

## SST-Servqual and customer outcomes in service industry: Mediating the rule of corporate reputation

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### ABSTRACT

Recently, the importance of service quality in various industries has gained much attention. Along with the development of technology, firms offer self-service technology to serve customers and create customer satisfaction. This aims to achieve positive behavioral intention, which could potentially become behavioral loyalty. This study aims to analyze how SST-Servqual affects customer satisfaction, behavioral intention, and behavioral loyalty mediated by corporate reputation in the Indonesian public service sector. We collected data from 400 self-service technology users through an online survey. To answer all hypotheses, we use Structural Equation Modeling with Lisrel 8.71. The results prove that SST-Servqual affected satisfaction, behavioral intention, and behavioral loyalty, both directly and indirectly, through company reputation. This research provides knowledge for the Indonesian service industry to build new technologies for increasing satisfaction, positive behavioral intentions, and behavioral loyalty.

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## 1. Introduction

The advances of information and communication technologies have changed the interaction between service providers and customers; therefore, service providers must develop service standards (Alhathal Faisal, Sharma, & Kingshott Russel, 2019; Barrett, Davidson, Prabhu, & Vargo, 2015). The service concept began from face-to-face services, which have evolved into services facilitated by technology (Fitzsimmons, 2003). At present, service providers are introducing new devices with technology to provide convenient services in order to achieve better customer performance and satisfaction (Gounaris, Dimitriadis, & Stathakopoulos, 2010; Hien, 2014; Tsou & Hsu, 2017). In recent years, the use of Self-Service Technology has become a phenomenon of business processes that have emerged in the service sector (Leung & Matanda, 2013; Verhoef et al., 2009). Self-service technology has replaced direct relationships between users and service providers (Meuter, Ostrom, Roundtree, & Bitner, 2000). It allows users to produce and use services without interacting directly with service company employees (Eastlick, Ratto, Lotz, & Mishra, 2012; Ju Rebecca Yen & Gwinner Kevin, 2003; Martins, Oliveira, & Popovič, 2014). Customers adopting technology might meet service risks when using self-service technology. Hence, customers consider a company's reputation more to reduce service uncertainty (Walsh, Bartikowski, & Beatty, 2014). The company's reputation plays a vital role in reducing the risk and uncertainty experienced by customers in choosing service providers in the service industry (Cintamür İsmail & Yüksel Cenk, 2018). The service companies have introduced self-service technology to increase productivity, experiences, and effectiveness in the service process (Curran & Meuter, 2005; Kelly, Lawlor, & Mulvey, 2017; Kokkinou & Cranage, 2013; Walker Rhett, Craig-Lees, Hecker, & Francis, 2002). Besides, the aim is to satisfy customers in accessing services through new and

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useful channels (McGrath & Astell, 2017; Meuter, Ostrom, Bitner, & Roundtree, 2003; Reinders, Dabholkar, & Frambach, 2008). With such a treatment, service companies can better handle customer demands and provide satisfaction (Mary. Bitner, Ostrom, & Meuter, 2002; Ganguli & Roy, 2011; Johnson, Bardhi, & Dunn, 2008). Some examples in Indonesia, customers usually use SST such as ATMs, internet banking, self-check-in at the airports, mobile banking, online shopping, gas stations, and vending machines. We define self-service technology as a technology that allows customers to transact or perform self-service and services provided by company employees (Meuter et al., 2000). Since developments in multi-channel marketing (Grewal & Levy, 2009; Musso, 2010), companies provide the SSTs interface combination that provides perfect customer service. For example, in Indonesia, several banks have spoiled customers to open accounts through a mobile application, and passengers can self-check at the airport or through a website. Banks have offered many services through the Internet, hotlines or “*interactive telephone systems*”, ATMs, and cellular phones.

