research Model

This research originally replicated from Liang et al (2013) from the research that was investigating factors affecting brand switching behavior in telecommunication industry in China. In this research, there were five variable that were examined. The variables that used were service quality, perceived price, customer satisfaction, switching cost, and switching behavior. There was some modification such as changed the location to Indonesia, and added several variables such as customer satisfaction and switching cost. While the theoretical framework was adapted from Shah et al (2018) from the research factors affecting brand switching behavior in telecommunication industry of Pakistan there was modification in the theoretical framework by added switching cost in the theoretical framework.

Theory that used in this research was Theory of Planned Behavior (TPB) that was proposed by Ajzen (1991). According to TPB, behavioral intention could be defined as an individual likelihood to draw in the behavior of interest and was a function of three components: (1) attitude, (2) subjective norm, and (3) perceived behavioral control (Ajzen, 1991). From research that was done by Pookulangara et al (2011) consumers were influenced by the level of perceived control. When consumers have higher perceived control, they would have less likely to change (Pookulangara, Hawley, & Xiao, 2011).

This research also used brand loyalty. Brand loyalty could be used to measure the success of marketing strategies of telecommunication companies. The level of brand loyalty has been used to measure the success of marketing strategy and serve as partial measures towards brand equity (Knox & Walker, 2001). In Knox & Walker (2001)'s research, they separate consumers into four categories of brand loyalty. They were loyals, habituals, variety seekers, and switchers. For those that classed as switchers, there were various reasons that push them to become switchers such as price, and children's influence. When switchers made repeat purchase, the purchase was not made out of loyalty but indifference (Knox & Walker, 2001).

2.2 Variables

Precisely, there were five variables discussed in this study, they were: (1) service quality; (2) perceived price; (3) customer satisfaction; (4) switching cost; (5) switching behavior. The theoretical definitions regarding these variables were discussed in the following section.

2.2.1 Switching Behavior

According to Shah, Husnain, & Zubairshah (2018) brand switching is an activity of consumers when they switch their faithfulness from one brand of a product or service to another brand. While according to Afzal, et al (2019) switching behavior is the process in which consumer switches from the usage of one product to another product but of same category. It can be concluded that switching behavior is when a consumer moves to a different brand but still using the same type of product or service.

There are many factors influencing consumer to switch from one brand to another. Evidence showed that perceived price, inconvenience, and quality of service were the key factors that influence the consumers brand switching behavior (Shah, Husnain, & Zubairshah, 2018). While according to the results of a research was done towards consumers of Sahiwal in Pakistan, consumers would switch their brand of telecommunication service if they can get lower price on another brand (Saeed, et al., 2013).

From research that was done by Makwana, Sharma, and Arora, (2014), it was revealed that service quality and price were the two main factors that influence the consumer switching behavior in telecommunication service companies. By offering good value, creating good relationship with customers through well-organized consumer services, and charge the price to a fair level, telecommunication service companies can maintain consumer switching behavior and can maintain the consumers while building long term profitable relationship with consumers (Makwana, Sharma, & Arora, 2014).

Research that was done by Shah, Husnain, & Zubairshah (2018), revealed that consumers are expecting to get a high service quality when they are needed to pay more. If the consumers expectation were not fulfilled, the consumers tended to switch from one brand to another. Thus, consumers switched if the amount of the money they spent were not worth it according to consumers.

Switching behavior is commonly happening nowadays. Research that was done by Rao, V.C.S.M.R, & Gundala (2016) in India resulting in that most of the respondents 55.65% had the willingness to switch their telecommunication service providers brands, and 43.33% of respondents already changed their telecommunication service providers (Rao, V.C.S.M.R, & Gundala, 2016).

Malhotra & Malhotra (2013) used the followed items to measure switching behavior:

1. I do not expect to stay with my current mobile service provider for long
2. When my contract with my mobile service provider runs out, I am likely to switch to another provider
3. I have often considered changing my current mobile service provider
4. I am likely to switch my provider to one that offers better services
5. I have often had problems with my current provider, which makes me want to switch providers

2.2.2 Service Quality

Service quality was considered to be the factor of competitiveness (Lewis, 1989). When company pay attention to service quality it would have helped the company to distinguish itself from other companies and gained competitive advantage (Moore, 1987). Service quality influence the repurchase intentions of both current and potential customers. Research has shown that customers that were dissatisfied with a service will disclose their experiences to more than three other people (Horovitz, 1990). According

to Zeithaml (1988) service quality means the verdict regarding the overall superiority of a service.

According to Liang et al (2013) service failure was the most common reason for Chinese customers switch their telecommunication service providers. Liang et al (2013) used followed items to measure the service quality:

1. Sending the same text messages again and again
2. Failure in delivering text messages
3. Too many spam text messages/calls
4. Too many unnecessary testing programs
5. Low signal quality in making or receiving calls

2.2.3 Perceived Price

According to Chen et al (1994) perceived price could be described as the judgment regarding service's price in comparison to its subsidiaries. According to Kim et al (2012), perceived price could be stated as the perceived level of monetary price for a seller in comparison with prices of other sellers. The concept of perceived price is based on the nature of the competitive-oriented pricing approach. This method focused on customers interest on whether they were being charged more or about the same as charged by competitors (Ryu & Han, 2009). This perceived price includes both monetary and nonmonetary prices, including the need to consider nonmonetary costs such as time and effort to the consumer (Zeithaml, 1988).

Gefen and Devine (2001) used the followed items to measure perceived price:

1. In my experience, books prices are generally cheaper at the vendor

2. I will probably not save money by buying books at another vendor
3. Book prices at the vendor are generally less costly
4. Overall, it is cheaper to buy books at the vendor

2.2.4 Customers Satisfaction

According to Oliver (1997), customers satisfaction could be defined as the contentment of the customer's desire arising out of the customer's aspiration to own or utilize a service. With regard related to consumption contentment, satisfaction was considered to be the resulted sensation or the verdict that the customer made when they got a specific level of pleasure from the features of a product or service. Zeithaml and Bitner (2003) implied that satisfaction resulted due to customer's appraisal of a service as compared with customer's needs and expectations so as to give verdict whether the service has fulfilled their needs and expectations.

Tuan (2012) used the followed items to measure customers satisfaction:

1. I'm satisfied with my decision to attend this university/college
2. If I have choice to do it all over again, I will still enroll in this university
3. My choice to enroll in this university/college is a wise one
4. I'm happy on my decision to enroll in this university
5. I did the right decision when I decided to enroll in this university
6. I'm happy that I enrolled in this university

2.2.5 Switching Cost

Switching cost could be defined as cost that charged once to the customers due to the process of switching from one brand to another (Burnham, Frels, & Mahajan, 2003). Switching cost can be categorized into three, they are: procedural switching cost, financial switching cost, and relational switching cost (Burnham, Frels, & Mahajan, 2003). Study by Burnham et al (2003) procedural switching cost would have increased by increasing consumer's perceptions on product complexity. For financial switching cost, Burnham et al (2003) explained that companies could use mixed price bundling, and offering loyalty program. Added intangible financial services would have increased perceptions of complexity and financial switching cost. For relational switching cost Burnham et al (2003) explained that companies could have increased consumer's perception of heterogeneity, encouraging broader product use, and reduce subsidiary provider and switching experience.

Burnham et al (2003) used the following items to measure switching cost:

Economical risk costs (procedural switching costs):

1. I worry that the service offered by other service providers won't work well as expected
2. If I try to switch service providers, I might end up with bad service for a while.
3. Switching to a new service provider will probably involve hidden cost/charges
4. I am likely to end up with a bad deal of financially if I switch to a new service provider

5. Switching to a new service provider will probably result in some unexpected hassle

6. I don't know what I'll end up having to deal with while switching to a new service provider

Evaluation costs (procedural switching costs):

1. I cannot afford the time to get the information to fully evaluate other service providers

2. How much time/efforts does it take to get the information you need to feel comfortable evaluating new service providers

3. Comparing the benefits of my service provider with the benefits of other service providers takes too much time/effort, even when I have the information

4. It is tough to compare other service providers

Learning costs (procedural switching costs):

1. Learning to use the features offered by a new service provider as well as I use my service would take time

2. There is not much involved in understanding a new service provider well

3. Even after switching it would take effort to "get up to speed" with a new service

4. Getting used to how another service provider works would be easy

Set-up costs (procedural switching costs):

1. It takes time to go through the steps of switching to a new service provider

2. Switching service provider involves an unpleasant sales process

3. The process of starting up with a new service is quick/easy

4. There are a lot of formalities involved in switching to a new service provider

Benefit loss costs (financial switching costs):

1. Switching to a new service provider would mean losing or replacing points, credits, service, and so on that I have accumulated with my service provider
2. How much would you lose in credits, accumulated points, services you have already paid for, and so on if you switched to a new service provider?
3. I will lose benefits of being a long-term customer if I leave my service provider

Monetary loss costs (financial switching costs):

1. Switching to a new service provider would involve some up-front cost (set-up fees, membership fees, deposits, etc.)
2. How much money would it take to pay for all of the costs associated with switching service providers?

Personal relationship loss costs (relational switching costs):

1. I would miss working with the people at my service provider if I switched providers
2. I am more comfortable interacting with the people working for my service provider than I would be if I switched providers
3. The people where I currently get my service matter to me
4. I like talking to the people where I get my service

Brand relationship costs (relational switching costs):

1. I like the public image my service provider has
2. I support my service provider as a firm

3. I do not care about the brand/company name of the service provider I use

There were various items that could have been used to measure switching cost. In this research, the indicators used were four questions from procedural switching costs, and one question from financial switching costs.

2.3 Hypotheses Development

2.3.1 Service Quality and Customer Satisfaction

Quality is one of the marketer's main positioning tools. Quality influence product or service performance, therefore, it is related to customer value and satisfaction (Kotler, Armstrong, & Opresnik, 2018). The American Society for Quality as cited in Kotler, Armstrong, and Opresnik (2018) defined quality as the attribute of a product or service that endure on its capability to satisfy directly or indirect to customer needs. Research that was done by Arianto (2013) gave a result that if the company could not deliver a good quality in accordance with the consumer's expectation, it would have influenced consumer satisfaction and lead to switching behavior by the consumers that were dissatisfied.

Coverage of calling area, value-added services, advertisement, services in campaigns, the suppliers' services of the operator, vendor services, and customer support services were included into the service offered by telecommunication networks (Aydin & Özer, 2005). Research that was done by Liang, Ma, and Qi, (2013) in China, had a result that the most shared result of why Chinese consumers was switching their telecommunication provider was because of a low service quality. The low service quality delivered such as low signal quality, failed to deliver messages, and sending

spam text resulting the consumer prefer to switch to another brand (Liang, Ma, & Qi, 2013).

Research that was done by Han et.al (2011) gave result that service quality had a positive and significant impact towards customer satisfaction. With high customer satisfaction, customer would tend to stick with the same brand. In addition, a research conducted in Pakistan proved that service quality also had a huge impact on customer satisfaction level (Malik, Ghafoor, & Iqbal, 2012). The research had a result that service quality had positive and significant impact towards customer satisfaction.

To prevent consumer switching from one brand to another, telecommunication service providers could upgrade their service level and network quality in order to make their customer loyal (Shujaat, Syed, & Ahmed, 2015). When the consumers did not get the quality of service according to their expectation, it could affect the consumers satisfaction and could resulting in consumer switching behavior. A satisfied consumer that was given a good service quality would be unlikely to switch from one brand to another (Rao, V.C.S.M.R, & Gundala, 2016).

Quality of service given to the customers was not only a vital factor in industrial companies, but also service companies (Shah, Husnain, & Zubairshah, 2018). Thus, the following hypothesis is proposed.

H1: Service quality has positive influence towards customer satisfaction

2.3.2 Perceived Price and Customer Satisfaction

Price is the total of money ask in payment for a product or a service. More broadly, price is the total of all the values that consumers exchange to gain the benefits

of having or using a product or service (Kotler, Armstrong, & Opresnik, 2018). Price frequently used as the benchmark of quality of something. Customer often compare the price offered across vendors and search for the most economical alternate, thus create their own perceived price (Kim, Xu, & Gupta, 2012).

According to Khurshid (2013) in the telecommunication industry specially in the cellular mobile phone service, price is a crucial factor in establishing and retaining customer loyalty. The research has discovered that telecommunication service provider that offer low price, have a high chance to take a large number of consumers.

Based on a research conducted by (Sumaedi, Bakti, & Metasari, 2011) in evaluating student's satisfaction on public universities in Indonesia, perceived price does have a significant and positive impact towards the student's satisfaction. The higher the perceived price the students felt, the more satisfied the students are. In addition, the similar research conducted by (Tuan, 2012) in Vietnam also had the same result. Perceived price has a positive influence towards the student's satisfaction of the university.

From a research in China that was done by Liang, Ma, and Qi, (2013), price was the second shared factor of why consumers were switching from one brand to another in telecommunication service provider industry. It could be concluded that consumers may not satisfied with the price that was offered by providers because of the price is too high. Therefore, they were choosing to switch brand that are more favorable to them. Similar result also happened to consumers in Pakistan. Consumers in Pakistan would switch their brand if the price that was perceived is too high (Afzal, et al., 2013).

Based to the research on Germany, perceived price could be considered as crucial aspect in consumer's purchases. It has a huge impact on consumer's satisfaction. The research results showed that perceived price has significant and positive impact towards consumer satisfaction (Herrmann, Xia, Monroe, & Huber, 2007).

Shah, Husnain, and Zubairshah (2018) stated that price acted as a crucial factor in telecommunication market, particularly for the mobile telecommunication service providers. The connection between price and consumer loyalty describes that satisfaction of consumers in telecommunication market depends on the price offered by the providers. If the price offered by the providers made customers perceived price low, customers may be dissatisfied and could end up switch to another brand. Therefore, the following hypothesis is proposed.

H2: Perceived price has positive influence towards customer satisfaction

2.3.3 Customer Satisfaction and Switching Behavior

According to Ningsih and Segoro (2014) customer satisfaction was a behavior, valuation and emotional reaction revealed by the consumer after finishing a purchase. The product or service were compared from the actual performance delivered by the product or service against the expectation of consumer toward the product or service.

After consumer made a purchase, they would display a satisfaction if the product or service that was purchased achieves the consumer expectation. Then they would stick to the brand and make future purchase. However, if the product was unable to fulfill their needs, they would be dissatisfied and could switch to other brands by

terminating his relationship with existing service provider (Shujaat, Syed, & Ahmed, 2015).

