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The Effect of E-Service Quality and E-Recovery Service Quality on E-Loyalty through E-Satisfaction, on E-Commerce in Indonesia

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Abstract:
Commercial transactions among countries and islands have never been easier with the virtual world through electronic transaction and electronic payment. Thus, it is of high importance for marketing experts to redesign their researches, especially in the field of services. The use of the internet has brought changes on the dimensions of service quality from service quality (servqual) to electronic-service quality. Service quality and customer satisfaction have been a primary research focus for more than forty years. Nonetheless, the development of the Internet itself inspired the emergence of electronic trading in the past decade. E-Service Quality (eSQ) *has a significant effect on* E-loyalty (eL) *on Indonesia's* E-commerce marketplace*. From the analysis previously conducted on the effect of* E-Service Quality (eSQ) *on* E-loyalty (eL)*, Both* E-Service Quality (eSQ) *and* E-satisfaction (ICE) variables are *found to have positive and significant effects.* E-Recovery Service Quality *(eRSQ) has a significant effect on* E-loyalty *(eL) on Indonesia's E-commerce marketplace. Based on the third hypothesis testing results, it was indicates that* E-Recovery Service Quality *(eRSQ) did not affect significantly to* E-loyalty *(eL).* E-Recovery Service Quality *(eRSQ) has a significant effect on*E-Satisfaction *(eS) on Indonesia's E-commerce marketplace. Based on the fourth hypothesis testing results, it was shown that* E-Recovery Service Quality *(eRSQ) has a significant effect on* E-loyalty *(eL) on Indonesia's E-commerce marketplace.* E-satisfaction (eS) *has a significant effect on* E-loyalty (eL) *on Indonesia's* E-commerce marketplace*. Based on the results of the fifth hypothesis testing, it was discovered that* E-satisfaction *(ICE) has a significant effect on* E-loyalty *(eL).* E-Service Quality (eSQ) *has a significant effect on* E-loyalty (eL) *through E-satisfaction on Indonesia's* E-commerce marketplace*. Based on the results of the sixth hypothesis testing, it was discovered that E-Service* Quality *(eSQ) has a significant effect on* E-loyalty *(eL* E-Recovery Service Quality (eRSQ) *has a significant effect on* E-loyalty (eL) *through E-satisfaction on Indonesia's* E-commerce marketplace*. Based on the results of the seventh hypothesis testing, it was discovered E-Recovery Service* Quality *(eRSQ) has a significant effect on* E-loyalty *(eL). E-Service Quality has an effect on E-Loyalty on Indonesia's Ecommerce marketplace. E-Service Quality has an effect on E-Satisfaction on Indonesia's Ecommerce marketplace. E-Recovery Service Quality has no effect on E-Loyalty on Indonesia's Ecommerce marketplace. E-Recovery Service Quality has an effect on E-Loyalty on Indonesia's Ecommerce marketplace. E-Satisfaction has an effect on E-Loyalty on Indonesia's Ecommerce marketplace. E-Service Quality has an effect on E-Satisfaction through E-satisfaction on Indonesia's Ecommerce marketplace. E-Recovery Service Quality has an effect on E-Loyalty through E-Satisfaction on Indonesia's Ecommerce marketplace*

Keywords: *E-service quality, e-recovery service quality, e-loyalty, e-satisfaction, e-commerce*

1. Introduction

A rapid exchange of information across countries in the world today has resulted in a borderless world unlike the previous years. The use of the internet, E-commerce, electronic data, virtual office and the like have destroyed the borders among countries in the world. Commercial transactions among countries and islands have never been easier with the virtual world through electronic transaction and electronic payment. Thus, it is of high importance for marketing experts to redesign their researches, especially in the field of services. The use of the internet has brought changes on the dimensions of service quality from service quality (servqual) to electronic-service quality. Service quality and customer satisfaction have been a primary research focus for more than forty years. Nonetheless, the development of the Internet itself inspired the emergence of electronic trading in the past decade. This new type of business has promoted the re-definition of business. The developers of SERVQUAL, Parasuraman, and et al. also developed two new scales to show their research interests in this new era.

Different from the SERVQUAL examined and applied on several studies, E-S-QUAL and E-RecS-QUAL (Parasuraman, et al., 2005) were just recently developed, and thus need to be validated and applied on different types of e-businesses. Parasuraman et al. (2005) developed an ES-QUAL model to measure the quality of electronic services that produce seven dimensions such as efficiency, system availability, fulfillment, privacy, responsiveness, compensation, and contact. The latter three dimensions including responsiveness, compensation, and contact are the dimensions of E-Recovery Service Quality that are used only if consumers have problems or questions related to the use of website. With the rapid improvement of online shopping, SERVQUAL instrument has been remodeled and validated to measure electronic service quality (e-SQ) presented through E-commerce websites. However, there has been scant research articles that directly examine how consumers measure e-SQ and its impact (Parasuraman, et al.,2005). By using conventional guidance for scale development, Parasuraman, et al. (2005) developed and created validation of multiple measurements scales to measure e-SQ in the context of online shopping. E-S-Qual is part of the Service Quality. According to Parasuraman, et al. (2005), the interaction among people who use technology has maintained that customer's evaluation on the new technology is a different process. E-S-ggQual is widely defined as inclusive of all phases of interaction among website customers. Findings from extensive study on how customers interact and evaluate technology-based-products show that customer satisfaction on these products involve highly complex and long-term process. The process may vary in different customer segment. Additionally, satisfaction in context does not always serve as a function of comparative standard of preconsumption. (Mick and Fournier, 1998 in Parasuraman,et al. 2005. E-S-Qual (Electronic Service Quality) scale is the scale developed by Parasuraman, et al. in 2005 to measure service quality through websites on consumers who do online shopping considering that the customer segment is different and customer satisfaction who do online shopping is different with that of customer satisfaction who do regular shopping. The scale that includes these 4 dimensions is comprised of efficiency, fulfillment, system availability and privacy. In this research, we added the dimension of touch point, as proposed by Sumardy (2015), where it can measure e-service quality of which denotes a feeling that appears when the interaction between the website customers and E-commerce is made in the form of E-Commerce websites, product search process, completeness of the products on offer, product description, method of payment, payment process, registration process and payment confirmation. One of the reasons of why consumers opted for E-commerce website is due to a lack of services in terms of service recovery or is often called as E-Recovery Service Quality, where there is a gap between expectations and fact after making payment and making transaction on E-Commerce websites and when the consumers are exploited, there should be a solution to it. Despite there has never been consumer complaints in electronics (e-commerce) in 2014, in 2015 there has been a record of 47 consumer complaints on E-Commerce websites or 4.56 percent of the total number of complaints filed to YLKI in 2016. It is feared that if E-commerce owners are irresponsive, customer satisfaction and customer loyalty will have a negative impact due to failure of meeting customer electronic service recovery. (E-Recovery Service Quality). Collier and Bienstock (2006) discovered that e-recovery service quality has a significant effect on e-satisfaction. However, the research undertaken by Wu (2011) revealed that e-recovery service quality is not associated with e-satisfaction, but affects service quality and customer loyalty electronically. Parasuraman, et al. (2005) in Izmir (2015) define E-RecS-QUAL or is often called as electronic services quality restoration as the scale of measuring the quality of electronic service recovery provided by the E-Commerce websites. According to Parasuraman, et al., dimensions of E-RecS-QUAL include responsiveness, compensation and contact. Consumer satisfaction of C2C E-Commerce in Indonesia come from 3 main e-commerce websites including Tokopedia, Bukalapak, and OLX. Of those three websites, there are two websites with high electronic consumer satisfaction in 2015, namely Tokopedia and OLX. But for Buka Lapak, satisfaction is not achieved as it does not match consumer expectations. OLX as a C2C player must anticipate consumer satisfaction in the future since the value obtained between expectation and satisfaction is at fulfilling criteria yet still at a sufficient level. Whereas within the E-Commerce world, switching from one website to another is at our finger tips. This phenomenon encouraged us to conduct further studies on consumer satisfaction in C2C E-Commerce websites. Additionally, McKinsey and Company (2013) published the causes of consumers unwilling to do online shopping in Indonesia. Some of those factors include the pictures displayed on online shopping does not coincide with the real item, the product cannot be tried on, the online support service is not satisfactory, and post sales service is less satisfactory and all of these lead to poor customer loyalty to purchase online. Hendrayati, et.al (2015) expressed the same notion in her research on consumer satisfaction in E-commerce where she elaborated on complaints filed on online shopping in Indonesia. Those complaints are presented in the following figure.

Figure 1: Figure of Complaints on Online Shopping (Hendrayati,Et.Al, 2015)

Since literatures on the dimensions of electronic satisfaction (e-satisfaction) is very limited, hence we developed a method to measure customer satisfaction that is by using *customer experience* and *total eService Satisfaction* as proposed by Sumardy (2015) and ICSA (2015).