SST is very beneficial for businesses because it helps companies serve more customers with less resource capacity. Finally, it can reduce costs because employees are replaced by SST (Curran & Meuter, 2005; Yang & Klassen Kenneth, 2008). Besides, it also helps companies reduce the costs of employee training, equipment, and communication (Leung & Matanda, 2013). SST focuses more on services that are more consistent, reliable, and not affected by variations of services (Liljander, Gillberg, Gummerus, & van Riel, 2006; Weijters, Rangarajan, Falk, & Schillewaert, 2007). Some literature shows that SST can increase customer satisfaction and loyalty (Mary. Bitner et al., 2002; Meuter, Bitner, Ostrom, & Brown, 2005). Besides increasing efficiency, SST provides strength to employees and customers (Hsieh, 2005) by increasing the convenience of time and place (J. Yang & Klassen Kenneth, 2008).

Several prior studies have paid attention to the impact of service quality on customer satisfaction and loyalty through the servqual measurement scale (Arts, Frambach, & Bijmolt, 2011; Asiah Omar, Aniza Che Wel, Abd Aziz, & Shah Alam, 2013; Mary Bitner, 1995; Boon-itt, 2015; Carman, 1990; Chang & Wang, 2016; J. Joseph. Cronin & Taylor, 1992; Deng, Lu, Wei, & Zhang, 2010; Fernandes & Pedroso, 2017; Furrer, Liu, & Sudharshan, 2000; Gronroos, 2001; Lehtinen & Lehtinen, 1991; Parasuraman, Zeithaml, & Berry, 1985, 1988; Teas, 1993; Wilson, A., Bitner, & Gremler, 2012). However, there has been a lack of research focusing on SST-service quality in Indonesia's service industry through company reputation, although some researchers have reviewed the impact of SST-servqual on customer satisfaction, loyalty, and behavioral intentions. (Beatson, Coote, & Rudd, 2006; Demirci Orel & Kara, 2014; Ganguli & Roy, 2011; Liljander et al., 2006; Narteh, 2015; Shahid Iqbal, Ul Hassan, & Habibah, 2018). This study examines the role of SST in the service delivery process. It investigates and understands its effects on corporate reputation, satisfaction, behavioral loyalty, and behavioral intentions of Indonesian consumers in the service industry. This research uses the SST-Servqual scale developed by J.-S. Lin, Chris and Hsieh (2011).

## 2. Literature Review

### 2.1. SST-Servqual

Self-service technology is an interface technology that allows customers to use services with no employees involved in the provision of the services (Meuter et al., 2000). Companies will obtain benefits when deciding to produce SST, such as increased productivity and cost savings (Dabholkar, 1996). However, in recent years, researchers have investigated the role of technology in service delivery in different industries (Dabholkar, 1996; Demoulin Nathalie & Djelassi, 2016; Gures, Inan, & Arslan, 2018; Meuter et al., 2003; Meuter et al., 2000; Parasuraman & Grewal, 2000; Shahid Iqbal et al., 2018). SST research clusters include the elaboration of different SST user profiles based on demographic characteristics, classification schemes for new technologies (Meuter et al., 2003), the role of technology in improving service quality (Dabholkar, 1996), and attitudes towards technology (Taylor & Todd, 1995).

In this research, we define SST-service quality as a mechanism for customers to serve themselves using interface technology. Companies that provide SST for customers can improve service quality performance and attract new customers because of many facilities provided (Parasuraman & Grewal, 2000). Some researchers have suggested that companies use technology to increase service exchange and increase the role of technology in meeting service benefits for customers and companies (Meuter et al., 2000; Salomann, Dous, Kolbe, & Brenner, 2007). Researchers are still reviewing and testing SST concepts, mainly testing SST usage, and there is a lot to learn about how customers use SST.

### 2.2. Corporate Reputation

The company's identity is reflected by its image and usually associated with its reputation through communication activities to customers (Abdullah, Shahrina, & Abdul, 2013; G. Dowling, R, 2000). The company's image is related to the company's reputation, and this evaluation is based on the direct experience of stakeholders with the company. These styles of communication and symbols provide information about the company's activities compared to its competitors (Gotsi & Wilson, 2001b). They build a positive company reputation through excellent communication from a positive corporate image (Westcott Alessandri, 2001). This study defines the company's reputation as an assessment that results from direct and indirect experience and information about the company (Gotsi & Wilson, 2001b; Westcott Alessandri, 2001) in providing technology-based services. The better the company provides SST-service quality, the more it will positively affect the company's reputation. Thus, a

company can enhance its reputation when it can build and communicate its corporate identity to stakeholders (Dowling, 2004) by technology-based services.