When consumers are dissatisfied, they would choose to switch from one brand to another brand that delivers them better services. One of the factors of customer switching behavior is customer satisfaction. It can be achieved by guaranteeing that the consumer gets maximum satisfaction from products and services delivered to them (Shah, Husnain, & Zubairshah, 2018).

Consumers are facing a wide-ranging selection of products and services that might satisfy their need. Consumers create expectations about the value and satisfaction that numerous market offerings will deliver and buy accordingly. Satisfied customers buy again and tell others about their good experiences. Dissatisfied consumers often switch to other brand and ridicule the product to others (Kotler, Armstrong, & Opresnik, 2018).

A research conducted by Yunita & Rosa (2016) the most influential factor of consumer to switch from one brand to another is because of dissatisfaction, especially when consumer expectation toward certain product is not met. The research also stated dissatisfaction influencing significantly positively towards switching behavior.

A study examined the relationship between price fairness, customer satisfaction, loyalty and price acceptance. The research proved that consumer sense of price fairness can rise customer satisfaction and loyalty. The research also found that if the customers are very satisfied and wants to make another purchase, they are eager to pay different prices (Martín-Consuegra, Molina, & Esteban, 2007). Research that

was done by Arianto (2013) gave a result that consumer switching behavior is affected significantly by how dissatisfied the consumers were. If the consumers were indeed dissatisfied, the consumers would have switched from the current brand.

In telecommunication service provider business, improving service quality provided can bring benefits and will increase customer satisfaction and trust. Telecommunication service providers should find methods in order to increase their services quality to sustain the basic strength to compete (Liu, Guo, & Lee, 2011). Thus, the following hypothesis is proposed.

H3: Customer satisfaction has negative influence towards switching behavior

2.3.4 Customer Satisfaction and Switching Cost

Customer satisfaction is not only influencing switching behavior. Some customers that already satisfied, may have second thought on switching to another brand. This reluctant behavior may be influenced by customer's switching cost. A research conducted by Edward and Sahadev (2011) had result that customer satisfaction has a positive and significant influence towards switching cost. Therefore, satisfied customers would need to pay higher switching cost if they want to switch from one brand to another (Edward & Sahadev, 2011).

Study conducted by Edward and Sahadev (2011) also recommend companies to manage customer satisfaction better through the increase of service quality. Therefore, the customers switching cost would also rise, driving customers to stay loyal and not switch to another brand. Thus, the following hypothesis is proposed

H4: Customer satisfaction has positive influence towards switching cost.

2.3.5 Switching Cost and Switching Behavior

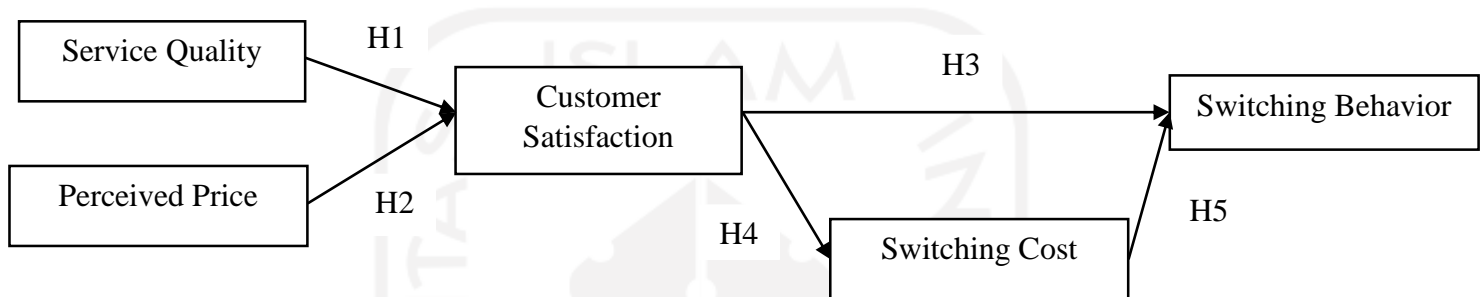
Switching cost is the cost charged to the customer because of switching to other service providers (Lee, Lee, & Feick, 2001). There are three types of switching cost, procedural, financial, and relational (Burnham, Frels, & Mahajan, 2003). In this research there were five indicators used to measure switching cost, four indicators came from procedural switching cost, and one indicator from financial switching cost. Switching cost is included as categories in the switching barriers, which emerges from an analyzing the experience of using a product or service (Colgate & Lang, 2001). Switching cost seem to be an important aspect to switching behavior (Ningsih & Segoro, 2014).

According to research that was done by Ningsih and Segoro (2014), customer switching cost had a significant positive influence towards customer loyalty. it meant that customer loyalty would increase when switching cost increase. By increasing switching cost, customers may become loyal because they have to consider the cost that will be charged when they switch from one brand to another. Research that was done by Aydin and Özer (2005) in Turkey, gave result that switching cost has a positive and significant impact towards customers loyalty to stick with the same brand. As well as research that was done by (Liu, Guo, & Lee, 2011) in Taiwan, the result was switching cost has been a huge impact towards customer loyalty to stick with the same brand.

H5: Switching cost has negative influence towards switching behavior

2.4 Theoretical Framework

This research is using five attributes of study, they are service quality, perceived price, customer satisfaction, switching cost, and switching behavior. The following is the concept of the research that will be conduct:



Source: Adapted from (Shah, Husnain, & Zubairshah, 2018)

Figure 2.1 Research Model

CHAPTER III

RESEARCH METHODOLOGY

3.1 Population and Sample

3.1.1 Population

Population is the whole of the elements, sharing mutual set of characteristics, that include the universe for the objective of the marketing research problem (Malhotra, Nunan, & Birsk, 2017). This research aimed to uncover the factors that influencing consumer switching behavior among university students, from one brand to another brand in telecommunication service providers in Indonesia. Therefore, the population in this study were university students that already switched from one Indonesian telecommunication service providers to another Indonesian telecommunication service providers.

3.1.2 Sample

Sample is a smaller group of the elements from the population selected to be involved in the study (Malhotra, Nunan, & Birsk, 2017). In this study, researcher took a small sample of the population to be researched.

3.1.3 Sampling Method

Sampling method that used in this research is non-probability sampling. According to Malhotra, Nunan, & Brisk (2017), non-probability sampling is rather based on the judgment of the researcher than relying on chance in selecting respondents. The researcher can also decide based on their own

opinion regarding which respondents are going to be included in the sample. The researcher also used convenience sampling. Convenience sampling is a non-probability sampling technique that tries to gain a sample of convenient respondents, and the collection of the samples is based on the researcher (Malhotra, Nunan, & Birsk, 2017). The respondent's criteria were university students in Indonesia that used Indonesian telecommunication service provider and already switched to another Indonesian telecommunication service provider. The question to the respondents is 21 questions with 4 questions for service quality and perceived price, 5 questions for customer satisfaction and switching cost, and 3 question for switching behavior. According to Hair (2006) the minimum number of samples for unknown exact population was five times the variables analyzed or indicator question.

$$\text{Number of samples} = 5 \times \text{indicator of questions}$$

Therefore, this research would at least need:

$$5 \times 21 = 105 \text{ samples}$$

3.2 Data and Data Collection

This research is a quantitative study with the data source used is primary data. Primary data are data created by a researcher for the objective of confronting the problem available (Malhotra, Nunan, & Birsk, 2017). Data collection of this study used:

3.2.1 Questionnaire

Questionnaire is an organized technique for collecting data containing list of questions, written or verbal, that respondents answered (Malhotra, Nunan, & Birsk, 2017). This research used questionnaire and distribute it to the respondents. The method of distributing the questionnaire were online distribution using Google Form. By using Google Form, respondents needed to fill the questionnaire and automatically sent back to the researcher.

3.2.2 Measurement Scale

To measure primary data, the researcher distributes questionnaires related to research variables to respondents. The scale used in this study is a five-point Likert scale. The following table is a Likert scale rating score:

Table 3.1 Assessments Score

No	Category	Scale
1	Strongly Disagree	1
2	Disagree	2
3	Neutral	3
4	Agree	4
5	Strongly Agree	5

3.3 Identification of Research Variables

a. Hypothesis 1

In hypothesis 1, there is an influence of service quality to customer satisfaction.

To empirically prove hypothesis 1, the variables to be measured are:

Independent Variable : Service quality

Dependent Variable : Customer satisfaction

b. In hypothesis 2, there is an influence of perceived price to customer satisfaction.

To empirically prove hypothesis 2, the variables to be measured are:

Independent Variable : Perceived price

Dependent Variable : Customer satisfaction

c. In hypothesis 3, there is an influence of customer satisfaction to switching behavior. To empirically prove hypothesis 3, the variables to be measured are:

Independent Variable : Customer satisfaction

Dependent Variable : Switching behavior

d. In hypothesis 4, there is an influence between customer satisfaction to switching cost. To empirically prove hypothesis 4, the variables to be measured are:

Independent Variable : Customer satisfaction

Dependent Variable : Switching cost

- e. In hypothesis 5, there is an influence between switching cost to switching behavior. To empirically prove hypothesis 5, the variables to be measured are:

Independent Variable : Switching cost

Dependent Variable : Switching behavior

3.4 Operational Definitions of Research Variables

In this research there would be two Independent variables, they are service quality, and price. Two mediating variables they were customer satisfaction and switching cost. Lastly one dependent variable which is switching behavior. Operational definitions of each research variables are:

1. Service quality. The American Society for Quality as cited in Kotler, Armstrong, and Opresnik (2018) defined quality as the attribute of a product or service that endure on its capability to satisfy directly or indirect to customer needs. Indicator that used were:

	Service Quality (Liang, Ma, & Qi, 2013)
1	My previous telecommunication service is having low signal quality
2	My previous telecommunication service makes me failed in delivering messages frequently
3	My previous telecommunication service is sending too many spam messages/calls

4	My previous telecommunication service is having too many unnecessary testing programs
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2. Perceived price. Perceived price is considered to be the perceived level of monetary price for one vendor in comparison with prices of other vendors (Kim, Xu, & Gupta, 2012). Indicators that used were:

	Perceived Price (Gefen & Devine, 2001)
1	I think my previous telecommunication service provider is cheap
2	I think I would not save more money by changing my telecommunication service provider
3	I think the fee of my previous telecommunication service provider generally less costly
4	Overall, I think the fee of my previous telecommunication service provider is cheaper

3. Customer satisfaction. According to Ningsih and Segoro (2014) customer satisfaction is a behavior, valuation and emotional reaction revealed by the consumer after finishing a purchase. Indicators that used were:

	Customer Satisfaction (Tuan, 2012)
1	I am satisfied with my decision to use my previous telecommunication service provider
2	My previous choice of the telecommunication service provider is a wise one
3	I am happy with my previous decision to use the telecommunication service provider
4	I did the right decision when I decided to use the previous telecommunication service provider
5	If I have choice to do it all over again, I will choose my previous telecommunication service provider

4. Switching Cost. Switching cost could be defined as cost that charged once to the customers due to the process of switching from one brand to another (Burnham et al 2003). In this research, the indicators used were four questions from procedural switching costs, and one question from financial switching costs. Indicators that used were:

	Switching Cost (Aydin & Özer, 2005)
--	-------------------------------------

1	If I switched to another telecommunication service provider, the service given might not as well as expected.
2	I am not sure the fee of another telecommunication service provider charged would be better for me.
3	Even if I have plenty of information, comparing the telecommunication service provider takes a lot of time and energy.
4	If I switched to another telecommunication service provider, I could not use some services until I learned to use them.
5	I would be concerned about the people who contact me using my previous number and could not reach me.

5. Switching intention. According to Han et al (2011), switching intention referred to the confirmed probability of swapping the current service provider with another. Indicators that used were:

	Switching Intention (Kim, Shin, & Lee, 2006)
1	I am considering switching from my current telecommunication service provider.

2	The chance of me to switch to another telecommunication service provider is high.
3	I am determined to switch to another telecommunication service provider.

3.5 Validity and Reliability

a. Validity

Validity are used to test how accurate the research that was conducted. Validity are divided into three parts commonly, they are content validity, criterion-related validity, and construct validity (Sekaran & Bougie, 2016). Content validity confirms that the measure comprises an acceptable and representative set of items that in accordance to the concept (Sekaran & Bougie, 2016). Criterion-related validity is established when the measure differentiates individuals on a criterion it is expected to predict (Sekaran & Bougie, 2016). Construct validity confirms how effective the results gained from the usage of the measure fit the theories around which the test is designed (Sekaran & Bougie, 2016).

Validity conducted by using 50 respondent's data (n=50) and using software SPSS version 26. The test was conducted using 5% r table with two tail test and $df=n-2$. Thus, creating degree of freedom (df)= $n-2$ resulting in $50-2=48$, and r table= 0,279. If r result \geq r table the item can be stated valid, and if r result \leq than r table the item can be stated invalid. According to the analysis the test results were:

Table 3.2 Instrument Validity Test

Variables	Indicator	r result n=50	r table	Statement
Service Quality	SQ1	0,716	0,279	Valid
	SQ2	0,807	0,279	Valid
	SQ3	0,714	0,279	Valid
	SQ4	0,708	0,279	Valid
Price	P1	0,838	0,279	Valid
	P2	0,880	0,279	Valid
	P3	0,831	0,279	Valid
	P4	0,878	0,279	Valid
Customer Satisfaction	CS1	0,865	0,279	Valid
	CS2	0,838	0,279	Valid
	CS3	0,878	0,279	Valid
	CS4	0,843	0,279	Valid
	CS5	0,875	0,279	Valid
Switching Cost	SC1	0,800	0,279	Valid
	SC2	0,738	0,279	Valid
	SC3	0,763	0,279	Valid
	SC4	0,577	0,279	Valid
	SC5	0,659	0,279	Valid

Switching Behavior	SB1	0,865	0,279	Valid
	SB2	0,818	0,279	Valid
	SB3	0,877	0,279	Valid

b. Reliability

The reliability of a measure shows to which extent the research has been conducted without bias (errors free) and hence ensures consistent measurement throughout time and across the various items within the instrument (Sekaran & Bougie, 2016).