Table of List of *Big E-commerce* Companies in Indonesia in 2017

Country	Website Name	Total Visit in Past 6 Months (Mn)	Avg Visit Duration	Bounce Rate
1 Indonesia	Tokopedia.com	39.5	10:57	30.7%
2 Indonesia	Lazada.co.id	35.3	5:34	52.6%
3 Indonesia	Elevenia.co.id	30.0	2:32	63.2%
4 Indonesia	Blibli.com	20.1	2:23	71.4%
5 Indonesia	Bhinneka. Com	5.2	4:19	49.0%
6 Indonesia	Jakartanotebook. Com	3.9	7:55	36.3%
7 Indonesia	Zalora.co.id	3.4	8:18	37.1%
8 Indonesia	Olx.co.id	20.1	11:31	23.9%
9 Indonesia	Bukalapak.com	26.7	7:40	37.5%

Table 1
Source: Nielsen, 2017

Based on table 1, where Big E-commerce Companies in Indonesia are listed, it can be seen that the most visited Indonesian e-commerce websites are tokopedia, lazada, elevenia, bukalapak, blibli and olx. But the level of average bounce rate of all Indonesian big E-commerce companies is still at high level of 43.5%. This means that from 100 people who visited E-Commerce websites, there are 45 potential customers who leave the websites after only opening one page website. This is due to the fact that there is lack of electronic loyalty on Indonesia's E-Commerce especially on B2C (Business to Consumer) that could be associated with electronic service quality has yet to show qualified performance so that the potential customer remains on the websites and open other shopping webpages until the transaction is made on the E-Commerce websites.

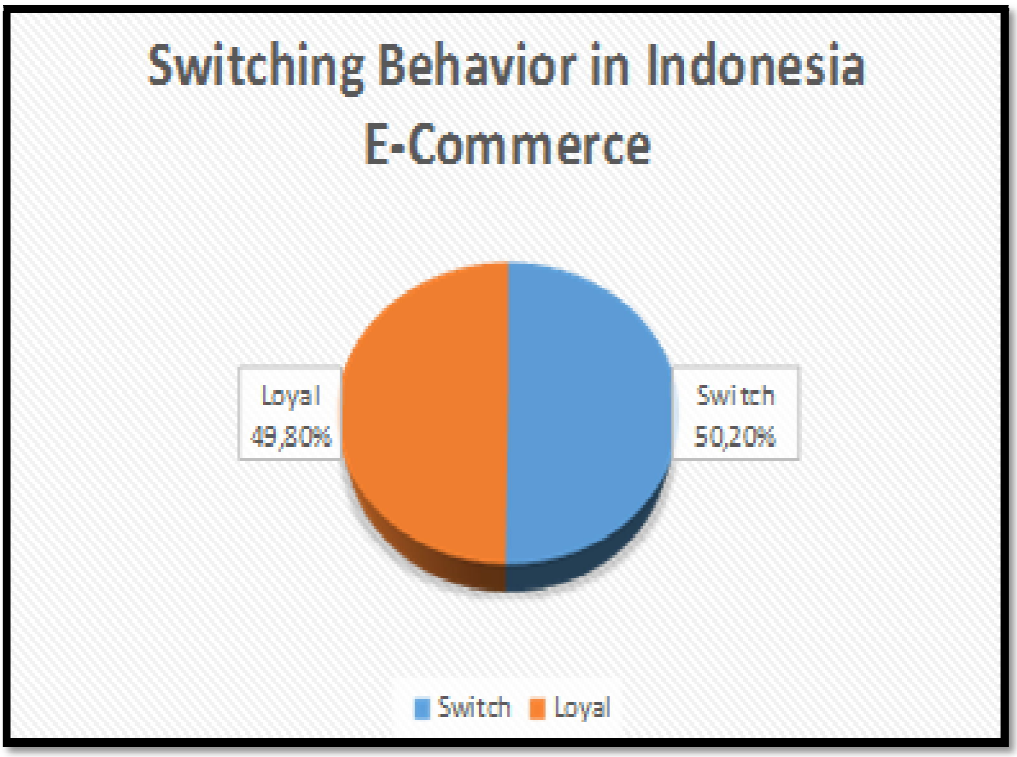

Figure 2: Switching Behavior Sumber: W & S Indonesia (2015)

Figure 2 shows that customer loyalty in Indonesia's E-Commerce is 49,80% and the behavior of moving to other E-Commerce websites is 50,20%. It is necessary for Indonesia's E-Commerce companies to maintain and increase electronic loyalty in order to win over competition in the digital business world. While the behavior of switching E-Commerce in the future is also described by W& S Indonesia as follows.

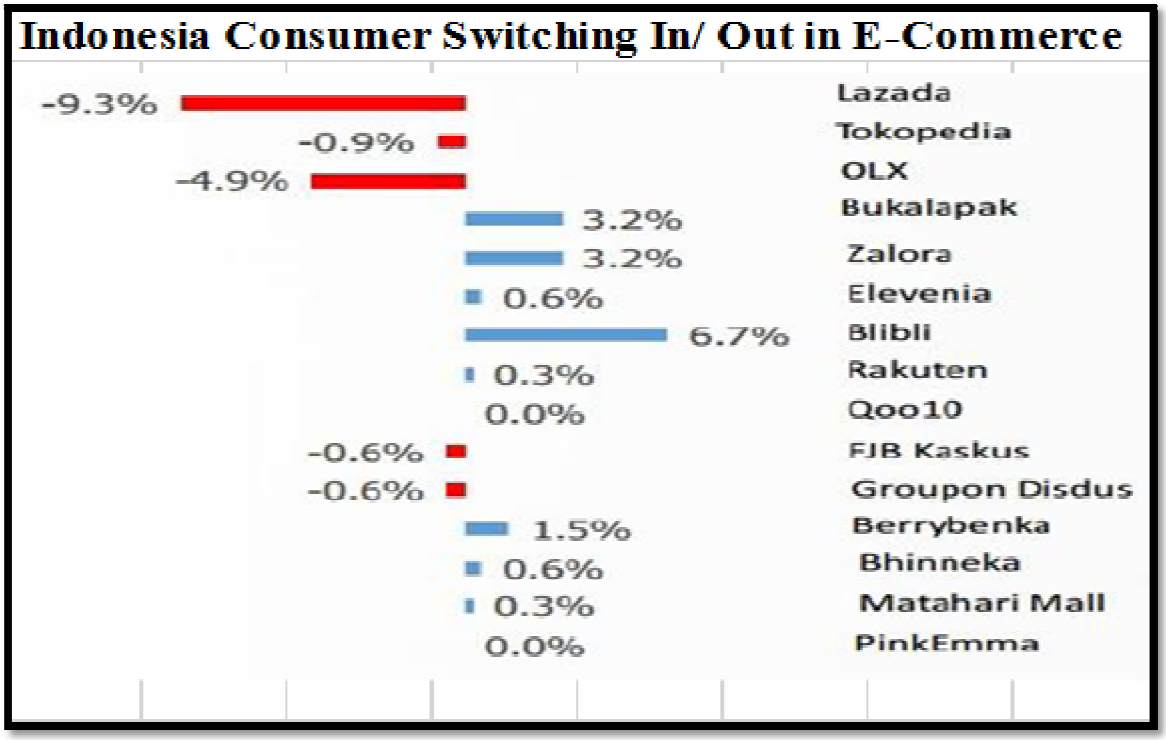

Figure 3: Consumer Switching in and out Sumber : W &S Indonesia (2015)

Based on the Figure 3 C2C E-commerce company that experiences switching in where the consumers are interested in switching to its E-commerce website is only Buka Lapak at 3.2%. On the other hand, the rest of C2C E-commerce companies

such as OLX, Tokopedia and Kaskus experience switching out where customers and E-commerce services users are interested to switch from their E-Commerce websites to other E-Commerce websites. The largest switching out of C2C is experienced by OLX by 4.9% which means that customers of OLX are interested in switching to other E-Commerce websites in the future by 4.9%. While other C2C companies that experience switching out include Tokopedia by 0.9% and Kaskus by 0.6%. This is where the phenomenon of loyalty occurs. The development of the digital world is said to be the fourth industrial revolution according to World Economic Forum, January 2016, in Davos, Switzerland. This means that all businesses in the world must adapt to and adjust to these changes. Digital technology has entered into all walks of human lives and growing rapidly over the years. To make a distinction, having telephone discovered, it took 75 years for 100 million people to use. Cellphones that were created in 1979 took 16 years to reach 100 million users. Facebook that was created in 2004 took only 4 years 6 months to 100 million users. WhatsApp that was founded in 2009 reached 100 million users in 3 years 4 months. Meanwhile, what happens in the Internet globally is that in one minute there is 20.8 million of WhatsApp messages delivered, 2.7 million of YouTube viewers, 2.4 million of Google searches, 38 thousand of Instagram post, 701 thousand of Facebook logins. This shows that digital growth has been rapidly developing. The potential of digital economy is linked to current internet penetration. A research institute, eMarketer, recorded that in 2014, the number of internet users domestically was 83.7 million. This number is predicted to be counting along with advancement of technology in Indonesia. Kompas R&D predicted that the number will continue to increase and in 2017 the total users will reach 117 million. This has definitely made Indonesia as a potential market for the traders or e-commerce companies.