### 2.3. Customer Outcomes

Customer satisfaction is an output of the quality of services provided by service companies. Customers consistently evaluate expectations before buying and after the actual purchase. It satisfies customers when a certain level of consistency occurs, and those who are dissatisfied when a lower level of consistency occurs (Parker & Mathews, 2001). Therefore, this condition is related to the level of pleasure and disappointment of the customer to the service. According to the study of Gronholdt, Martensen, and Kristensen (2000), customer satisfaction is a comparison of all service experiences based on customers' expectations and perceptions of ideal services. When linked with self-service, customers will be satisfied if they do not find a system interruption during interacting with technology.

We interpret behavioral intention as a person's interest in formulating a conscious plan to do or not specific actions in the future (Warshaw & Davis, 1985). According to Technology Acceptance Model, customers' attitude towards usage will determine their intention to use technology, thus affecting the level of use and perceived ease of use of information systems (Bonanno & Kommers, 2008; F. Davis, D, 1989; F. Davis, D., Bagozzi., & Warshaw., 1989). Consumer behavior theory is the foundation for the formation of Theory of Reasoned Action (Icek. Ajzen & Fishbein, 1975) in the relationship between intention and actual behavior. The Theory of Reasonable Action holds that it is an actual behavior that results from one's intention to take specific actions (Icek. Ajzen & Fishbein, 1975). Theory Planned Behavior (TPB) (Icek Ajzen, 1991), deriving from Theory of Reasoned Action (TRA) (Icek. Ajzen & Fishbein, 1975), explains customer attitudes towards the use of technology widely believed to influence behavioral intentions (Icek Ajzen, 1991; Icek. Ajzen & Fishbein, 1975; Curran & Meuter, 2005).

Behavioral loyalty is loyalty reflected in the frequency of customers who choose the same product or service compared to the total quantity of specific products or services consumed (Francis. Buttle & Burton, 2002; Chou, Lu, & Chang, 2014; Dick & Basu, 1994; Y. Wang, Lo, & Yang, 2004). Customer retention is loyalty related to behavioral loyalty, which is measured by buying behavior as shown by the high frequency of buying products or using services. Meanwhile, loyalty refers to attitudinal loyalty and is measured based on elements of attitudes, beliefs, feelings, and intention to purchases (F. Buttle & Maklan, 2019). Loyalty and retention are unique. The researchers understand that loyalty is an attitudinal construct or is related to customer attitudes toward the firm. Retention is a behavioral construct or related to behavior towards the firm (Ennew & Binks, 1996). In detail, Ennew and Binks (1996) state that although attitudes and behaviors are related, a positive attitude does not always result in repurchase behavior. Reichheld (2003) states that loyalty is essential, but it is difficult to measure. Therefore, measuring customer loyalty should be done based on behavioral intention.

### 2.4. Hypothesis Development

As the impact of technological development, service companies offer SST-service quality to improve customer experience, reduce direct and indirect costs associated with employees, and build customer retention (Ryu, Lee, & Kim, 2012; Tsou & Hsu, 2017; I.-L. Wu, 2013). Self-service technology provides a variety of choices for customers to get services openly (Shahid Iqbal et al., 2018). Therefore, service quality reflects customer perception that the company offers service innovative, high-quality, honest, and has value for money (Walsh & Beatty, 2007; Walsh, Mitchell, Jackson, & Beatty, 2009).

Many researchers are interested in studying the reputation of companies, especially those engaged in services. A company with an excellent reputation has an advantage in attracting new customers (Gotsi & Wilson, 2001a; Groenland, 2002). In making decisions, customers evaluate the company's reputation from the quality of service provided. Companies have used various methods to improve their reputation through service quality because it can improve customer perceptions of the quality of services provided (Feldman, Bahamonde, & Velasquez, 2014).