Table 3.3 Instrument Reliability Test

Variables	Cronbach's Alpha	Standard Cronbach's Alpha	Statement
Service Quality	0,715	0,7	Reliable
Price	0,873	0,7	Reliable
Customer Satisfaction	0,910	0,7	Reliable
Switching Cost	0,741	0,7	Reliable
Switching Behavior	0,814	0,7	Reliable

3.6 Data Analysis

3.6.1 Descriptive Analysis

After the questionnaire has been collected, there would be a descriptive discussion of the data. The purpose of a descriptive study is to gain data that can be used to describes the topic of interest (Sekaran & Bougie, 2016). In this analysis, researcher will show the data and then presents an overview of the research results. In this analysis there are two things that are conveyed, namely:

1. **Characteristic Data of Respondents**

In this research, data of respondents that used were age, gender, and income.

2. **Respondent's Assessment Data on Variables**

3.6.2 Statistic Tools

Data that have been gathered from questionnaire were analyzed statistically to prove the hypothesis that was proposed. Analysis tool used is Structural Equation Model (SEM). SEM is a technique for approximating a sequence of dependence relationships among a set of concepts or constructs represented by multiple measured variables and combined into an integrated model (Malhotra, Nunan, & Birsk, 2017). The software used to analyze the structure is Analysis of Moment Structure (AMOS). The software gave result such as scaling, and structural problem. The result can be analyzed and test the hypotheses.

Step that would be taken during SEM test:

1) **Quality of the Data**

a. **Sample size**

Sample size has an important role in interpreting SEM result, because it can give based estimation for sampling error. Therefore, the recommended sample size is between 100 to 200 samples (Ghozali, 2017).

b. **Data Normality**

Data that has been gathered need to be analyzed to determine whether the data fulfill the normality assumption, after that data can be process further to SEM modelling. Normality test is conducted with objective to evaluate whether the data included in normal distribution standard. Normality test using AMOS can be categorized as normal if the value of critical ratio is $\pm 2,58$ at a significance level of 0.01 (Ghozali, 2017).

c. **Outlier Evaluation**

Outlier is an observation condition from data that has unique characteristics that appear to be far different from other observations and appear in an extreme form (Ghozali, 2017). Outlier evaluation can be conducted with (Ferdinand, 2006):

a) **Univariate Outlier**

Univariate outlier evaluation can be done by specifying the threshold that is categorized as an outlier by changing the value of

research data into standard score or Z-score which has zero mean value with a standard deviation of 1.00. If there is a Z-score $\geq \pm 3$, then it can be stated as univariate outliers.

b) Multivariate Outlier

Although the results of data evaluation do not show any outliers at the univariate level, if the data is combined, it can become outliers.

This evaluation is presented in the AMOS output from the mahalonobis distance. The basis for calculating the mahalonobis distance is based on the chi square value with degrees of freedom adjusted for the number of independent variables at the level of $p < 0.001$. Multivariate outliers were detected if the mahalonobis distance value was greater than χ^2 (chi-square).

2) Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) aimed to test whether the indicators of latent variables are significant and valid (Ghozali, 2017). The CFA measurement is based on a validity test questionnaire items and the reliability of the loading factor. Validity test showed how the manifest variable (indicator) reflects of the latent variable being measured. The value of the validity test to be declared valid must have a loading factor > 0.50 (Ghozali, 2017). Test reliability indicated the extent to which the measurement can be give a result that is relatively not much different from the re-measurement on the same object. Good construct reliability is that has a value > 0.70 (Ghozali, 2017).

3) Goodness of Fit

At this stage, the researcher measured the suitability of the actual or observed input with the predictions of the proposed model. Previously, the data conformity was evaluated with the basic assumptions in the structural equation model. Because SEM is very sensitive to data distribution characteristics, especially to those containing high kurtosis, the data must be tested for the presence of outliers and the distribution of data must also be normally multivariate.

If the basic assumption of SEM has been fulfilled, the next step is evaluating offending estimate. Offending estimate is the estimated coefficient in the structural model or measurement model which value is above the acceptable limit. If after evaluated it is confirmed that there is no longer an offending estimate, researcher then can assess the overall fit model using various criteria for the fit model assessment. The criteria for the fit model assessment are used are (Ghozali, 2017):

a) Likelihood Ratio Chi-Square Statistic

The chi square likelihood ratio (X^2) shows the fundamental measure of overall fit. The higher the chi square value compared to the degree of freedom will resulting in smaller probability (p) value than the significance level (α). The smaller the chi square value indicates the better, because the covariance matrix input between predictions and

real observations does not show a significant difference (Ghozali, 2017).

b) CMIN/DF

This assessment is obtained by dividing the chi square value by the degree of freedom. This assessment is recommended by some authors to determine the relative chi square value (X^2) which indicates a difference between the covariance matrices studied and those estimated. Ghozali (2017) used value ratio <2 as the fit scale.

c) Goodness of Fit Index (GFI)

This valuation shows a non-statistical measure by calculating the weighted comparison of the variance present in the covariance matrix of the sample and described with the population covariance matrix. GFI has values that range from 0 (poor fit) to 1.0 (perfect fit), the higher the GFI value the better. Several researchers suggest value above 90% as a good fit (Ghozali, 2017).

d) Root Mean Square Error of Approximation (RMSEA)

This measurement can fix the result if there is a tendency for the chi square statistic to reject models that use large sample sizes. Root Mean Square Error of Approximation (RMSEA) value that can be accepted range between 0,03 to 0,08.

e) Adjusted Goodness of Fit Index (AGFI)

This valuation is included in goodness of fit measurement in the incremental fit. This valuation is derived from the development of the goodness of fit index assessment which is adjusted to the value of the degree of freedom ratio.

The higher value the adjusted goodness of fit index, the better the model. The value that is suggested is ≥ 0.90 (Ghozali, 2017).

f) Tucker Lewis Index (TLI)

TLI is a measure that combines the parsimony measure into the index of comparison between the tested models and the baseline model. The recommended TLI value lies between 0 and 1.0, with recommended value is ≥ 0.90 (Ghozali, 2017).

g) Normal Fit Index (NFI)

NFI shows the proportional size of the proposed model and null model. Range of the value is from 0 (no fit at all) until 1.0 (perfect fit), the recommended value is ≥ 0.90 (Ghozali, 2017).

Table 3. 4 Goodness of Fit Test Criteria

No.	Goodness of Fit	Cut off Value
1	Chi-Square	Low
2	Probability	≥ 0.05
3	CMIN/DF	$< 2,0$

4	GFI	≥ 0.90
5	RMSEA	$0.03 \leq \text{RMSEA} \leq 0.08$
6	AGFI	≥ 0.90
7	TLI	≥ 0.90
8	NFI	≥ 0.90

4) Model Modification

When the model is stated not fit with the data, the appropriate act that can be done is to modify the model by adding connecting line, adding more variable if available, or reducing variable. Model modification can be done based on modification indices resulting from AMOS. If the model is modified, then the model has to be cross-validated first before accepted.

5) Hypotheses Test

The hypotheses that have been proposed are tested by observing at the results of the analysis, by observing the signs and the magnitude of their significant values. If the sign is corresponding with the theory and the significant value is < 0.05 , then the hypothesis is accepted. However, if the sign is not corresponding to the theory and the significant value is > 0.05 , the hypothesis is rejected.

CHAPTER IV

DATA ANALYSIS AND DISCUSSION

This chapter consisted of the result of the research investigating influencing factors of consumer brand switching behavior in Indonesia telecommunication service provider. The data in this research was primary data that was obtained through questionnaire that was shared using Google Form to 300 respondents. The questionnaire was shared to university students in Indonesia that have switched brand of Indonesia telecommunication service provider. The questionnaire mainly distributed throughout the city of Jakarta and Yogyakarta. The result of the primary data was used to answer the research problem. Furthermore, the result was presented using descriptive analysis and SEM analysis.

Analysis technique that used in this research was Structural Equation Modeling (SEM). SEM was used because of simultaneously complicated hypothesis test, accuracy of analyzing questionnaire data involving perceptions without neglecting error on each observation, and ease of model modification with a second order if the model was not feasible, therefore it was easier to proceed using SEM analysis. The software that used to conduct SEM analysis technique was AMOS.

The analysis carried out was done in accordance with the stages in the analysis statistics that was described in the previous chapter. The evaluation of the SEM model was also analyzed to obtain the proposed fit. From the results of data processing,

evidence was obtained of the hypothesis which then becomes a reference in the conclusion.

4.1 Respondents Descriptive Analysis

The descriptive analysis was explaining the characteristic of the respondents. It consisted of gender, age, the semester respondent enrolling on, income, and the current telecommunication service provider.

4.1.1 Respondents Gender

From the result of the questionnaire shared to 300 university students in Indonesia, researcher obtained characteristic data respondents based on gender as follows:

Table 4.1 Respondents Characteristics Based on Gender

Gender	Frequency	Percentage (%)
Male	152	50,7%
Female	148	49,3%
Total	300	100%

According to Table 4.1 it could be seen the majority of the respondent's answers are male with 152 responses or 50,7%. While the rest of the respondent's answers are female with 148 responses or 49,3%.

4.1.2 Respondents Age

From the result of the questionnaire shared to 300 university students in Indonesia, researcher obtained characteristic data respondents based on gender as follows:

Table 4.2 Respondents Characteristics Based on Age

Age	Frequency	Percentage (%)
<18	3	1%
18-20	97	32,3%
21-23	177	59%
>23	23	7,7%
Total	300	100%

According to Table 4.2 it could be seen the majority of the respondent's age answers were between 21-23 with 177 responses or 59%. The second majority of respondent's age answers were between 18-20 with 97 responses or 32,3%. The third majority of the respondent's age answers were >23 with 23 responses or 7,7%. While the minority of the respondent's age answers were <18 with 3 responses or 1%.

4.1.3 The Semester Respondents Enroll

From the result of the questionnaire shared to 300 university students in Indonesia, researcher obtained characteristic data respondents based on gender as follows:

Table 4.3 Respondents Characteristics Based on The Semester They Enroll

Semester	Frequency	Percentage (%)
3	64	21,3%
5	86	28,7%
7	144	48%
9	6	2%
Total	300	100%

According to Table 4.3 it could be seen the majority of the respondents answered they are enrolling on 7th semester with frequency of 144 answers or 48%. The second majority of the respondents answered they are enrolling on 5th semester with frequency of 86 answers or 28,7%. The third majority of the respondents answered they are enrolling on 3rd semester with frequency of 64 answers or 21,3%. The minority of the respondents answered they are enrolling on 9th semester with frequency of 6 or 2%.

4.1.4 Respondents Income

From the result of the questionnaire shared to 300 university students in Indonesia, researcher obtained characteristic data respondents based on gender as follows:

Table 4.4 Respondents Characteristics Based on Income

Income	Frequency	Percentage (%)
<Rp. 500.000	60	20%
Rp. 500.000 – Rp. 999.000	74	24,7%
Rp. 1.000.000 – Rp. 1.500.000	122	40,7%
>Rp. 1.500.000	44	14,7%
Total	300	100%

According to Table 4.4 it could be seen the majority of the respondent's income were between Rp. 1.000.000 – Rp. 1.500.000 with 122 frequency of answers or 40,7%. The second majority of the respondent's income were between Rp. 500.000 – Rp. 999.000 with 74 frequency of answers or 24,7%. The third majority of respondent's income were <Rp. 500.000 with 60 frequency of answers or 20%. While the minority of the respondent's income were >Rp. 1.500.000 with 44 frequency of answers or 14,7%.

4.1.5 Respondents Current Telecommunication Service

From the result of the questionnaire shared to 300 university students in Indonesia, researcher obtained characteristic data respondents based on gender as follows:

Table 4.5 Respondents Characteristic Based on Current Telecommunication Service

Telecommunication Service	Frequency	Percentage (%)
Telkomsel	155	51,7%
XL	60	20%
Indosat	28	9,3%
Tri	17	5,7%
Smartfren	28	9,3%
By.U	8	2,7%
Axis	4	1,3%
Total	300	100%

According to Table 4.5 it could be seen the majority of the respondent's current telecommunication service provider was Telkomsel with 155 answers or 51,7%. The second majority of the respondent's current telecommunication service provider was XL with 60 answers or 20%. The third majority of the respondent's current telecommunication service provider was Indosat and Smartfren with same frequency of answer of 28 and same amount of percentage

9,3%. The fourth majority of the respondent's current telecommunication service provider was Tri with 17 answers or 5,7%. The fifth majority of the respondents current telecommunication service provider was By.U with 8 answers or 2,7%. The minority of the respondent's current telecommunication service provider was Axis with 4 answers or 1,3%.

4.2 Analysis of Research Variable Data Description

Based on the data collected, respondents' answers had been recapitulated and then analyzed to find out a description of the answers of each variables. This description of the respondent's answer showed the respondent's views on various research variables including service quality, price perception, customer satisfaction, switching cost, and switching behavior. The respondent's assessment used a five-point Likert scale from (1) Strongly Disagree to (5) Strongly Agree.

As for the calculation of the criteria as follows:

Lowest value : 1

Highest value : 5

$$\text{Interval} = \frac{5-1}{5} = 0.8$$

Thus, that the assessment limits for each variable are obtained as follows:

Table 4.6 Value Interval

Interval	Category
1,00 – 1,80	Very Poor
1,81 – 2,61	Poor
2,62 – 3,42	Moderate
3,43 - 4,23	Good
4,24 – 5,00	Very Good

4.2.1 Descriptive Analysis of Service Quality Variable

According to the respondent's answers that had been collected regarding service quality, it can be explained that the distribution of respondents' assessments of service quality variables is as shown in Table 4.7 below:

Table 4.7 Results of the Descriptive Analysis on Service Quality Variables

Indicator	Mean	Criteria
My previous telecommunication service is having low signal quality	3,53	Good
My previous telecommunication service makes me failed in delivering messages frequently	3,27	Moderate
My previous telecommunication service is sending too many spam messages/calls	3,42	Moderate
My previous telecommunication service is having too many unnecessary testing programs	3,42	Moderate
Mean	3,41	Moderate

From the descriptive analysis result on Table 4.7 above, it showed that the mean of respondent's answers value is 3,41 (moderate). The indicator that had highest value was "my previous telecommunication service is having low signal quality" with mean value 3,53 (good). While the lowest indicator was "My previous telecommunication service makes me failed in delivering messages frequently" with mean value 3,27 (moderate). This showed that the respondent had provided an assessment evaluation of service quality with Moderate category.