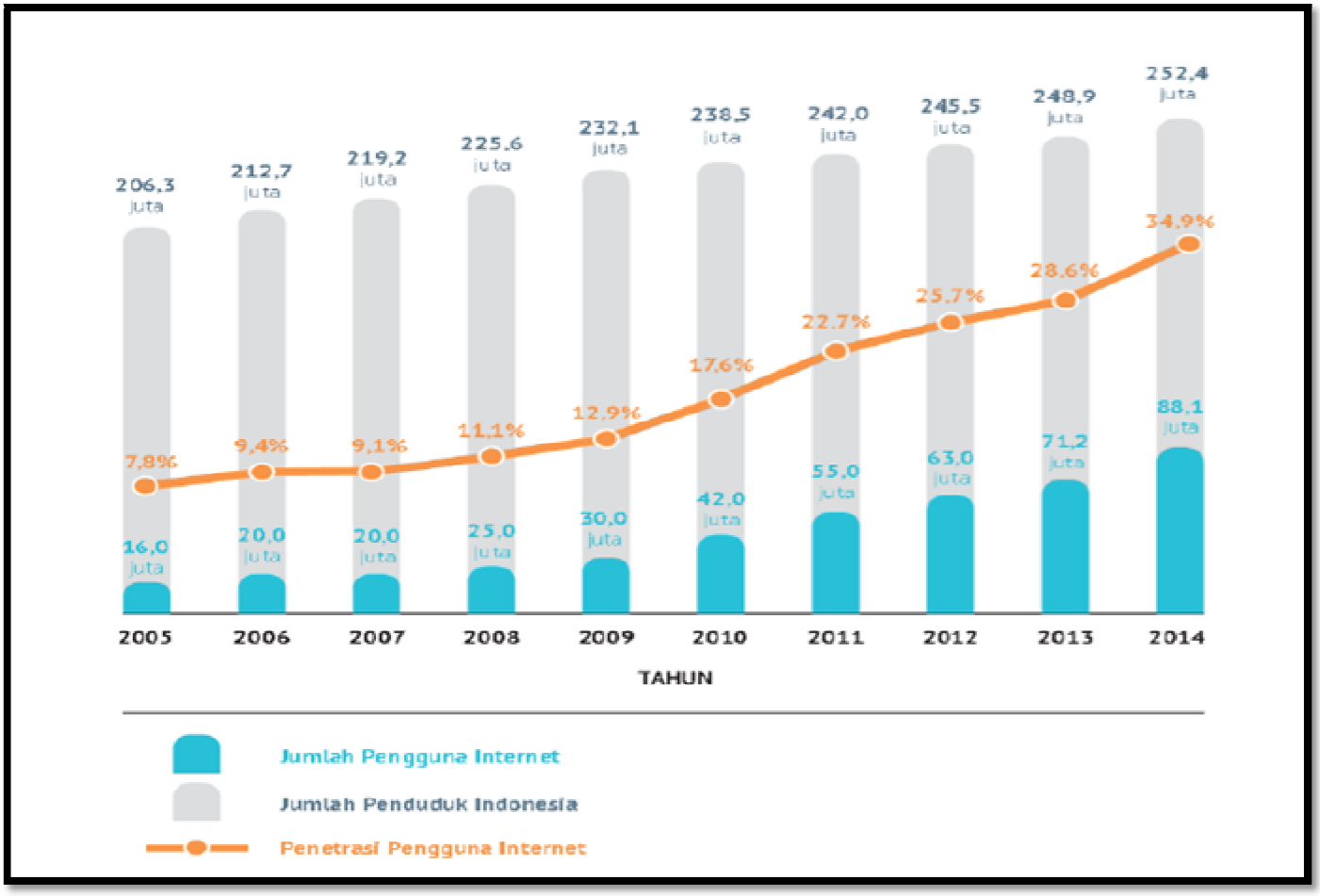

Figure 4: The Growth of Penetration and Internet Users from 2005 to 2014 (APJII, 2015)

Figure 4 shows the growth of penetration and internet users in Indonesia since 2005. Due to the evolving Internet provider and the emergence of 4G technology, since 2010, the number of internet users began to increase significantly by more than ten million users each year. This supports E-commerce business transaction in Indonesia. From the data obtained from the Association of Indonesian Internet Service Provider, the total of internet user penetration as compared to the population of Indonesia has experienced a positive consistent growth though still relatively low as compared to the neighboring countries in Southeast Asia. Below is the statistic figure on figure 5.

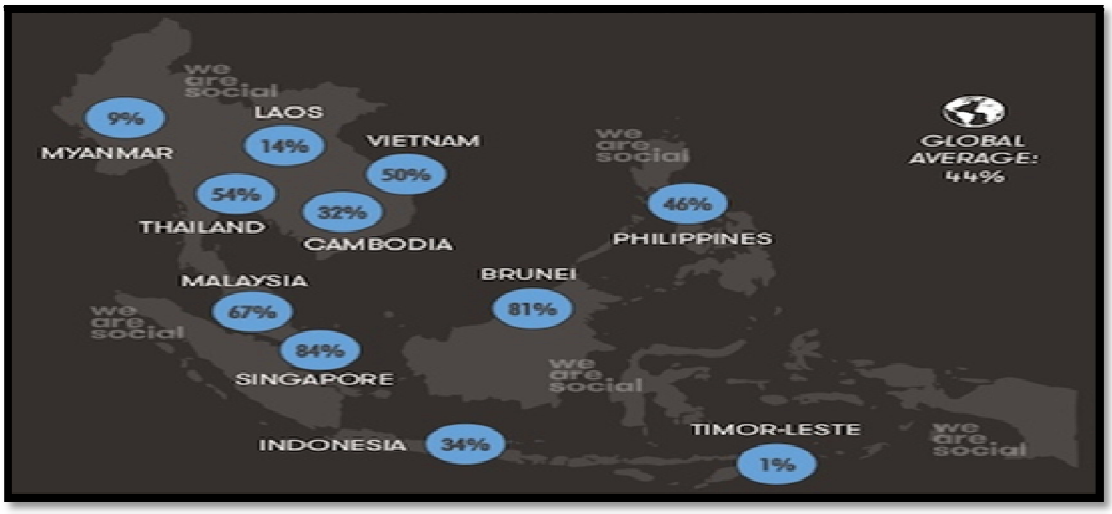

Figure 5: The Number of Internet Users in Southeast Asia Compared to the Population (Wearesocial, 2015)

Indonesia has the potential to experience growth of the number of internet users as it is still 34% of the total population as compared to the neighbouring countries such as Malaysia by 67% and Singapore by 84%. The growth of e-commerce has increased congruent with the increased number of internet users and customer trust on electronic transaction. Electronic trading industry or e-commerce which continues to grow and develop worldwide, is believed to have become an important part and have a significant impact on global economic growth. According to a study and research undertaken by a management and business consulting firm AT Kearny, global sales value of e-commerce in 2015 nearly reached 1 trillion dollars or grew by 18% as compared to the year 2014.

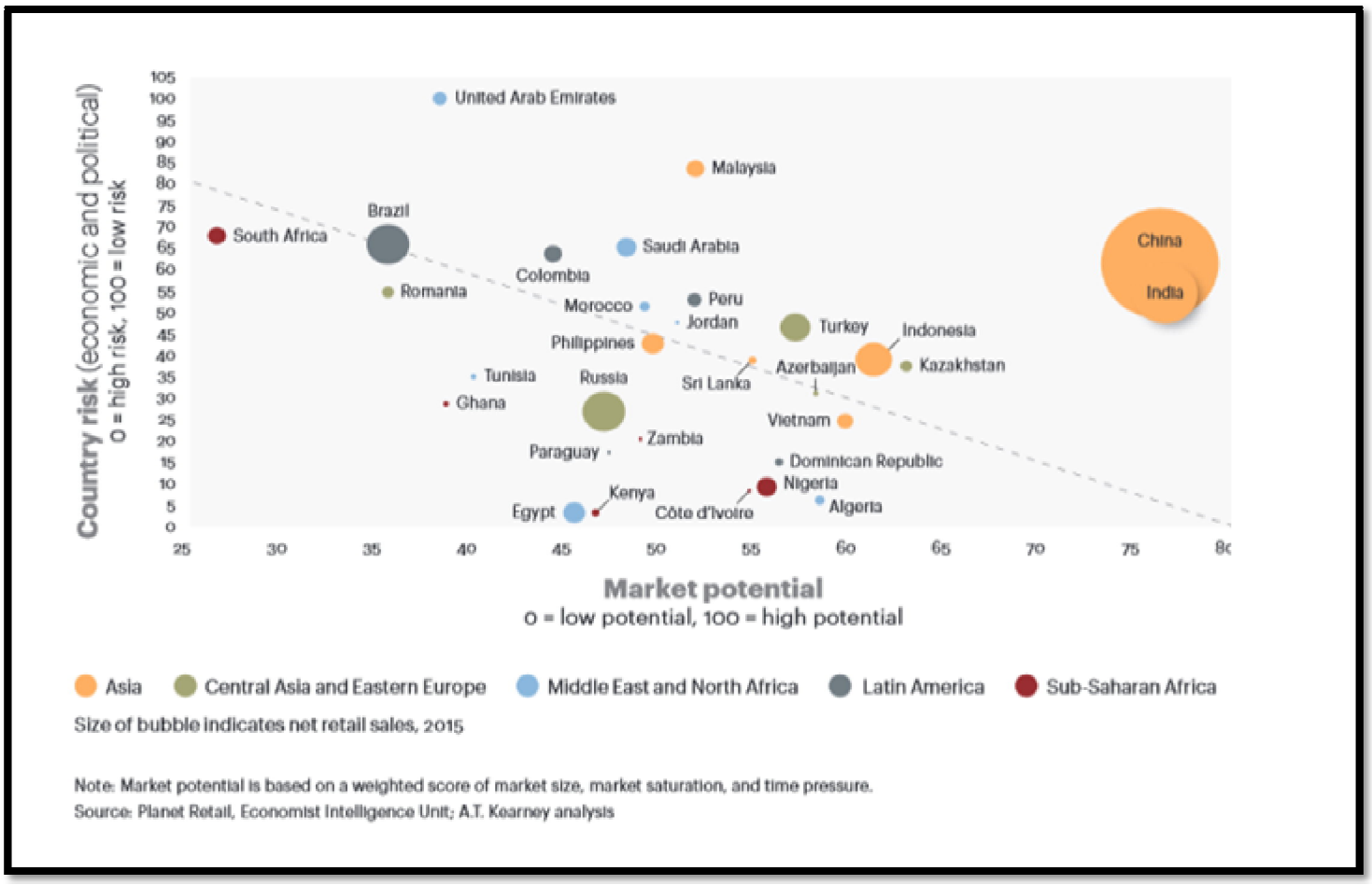

Figure 6: Attractiveness of Global Retail Development Index (Retail Planet, Economist Intelligence Unit; A.T.Kearney Discounts, 2016)

According to figure 6 Indonesia is a marketplace with potentials above the average with economic or political risks. The size of the ball showed retail sales value is clean and Indonesia has a relatively big value, below China, India, Russia and Brazil. Even the neighboring countries such as Malaysia and the Philippines are below Indonesia. In brief, according to Kearney analysts (2016) Indonesia is in the fifth place of Global Retail Development Index.