Based on the perspective of marketing science, the company's reputation and image impact customer behavior. Customer loyalty is influenced by the perceived image (Rindova & Fombrun, 1999). Thus, both the company's image and reputation are assumed to impact customer loyalty positively. A positive image or a good corporate reputation will help companies build customer satisfaction and maintain loyal relationships with customers (Davies, Chun, da Silva, & Roper, 2003; Dick & Basu, 1994; Garcia-Madariaga & Rodríguez-Rivera, 2017; Helm & Tolsdorf, 2013; Walsh et al., 2009; Yu-Te & Heng-Chi, 2013).

The perception of service quality contributes to the overall service that impacts customer satisfaction, purchase intentions, and company performance (J. Joseph. Cronin & Taylor, 1992; R. L. Oliver, 1993; Zeithaml, Berry, & Parasuraman, 1996). The quality of services related to self-service technology must be evaluated based on the relationship between technology, perspectives, and customer problems which affect the company's success. In their study, Walsh and Beatty (2007) and Schwaiger (2004) describe conceptual service quality as a construct of attitudes that reflects customer feelings toward service companies based on past customer experience and information about the companies. Customers will expand their perceptions about service quality and which services can be agreed upon, so that perceived quality of the customers can influence the image of the companies.

Satisfaction shows the extent to which consumers emit positive sentiments in receiving services (J. Lin & Hsieh, 2006). This is related to the customers' feelings adequately compensated for the situation in exchange for individual costs (Al-Alak, 2009). Satisfaction arises when a customer compares actual purchases and consumption in the past with the expected benefits of the product or service to meet the customer's aspirations (Bergman & Klefsjö, 2010; J. Joseph Cronin, Brady, & Hult, 2000). According to C. Oliver (1997), satisfaction is "*a reaction to customer satisfaction*". It is an appraisal of the characteristics of a product or service that provides a pleasant level of consumption experience. Based on the theory of value perception, we define satisfaction as an emotional response that starts through a cognitive evaluation process (Parker & Mathews, 2001). However, Swan and Combs (1976) explained that satisfaction is associated with access to meet performance. Dissatisfaction arises when review a product or service is below customer expectations.

Based on the expectancy disconfirmation model, expectations in self-service technology and customer satisfaction are considered a reward. Sufficient satisfaction can be achieved when customers believe that their expectation are met through self-service technology (Chen & Chen, 2009). To improve company performance and customer satisfaction, the company presents self-service technology to deliver services in an integrated manner to provide comfort for customers (Demirci Orel & Kara, 2014; Demoulin Nathalie & Djelassi, 2016; Rust & Espinoza, 2006). Based on customer perceptions of interface technology, several researchers have explained the relationship between satisfaction and service quality. Wolfenbarger and Gilly (2003) found a significant relationship between service quality and satisfaction in the e-seller context. Futhermore, Ribbink, van, Liljander, and Streukens (2004), identified a positive relationship between the quality of electronic services and customer satisfaction in the e-commerce industry. Wu (2011), examined the relationship between e-service quality and customer satisfaction, and they decided that e-service quality was related to customer satisfaction. Bogicevic, Bujisic, Bilgihan, Yang, and Cobanoglu (2017), explained the positive impact of airports implementing self-service technology on passenger satisfaction. Other researchers explained the positive relationship between user satisfaction in using self-service technology with loyalty, and behavioral intentions (Demirci Orel & Kara, 2014; C. Lin, Shih, & Sher, 2007; Xinyuan Zhao, Mattila, & Eva, 2008). Demirci Orel and Kara (2014), identified SST-servqual in self-service checkout, which has a positive effect on loyalty and has an indirect effect on customer satisfaction. Iqbal, Hassan, Sharif, and Habibah (2017) identified customer satisfaction as a partial mediation between service quality, behavioral intention, and customer loyalty.

Lee, Lee, and Feick (2001) explained that customer loyalty is similar to with word of mouth, increasing the likelihood of making repeat purchases, and often making purchases if the company offers a product or service. Results of a literature review show that service quality has become an essential element shaping customer loyalty (Boulding, Kalra, Staelin, & Zeithaml, 1993; J. Joseph Cronin & Taylor, 1992; Goutam & Gopalakrishna, 2018; Makanyeza & Chikazhe, 2017; Prentice, 2013).