4.2.2 Descriptive Analysis of Perceived Price Variable

According to the respondent's answers that had been collected regarding service quality, it could be explained that the distribution of respondents' assessments of price perception variables is as shown in Table 4.8 below:

Table 4.8 Results of the Descriptive Analysis on Perceived Price Variables

Indicator	Mean	Criteria
I think my previous telecommunication service provider is cheap	3,47	Good
I think I would not save more money by changing my telecommunication service provider	3,52	Good
I think the fee of my previous telecommunication service provider generally less costly	3,56	Good
Overall, I think the fee of my previous telecommunication service provider is cheaper	3,52	Good
Rata-Rata	3,52	Good

From the descriptive analysis result on Table 4.8 above, it showed that the mean of respondent's answers value is 3,52 (good). The indicator that had highest value is "I think the fee of my previous telecommunication service provider generally less costly" with mean value 3,56 (good). While the lowest indicator was "I think my previous telecommunication service provider is cheap"

with mean value 3,47 (good). This showed that the respondent had provided an assessment evaluation of perceived price with Moderate category.

4.2.3 Descriptive Analysis of Customer Satisfaction Variable

According to the respondent's answers that had been collected regarding service quality, it could be explained that the distribution of respondents' assessments of customer satisfaction variables is as shown in Table 4.9 below:

Table 4.9 Results of the Descriptive Analysis on Customer Satisfaction Variables

Indicator	Mean	Criteria
I am satisfied with my decision to use my previous telecommunication service provider	3,10	Moderate
My previous choice of the telecommunication service provider is a wise one	3,14	Moderate
I am happy with my previous decision to use the telecommunication service provider	3,12	Moderate
I did the right decision when I decided to use the previous telecommunication service provider	3,05	Moderate
If I have choice to do it all over again, I will choose my previous telecommunication service provider	2,88	Moderate
Rata-Rata	3,06	Moderate

From the descriptive analysis result on Table 4.9 above, it showed that the mean of respondent's answers value is 3,06 (moderate). The indicator that had highest value was "My previous choice of the telecommunication service provider is a wise one" with mean value 3,14 (moderate). While the lowest indicator was "If I have choice to do it all over again, I will choose my previous telecommunication service provider" with mean value 2,88 (moderate). This showed that the respondent had provided an assessment evaluation of customer satisfaction with neutral category.

4.2.4 Descriptive Analysis of Switching Cost Variable

According to the respondent's answers that had been collected regarding service quality, it could be explained that the distribution of respondents' assessments of switching cost variables is as shown in Table 4.10 below:

Table 4.10 Results of the Descriptive Analysis on Switching Cost Variables

Indicator	Mean	Criteria
If I switched to another telecommunication service provider, the service given might not as well as expected.	2,94	Moderate
I am not sure the fee of another telecommunication service provider charged would be better for me.	3,06	Moderate
Even if I have plenty of information, comparing the telecommunication service	3,01	Moderate

provider takes a lot of time and energy.		
If I switched to another telecommunication service provider, I could not use some services until I learned to use them.	3,05	Moderate
I would be concerned about the people who contact me using my previous number and could not reach me.	3,04	Moderate
Rata-Rata	3,02	Moderate

From the descriptive analysis result on Table 4.10 above, it showed that the mean of respondent's answers value is 3,02 (moderate). The indicator that had highest value was "I am not sure the fee of another telecommunication service provider charged would be better for me." with mean value of 3,06 (moderate). While the lowest indicator was "If I switched to another telecommunication service provider, the service given might not as well as expected." with mean value 2,94 (moderate). This showed that the respondent had provided an assessment evaluation of customer satisfaction with neutral category.

4.2.5 Descriptive Analysis of Switching Behavior Variable

According to the respondent's answers that had been collected regarding service quality, it could be explained that the distribution of respondents' assessments of switching behavior variables is as shown in Table 4.11 below:

Table 4. 11 Results of the Descriptive Analysis on Switching Behavior Variables

Indicator	Mean	Criteria
I am considering switching from my current telecommunication service provider.	3,61	Good
The chance of me to switch to another telecommunication service provider is high.	3,73	Good
I am determined to switch to another telecommunication service provider.	3,71	Good
Rata-Rata	3,68	Good

From the descriptive analysis result on Table 4.11 above, it showed that the mean of respondent's answers value is 3,68 (good). The indicator that had highest value was "The chance of me to switch to another telecommunication service provider is high." with mean value of 3,73 (good). While the lowest indicator was "I am considering switching from my current telecommunication service provider." with mean value 3,61 (good). This showed that the respondent had provided an assessment evaluation of customer satisfaction with neutral category.

4.3 SEM (Structural Equation Modelling) Analysis

SEM analysis SEM analysis aimed to examine the relationship between variables latent with the manifest variable in the measurement equation, the relationship between one latent variable with another latent variable in the equation

structural and describes errors in measurement Ghozali (2017). This study used an AMOS program that could process models research that is dimensional and tiered.

4.3.1 Quality Data Test

1) Sample Size

It is stated that the minimum sample size to use Maximum Likelihood (ML) method is 100 sample Ghozali (2017). In this research the amount of data collected is 300 data, thus the amount of data was sufficient. For further process is carried out using SEM AMOS software.

2) Data Normality

Test for normality with the AMOS program using comparison of the value of C.R (critical ratio) on the assessment of normality ± 2.58 with a significance level of 0.01 Ghozali (2017). If the CR value of the multivariate data is in the range ± 2.58 , then the research data can be stated normal. The results of the data normality test are shown in Table 4.12 as follows:

Table 4.12 Normality Data Test

Variable	min	max	skew	c.r.	kurtosis	c.r.
SB3	1,000	5,000	-,446	-3,152	-,355	-1,256
SB2	1,000	5,000	-,510	-3,608	-,193	-,683
SB1	1,000	5,000	-,660	-4,668	,010	,034

Variable	min	max	skew	c.r.	kurtosis	c.r.
SC5	1,000	5,000	,029	,208	-,414	-1,463
CS5	1,000	5,000	,320	2,264	-,369	-1,306
SC1	1,000	5,000	,344	2,430	,322	1,137
SC2	1,000	5,000	,032	,229	-,447	-1,580
SC3	1,000	5,000	,176	1,248	-,235	-,830
SC4	1,000	5,000	,033	,232	-,248	-,875
CS4	1,000	5,000	,164	1,157	-,237	-,839
CS3	1,000	5,000	-,037	-,260	-,456	-1,612
CS2	1,000	5,000	,016	,116	-,257	-,909
CS1	1,000	5,000	-,028	-,195	-,552	-1,952
P1	1,000	5,000	-,462	-3,265	-,271	-,958
P2	1,000	5,000	-,461	-3,262	-,324	-1,146
P3	1,000	5,000	-,272	-1,921	-,270	-,956
P4	1,000	5,000	-,471	-3,328	-,070	-,248
SQ1	1,000	5,000	-,415	-2,932	-,482	-1,703
SQ2	1,000	5,000	,014	,098	-,472	-1,669
SQ3	1,000	5,000	-,281	-1,988	-,501	-1,770
SQ4	1,000	5,000	-,252	-1,779	-,530	-1,875
Multivariate					7,165	1,997

Table 4.12 showed value of CR multivariate is 1,997 which is below 2,58. Therefore, the data on this research can be stated distributed normally.

3) Outlier Evaluation

Outliers are observations or data that have unique characteristics that look different from other observations and appear in the form of extreme values, either for a variable or for combined variables. The outliers can be evaluated using an analysis of the multivariate outliers seen from the Mahalanobis Distance value.

Mahalanobis Distance test is calculated using the chi-square value on the degree of freedom of 20 indicators at the level of $p < 0.001$ using the formula $X^2(21; 0.001) = 46.797$. The results of the outlier analysis can be seen in Table 4.13

Table 4.13 Outlier Data Test

Observation number	Mahalanobis d-squared	p1	p2
277	40,535	,006	,854
253	39,403	,009	,741
113	39,387	,009	,494
95	38,465	,011	,444

Observation number	Mahalanobis d-squared	p1	p2
24	37,502	,015	,453
109	37,316	,015	,321
106	36,254	,020	,417
268	36,180	,021	,291
69	36,021	,022	,209
2	35,906	,022	,140
242	35,874	,023	,081
175	35,601	,024	,064
114	34,485	,032	,172
34	34,169	,035	,165
235	33,812	,038	,172
182	33,566	,040	,158
3	33,216	,044	,172

In Table 4.13, it is known that the highest mahalanobis d square value was 40.535, thus it did not exceed the c-square value of 46.797. From these results, it can be concluded that there are no outlier data.

4.3.2 Confirmatory Factor Analysis

Confirmatory analysis was used to test the concepts built using several measurable indicators. In the confirmatory analysis, the first thing to look at was the loading factor value of each indicator. The loading factor can be used to measure construct validity where a questionnaire was stated to be valid if the questions on the questionnaire are able to reveal something that is measured by the questionnaire. According to Ghozali (2017) a data can be stated valid if the value of factor loading $>0,5$. While for the reliability test of the data, a data can be stated reliable if the value of construct reliability is $>0,7$. For the loading factor value, it can be seen in Table 4.14 below.

4.3.2.1 Validity and Reliability Test

Table 4.14 Validity Test Result

Variables	Indicator	Factor Loading	Statement	Construct Reliability	Statement
Service Quality	SQ1	0,808	Valid	0,8	Reliable
	SQ2	0,778	Valid		
	SQ3	0,568	Valid		
	SQ4	0,471	Not Valid		
Perceived Price	PP1	0,785	Valid	0,9	Reliable
	PP2	0,796	Valid		
	PP3	0,750	Valid		
	PP4	0,825	Valid		
	CS1	0,776	Valid	0,9	Reliable

Customer Satisfaction	CS2	0,714	Valid		
	CS3	0,841	Valid		
	CS4	0,756	Valid		
	CS5	0,741	Valid		
Switching Cost	SC1	0,844	Valid	0,8	Reliable
	SC2	0,576	Valid		
	SC3	0,715	Valid		
	SC4	0,527	Valid		
	SC5	0,326	Not Valid		
Switching Behavior	SB1	0,757	Valid	0,9	Reliable
	SB2	0,743	Valid		
	SB3	0,761	Valid		

From table 4.14 it showed that all indicators in this study already had a loading factor value of more than 0.5 except for SQ4 and SC5 therefore, they must be dropped from the analysis. After dropping the invalid indicators, the rest of the indicators can be stated valid in this study.

From Table 4.14 it could be seen that the construct reliability of all variables showed ≥ 0.7 . Thus, it can be concluded that the questionnaire used for this study was stated reliable.

4.3.3 Structural Model Identification

By looking at the estimation results, structural model can be identified. If the results of model identification show that the model is in the over-identified category, then SEM analysis can only be carried out. This identification was done by looking at the df value of the model created.

Table 4.15 Computation of Degrees of Freedom

Number of distinct sample moments:	190
Number of distinct parameters to be estimated:	56
Degrees of freedom (190 - 56):	134

The results from Table 4.15 showed the df value of the model was 134. This showed that the model was over identified because it had a positive df value. Therefore, data analysis could be continued.

4.3.4 Structural Analysis

After each variable were tested and accepted, the next step was to estimate the full model structural. It can be done by inserting the indicators that already tested with confirmatory factor analysis. The result of the structural model analysis can be seen from Figure 4.1 below.

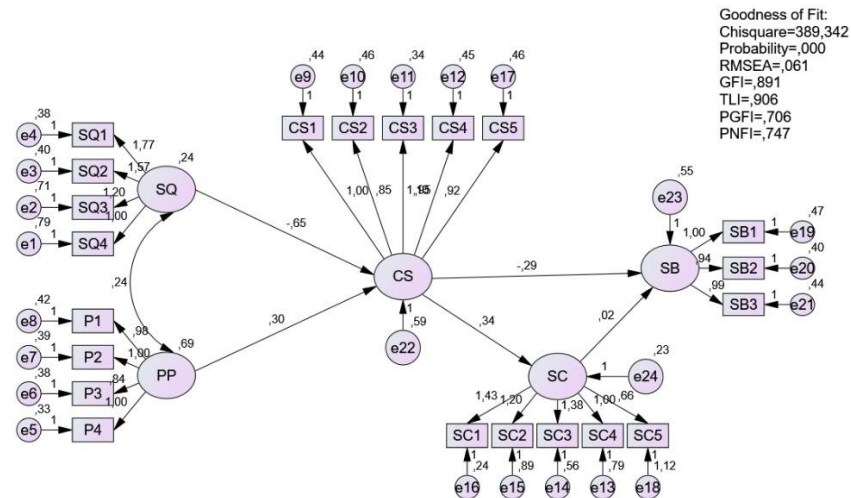


Figure 4.1 Structural Equation Model

4.3.4 Goodness of Fit

Goodness of fit is done to find out how far the hypothesized model is fit the sample data. Goodness of fit is analyzed through several criteria. The following are the results of goodness of fit shown in Table 4.16 below.

Table 4.16 Goodness of Fit Index Result

Goodness of Fit Index	Cut-off Value	Research Model	Model
Chi-Square	Low	389,342	Not Fit
Probability	≥ 0.05	0,000	Not Fit
CMIN/DF	< 2.0	2,128	Not Fit
GFI	≥ 0.90	0,891	Fit

RMSEA	$0.03 \leq \text{RMSEA} \leq 0.08$	0,061	Fit
AGFI	≥ 0.90	0,863	Not Fit
TLI	≥ 0.90	0,906	Fit
NFI	≥ 0.90	0,858	Not Fit

From the results of the goodness of fit test in Table 4.16, it showed that most of the criteria were not fit. Therefore, to increase the GOF value, it was necessary to modify the model which refers to the table modification index by providing a covariance relationship or removing indicators that had a high MI (Modification Index) value.