For Southeast Asian region, sales value of e-commerce in ASEAN countries is relatively small, less than 1 percent of the total sales in retail industry sector, compared to other countries in Europe, or in China and the United States which reached 6% to 8%. However, in the next few years, according to Kearney, the growth of retail sales value through e-commerce in ASEAN countries might increase up to 25% per year. This can be achieved along with the increased purchasing power, increased level of internet user penetration, and more varied offers online. According to Online Research Shopping Outlook 2015 published by BMI research, it was discovered that the value of online shopping in 2014 reached 21 trillion. In the meantime, the data from the Association of Indonesian Internet Service Providers (APJII) revealed that the Internet users in Indonesia has reached 88,1 million users until January 2016 where 48 percent of them are daily internet users.

Research Markplus Insight and an online magazine Marketeers in 2013 revealed that from 74,6 million internet users in Indonesia, 20% of them make online purchases. The number of internet users who make an online transaction in Indonesia is still below Thailand, Philippines, Vietnam, Singapore and Malaysia which reached 60% to 80% of those who make an online transaction. The magnitude of Indonesia's population of 253 million people indicates the high potentials for e-commerce in Indonesia. The ambition of making Indonesia as the largest digital economic actor in Southeast Asia with the projected value of e-commerce transaction of 130 billion US dollars per year is not impossible. (Presidenri.go.id,2016). The number of internet users that continues to grow significantly is one of the factors for accelerating e-commerce growth in Indonesia. The more affordable price for internet connection with broadband network promotes people's interest and enthusiasm consistently use the internet in various aspects of their lives. According to release by Bank Indonesia on CNN Indonesia website, the transaction of e-commerce in Indonesia in 2014 reached US$2.6 billion or equivalent to Rp 34.9 trillion. Laudon (2014) stated that, in general, e-commerce is classified into five categories, they are Business-to-Consumer (B2C) E-commerce, Business-to-Business (B2B) E-commerce, Customer-to-Customer (C2C), Peer-to-Peer (P2P) E-commerce, and Mobile Commerce (M-Commerce). Most of previous research literatures explored Business-to-Consumer (B2C) E-commerce, this research, however, focuses on one category of e-commerce that is widely known by Indonesians, C2C (Customer to Customer) or is publicly recognized as sales and purchase websites. C2C e-commerce allows its users to buy and sell products or services through a marketplace. The main characteristics of C2C are that the sale and purchase transactions are made by fellow users, while the marketplace provider acts as a mediator and a service provider. According to SWA (2015), the companies under Consumer-to-Consumer (C2C) E-commerce sector in Indonesia include TokoBagus/ OLX, Tokopedia, Buka Lapak, Kaskus, and Qoo10 Indonesia. With regards to e-commerce, one cannot claim that e-commerce would 100% replace offline retailers. In reality, online and offline retailers complement each other. The use of e-commerce by Indonesians is constantly growing.

Rank of popularity	Indonesia E-commerce	Popularity based Index	Jenix E commerce
1	Lazada	37,4	B2C
2	Tokopedia	18,3	C2C
3	OLX	7,8	C2C
4	Bkalapak	7,4	C2C
5	Zalora	5,9	B2C
6	ELevenia	5,4	B2C
7	Blibli	3,9	B2C
8	Rakuten	2,5	B2C
9	Qoo10	1,7	C2C
10	Kaskus	1,2	C2C

Table 2: Popularity Brand Index Indonesia E-Commerce Sites
Sumber: W & S Indonesia

Based on table 2., it is seen that from 10 most popular E-Commerce website brands, the number of B2C outnumbers the number of C2C in terms of the most effective and remembered brand in the consumer's minds, where B2C and C2C are similar in total of five which include Tokopedia, OLX, Buka Lapak, Qoo10 Indonesia and Kaskus. The most popular company in terms of *Brand* is Lazada which is not included in the C2C *E-Commerce category.* In an effort to win digital business competition, it is required to maintain and develop customer loyalty and customer satisfaction electronically.

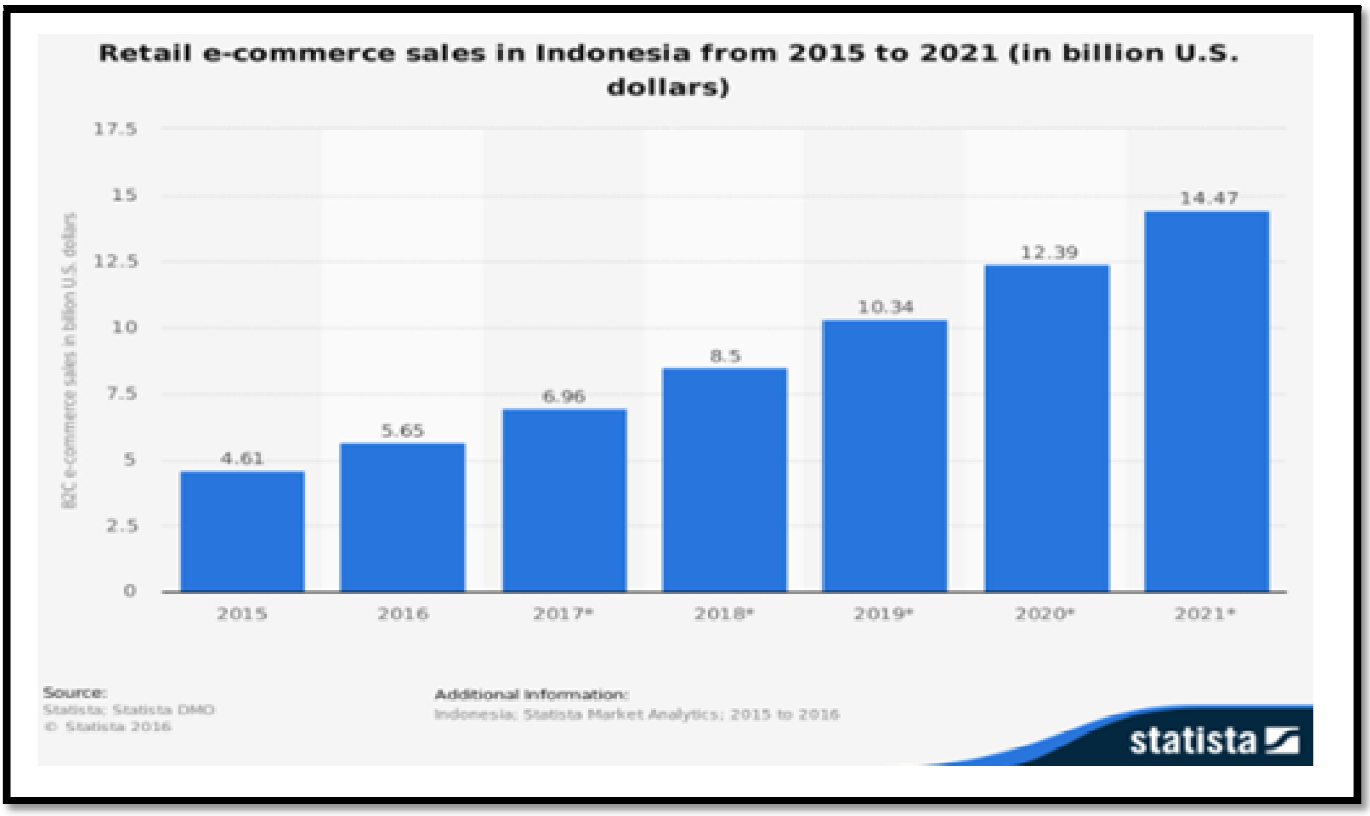

Figure 7: Figure of Retail Sales Value of E-Commerce in Indonesia from 2015 to 2021 (Statista, 2016)