Parasuraman and Grewal (2000) explained that customer loyalty can increase company value in the service sector by examining service quality, value, and chain of loyalty in the sense of e-service delivery. In the context of online services. Z. Yang and Peterson (2004) show that customer satisfaction and product value are the major drivers for service companies to gain customer loyalty. Ganguli and Roy (2011) found a positive and significant influence of service quality dimensions on customer satisfaction and loyalty in the technology-based banking industry. Xin, James, and Viswanath (2014) examined the effect of service innovation and brand equity on customer loyalty in the information technology sector and found that brand equity significantly influences affective and conative loyalty.

Research on consumer behavior has confirmed the relationship between actual behavior and behavioral intention (De Cannière, De Pelsmacker, & Geuens, 2009; Ikhsan, Primiana, Febrian, & Sari, 2016; Webb & Sheeran, 2006). In the literature on customers adopting technology, they explained that the customer's actual behavior can be described in terms of frequency of use or the level of use of technology systems (Demoulin Nathalie & Djelassi, 2016; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000; Venkatesh, Thong, & Xu, 2012). Some studies have explored user intentions to use self-service technology (Venkatesh et al., 2012; Y.-S. Wang, Lin, & Luarn, 2006). It is found that there are several factors and effects of attitudes that drive user behavioral intentions toward self-service technology (Curran, Meuter, & Surprenant, 2003; Weijters et al., 2007). Martins et al. (2014) combined the concept of UTAUT and perceived risk to explain behavioral intentions and behavior in using internet banking. They explained behavioral intention as an essential factor in explaining actual behavior in internet banking. Demoulin Nathalie and Djelassi (2016) investigated the intention to use actual self-service technology by considering several driving factors for customers, i.e., individual, system, and situational factors. Their findings reveal that past use, situational factors, and perceived behavioral control are essential factors of intention to behave towards self-service technology. Therefore, the following hypotheses are proposed:

- H1: SST-servqual impacts on corporate reputation.
- H2: SST-servqual impacts on customer satisfaction.
- H3: SST-servqual impacts on behavioral intention.
- H4: SST-servqual impacts on customer loyalty.
- H5: Corporate reputation impacts on behavioral intention.
- H5a: Corporate reputation mediates the association between SST-servqual and behavioral intention.
- H6: Corporate reputation impacts on customer satisfaction.
- H6a: Corporate reputation mediates the association between SST-servqual and customer satisfaction.

- H7: Corporate reputation impacts on customer loyalty.
- H7a: Corporate reputation mediates the association between SST-servqual and behavioral loyalty.
- H8: Customer satisfaction impacts on behavioral intention.
- H9: Customer satisfaction impacts on customer loyalty.
- H10: Behavioral intention impacts on behavioral loyalty.
- H11: Customer satisfaction mediates the association between corporate reputation and behavioral intention.
- H12: Customer satisfaction mediates the association between corporate reputation and behavioral loyalty.
- H13: Behavioral intention mediates the association between corporate reputation and behavioral loyalty.
- H14: Behavioral intention mediates the association between customer satisfaction and behavioral loyalty.