4.3.5 Modified Model

The following is a research model that had been modified by referring to the modification index table by providing covariance relationships or removing indicators that have a high MI (Modification Index) value. The modified model could be seen in figure 4.2 below:

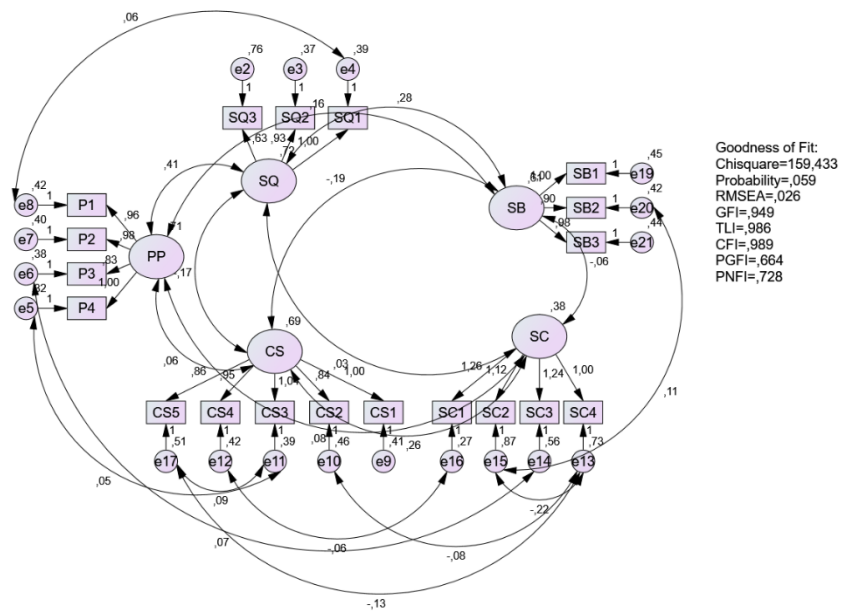


Figure 4.2 Modified Confirmatory Factor Analysis

After modification, the results showed that the Goodness of Fit value has met all the criteria therefore the model in this study can be stated fit as in table 4.17

Table 4.17 Modified Goodness of Fit Index Result

Goodness of Fit Index	Cut-off Value	Research Model	Model
Chi-Square	Low	159,433	Marginal Fit
Probability	≥ 0.05	0,059	Fit
CMIN/DF	< 2.0	1,169	Fit
GFI	≥ 0.90	0,949	Fit

RMSEA	$0.03 \leq \text{RMSEA} \leq 0.08$	0,026	Marginal Fit
AGFI	≥ 0.90	0,928	Fit
TLI	≥ 0.90	0,986	Fit
NFI	≥ 0.90	0,938	Fit

Table 4.17 showed that the model in this research is categorized as good fit model.

a. Likelihood Ratio Chi-Square (X^2)

Chi Square (X^2) shows a measure to evaluate the suitability of the overall model or a fundamental measure of overall fit. Based on the results of Table 4.18, the chi-square is 159,433 and p value of 0.059. This value indicates that the research model is fit.

b. CMIN/DF

CMIN / DF is an index that measures the goodness of fit model using the number of calculation coefficients expected to achieve conformity. The CMIN / DF results in this study were 1.169 indicating that the research model was fit.

c. Goodness of Fit Index (GFI)

GFI is the level of suitability of the overall model calculated from the squared residuals in the predicted model and compared to the actual data. The GFI value in this model was 0.949. The value according to the recommended level ≥ 0.90 indicated the research model was fit.

d. Root Mean Square Error of Approximation (RMSEA)

The RMSEA is an index used to compensate for chi-square values in a large sample. The RMSEA value of this study was 0.026 with a recommended value that is between 0.03 to 0.08 (Hair Jr, Black, Babin, & Anderson, 2010). Therefore, the RMSEA value indicated a fit research model.

e. Adjusted Goodness of Fit Index (AGFI)

AGFI is a development of GFI which is adjusted to the proposed degree of freedom ratio with the degree of freedom for the null model. The AGFI value in this model was 0.928. The value corresponds to the recommended level ≥ 0.90 . This showed that the research model was fit

f. Tucker Lewis Index (TLI)

TLI is a suitability index which tends to be less influenced by sample size. The TLI value in this study was 0.986 with a recommended value of ≥ 0.90 . This showed that the research model was fit.

g. Normed Fit Index (NFI)

NFI is a measure of the comparison of the proposed models and the null model. The NFI value in this study was 0.938 with a recommended value of ≥ 0.90 . This shows that the research model is fit.

From the results of the goodness of fit measurement on modified model above, this model can be accepted because the model had shown that it was fit and no need for further modification.

4.3.7 Hypotheses Test

In this section, hypothesis test was carried out to analyze the structural models that had been made. The process of testing the proposed hypothesis could be done by observing at the value of the standardized regression coefficient. The modified final model could be seen from figure 4.3 below:

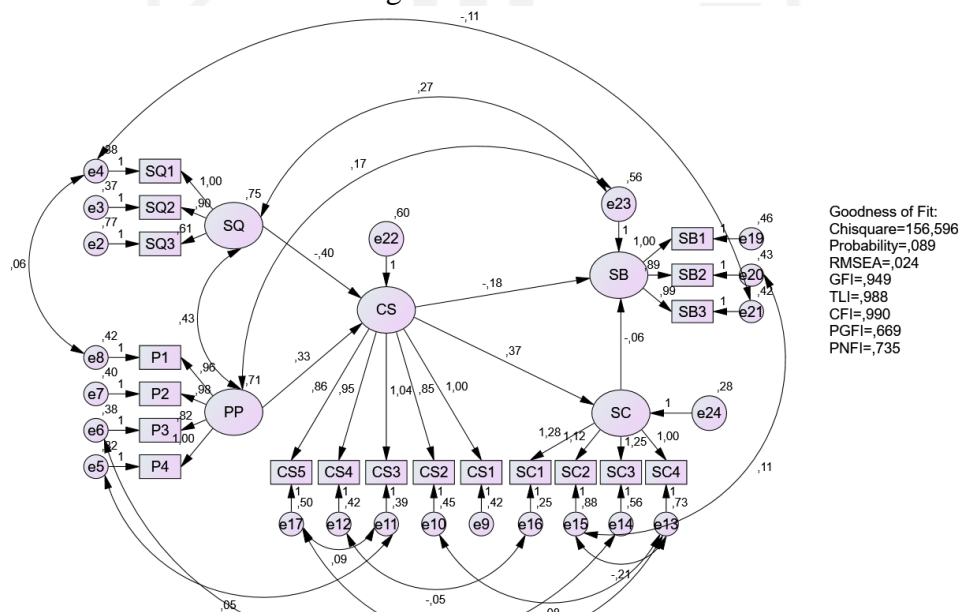


Figure 4.3 Modified Final Model

The results of data processing could be seen that there was a positive relationship between variables if C.R shows a value above 1.96 and significant if the P value is below 0.05 (Ghozali, 2016). Based on statistical analysis using the AMOS program, the test results are shown in Table 4.18 below.

Table 4.18 Hypotheses Test Result

No	Hypotheses	Estimate	S.E.	C.R.	P	Statement
1	H1	-,398	,090	-4,440	***	Rejected
2	H2	,329	,087	3,782	***	Accepted
3	H3	-,179	,081	-2,228	,026	Accepted
4	H4	,366	,058	6,354	***	Accepted
5	H5	-,058	,102	-,568	,570	Accepted

Based on Table 4.18 above, it could be seen the results of the regression weight test which could explain the coefficient of influence between the related variables. Thus, the results of the regression weight analysis showed that:

- 1) Service quality has negative influence towards customer satisfaction

Based on the hypothesis test, the estimate regression weight gained is -0,398 and -4,440 for the C.R value. This result showed negative influence of service quality to customer satisfaction. The test of this variable also has

probability value of 0,000 ($p < 0,05$) which is significant. Therefore, the hypothesis was rejected.

2) Perceived price has positive influence towards customer satisfaction

Based on the hypothesis test, the estimate regression weight gained was 0,329 and 3,782 for the C.R value. This result show positive influence of perceived price to customer satisfaction. The test of this variable also has probability value of 0,000 ($p < 0,05$) which is significant. Therefore, the hypothesis stating “perceived price has positive influence towards customer satisfaction” was accepted.

3) Customer satisfaction has negative influence towards switching behavior

Based on the hypothesis test, the estimate regression weight gained was -0,179 and -2,228 for the C.R value. This result showed negative influence of customer satisfaction to switching behavior. The test of this variable also has probability value of 0,026 which is significant. Therefore, the hypothesis stating “customer satisfaction has negative influence towards switching behavior” was accepted.

4) Customer satisfaction has positive influence towards switching cost.

Based on the hypothesis test, the estimate regression weight gained was 0,366 and 6,354 for the C.R value. This result show positive influence of customer satisfaction to switching cost. The test of this variable also has probability value of 0,000 ($p < 0,05$) which is significant. Therefore, the

hypothesis stating “customer satisfaction has positive influence towards switching cost” was supported.

5) Switching cost has negative influence towards switching behavior

Based on the hypothesis test, the estimate regression weight gained was -0,058 and -0,568 for the C.R value. This result showed negative influence of switching cost to switching behavior. This means that if the consumers had low switching cost, they would still have high switching behavior. The test of this variable also had probability value of 0,570 which is insignificant. Therefore, the hypothesis stating “switching cost has positive influence towards switching behavior” was accepted.

6) Influence of Independent Variable

This test was carried out to determine the influence between variables directly and indirectly.

Table 4.19 Influence of Independent Variable

Variables	Total Effect					Direct Effect					Indirect Effect				
	SQ	PP	CS	SC	SB	SQ	PP	CS	SC	SB	SQ	PP	CS	SC	SB
CS	-,398	,329	,000	,000	,000	-,398	,329	,000	,000	,000	,000	,000	,000	,000	,000
SC	-,146	,120	,366	,000	,000	,000	,000	,366	,000	,000	,014	,009	,000	,000	,000
SB	,0,80	-,0,66	-,201	,0,58	,000	,000	,000	-,179	-,058	,000	,011	,010	,560	,000	,000

Table 4.19 above showed that direct effect of service quality towards customer satisfaction have value of $-.398$ or $-39,8\%$. Perceived price had direct effect towards customer satisfaction with value of $.329$ or $32,9\%$. Customer satisfaction had direct effect towards switching cost with value $.366$ or $36,6\%$. Customer satisfaction also had direct effect towards switching behavior with value $-.179$ or $-17,9\%$. Switching cost had direct effect towards switching behavior with value of $-.058$ or $-5,8\%$.

Table 4.19 also showed indirect effect of the variables. Service quality had indirect effect towards switching cost with value of $.014$. Service quality also had indirect effect towards switching behavior with value of $.011$. Perceived price had indirect effect towards switching cost with value of $.009$. Perceived price also had indirect effect towards switching behavior with value of $.010$. Lastly customer satisfaction had indirect effect towards switching behavior with value of $.560$.

4.4 Discussion

After tested the hypotheses based on research findings, then the following discussion can be drawn.

1) The influence of service quality towards customer satisfaction

The result of the research showed that service quality influencing customer satisfaction negatively and significantly. This means that the variable had an opposite influence. This result is different from previous researches such

as from Malik et al. (2012), and Rao et al. (2016). Their research showed that service quality had positive influence towards customer satisfaction, while on this research is the opposite. This could happen because in both of their research the respondents were varies from students, employees, businessman, professionals, and professors. While on this research the respondents were only from students.

2) The influence of perceived price towards customer satisfaction

The result of the research showed that perceived price influencing customer satisfaction positively and significantly. It means that if the perceived price by the customer was good, it would increase their customer satisfaction towards certain product or service. Telecommunication company could adjust their price in order to be accepted by their consumers and increase their customer satisfaction. This result was in accordance with the research that was conducted by Shah et al. (2018). According to the research, perceived price that was felt by the customers was a crucial factor in creating positive customer satisfaction.

3) The Influence of customer satisfaction towards switching behavior

The result of the research showed that customer satisfaction influencing switching behavior negatively and significantly. It means that if the customer satisfaction is low, then customers would be resulting in switching behavior. This result was in accordance with the research that was conducted

by Yunita & Rosa (2016) regarding switching behavior on a product. They uncovered that the most influential factor of consumer to switch from one brand to another is because of dissatisfaction, especially when consumer expectation toward certain product is not met.

4) The Influence of customer satisfaction towards switching cost

The result of the research showed that customer satisfaction influencing switching cost positively and significantly. This means that the higher the customer satisfaction, the higher the switching cost would be for the consumers. Telecommunication company should increase their customer satisfaction in order to keep the switching cost of customers high. The research result was in accordance with the research conducted by Edward and Sahadev (2011). With switching cost of customers high, customers would tend to stick with the same brand.

5) The Influence of switching cost towards switching behavior

The result of the research showed that switching cost influencing switching behavior negatively but not significant. This means that if consumers have low switching cost, they would have switching behavior. In addition, the negative influence was insignificant. It means that switching cost do not serve as a strong factor to be considered. The research result was in slightly different with the research conducted by Ningsih and Segoro (2014). By increasing customers satisfaction and switching cost, customers would tend to be loyal and reluctant to switch from one brand to the other.

CHAPTER V

CONCLUSION

Based on the results of the analysis that had been obtained in the study entitled “Investigating Influencing Factors of Consumer Brand Switching Behavior Among University Students in Indonesia Telecommunication Service Provider” by using SEM (Structural Equation Model) analysis and by distributing 300 questionnaires to university students who had switch from telecommunication provider in Indonesia. Therefore, it could be drawn a conclusion and suggestions as follows:

5.1 Conclusion

From the results of the analysis in this research, it could be concluded that most of the hypotheses that had been formulated was accepted, while one of the hypotheses had been rejected. Most of the hypotheses were had significant influence, while there was one hypothesis that was not showed significant influence. Thus, conclusion could be drawn as follows:

1. The result of the research showed that service quality influencing customer satisfaction negatively and significantly. This means that service quality had opposite outcome with customer satisfaction. Even though service quality was bad, customer may still be satisfied.
2. The result of the research showed that perceived price influencing customer satisfaction positively and significantly. It means that if the perceived price by

the customer was good, it would increase their customer satisfaction towards certain product or service. Telecommunication company could adjust their price in order to be accepted by their consumers and increase their customer satisfaction. This result was in accordance with the research that was conducted by Shah et al. (2018). According to the research, perceived price that was felt by the customers was a crucial factor in creating positive customer satisfaction.