According to Statista (2016) as shown in figure 1.8. that make sales estimate of E-commerce retails in Indonesia; the estimated number is far greater than the sales value summarized by inside retail in the same year. For example, in 2015, the sales value predicted by statistical higher by USD 1.05 billion and in 2016 there was a sales gap of USD .76 billion. This can be caused by various factors which potentially come from service quality, service recovery, customer satisfaction and loyalty through electronic media. Indonesia has surpassed Singapore and Thailand in 2014, for having successfully developed into the largest e-commerce market in ASEAN with online sales value of USD $1.1 billion. It means that only 0.7% of total sales in Indonesia, according to Euromonitor, predicted online income with compound growth rate by 38% between 2014 and 2017, where the online sales transaction varies from entertainment media such as books, video games, electronic goods, fashion, tourism and others. According to the research undertaken by Web Similar 2016, it was revealed that there are two most popular C2C E-Commerce websites in Indonesia, they are Tokopedia and Kaskus. Yet, other websites are not listed in big thirteen. This indicates that there is lack of customer satisfaction and loyalty electronically on E-Commerce websites in Indonesia. Griffin (2002) points out that the widespread of internet uses has changed consumer expectations in forming a successful relationship. Previously, information on sales and marketing cannot be directly distributed to customers, but now, companies have to allow their consumers to receive/retrieve information on marketing of the products/services they look for at anytime they want and allow consumers to complete the purchase process in a way they want. So therefore, today, company's ability to survive depends on gathering customer's data from various media that has information on customer contacts; whether through clicks on E-Commerce websites, emails, phone, fax, toll free telephone, stores, distributors or direct sellers. When these data are used appropriately, they allow the company to respond to customers individually. This is often called as "mass customization". Both of these modern ways of selling have generated a new type of consumer with different quality, thus making the consumers interested in buying on their own way. Nonetheless, most companies are not ready yet with these modern customers, leaving bad impressions on the company. The consumer feels less appreciated and is often given false hope which does not match their expectations. This leads to low level of customer loyalty. Here comes a gap between service quality, customer satisfaction and loyalty through electronic media. Loyal consumers visited their favorite E-Commerce websites more often than those who are not. They spend more resources to purchase products and services. This phenomenon is an interesting lead for online businesses where loyal consumer is an important factor that needs to be maintained on an ongoing basis. Several results of research on E-Commerce discovered that consumer satisfaction is closely related with customer loyalty and consumer satisfaction has often proved to have a positive impact on customer loyalty (Kim et al., 2009). This relationship was examined by Luarn and Lin (2003) which shows that e-satisfaction has a direct and significant impact on e-loyalty. Shankar, et al. (2003) in Jaronski (2004:63) revealed an interesting discovery to show that although the level of consumer satisfaction for an electronic service is similar to that of offline, loyalty to a service provider is higher when the service is selected online as compared to offline. Therefore, the relationship between online satisfaction and

online loyalty is more powerful than that of offline. A study undertaken by Anderson and Srinivasan (2003) tested the hypothesis that the higher the level of e-satisfaction, the higher the level of e-loyalty. Their research found that e-loyalty is significantly influenced by e-satisfaction and has a positive relation. E-satisfaction is also found to have positive and significant relation to e-loyalty in Korea (Jin,et al.,2008). However, on the other hand, several studies revealed the opposite that the electronic service quality has no effect on electronic loyalty. (Yang and Tsai, 2007, Yaya,et.al, 2011; Chang dan Wang, 2011). This also means that there are other variables that determine the relationship between electronic service quality and electronic loyalty. The research undertaken by Ponirin (2011) concluded that e-satisfaction proved to have no relation to e-loyalty in developed countries.

2. Literature Review

2.1. Definition of E-commerce

E-commerce is defined as all trading activities conducted online. Electronic connectivity is based on computer technology that leads to the emergence of worldwide network or is often called as the world wide web (Chu,et al.,2007 in Jeon 2009) which allows electronic trading on the internet. (Operitel Corp.,2004 in Jeon 2009). While according to Ponirin (2011), E-commerce is the use of the internet and web technology in making business transaction. According to Aji (2016), E-commerce is the distribution, purchase, sales, marketing of goods and services through electronic system such as the internet or television, www, or other computer networks. E-commerce may involve electronic fund transfer, electronic data interchange, automatic inventory management system, and automatic data collection system. Information technology industry views this e-commerce activity as the application and implementation of e-business related to commercial transactions such as electronic funds transfer, SCM (supply chain management), electronic marketing (e-marketing), or online marketing, online transaction processing, electronic data interchange. E-commerce is part of e-business, where the scope of e-business is wider, not just includes commerce but also business partners collaboration, customer services, job vacancy and so on. In addition to the network technology of www, e-commerce also requires database technology, electronic letter (e-mail) and other forms of non-computer technology such as the system of goods delivery and payment method for this e-trademark. According to Almira (2015), E-commerce is an electronic trading of not only sale and purchase activity conducted online, but also marketing of goods and services and funds transfer and data exchange using an electronic system such as the internet. Almira (2015) and Rebecca (2016) identified ten basic types of e-commerce or e-commerce business forms with different characteristics. These include Business-to-Business (B2B),Business-to-Consumer (B2C),Consumer-to-Consumer (C2C),Consumer-to-Business(C2B), Business-to-Administration (B2A),Consumer-to-Administration (C2A), Online-to-Offline (O2O), Social Media, Classified Advertisement, Shopping Mall

2.2. E-Service Quality

In general, eSQ shows the extent to which the organizational capability meets customer's needs by using internet facilities, one of which is a *website*. Parasuraman,et al. (2005) argues that the emergence of eSQ as a strategic issue is now driven by the assumption that eSQ is a determining factor in competitive advantages and in the long term success of the company. While Zeithaml,*et al.* (2002:363) define eSQ as an electronic service quality (eSQ) which shows the extent to which a network site (*website*) facilitates expenditures, purchases and delivery of goods and services in an effective and efficient manner. While according to Colby and Parasuraman (2003), electronic services such as the entire types of services operated through an electronic intermediary that includes in it transaction initiated and controlled by the customer. Boyer,*et al.* (2002:175) in Sousa, *et al.* (2006:357) believe that the entire interactive services on the *internet* use multimedia technology, information technology and sophisticated telecommunications technology.

2.3. E-Recovery Service Quality

In consumer satisfaction literatures, Fornell, et al. (1996) developed a model for consumer satisfaction index for the Americans which comprehensively identified a mutual relationship between consumer satisfaction and indicators as well as the impact of consumer satisfaction. But this model fails to describe how institutions deal with services failure and how to turn dissatisfied consumers into loyal consumers. Therefore, it is necessary to add Service Recovery/ Restoration Services as an important variable in such a model in order to help explain how a company can improve customer satisfaction through a solution of services failure and turn dissatisfied consumers into loyal customers. This study is aimed at testing the relationship between service quality, consumer satisfaction, electronic service quality restoration and customer loyalty for electronic consumer on electronic trading by adopting E-S-Qual and E-RecS-Qual models. Service recovery shows the actions taken by an organization to address one service failure in an attempt to increase consumer's service satisfaction (Bell,1994) and in the end maintain customer's retention rate (Miller, et al.,2000). The management needs to support service recovery in an organization, as poor or ineffective service recovery implies consumers who have been disappointed for the second time. This may result in consumers performing negative WOM (Word-of-Marketing) communication, transaction transfer from the organization to the competitor (Lewis and McCann, 2004), poorer evaluation towards the organization as compared to the customers who receive service recovery soon after they experience service failure (Maxham,2001). Services failure and all its derivative efforts of

service recovery in an organization has a great impact on the company itself and on relationship quality with the organization, though other efforts have been carried out by the organization in order to build long-term relationships with customers.

2.4. E-satisfaction

Satisfaction is a ratio between expectations and performance (Brilliant and Achyar, 2013). Dissatisfaction occurs when performance is considered insufficient as compared to expectations. Kepuasan terjadi saat kinerja sesuai ataupun melebihi harapan (Kotler,et al.,2005 dalam Brilliant dan Achyar,2013). Customer satisfaction can be defined as the extent to which customer's needs, desires and expectations are met (McCarthy and Perreault, 2002). Customer satisfaction is a gauge of performance of perceived organizational product relative to a buyer's expectations. If the product's performance fails to meet expectations of the consumer, then the customer is dissatisfied. If performance copes up with the expectations, then the customer is satisfied. If performance exceeds the levels of expectations, then the customer is said to be highly satisfied and delighted. Keeping customers satisfied serves as the best competitive advantage against competitors. Customers are found loyal and are prepared to pay premium for a product. In addition to this they become excellent external marketers for the organization (Gupta et al., 2003 in Sheikh and Basti, 2015:81). Satisfaction is comparison between expectation and performance. Dissatisfaction occurred when performance fell short on expectation. Satisfaction occurred when performance matched or exceeded expectation (Kotler,et al, 2005 in Brilliant and Achyar, 2013:51). Satisfaction is how far customer's needs, wants, and expectations are met. (McCarthy and Perreault, 2002 in Brilliant and Achyar, 2013:51)

2.5. E-loyalty

The initial view of brand loyalty focuses on repeated purchase behavior, such as the study conducted by Brown (1952) in Srinivasan, et al. (2002) classified customer loyalty into four categories namely undivided loyalty, divided loyalty, unstable loyalty, and no loyalty, based on consumer purchasing patterns. Lipstein (1959) and Kuehn (1962) measure customer loyalty with products re-purchase probability. Several studies (e.g. Day,1969; Jacoby and 89 Chesnut,1978) suggested that the definition in behavior alone is not enough as it makes no difference between true loyalty and spurious loyalty that may cause, for example, lack of alternatives available for consumers. In order to answer this criticism, researchers have proposed to measure customer loyalty using the dimensions of attitude, plus the dimensions of behavior. Engel and Blackwell (1982) define brand loyalty as consumers response on preferences, attitudes and behaviors toward one or more brand names on a product category shown at a particular time to consumers. Jacoby (1971) expressed his views that customer loyalty is a process of biased purchasing behavior that comes from a psychological process. According to Assael (1992,87), brand loyalty is an attitude of love towards a brand that resulted in consistent purchase on the brand from time to time. This view is supported by Keller (1993) who proposed that customer loyalty emerges when the attitude of love towards a brand is depicted through re-purchase behavior. Gremler (1995) proposed that the two dimensions of both attitudes and behaviors need to be integrated in the gauge of customer loyalty.