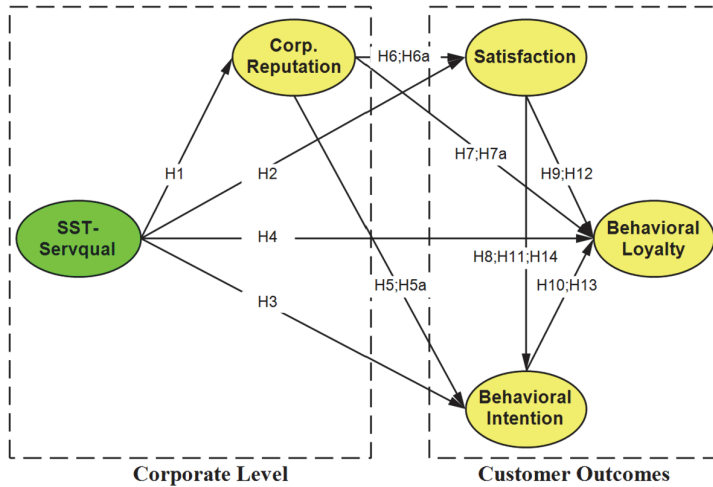
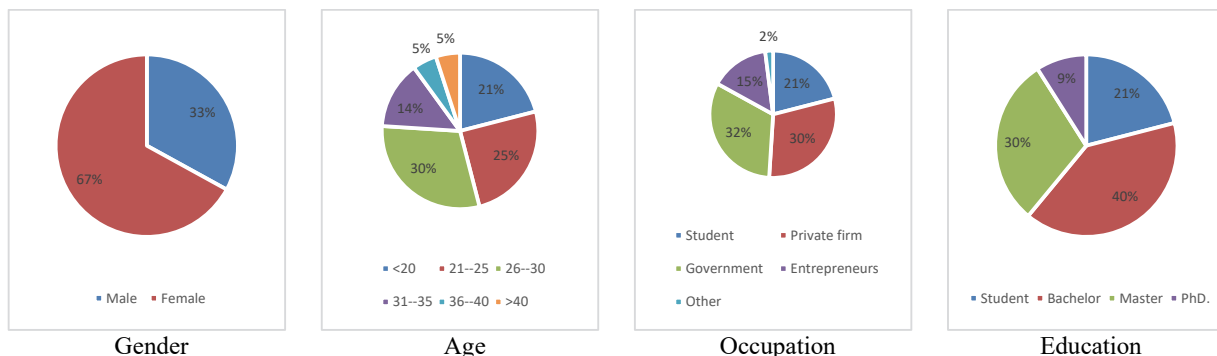


Fig. 1. Research Framework

3. Method

3.1. Research Design

We collected the research data using “google form” distributed to customers through social media, such as Facebook and Instagram. They have used self-service technology, such as ATMs, internet banking, mobile banking, self-check-in at the airports, online shopping, gas stations, and vending machines. We designed the questionnaire by giving opening questions. First, the respondents were asked, “have you used self-service technology?”. If they answer “Yes”, they can proceed to stage two, answering questions. If they answer “No”, then they must “Stop”. We do not know the accurate population. So, the sampling used the Lemeshow method (Lemeshow, Hosmer, Klar, & Lwanga, 1990) with an error margin of 5%, and we got a minimum sample of 385 people. The questionnaire was distributed randomly and the data collection was done in three months. The random sampling technique was employed to obtain the sample; each sample was selected from the same population, and each sample was selected independently (Anderson, Sweeney, & Williams, 2011). We got 650 responses, but those meeting the selection criteria were 400 responses. Most respondents are women (67%) aged 26-30 years. Respondents' jobs are dominated by government employees (32%) and private employees (30%). The respondents' average education level is bachelor (40%) and master's degree (30%). They have an average monthly income of Rp.5.100.000–Rp.9.000.000 (35%). The respondents can use computers at medium level (40%) and most of them often use SST to collect and save money at ATMs (20%) and internet banking (17.3%). They use SST 5–10 times in 1 month (Fig. 1). We tested the goodness of data using composite reliability (CR) and variance extract (VE). After being fulfilled, the statistical analysis was used to test the structural model. Finally, we present practical and managerial implications so that we can understand customer attitudes in using SST.