3. The result of the research showed that customer satisfaction influencing switching behavior negatively and significantly. It means that with low customer satisfaction gained by the customers, they would tend to switch from one brand to the other. This result was similar with the research conducted by Arianto (2013), if the consumer was indeed dissatisfied, there would be a chance of the consumer to switch from the current brand.
4. The result of the research showed that customer satisfaction influencing switching cost positively and significantly. This means that the higher the customer satisfaction, the higher the switching cost would be for the consumers. Telecommunication company should increase their customer satisfaction in order to keep the switching cost of customers high. The research result was in accordance with the research conducted by Edward and Sahadev (2011). With high customer satisfaction customer would also have high switching cost they need to sacrifice if they want to switch to another brand.
5. The result of the research showed that switching cost influencing switching behavior negatively but not significant. This means that with low switching cost

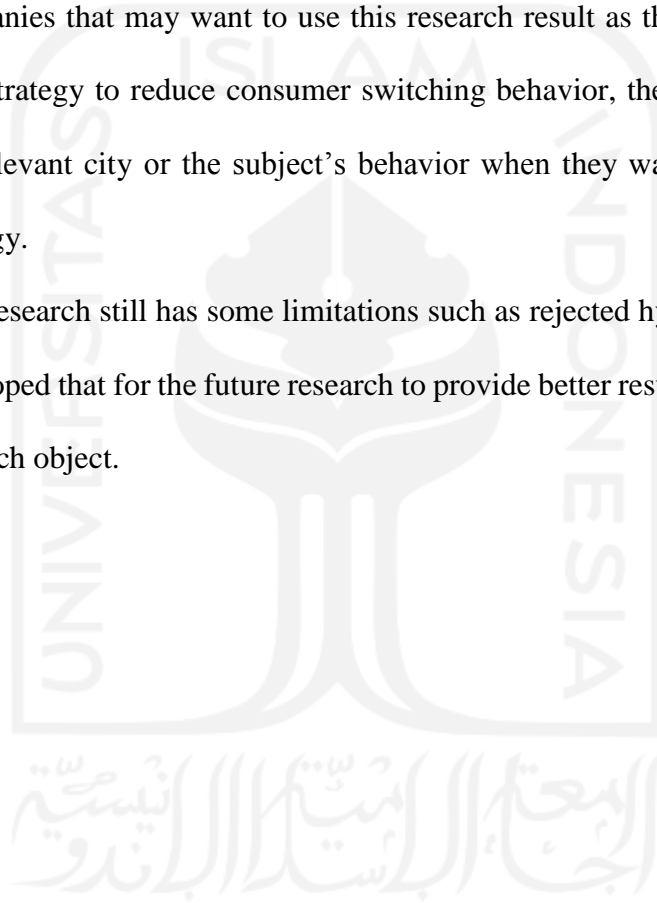
gained by the customers, they could have switching behavior easily. This result was similar to research that was done by Aydin and Özer (2005) in Turkey. They gained result that switching cost had been a positive impact towards customers loyalty to stick with the same brand. Thus, by having high switching cost, customers would not easily had switching behavior.

5.2 Suggestion and Limitation

Based on the results of this research, the researcher proposes several suggestions that are expected to be useful for both telecommunication companies and future research that are similar to this research. The suggestion and limitation are written as follows:

1. Considering hypothesis that has been rejected, telecommunication companies would still need to consider giving a good service quality. Because in this research the respondents were university students, they may have different opinion with employees, professional, businessman, and professors alike.
2. Telecommunication companies should also consider creating new price lists that was fit and could be accepted by the consumers. In this research it was proven that high perceived price felt by the consumers would mean high customer satisfaction. With having high customers satisfaction, it would increase the switching cost. Thus, making customers loyal and stick with the same brand.

3. The subject of this research is Indonesian university students. The questionnaire distributed mainly in the city of Jakarta and Yogyakarta. Telecommunication companies must be aware that the result of research that was similar to this research may have different result. Therefore, the telecommunication companies that may want to use this research result as their basis of creating new strategy to reduce consumer switching behavior, they must align it with the relevant city or the subject's behavior when they want to implement the strategy.
4. This research still has some limitations such as rejected hypothesis. Therefore, it is hoped that for the future research to provide better result with more diverse research object.



REFERENCES

- Abdi, H., & Williams, L. J. (2010). *Principal component analysis*. John Wiley & Sons, Inc.
- Afzal, S., Chandio, A. K., Shaikh, S., Bhand, M., Ghumro, B. A., & Khuhro, A. K. (2013). Factors Behind Brand Switching in Cellular Networks. *International Journal of Asian Social Science*.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Process*.
- Arianto, A. B. (2013). Pengaruh Atribut Produk, Harga, Kebutuhan Mencari Variasi dan Ketidakpuasan Konsumen terhadap Keputusan Perpindahan Merek dari Samsung Galaxy Series di Kota Malang. *Jurnal Aplikasi Manajemen*.
- Arya, H. (2016). Brand Switching In Telecom Industry. *Journal of Exclusive Management Science*.
- Aydin, S., & Özer, G. (2005). The analysis of antecedents of customer loyalty in the Turkish mobile telecommunication market. *European Journal of Marketing*.
- Burnham, T. A., Frels, J. K., & Mahajan, V. (2003). Consumer Switching Costs: A Typology, Antecedents, and Consequences. *Academy of Marketing Science*.
- Colgate, M., & Lang, B. (2001). Switching barriers in consumer markets: an investigation of the financial services industry. *Journal of Consumer Marketing*.
- Edward, M., & Sahadev, S. (2011). Role of switching costs in the service quality, perceived value, customer satisfaction and customer retention linkage. *Asia Pacific Journal of Marketing and Logistics*.
- Ferdinand, A. (2006). *Structural Equation Modeling dalam Penelitian Manajemen; Aplikasi Model-Model Rumit dalam Penelitian untuk Tesis Magister dan Disertasi Doktor, Edisi 4*. Semarang: Universitas Diponegoro.
- Gefen, D., & Devine, P. (2001). Customer Loyalty to an Online Store: The Meaning of Online Service Quality. *International Conference on Information Systems*.
- Ghobadian, A., Jones, M., & Speller, S. (1993). Service Quality Concepts and Models. *International Journal of Quality & Reliability Management*.
- Ghozali, I. (2016). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 23 (Edisi 8)*. Semarang: Badan Penerbit Universitas Diponegoro.

- Ghozali, I. (2017). *Model Persamaan Struktural Konsep dan Aplikasi dengan Program AMOS 24 Update Bayesian SEM Edisi 7*. Semarang: Universitas Diponegoro.
- Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis (7th Edition)*. Essex, United Kingdom: Person Prentice Hall.
- Hair, J. F. (2006). *Multivariate Data Analysis Edisi 5*. Jakarta: Gramedia Pustaka Utama.
- Han, H., Kim, W., & Hyun, S. S. (2011). Switching intention model development: Role of service performances, customer satisfaction, and switching barriers in the hotel industry. *International Journal of Hospitality Management*.
- Herrmann, A., Xia, L., Monroe, K. B., & Huber, F. (2007). The influence of price fairness on customer satisfaction: an empirical test in the context of automobile purchases. *Journal of Product & Brand Management*.
- Hidayat, A., Adanti, A. P., Darmawan, A., & Setyaning, A. N. (2019). Factors Influencing Indonesian Customer Satisfaction and Customer Loyalty in Local Fast-Food Restaurant. *International Journal of Marketing Studies*.
- Horovitz, J. (1990). *How to Win Customers: Using Customer Service for a Competitive Edge*. Financial Times Management.
- Indonesia, A. P. (2020). *Keanggotaan*. Retrieved May 12, 2020, from ATSI: <https://www.atsi.or.id/keanggotaan/>
- Khurshid, M. (2013). Determinants of Customer Loyalty, its Causes and Influences in Telecom Industry. *International Review of Social Sciences*.
- Kim, G., Shin, B., & Lee, H. G. (2006). A study of factors that affect user intentions toward email service switching. *Information & Management*.
- Kim, H.-W., Xu, Y., & Gupta, S. (2012). Which is more important in Internet shopping, perceived price or trust? *Electronic Commerce Research and Application*.
- Knox, S., & Walker, D. (2001). Measuring and Managing Brand Loyalty. *Journal of Strategic Marketing*.
- Kotler, P., Armstrong, G., & Opresnik, M. O. (2018). *Principles of Marketing 17th Edition*. Pearson Education Limited.

- Lee, J., Lee, J., & Feick, L. (2001). The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. *Journal of Service Marketing*.
- Lewis, B. R. (1989). Quality in The Service Sector: A Review. *International Journal of Bank Marketing*.
- Liang, D., Ma, Z., & Qi, L. (2013). Service quality and customer switching behavior in China's mobile phone service sector. *Journal of Business Research*.
- Liu, C.-T., Guo, Y. M., & Lee, C.-H. (2011). The effects of relationship quality and switching barriers on customer loyalty. *International Journal of Information Management*.
- Makwana, K., Sharma, N., & Arora, S. (2014). Factors Influencing Consumer Brand Switching Behavior in Telecommunication Industry: An Empirical Study. *Prestige e-Journal of Management and Research*.
- Malhotra, A., & Malhotra, C. K. (2013). Exploring switching behavior of US mobile service customers. *Journal of Services Marketing*.
- Malhotra, N. K., Nunan, D., & Birsk, D. F. (2017). *Marketing Research an Applied Approach Fith Edition*. Slovakia: Pearson Education Limited.
- Malik, M. E., Ghafoor, M. M., & Iqbal, H. K. (2012). Impact of Brand Image, Service Quality and price on customer satisfaction in Pakistan Telecommunication sector. *International Journal of Business and Social Science*.
- Martín-Consuegra, D., Molina, A., & Esteban, Á. (2007). An integrated model of price, satisfaction and loyalty: an empirical analysis in the service sector. *Journal of Product & Brand Management*.
- Moore, C. D. (1987). Outclass the Competition with Service Distinction. *Mortgage Banking*.
- Nielsen: *Consumer Disloyalty is The New Normal*. (2019, June 19). Retrieved May 13, 2020, from nielsen.com: <https://www.nielsen.com/eu/en/press-releases/2019/consumer-disloyalty-is-the-new-normal/>
- Ningsih, S. M., & Segoro, W. (2014). The influence of customer satisfaction, switching cost and trusts in a brand on customer loyalty - the survey on student as im3 users in Depok, Indonesia. *Procedia - Social and Behavioral Sciences*.

- Oliver, R. L. (1997). *Emotional expression in the satisfaction response*.
- Pookulangara, S., Hawley, J., & Xiao, G. (2011). Explaining Consumers' Channel-Switching Behavior Using The Theory of Planned Behavior. *Journal of Retailing and Consumer Services*.
- R., R., & Charlas, D. L. (2012). Agency Related Issues Faced By Clients – The Major Cause Behind Brand Switching In Cellular Phone Service Industry. *International Journal of Research in Human Resources Management*.
- Rao, D. U., V.C.S.M.R, D. P., & Gundala, D. R. (2016). Brand Switching Behavior in Indian Wireless Telecom Service Market. *Journal of Marketing Management*.
- Ryu, K., & Han, H. (2009). Influence of the Quality of Food, Service, and Physical Environment on Customer Satisfaction and Behavioral Intention in Quick-Casual Restaurants: Moderating Role of Perceived Price. *Journal of Hospitality & Tourism Research*.
- Saeed, R., Lodhi, R. N., Saeed, M. S., Fareed, Z., Sami, A., Dustgeer, F., . . . Ahmad, M. (2013). Factors Affecting Brand Switching in Telecommunication A Case Study of Sahiwal District, Pakistan. *World Applied Sciences Journal*.
- SDPPI, T. P. (2018). *Analisis Industri Telekomunikasi Indonesia Untuk Mendukung Efisiensi*. Puslitbang Sumber Daya, Perangkat, dan Penyelenggaraan Pos dan Informatika.
- Sekaran, U., & Bougie, R. (2016). *Research Method for Business a Skill Building Approach Seventh Edition*. Chichester: Wiley.
- Shah, M. A., Husnain, M., & Zubairshah, A. (2018). Factors Affecting Brand Switching Behavior in Telecommunication Industry of Pakistan: A Qualitative Investigation. *American Journal of Industrial and Business Management*.
- Shujaat, S., Syed, N. A., & Ahmed, U. (2015). Factors Behind Brand Switching in Telecommunication Industry of Pakistan. *IBT Journal of Business Studies*.
- Sumaedi, S., Bakti, I. G., & Metasari, N. (2011). The Effect of Students' Perceived Service Quality and Perceived Price on Student Satisfaction. *Management Science and Engineering*.
- Sutianto, F. D. (2019, August 13). *Survei Loyalitas: 38 Persen Konsumen RI Suka Coba Merek Baru*. Retrieved May 14, 2020, from Kumparan:

<https://kumparan.com/kumparanbisnis/survei-loyalitas-38-persen-konsumen-ri-suka-coba-merek-baru-1relcYltsZN/full>

- Tamara, N. H. (2019, August 23). *Pasang Surut Kinerja Tiga Raksasa Telekomunikasi*. Retrieved May 12, 2020, from katadata.co.id: <https://katadata.co.id/analisisdata/2019/08/22/pasang-surut-kinerja-tiga-raksasa-telekomunikasi>
- Tuan, D. N. (2012). Effects of Service Quality and Price Fairness on Student Satisfaction. *International Journal of Business and Social Science* .
- Yunita, D., & Rosa, A. (2016). Pengaruh Mencari Variasi, Ketidakpuasan, dan Ketidak Tersediaan Produk Terhadap Perpindahan Merek. *Jurnal Manajemen dan Bisnis Sriwijaya*.
- Zeithaml, V. A. (1988). Consumers' perceptions of price, quality, and value: a means-end model and synthesis of evidence. *Journal of Marketing*.
- Zeithaml, V. A., & Bitner, M. J. (2003). *Services Marketing: Integrating Customer Focus Across the Firm*.

ATTACHMENTS

Attachment 1 Research Questionnaire

Assalamu'alaikum Wr. Wb.

My name is Rifqi Isham Santoso, I am currently enrolling as 2017 student in Management Study Program, Faculty of Business and Economics, Islamic University of Indonesia (UII). I am currently doing a thesis research entitled "Investigating the Factors Affecting Trademark Transfer Behavior among Indonesian Telecommunications Service Providers among Students" With all humility I ask for your availability and cooperation to fill out this questionnaire according to personal perceptions. The data gathered will only be used for academic research purposes.

Thank you for your attention and participation.

Wassalamualaikum wr. wb.

Best regards,

Rifqi Isham Santoso

Section A

1. Gender:
 - Male
 - Female
2. Age:
 - <18
 - 18-20
 - 21-23
 - >23
3. Your current semester:
4. Monthly income:
 - <Rp. 500.000
 - Rp. 500.000 – Rp. 999.000
 - Rp. 1.000.000 – Rp. 1.500.000
 - >Rp. 1.500.000
5. Have you ever switched from telecommunication service provider? (Telkomsel, XL, Indosat):
 - Yes
 - No
6. What is your current telecommunication service provider?
 - Telkomsel

- XL
- Indosat
- Tri
- Smartfren
- Other

Section B

Instructions:

Please select one of the available options according to your situation.