3. Research Methodology

3.1. Data Source, Population and Samples

3.1.1. Data Source

The source of the data required in this research are primary and secondary data. The primary data obtained from respondents will be examined by using list of questionnaires, while the secondary data obtained from the internet.

3.1.2. Research Population

The population in this research are consumers who make online purchases on E-commerce marketplace in Indonesia. This study will be tested on consumers in big cities in Indonesia including Medan, who make online purchases or transactions on Indonesia's E-Commerce websites. This population were selected because theoretically and empirically, they have the characteristics relative to the topic and objective of the study. In this research, the number of population is unknown.

3.1.3. Research Samples

The sample size in this study was determined under certain considerations. First, the number of population is dynamic; second, since this study uses a Maximum Likelihood Estimation Model (ML), the estimation requires large samples size of a minimum of 100 to 200. But when the sample size is bigger (between 400 to 500) then the sensitivity of this model in detecting the difference between the data will be higher, resulted in a bad goodness-of-fit (Ghozali, 2008). Therefore, the sample size in this research adopted Hair, et al (1996), Ferdinand (2002), and Ghozali (2006) in which the number of samples can be calculated by total indicators multiplied by 5 to 10. As this study uses 4 construct variables with the total number of indicators of 60, the number of samples needed in this study is at least 60 x 5 = 300. The sample were collected using non-probability sampling, which in this research the sampling technique used was accidental sampling. Internet random sampling was adopted in which the questionnaires were created using google form and in the form of multimedia which can be accessed and responded by consumers either from computers, laptops, smart phones and tabs; distributed through various social media

applications such as Line, WhatsApp and Facebook. While on offline system, the questionnaires distributed to consumers, who have made online purchases through Indonesia's E-commerce, encountered on any day, either on holidays or on weekdays. To get offline data, we approached respondents individually, and asked their willingness to be the respondents of this research. Once they approve of it, we conducted an interview with the respondents individually with reference to the questionnaire items previously prepared.

3.2. Inferential Statistical Analysis

Analytical statistics has an ultimate goal of making inference or generalizing the results of samples measurement from the population unit. In this research, the data were statistically analyzed using Structural Equation Modeling (SEM) with the help of Smart Partial Least Squares (PLS) software considering the fact that the statistical model is relatively complex and was aimed at exploring the knowledge and testing the hypothesis. Partial Least Squares (PLS) analysis is a multivariate statistics technique that make comparisons between multiple dependent variables and multiple independent variables (Abdillah and Jogiyanto, 2015).

3.3. Path Diagram and Structural Equation Model Diagram

Path Diagram visualizes research conceptual framework which helps people to better understand and analyze the concept. The formation of path diagram must take into account exogenous or endogenous construct variables with manifest variables from each latent variable. The initial proposal of research structural equation model based on the conceptual framework under study is as follows:

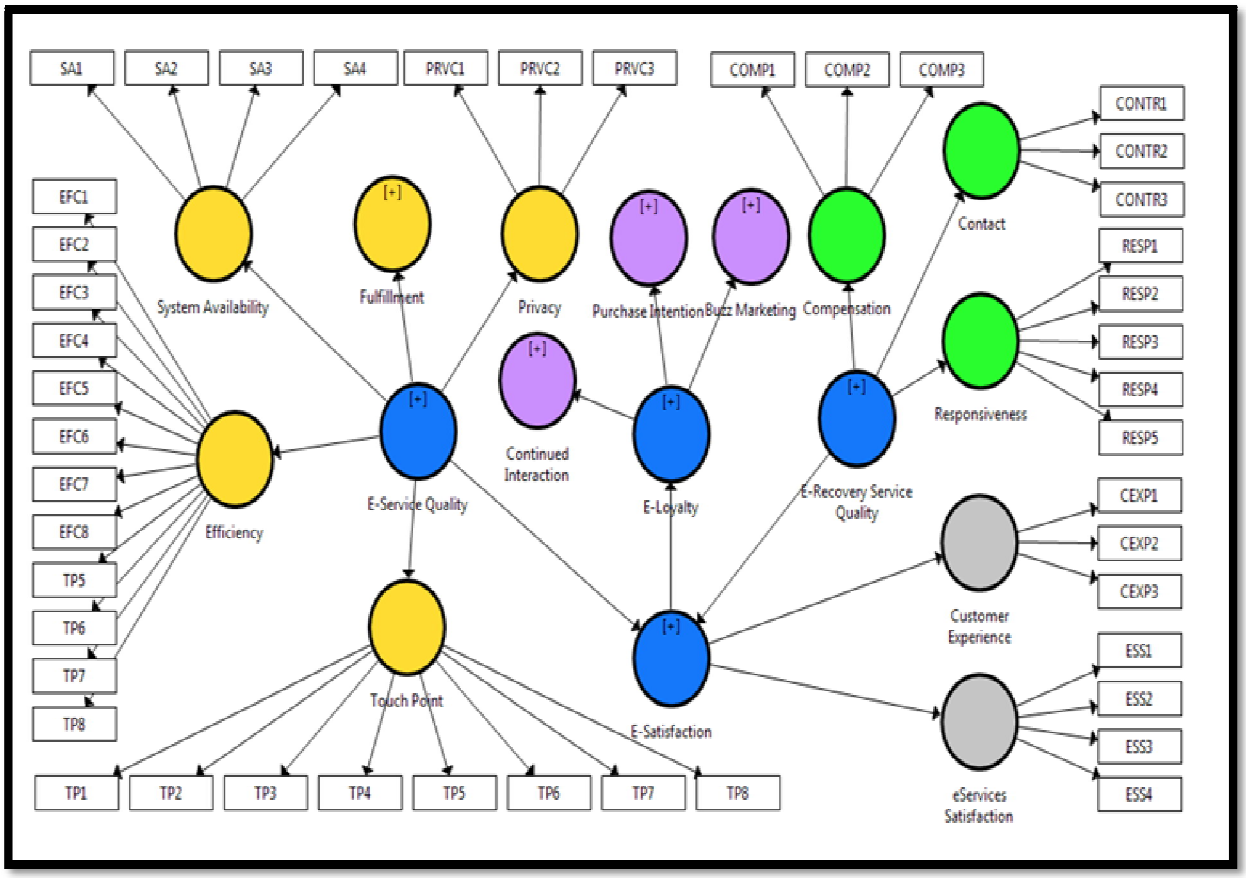

Figure 8: Research Model Design

3.4. Results of Hypothesis Testing

The hypothesis testing can be seen on the test results of path coefficient of t-values - statistics and P value from calculation results. The following table shows the details

Hipotesis	Beta	S.E	P-Values	Keterangan	Keputusan
E-Service Quality berpengaruf positif dan signifikan terhadap E-Loyalty	0.228	0.072	0.001	signifikan	Diterima
E-Service Quality berpengaruf positif dan signifikan terhadap E-satisfaction	0.605	0.055	0.000	signifikan	Diterima
E-Ricovery Service Quality berpengaruf positif dan signifikan terhadap E-Loyalty	0.052	0.044	0.120	Tidak signifikan	ditolak
E-Ricovery Service Quality berpengaruf positif dan signifikan terhadap E- satisfaction	0.168	0.063	0.004	signifikan	Diterima
E-satisfaction Quality berpengaruf positif dan signifikan terhadap E-Loyalty	0.629	0.061	0.000	signifikan	Diterima
E-Service Quality berpengaruf positif dan signifikan terhadap E-Loyalty melalui E-satisfaction	0.381	0.056	0.000	signifikan	Diterima
E-Ricovery Service Quality berpengaruf positif dan signifikan terhadap E-Loyalty melalui E-satisfaction	0.106	0.038	0.003	signifikan	Diterima

Table 3: Hypothesis Testing Results
Source: Processed Smart PLS 3 Output (2017)

The Hypothesis Testing uses Sig. level of 5 percent (one-tailed). If the p-value obtained is < 0.05, then the hypothesis is accepted either for direct effect hypothesis or indirect effect hypothesis. Based on the testing results, the P-Value on the variables that have an effect on other variables shows smaller values than sig. value. 5%, that shows 0,000 to 0.004 smaller than 0.05, thus the hypothesis one to seven were accepted, except hypothesis three for variable of E-Recovery Service Quality on E-Loyalty has greater value than 0.05 which means that both variables are not related, thus making the hypothesis rejected.