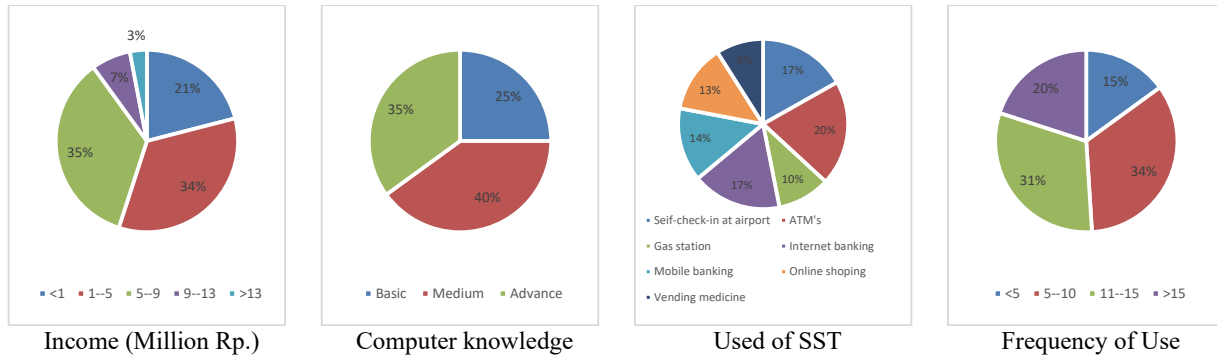


Fig. 2. Characteristics of User

3.2. Measurement

We create a research framework by prioritizing research (Shahid Iqbal et al., 2018), such as SST-servqual, customer satisfaction, behavioral intention, and customer loyalty.

Table 1

Measurement and Goodness of Data

Construct	Item	SLF	t-value
<b>SST-Servqual – Mean = 3.46, CR=0.97; VE=0.61</b>			
Functionality (Func)	Func1. I can complete my service with SST in a short time (mean=3.50).	0.73	16.89
	Func2. The company's SST service process is clear (mean=3.40).	0.76	17.74
	Func3. Using a company SST requires a little effort (mean=3.49).	0.81	19.42
Enjoyment (Enj)	Func4. I can complete the service smoothly with the SST company (mean=3.42).	0.75	17.28
Security (Sec)	Func5. Each SST service item or function is error-free (mean=3.53).	0.79	18.87
Design (Des)	Enj1. The company's SST operation is impressive (mean=3.43).	0.73	16.86
Assurance (Assr)	Enj2. I feel happy to use SST (mean=3.52).	0.81	19.60
Convenience (Con)	Enj3. The company's SST has an interesting additional function (mean=3.51).	0.72	16.38
Customization (Cst)	Enj4. SST company gave me all relevant information (mean=3.45).	0.83	20.31
	Sec1. I feel safe in my transactions with company SST (mean=3.39).	0.75	17.48
	Sec2. A privacy policy that is clear when I use the company SST (mean=3.51).	0.81	19.57
	Des1. The company's SST layout is aesthetically appealing (mean=3.41).	0.80	19.11
	Des2. SST companies seem to use the latest technology (mean=3.55).	0.76	17.81
	Assr1. Companies that provide SST are well known (mean=3.50).	0.82	19.84
	Assr2. Companies that provide SST have an excellent reputation (mean=3.43).	0.79	18.93
	Con1. SST has convenient operating hours for customers (mean=3.37).	0.80	18.97
	Con2. It is accessible and available to reach the company SST (mean=3.47).	0.73	16.93
	Con3. It is easy and helpful to use company SST (mean=3.40).	0.84	21.32
	Cst1. SST company understands my specific needs (mean=3.50).	0.73	16.81
	Cst2. SST company has my best interest (mean=3.39).	0.76	17.84
	Cst3. SST company has features that personalized for me (mean=3.48).	0.81	19.32
<b>Goodness of Fit for CFA SST-Servqual: GFI=0.90; AGFI=0.86; NFI=0.98; CFI=0.99; RMSEA=0.068; <math>\chi^2=485.69</math>; df=171; Probability=0.000</b>			
<b>Corporate Reputation – Mean=3.56; CR=0.93; VE=0.59</b>			
	Cr1. I have a good feeling towards the SST companies (mean=3.57).	0.81	17.07
	Cr2. I appreciate the SST companies (mean=3.51).	0.74	19.40
	Cr3. I believe in SST companies (mean=3.54).	0.81	19.12
	Cr4. SST companies offer excellent value services. (mean=3.50).	0.80	18.66
	Cr5. SST companies have good leadership (mean=3.64).	0.79	16.35
	Cr6. SST companies are well controlled (mean=3.48).	0.72	16.93
	Cr7. I believe that SST providers have offered high-quality services (mean=3.64).	0.74	16.78
	Cr8. In general, I believe that SST providers always fulfill their promises (mean=3.54).	0.73	19.47
	Cr9. SST companies have an excellent reputation (mean=3.53).	0.81	18.82
	Cr10. I think the reputation of the SST firm that I use is more trustworthy than other SST firms (mean=3.67).	0.79	16.50
<b>Customer Satisfaction – Mean=3.47; CR=0.87; VE=0.69</b>			
	CS1. Overall, I am satisfied with the SST offered by the company (mean=3.50).	0.73	20.68
	CS2. The SST offered by the company exceeded my expectations (mean=3.46).	0.86	18.61
	CS3. The SST offered by the company is close to my idea (mean=3.46).	0.80	19.64
<b>Behavioral Intention – Mean=3.45; CR=0.84; VE=0.64</b>			
	BI1. I will be most likely to reuse this SST (mean=3.41).	0.83	18.14
	BI2. The possibility of recommending this SST to a friend is very high (mean=3.52).	0.80	18.01
	BI3. If I have to use it again, I will make the same decision (mean=3.43).	0.80	18.03
<b>Behavioral Loyalty – Mean=3.53; CR=0.89; VE=0.62</b>			
	BL1. I will use this SST again (mean=3.54).	0.80	18.75
	BL2. I will recommended this SST to my close friends (mean=3.46).	0.80	17.96
	BL3. If I need to reuse it, I will come to SST (mean=3.50).	0.78	17.93
	BL4. I will talk positively about this SST to others (mean=3.54).	0.78	16.88
	BL5. This SST is my best choice (mean=3.60).	0.74	19.59
<b>Goodness of Fit for CFA corporate reputation; satisfaction; behavioral intention and behavioral loyalty: GFI=0.94; AGFI=0.91; NFI=0.99; CFI=0.99; RMSEA=0.040; <math>\chi^2=281.70</math>; df=171; Probability=0.000</b>			