Information:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

There are no right or wrong answers in this questionnaire. We also did not ask for names and identities. Please be able to fill in the answer options according to yourself.

Service Quality

No	Question	Response				
		1	2	3	4	5
1	My previous telecommunication service is having low signal quality					
2	My previous telecommunication service makes me failed in delivering messages frequently					
3	My previous telecommunication service is sending too many spam messages/calls					
4	My previous telecommunication service is having too many unnecessary testing programs					

Perceived Price

No.	Question	Response				
		1	2	3	4	5
1	I think my previous telecommunication service provider is cheap					
2	I think I would not save more money by changing my telecommunication service provider					
3	I think the fee of my previous telecommunication service provider generally less costly					
4	Overall, I think the fee of my previous telecommunication service provider is cheaper					

Customer Satisfaction

No.	Question	Response				
		1	2	3	4	5
1	I am satisfied with my decision to use my previous telecommunication service provider					
2	My previous choice of the telecommunication service provider is a wise one					
3	I am happy with my previous decision to use the telecommunication service provider					
4	I did the right decision when I decided to use the previous telecommunication service provider					

5	If I have choice to do it all over again, I will choose my previous telecommunication service provider					
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Switching Cost

No.	Question	Response				
		1	2	3	4	5
1	If I switched to another telecommunication service provider, the service given might not as well as expected.					
2	I am not sure the fee of another telecommunication service provider charged would be better for me.					
3	Even if I have plenty of information, comparing the telecommunication service					

	provider takes a lot of time and energy.					
4	If I switched to another telecommunication service provider, I could not use some services until I learned to use them.					
5	I would be concerned about the people who contact me using my previous number and could not reach me.					

Switching Behavior

No.	Question	Response				
		1	2	3	4	5
1	I am considering switching from my current telecommunication service provider.					
2	The chance of me to switch to another telecommunication service provider is high.					
3	I am determined to switch to another telecommunication service provider.					

Attachment 2 Instrument Test Data

No.	SQ1	SQ2	SQ3	SQ4	P1	P2	P3	P4	CS1	CS2	CS3	CS4	CS5	SC1	SC2	SC3	SC4	SC5	SB1	SB2	SB3
1	3	5	3	5	3	3	3	3	3	3	3	5	3	4	3	3	3	4	4	3	3
2	2	3	3	2	2	1	2	1	2	1	2	1	2	2	1	3	3	1	5	4	5
3	2	2	4	4	1	1	3	3	3	3	3	3	2	3	3	3	5	3	4	4	4
4	2	3	2	4	2	2	3	3	2	1	1	1	2	3	2	1	2	3	5	4	4
5	3	3	3	4	3	3	3	3	3	5	5	5	3	3	3	5	3	3	5	4	4
6	3	3	3	4	3	4	4	4	4	5	4	4	5	5	4	5	3	5	5	3	5
7	4	4	4	3	4	3	4	4	3	5	3	3	3	4	5	5	4	3	4	4	5
8	4	4	4	3	4	4	3	3	3	3	3	3	3	3	5	3	4	3	4	4	5
9	4	4	5	3	5	4	5	4	1	2	1	2	2	2	3	2	1	3	5	4	5
10	4	5	2	3	3	3	3	3	2	2	2	2	2	3	3	3	3	4	3	5	4
11	4	4	5	4	4	4	4	3	2	3	2	3	2	2	3	2	1	3	3	5	5
12	4	3	3	4	4	4	4	5	5	4	4	4	5	4	2	4	2	4	1	1	2
13	4	4	3	3	3	3	3	3	1	3	1	1	1	2	3	2	2	1	1	3	2
14	4	4	5	4	4	5	4	4	3	5	3	3	3	3	3	3	4	3	4	5	4
15	4	4	5	4	4	3	4	4	3	3	3	5	3	3	5	3	4	3	4	5	5
16	4	4	3	5	5	5	4	4	2	2	3	3	2	2	3	2	1	3	4	5	4
17	4	3	4	5	4	5	4	4	2	2	2	1	2	2	1	3	3	1	4	3	3
18	4	3	5	5	3	5	4	4	2	3	3	2	2	3	4	4	2	4	4	3	3
19	4	3	4	5	5	4	5	5	5	3	3	5	3	3	3	3	3	5	4	4	5
20	4	3	3	5	3	2	3	3	2	2	3	2	2	3	3	3	4	3	5	4	3
21	4	4	4	5	5	4	4	5	2	2	2	1	2	3	2	3	3	4	5	4	5
22	4	5	5	5	5	5	4	4	2	3	3	2	1	3	4	5	4	2	5	4	4

23	3	4	5	4	3	2	3	3	4	5	4	3	4	4	1	3	3	1	2	1	2
24	3	2	4	4	3	2	3	3	4	3	3	3	4	3	2	3	3	2	2	2	1
25	3	3	4	4	3	3	4	4	5	4	4	4	4	3	3	3	3	3	3	3	3
26	4	3	2	4	3	4	4	4	4	5	4	4	5	5	4	5	3	5	1	2	1
27	5	5	4	5	3	4	4	4	2	2	3	3	2	2	3	2	2	1	4	5	4
28	5	5	4	5	4	5	5	4	2	1	2	1	2	3	4	5	4	2	4	4	5
29	2	1	3	4	2	1	2	2	2	2	3	3	2	2	2	1	2	3	4	4	3
30	2	2	4	4	4	4	4	4	4	4	4	4	2	2	1	3	4	2	4	4	3
31	3	3	3	4	3	2	3	3	3	4	3	3	3	5	4	4	5	3	3	3	5
32	3	2	2	1	1	2	2	2	3	2	2	1	2	2	3	2	1	3	4	5	4
33	3	3	4	4	3	4	5	3	4	4	5	4	5	3	2	3	3	4	2	1	2
34	4	4	3	3	5	4	3	4	5	3	5	3	3	3	5	3	4	3	5	5	4
35	4	3	2	2	3	3	4	3	2	2	1	2	1	2	1	1	2	3	4	3	5
36	4	3	3	4	4	4	5	4	3	3	3	3	3	3	5	3	3	5	4	3	3
37	4	5	4	4	4	4	3	4	3	3	3	3	3	3	3	3	3	5	4	4	5
38	4	4	3	4	3	3	3	3	4	4	3	3	4	3	3	2	2	1	4	4	4
39	4	3	3	4	3	5	3	5	3	5	3	3	5	5	3	3	3	4	5	4	5
40	5	4	4	3	3	5	4	4	2	3	3	2	2	2	3	2	2	2	4	3	5
41	2	1	2	1	2	3	3	3	3	2	2	1	2	4	3	3	3	4	4	3	3
42	3	3	2	3	2	4	3	3	4	4	5	4	4	3	2	2	2	2	3	3	2
43	3	2	3	3	2	3	3	3	3	3	4	3	3	3	4	4	2	4	3	2	3
44	3	2	1	3	1	2	2	1	3	4	3	3	3	1	2	2	1	3	3	3	2
45	3	2	4	3	4	2	3	2	3	3	3	3	2	2	1	3	3	1	2	3	4
46	3	3	4	4	4	4	3	3	4	3	3	3	4	2	1	3	4	2	3	4	3
47	3	4	5	4	3	3	3	3	4	5	4	3	4	4	5	3	3	5	3	5	3
48	3	3	3	4	3	4	4	4	4	4	4	4	4	3	3	3	3	5	4	3	4
49	3	3	3	5	3	4	3	3	3	4	3	3	3	3	4	4	2	4	3	3	2

50	3	3	4	5	3	4	5	3	4	4	5	4	5	3	3	3	3	4	3	5	3
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Attachment 3 Validity and Reliability Instrument Test Data

Service Quality

		Correlations				
		SQ1	SQ2	SQ3	SQ4	TotalSQ
SQ1	Pearson Correlation	1	.680**	.259	.267	.716**
	Sig. (2-tailed)		.000	.069	.061	.000
	N	50	50	50	50	50
SQ2	Pearson Correlation	.680**	1	.367**	.348*	.807**
	Sig. (2-tailed)	.000		.009	.013	.000
	N	50	50	50	50	50
SQ3	Pearson Correlation	.259	.367**	1	.424**	.714**
	Sig. (2-tailed)	.069	.009		.002	.000
	N	50	50	50	50	50
SQ4	Pearson Correlation	.267	.348*	.424**	1	.708**
	Sig. (2-tailed)	.061	.013	.002		.000
	N	50	50	50	50	50
TotalSQ	Pearson Correlation	.716**	.807**	.714**	.708**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	50	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Reliability Statistics

Cronbach's	
Alpha	N of Items
.715	4

Perceived Price

		Correlations				
		PP1	PP2	PP3	PP4	TotalPP
PP1	Pearson Correlation	1	.610**	.592**	.650**	.838**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	50	50	50	50	50
PP2	Pearson Correlation	.610**	1	.647**	.712**	.880**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	50	50	50	50	50
PP3	Pearson Correlation	.592**	.647**	1	.672**	.831**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	50	50	50	50	50
PP4	Pearson Correlation	.650**	.712**	.672**	1	.878**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	50	50	50	50	50
TotalPP	Pearson Correlation	.838**	.880**	.831**	.878**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	50	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	N of Items
.873	4

Customer Satisfaction

		Correlations					
		CS1	CS2	CS3	CS4	CS5	TotalCS
CS1	Pearson Correlation	1	.592**	.731**	.654**	.764**	.865**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	50	50	50	50	50	50
CS2	Pearson Correlation	.592**	1	.660**	.632**	.696**	.838**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	50	50	50	50	50	50
CS3	Pearson Correlation	.731**	.660**	1	.715**	.684**	.878**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	50	50	50	50	50	50
CS4	Pearson Correlation	.654**	.632**	.715**	1	.611**	.843**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	50	50	50	50	50	50
CS5	Pearson Correlation	.764**	.696**	.684**	.611**	1	.875**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	50	50	50	50	50	50
TotalCS	Pearson Correlation	.865**	.838**	.878**	.843**	.875**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	50	50	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's	
Alpha	N of Items
.910	5

Switching Cost

		Correlations					
		SC1	SC2	SC3	SC4	SC5	TotalSC
SC1	Pearson Correlation	1	.421**	.577**	.424**	.482**	.800**
	Sig. (2-tailed)		.002	.000	.002	.000	.000
	N	50	50	50	50	50	50
SC2	Pearson Correlation	.421**	1	.426**	.220	.455**	.738**
	Sig. (2-tailed)	.002		.002	.124	.001	.000
	N	50	50	50	50	50	50
SC3	Pearson Correlation	.577**	.426**	1	.505**	.260	.763**
	Sig. (2-tailed)	.000	.002		.000	.068	.000
	N	50	50	50	50	50	50
SC4	Pearson Correlation	.424**	.220	.505**	1	.011	.577**
	Sig. (2-tailed)	.002	.124	.000		.941	.000
	N	50	50	50	50	50	50
SC5	Pearson Correlation	.482**	.455**	.260	.011	1	.659**
	Sig. (2-tailed)	.000	.001	.068	.941		.000
	N	50	50	50	50	50	50
TotalSC	Pearson Correlation	.800**	.738**	.763**	.577**	.659**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	50	50	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's Alpha	N of Items
.741	5

Switching Behavior

Correlations

		SB1	SB2	SB3	TotalSB
SB1	Pearson Correlation	1	.553**	.666**	.865**
	Sig. (2-tailed)		.000	.000	.000
	N	50	50	50	50
SB2	Pearson Correlation	.553**	1	.559**	.818**
	Sig. (2-tailed)	.000		.000	.000
	N	50	50	50	50
SB3	Pearson Correlation	.666**	.559**	1	.877**
	Sig. (2-tailed)	.000	.000		.000
	N	50	50	50	50
TotalSB	Pearson Correlation	.865**	.818**	.877**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

Reliability Statistics

Cronbach's	
Alpha	N of Items
.814	3

Attachment 4 Data Analysis

No	SQ1	SQ2	SQ3	SQ4	P1	P2	P3	P4	CS1	CS2	CS3	CS4	CS5	SC1	SC2	SC3	SC4	SC5	SB1	SB2	SB3
1	3	5	3	5	3	3	3	3	3	3	3	5	3	4	3	3	3	4	4	3	3
2	2	3	3	2	2	1	2	1	2	1	2	1	2	2	1	3	3	1	5	4	5
3	2	2	4	4	1	1	3	3	3	3	3	3	2	3	3	3	5	3	4	4	4
4	2	3	2	4	2	2	3	3	2	1	1	1	2	3	2	1	2	3	5	4	4
5	3	3	3	4	3	3	3	3	3	5	5	5	3	3	3	5	3	3	5	4	4
6	3	3	3	4	3	4	4	4	4	5	4	4	5	5	4	5	3	5	5	3	5
7	4	4	4	3	4	3	4	4	3	5	3	3	3	4	5	5	4	3	4	4	5
8	4	4	4	3	4	4	3	3	3	3	3	3	3	3	5	3	4	3	4	4	5
9	4	4	5	3	5	4	5	4	1	2	1	2	2	2	3	2	1	3	5	4	5
10	4	5	2	3	3	3	3	3	2	2	2	2	2	3	3	3	3	4	3	5	4
11	4	4	5	4	4	4	4	3	2	3	2	3	2	2	3	2	1	3	3	5	5
12	4	3	3	4	4	4	4	5	5	4	4	4	5	4	2	4	2	4	1	1	2
13	4	4	3	3	3	3	3	3	1	3	1	1	1	2	3	2	2	1	1	3	2
14	4	4	5	4	4	5	4	4	3	5	3	3	3	3	3	3	4	3	4	5	4
15	4	4	5	4	4	3	4	4	3	3	3	5	3	3	5	3	4	3	4	5	5
16	4	4	3	5	5	5	4	4	2	2	3	3	2	2	3	2	1	3	4	5	4
17	4	3	4	5	4	5	4	4	2	2	2	1	2	2	1	3	3	1	4	3	3
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22	4	5	5	5	5	5	4	4	2	3	3	2	1	3	4	5	4	2	5	4	4
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27	5	5	4	5	3	4	4	4	2	2	3	3	2	2	3	2	2	1	4	5	4
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Attachment 5 Frequency Respondent Count Data

Gender	Frequency	Percentage
Female	148	49,3%
Male	152	50,7%
	300	100,0%

Age	Frequency	Percentage
<18	3	1,0%
>23	23	7,7%
18-20	97	32,3%
21-23	177	59,0%
	300	100,0%