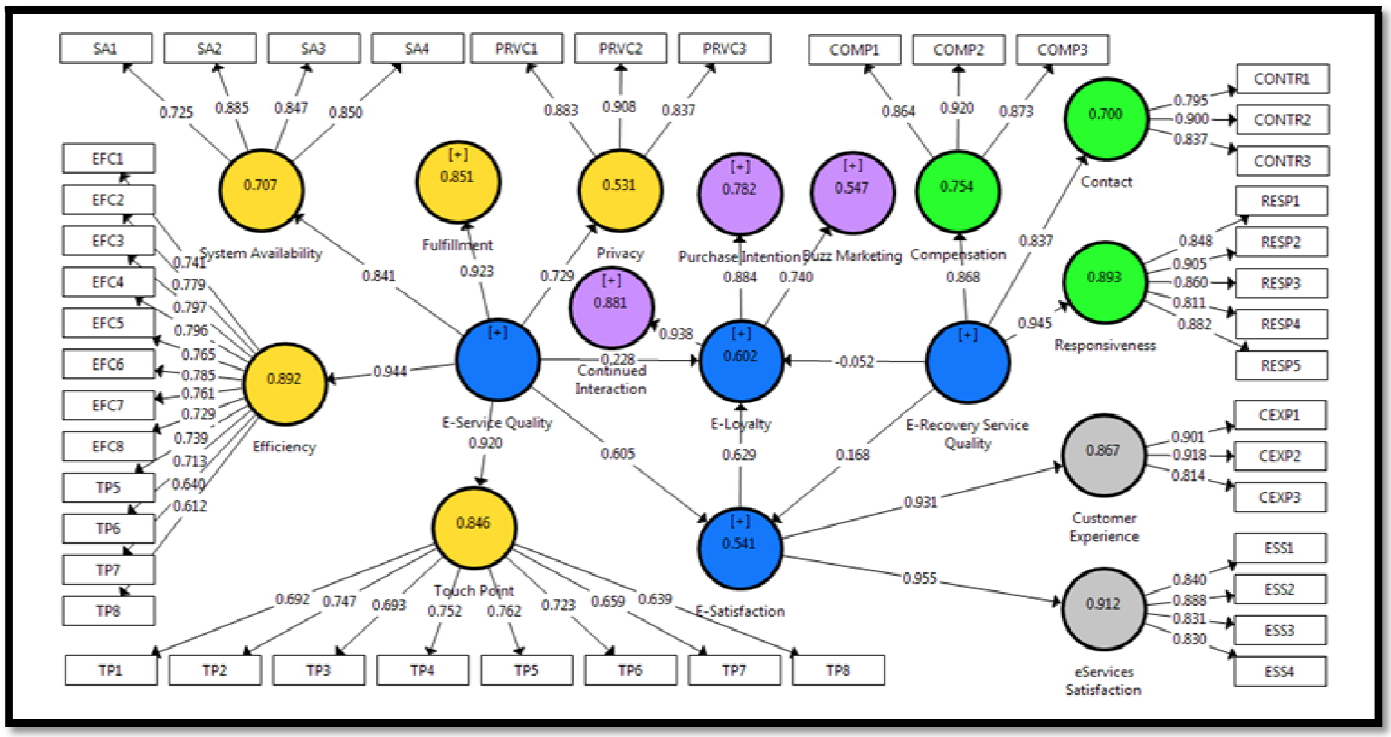

Figure 9: Data Processing Results

3.5. Measurement Model - Outer Model

The measurement model is used to test the construct validity and instruments reliability. *The results of outer model* testing are described as follows:

3.5.1. Average Variance Extracted (AVE)

The AVE value of all the variables are declared valid if the AVE value ranges above 0.50. The AVE value of each variable can be seen in the Table

	Average Variance Extracted (AVE)
Buzz Marketing	0,765
Compensation	0,786
Contact	0,714
Continued Interaction	0,655
Customer Experience	0,772
E-Loyalty	0,545
E- Recovery Service Quality	0,599
E-Satisfaction	0,661
E-Service Quality	0,500
Efficiency	0,548
Fulfillment	0,581
Privacy	0,768
Purchase Intention	0,758
Responsiveness	0,743
System Availability	0,687
Touch Point	0,504
Eservice Satisfaction	0,719

Table 4: Nilai Average Variance Extracted

3.5.2. Composite Reliability

Composite reliability describes the consistency of statements in the instrument and sees reliable indicators. Composite reliability testing on all variables are declared reliable when loading value above 0.7. The composite reliability value of each variable can be seen in the table Composite Reliability Value

	Composite Reliability
Buzz Marketing	0,907
Compensation	0,916
Contact	0,882
Continued Interaction	0,919
Customer Experience	0,910
E-Loyalty	0,939
E- Recovery Service Quality	0,942
E-Satisfaction	0,932
E-Service Quality	0,961
Efficiency	0,935
Fulfillment	0,932
Privacy	0,908
Purchase Intention	0,926
Responsiveness	0,935
System Availability	0,897
Touch Point	0,890
Eservice Satisfaction	0,911

Table 5
Source: Smart PLS 3 (2017)

3.5.3. Cronbach's Alpha

Cronbach's alpha elucidates the consistency of statements in the instruments. The instrument is categorized as reliable if one's answer to the statements is consistent or stable from time to time. Cronbach's alpha tests on all variables are declared reliable when the loading value is above 0.7. The Cronbach's alpha value of each variable can be seen in the Table

	Cronbach's Alpha
Buzz Marketing	0,846
Compensation	0,863
Contact	0,799
Continued Interaction	0,895
Customer Experience	0,851
E-Loyalty	0,929
E- Recovery Service Quality	0932
E-Satisfaction	0,914
E-Service Quality	0,957
Efficiency	0,924
Fulfillment	0,918
Privacy	0,849
Purchase Intention	0,893
Responsiveness	0,913
System Availability	0,846
Touch Point	0,859
eservice Satisfaction	0,869

Table 6: Cronbach's Alpha Value
Source: Smartpls 3 (2017)

3.6. Structural Model Testing - Inner Model

Inner model shows the relationship between latent variables with other examined variables. Inner models evaluation with bootstrapping tests produces coefficient of determination of R-square, Q-square and path coefficients. Evaluation results of inner model are described as follows:

3.6.1. Coefficient of Determination (*R-squared)*

R-square (R^2) can be used to assess whether specific independent latent variables have a substantive effect on dependent latent variables. The Model is considered to have an effect when R^2 is greater than 0 (zero). The results of coefficient of determination R^2 of the model can be seen in the following Table 7:

	R Square	R Square Adjusted
E-Loyalty	0,602	0,598
E-Satisfaction	0,541	0,538

Table 7: Coefficient of Determination (R-Squared) Value
Source: Smart PLS 3 (2017)

3.6.1.1. Q-square (Q^2)

Q-square (Q^2) measures how good the observation value produced by the model and the estimation of parameters. A model is considered to have relevant predictive value if the value of Q^2 is greater than 0 (zero). Q^2 scale has a value ranges between $0 < Q^2 < 1$. The model gets better if the value of Q^2 is close to 1. The *predictive relevance value was* obtained from:

Q2 = 1- (1-R12) (1-R22)
Q2 = 1- (1-0.602) (1-0.541)
Q2 = 1- (0.183)
Q2 = 0,82

The calculation results of Q2 in this research is 0.82 which means that 82% of the independent and *intervening variables* in the research worthy explains the dependent variable of electronic loyalty. Hence, the research model used is appropriate and the hypothesis testing may proceed.

3.6.1.2. Effect Size (f^2)

The effect size is used to see the magnitude of the effect of each exogenous latent variable in forming endogenous latent variable. The effect size measures the contribution between each variable against proxy R^2. Effect Size between 0.05 - 0.20 describes a significant individual contribution

	E-Loyalty	E- Recovery Service	E-Satisfaction	E-Service Quality
E-Loyalty				
E-Recovery Service Quality	0,054		0,168	
E-Satisfaction	0,629			
E-Service Quality	0,608		0,605	

Table 8: Effect Size Value
Source: Smart PLS 3 (2017)

3.7. Measurement Model Analysis

Measurement Model Analysis aims to analyze how valid the dimensions used in this research to measure each research variable. To analyze measurement model, *outer loadings value was used*. The conditions are if the value of *p-values* of measurement model is smaller than 0.05 or the value of *t-statistics is* greater than 1.96, then the dimensions can be declared significant in measuring the variables. The measurement model analysis also provides the dimensions most closely related to research variables seen from which dimension with *original sample (O) value*. The change of the dominant research variable is reflected from any dimension.

3.7.1. Measurement Model for Electronic Service Quality Variable

Based on the calculation results of each indicator, the T - Statistics value is greater than 1.96 and P value is smaller than 0.05. This means that each of the indicators has a significant relation. The following table shows the details:

	Original Sample (o)	Sample Mean (M)	Standard Deviation(STDEV)	T Statistics	P values
E-Service Quality-> Buzz Marketing	0,450	0,449	0.048	9,280	0,000
E-Service Quality-> Continued Interaction	0,571	0,559	0,056	10,282	0,000
E-Service Quality-> Customer Experience	0,563	0,564	0,053	10,579	0,000
E-Service Quality-> E-Loyalty	0,608	0,607	0,058	10,454	0,000
E-Service Quality-> E-Satisfaction	0,605	0,606	0,055	10,994	0,000
E-Service Quality-> Efficiency	0,944	0,946	0,008	118,256	0,000
E-Service Quality-> Fulfillment	0,923	0,923	0,015	61,010	0,000
E-Service Quality-> Privacy	0,729	0,731	0,032	22,680	0,000
E-Service Quality-> Purchase Intention	0,538	0,537	0,055	9,797	0,000
E-Service Quality-> System Availability	0,841	0,842	0,025	33,835	0,000
E-Service Quality-> Touch Point	0,920	0,921	0,011	86,093	0.000
E-Service Quality-> eservice Satisfaction	0,578	0,579	0,054	10,742	0,000

Table 9: Measurement of Electronic Service Quality Variable
Source: Research Results (Data Processed In 2017)

3.7.2. Measurement Model for Electronic Recovery Service Quality Variable

Based on the calculation results of each indicator, the T - Statistics value is greater than 1.96 and P value is smaller than 0.05. This means that each of the indicators has a significant relation. The following table 5.27 shows the details:

	Original Sample (o)	Sample Mean (M)	Standard Deviation(STDEV)	T Statistics (0/ STDEV)	P values
E-Recovery Service Quality-> Buzz Marketing	0,040	0,053	0,039	1,019	0,154
E-Recovery Service Quality-> Compensation	0,868	0,869	0,018	48,919	0,000
E-Recovery Service Quality-> Contact	0,837	0,838	0,023	35,746	0,000
E-Recovery Service Quality-> Continued Interaction	0,051	0,067	0,049	1,036	0,150
E-Recovery Service Quality-> Customer Experience	0,157	0,156	0,059	2,669	0,004
E-Recovery Service Quality-> E-Loyalty	0,054	0,072	0,052	1,037	0,150
E-Recovery Service Quality-> E-Satisfaction	0,168	0,168	0,063	2,660	0,004
E-Recovery Service Quality-> Purchase Intention	0,048	0,064	0,046	1,040	0,149
E-Recovery Service Quality-> Responsiveness	0,945	0,945	0,007	129,461	0,000
E-Recovery Service Quality-> eService Satisfaction	0,161	0,160	0,060	2,665	0,004

Table 10: Measurement of Electronic Service Quality Variable
Source: Research Results (Data Processed In 2017)

3.7.3. Measurement Model for Electronic Satisfaction Variable

Based on the calculation results of each indicator, the T - Statistics value is greater than 1.96 and P value is smaller

than 0.05. This means that each of the indicator has a significant relation. The following table shows the details:

	Original Sample (o)	Sample Mean (M)	Standard Deviation(STDEV)	T Statistics (0/ STDEV)	P Values
E-Satisfaction-> Buzz Marketing	0,465	0,467	0,055	8,404	0,000
E-Satisfaction->Continued Interaction	0,590	0,591	0,058	10,207	0,000
E-Satisfaction-> Customer Experience	0,931	0,932	0,010	95,646	0,000
E-Satisfaction-> E-Loyalty	0,629	0,63	0,061	10,260	0,000
E-Satisfaction-> Purchase Intention	0,556	0,557	0,056	10,009	0,000
E-Satisfaction-> eService Satisfaction	0,955	0,956	0,007	146,539	0,000

Table 11: Measurement of Electronic Satisfaction Variable
Source: Research Results (Data Processed In 2017)

3.7.4. Measurement Model Of Electronic Loyalty Variable

Based on the calculation results of each indicator, the T - Statistics value is greater than 1.96 and P value is smaller than 0.05. This means that each of the indicator has a significant relation. The following table shows the details:

	Original Sample (o)	Sample Mean (M)	Standard Deviation(STDEV)	T Statistics (0/ STDEV)	P values
E-Loyalty-> Buzz Marketing	0,740	0,741	0,041	18,044	0,000
E-Loyalty-> Continued Interaction	0,938	0,938	0,009	101,802	0,000
E-Loyalty-> Purchase Intention	0,884	0,885	0,014	64,606	0,000

Table 12: Measurement of Electronic Loyalty Variable

4. Tests Results among Each Variable

The hypothesis test was performed to see the results of data analysis on hypothesis formulation that has been previously formed. The testing among each of the variable is as follows:

- E-Service Quality (eSQ) has a significant effect on E-loyalty (eL) on Indonesia's E-commerce marketplace. From the analysis previously conducted on the effect of E-Service Quality (eSQ) on E-loyalty (eL), it was obtained that the parameter coefficient value of 0,228 and the statistic t value is 3,162 (t_{count}> 1.96). Next, the P Value of 0.001 is smaller than 0.005, the t-statistic value exceeds 1.96 (t_{table}) which shows that the relationship between these two variables is significant, while coefficient of 0,104 indicates a positive effect between both variables. These figures can be seen in table 5.5 of Path Coefficients. Therefore, it can be concluded that hypothesis 1 stating that E-Service Quality (eSQ) has a significant effect on E-loyalty (eL) on Indonesia's E-commerce marketplace is accepted.
- E-Service Quality (eSQ) has a significant effect on E-Satisfaction (eS) on Indonesia's E-commerce marketplace. Both E-Service Quality (eSQ) and E-satisfaction (ICE) variables are found to have positive and significant effects. This is shown by t-statistics value of 10,994 (t_{table}> 1.96) and positive valued parameters coefficient of 0.605. Then the P Value of 0,000 is smaller than 0.005. Therefore, it can be concluded that hypothesis 2 stating that E-Service Quality (eSQ) has a significant effect on E-Satisfaction (eS) on Indonesia's E-commerce marketplace is accepted.
- E-Recovery ServiceQuality (eRSQ) has a significant effect onE-loyalty (eL) on Indonesia's E-commerce marketplace. Based on the third hypothesis testing results, it was indicates that E-Recovery ServiceQuality (eRSQ) did not affect significantly to E-loyalty (eL). This is evident from t-statistics value of 1,175 which is located below t-table value (< 1.96) and negative parameter coefficient value of -0,052, and the P Value of 0,120 is greater than 0.05. This means that the hypothesis of E-Recovery ServiceQuality (eRSQ) having a significant effect on E-loyalty (eL) in this research is rejected.
- E-Recovery ServiceQuality (eRSQ) has a significant effect onE-Satisfaction (eS) on Indonesia's E-commerce marketplace. Based on the fourth hypothesis testing results, it was shown that E-Recovery ServiceQuality (eRSQ) has a significant effect on E-loyalty (eL) on Indonesia's E-commerce marketplace. This is evident from t-statistics value of 2,660 which is located below t-table value (>1.96) and positive parameter coefficient value of 0,168. Then, the P value of 0.004 is smaller than the value of 0.005, thus E-Recovery ServiceQuality (eRSQ) has a significant effect on E- Satisfaction (ICE) on Indonesia's E-commerce marketplace and both proved to be related and significant.
- E-satisfaction (eS) has a significant effect on E-loyalty (eL) on Indonesia's E-commerce marketplace. Based on the results of the fifth hypothesis testing, it was discovered that E-satisfaction (ICE) has a significant effect on E-loyalty (eL). This is evident from t-statistics value of 10,260 which is located above the required t-table value (>1.96) and has parameter coefficient value of 0,629. Then, the P value of 0.000 is smaller than the value of 0.005, thus E-satisfaction (eS) has a significant effect on E-Loyalty (eL) on Indonesia's E-commerce marketplace and both proved

to be related and significant.

- E-Service Quality (eSQ) has a significant effect on E-loyalty (eL) through E-satisfaction on Indonesia's E-commerce marketplace. Based on the results of the sixth hypothesis testing, it was discovered that E-Service Quality (eSQ) has a significant effect on E-loyalty (eL). This is evident from the parameters coefficient value of 0,381 and the P Value of 0.000 smaller than 0.05, leaving E-Service Quality (eSQ) to have a significant effect on E-loyalty (eL) through E-satisfaction (ICE) on Indonesia's E-commerce marketplace. Hence both proved to be related and significant in this research.
- E-Recovery Service Quality (eRSQ) has a significant effect on E-loyalty (eL) through E-satisfaction on Indonesia's E-commerce marketplace. Based on the results of the seventh hypothesis testing, it was discovered E-Recovery Service Quality (eRSQ) has a significant effect on E-loyalty (eL). This is evident from the parameters coefficient value of 0,106 and the P Value of 0.003 smaller than 0.05, leaving E-Recovery Service Quality (eSQ) to have a significant effect on E-loyalty (eL) through E-satisfaction (ICE) on Indonesia's E-commerce marketplace. Hence both proved to be related and significant in this research.

5. Conclusions

Based on the research results above, the following conclusions are drawn:

- E-Service Quality has an effect on E-Loyalty on Indonesia's Ecommerce marketplace.
- E-Service Quality has an effect on E-Satisfaction on Indonesia's Ecommerce marketplace.
- E-Recovery Service Quality has no effect on E-Loyalty on Indonesia's Ecommerce marketplace
- E-Recovery Service Quality has an effect on E-Loyalty on Indonesia's Ecommerce marketplace
- E-Satisfaction has an effect on E-Loyalty on Indonesia's Ecommerce marketplace
- E-Service Quality has an effect on E-Satisfaction through E-satisfaction on Indonesia's Ecommerce marketplace.
- E-Recovery Service Quality has an effect on E-Loyalty through E-Satisfaction on Indonesia's Ecommerce marketplace.

From practical point of view, the following conclusions can be drawn:

- Based on E-Service Quality variable, the dimensions that need to be preserved are touch point, efficiency,
- System availability and privacy. While the dimension that needs to be improved is fulfillment.
- Based on e-satisfaction variable, the dimension that needs to be preserved is customer experience.
- Whereas the dimension that needs to be improved is total electronic service satisfaction.
- Based on e-recovery service quality variable, the dimensions that need to be preserved are contact and
- Responsiveness. While the dimension that needs to be taken into account is compensation.
- Based on e-loyalty variable, the dimensions that need to be preserved are purchase intention and continued
- Interaction. Whereas the dimension that needs to be improved is Buzz Marketing.

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