Income	Frequency	Percentage
<Rp. 500.000	60	20,0%
>Rp. 1.500.000	74	24,7%
Rp. 1.000.000 - Rp. 1.500.000	122	40,7%
Rp. 500.000 - Rp. 999.000	44	14,7%
	300	100,0%

Telecommunication Service Provider	Frequency	Percentage
Axis	4	1,3%
By.U	8	2,7%
Indosat	28	9,3%
Smartfren	28	9,3%
Telkomsel	155	51,7%
Tri	17	5,7%
XL	60	20,0%
	300	100,0%

Semester	Frequency	Percentage
3	64	21,3%
5	86	28,7%
7	144	48,0%
9	6	2,0%
	300	100,0%

Attachment 6 Validity and Reliability Test Data

Validity

	Estimate
SQ4 <--- SQ	,471
SQ3 <--- SQ	,568
SQ2 <--- SQ	,778
SQ1 <--- SQ	,808
P4 <--- PP	,825
P3 <--- PP	,750
P2 <--- PP	,796
P1 <--- PP	,785
CS1 <--- CS	,776
CS2 <--- CS	,714
CS3 <--- CS	,841
CS4 <--- CS	,756
SC4 <--- SC	,527
SC3 <--- SC	,715
SC2 <--- SC	,576
SC1 <--- SC	,844
CS5 <--- CS	,741
SC5 <--- SC	,326
SB1 <--- SB	,757
SB2 <--- SB	,743
SB3 <--- SB	,761

Reliability

Indicators	Standard Loading	Standard Loading ²	Measurement Error	CR	VE
SQ3	0,525	0,276	0,724	0,8	0,5
SQ2	0,791	0,626	0,374		
SQ1	0,803	0,645	0,355		
P4	0,830	0,689	0,311	0,9	0,6
P3	0,750	0,563	0,438		
P2	0,793	0,629	0,371		
P1	0,781	0,610	0,390		
CS1	0,790	0,624	0,376	0,9	0,6

CS2	0,719	0,517	0,483		
CS3	0,810	0,656	0,344		
CS4	0,773	0,598	0,402		
CS5	0,707	0,500	0,500		
SC4	0,585	0,342	0,658	0,8	0,5
SC3	0,714	0,510	0,490		
SC2	0,596	0,355	0,645		
SC1	0,833	0,694	0,306		
SB1	0,758	0,575	0,425	0,9	0,6
SB2	0,734	0,539	0,461		
SB3	0,759	0,576	0,424		



Attachment 7 SEM Test

Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
SB3	1,000	5,000	-,446	-3,152	-,355	-1,256
SB2	1,000	5,000	-,510	-3,608	-,193	-,683
SB1	1,000	5,000	-,660	-4,668	,010	,034
SC5	1,000	5,000	,029	,208	-,414	-1,463
CS5	1,000	5,000	,320	2,264	-,369	-1,306
SC1	1,000	5,000	,344	2,430	,322	1,137
SC2	1,000	5,000	,032	,229	-,447	-1,580
SC3	1,000	5,000	,176	1,248	-,235	-,830
SC4	1,000	5,000	,033	,232	-,248	-,875
CS4	1,000	5,000	,164	1,157	-,237	-,839
CS3	1,000	5,000	-,037	-,260	-,456	-1,612
CS2	1,000	5,000	,016	,116	-,257	-,909
CS1	1,000	5,000	-,028	-,195	-,552	-1,952
P1	1,000	5,000	-,462	-3,265	-,271	-,958
P2	1,000	5,000	-,461	-3,262	-,324	-1,146
P3	1,000	5,000	-,272	-1,921	-,270	-,956
P4	1,000	5,000	-,471	-3,328	-,070	-,248
SQ1	1,000	5,000	-,415	-2,932	-,482	-1,703
SQ2	1,000	5,000	,014	,098	-,472	-1,669
SQ3	1,000	5,000	-,281	-1,988	-,501	-1,770
SQ4	1,000	5,000	-,252	-1,779	-,530	-1,875
Multivariate					7,165	1,997

Outlier Evaluation

Function Arguments

CHIINV

Probability 0,001 = 0,001

Deg_freedom 21 = 21

= 46,79703804

This function is available for compatibility with Excel 2007 and earlier.
Returns the inverse of the right-tailed probability of the chi-squared distribution.

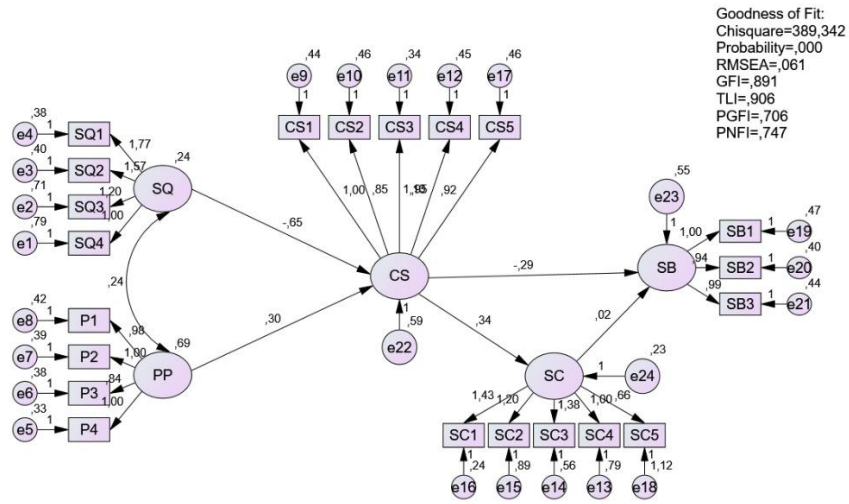
Deg_freedom is the number of degrees of freedom, a number between 1 and 10¹⁰, excluding 10¹⁰.

Formula result = 46,79703804

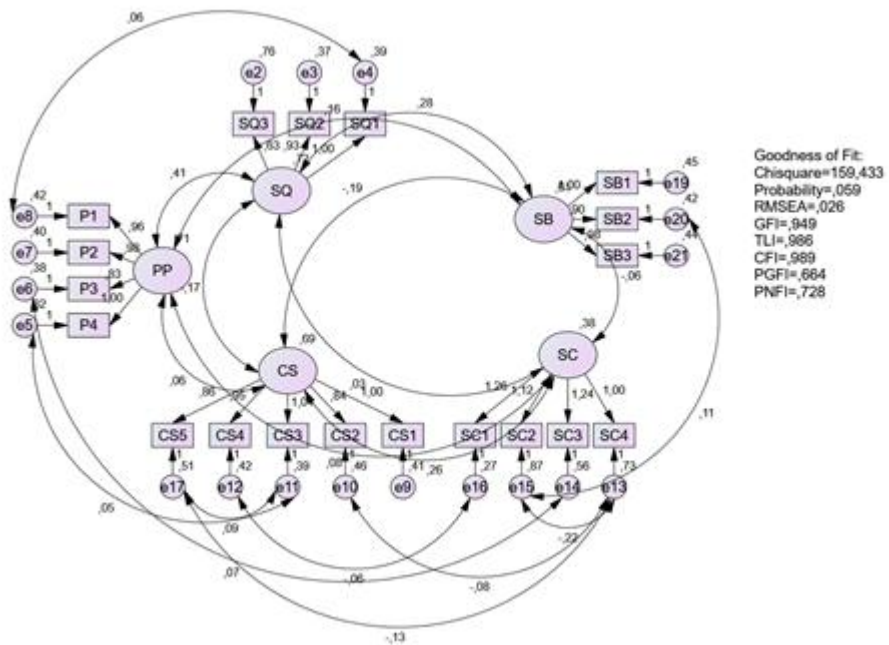
[Help on this function](#)

Observation number	Mahalanobis d-squared	p1	p2
277	40,535	,006	,854
253	39,403	,009	,741
113	39,387	,009	,494
95	38,465	,011	,444
24	37,502	,015	,453
109	37,316	,015	,321
106	36,254	,020	,417
268	36,180	,021	,291
69	36,021	,022	,209
2	35,906	,022	,140
242	35,874	,023	,081
175	35,601	,024	,064
114	34,485	,032	,172
34	34,169	,035	,165
235	33,812	,038	,172
182	33,566	,040	,158
3	33,216	,044	,172

Confirmatory Factor Analysis Result



Modified Confirmatory Factor Analysis



Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	56	156,596	134	,089	1,169
Saturated model	190	,000	0		
Independence model	19	2515,229	171	,000	14,709

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,051	,949	,928	,669
Saturated model	,000	1,000		
Independence model	,275	,418	,353	,376

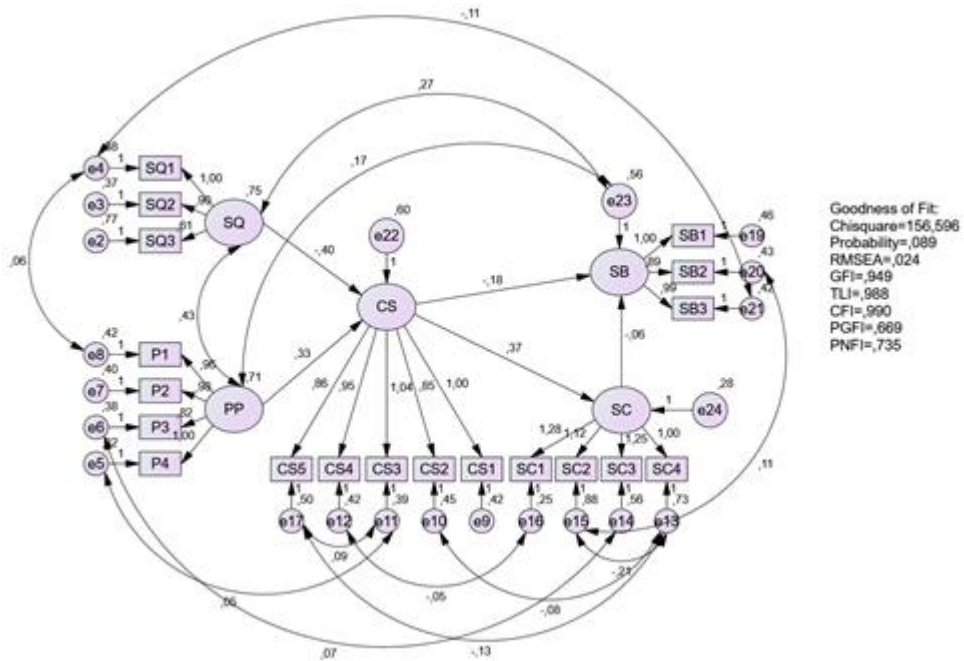
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,938	,921	,991	,988	,990
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,024	,000	,038	1,000
Independence model	,214	,207	,222	,000

Final Modified Model



Hypotheses Test

	Estimate	S.E.	C.R.	P	Statement
CS <--- SQ	-,398	,090	-4,440	***	Negative Significant
CS <--- PP	,329	,087	3,782	***	Positive Significant
SC <--- CS	,366	,058	6,354	***	Positive Significant
SB <--- CS	-,179	,081	-2,228	,026	Negative Significant
SB <--- SC	-,058	,102	-,568	,570	Negative Not Significant

Influence Total

Total Effects (Group number 1 - Default model)

	PP	SQ	CS	SC	SB
CS	,329	-,398	,000	,000	,000
SC	,120	-,146	,366	,000	,000
SB	-,066	,080	-,201	-,058	,000

	PP	SQ	CS	SC	SB
SB3	-,066	,079	-,200	-,058	,994
SB2	-,059	,071	-,178	-,052	,886
SB1	-,066	,080	-,201	-,058	1,000
CS5	,284	-,344	,864	,000	,000
SC1	,155	-,187	,470	1,285	,000
SC2	,135	-,163	,411	1,122	,000
SC3	,151	-,183	,459	1,254	,000
SC4	,120	-,146	,366	1,000	,000
CS4	,314	-,379	,954	,000	,000
CS3	,344	-,416	1,045	,000	,000
CS2	,278	-,336	,846	,000	,000
CS1	,329	-,398	1,000	,000	,000
P1	,961	,000	,000	,000	,000
P2	,980	,000	,000	,000	,000
P3	,824	,000	,000	,000	,000
P4	1,000	,000	,000	,000	,000
SQ1	,000	1,000	,000	,000	,000
SQ2	,000	,902	,000	,000	,000
SQ3	,000	,606	,000	,000	,000

Direct Influence

Direct Effects (Group number 1 - Default model)

	PP	SQ	CS	SC	SB
CS	,329	-,398	,000	,000	,000
SC	,000	,000	,366	,000	,000
SB	,000	,000	-,179	-,058	,000
SB3	,000	,000	,000	,000	,994
SB2	,000	,000	,000	,000	,886
SB1	,000	,000	,000	,000	1,000
CS5	,000	,000	,864	,000	,000
SC1	,000	,000	,000	1,285	,000
SC2	,000	,000	,000	1,122	,000
SC3	,000	,000	,000	1,254	,000
SC4	,000	,000	,000	1,000	,000

	PP	SQ	CS	SC	SB
CS4	,000	,000	,954	,000	,000
CS3	,000	,000	1,045	,000	,000
CS2	,000	,000	,846	,000	,000
CS1	,000	,000	1,000	,000	,000
P1	,961	,000	,000	,000	,000
P2	,980	,000	,000	,000	,000
P3	,824	,000	,000	,000	,000
P4	1,000	,000	,000	,000	,000
SQ1	,000	1,000	,000	,000	,000
SQ2	,000	,902	,000	,000	,000
SQ3	,000	,606	,000	,000	,000

Indirect Influence

Indirect Effects - Two Tailed Significance (BC) (Group number 1 - Default model)

	PP	SQ	CS	SC	SB
CS	...	...	...	...	...
SC	,009	,014	...	...	...
SB	,010	,011	,560	...	...
SB3	,015	,010	,023	,630	...
SB2	,008	,007	,018	,666	...
SB1	,010	,011	,026	,612	...
CS5	,011	,016	...	...	...
SC1	,012	,015	,019	...	...
SC2	,013	,008	,014	...	...
SC3	,013	,015	,014	...	...
SC4	,009	,014	,009	...	...
CS4	,014	,012	...	...	...
CS3	,014	,012	...	...	...
CS2	,019	,014	...	...	...
CS1	,013	,016	...	...	...
P1	...	...	...	...	...
P2	...	...	...	...	...
P3	...	...	...	...	...
P4	...	...	...	...	...

	PP	SQ	CS	SC	SB
SQ1
SQ2
SQ3