We combined a new construct, i.e., corporate reputation, following the recommendations of Shahid Iqbal et al. (2018). The

company's reputation is adopted measurements from Ageeva, Melewar, Foroudi, Dennis, and Jin (2018). We consider corporate reputation's contribution to be necessary because it relates to customer ratings that result from receiving direct and indirect experience and information about the company from time to time (Ageeva et al., 2018). The research variables were classified into five variables, i.e., SST-servqual, corporate reputation, customer satisfaction, behavioral intention, and behavioral loyalty. For measuring SST-servqual, we adopted dimensions and indicators from Shahid Iqbal et al. (2018), based on the results of the validity and reliability developed by Lin, Chris and Hsieh (2011), i.e., a) functionality; b) enjoyment; c) security; d) design; e) assurance; f) convenience and g) customization. For measuring corporate reputation, we adopted the study Ageeva et al. (2018), comprising 10 indicators. For measuring customer satisfaction, we adopted the study of Shahid Iqbal et al. (2018), comprising 3 indicators based on the American Customer Satisfaction Index (ACSI) (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). For measuring behavioral loyalty: We adopted the study of Shahid Iqbal et al. (2018), which comprises 5 indicators. Finally, for measuring behavioral intention, we adopted the study Shahid Iqbal et al. (2018) comprising 3 indicators. The measurement scale in the questionnaire uses a 5 point semantic differential scale. The semantic differential scale aims to get a more specific description of the respondents' responses.

## 4. Result

### 4.1. Goodness of Data

We tested the measurement model using Lisrel 8.71 (Jöreskog & Sörbom, 1996) because the model has a latent construct and several indicators. We confirmed the confirmatory factor analysis (CFA) of all constructs to ensure that the measured indicators contribute to the latent construct value. Because of the verification, the expected loading factor is higher than 0.5 (Hair, Black, Babin, & Anderson, 2019). Our convergent validity testing used variance extracted (VE) and the reliability testing used composite reliability (CR). A variance extracted value requirement is higher than 0.5 and a CR value of 0.6 for exploratory research and above 0.7 for most, but not over 0.95 (Hair et al., 2019). Before evaluating the measurement models and testing the hypotheses, we tested the CFAs of each construct and produced a fit measurement model (Table 1). CFA for SST-servqual yields Goodness of Fit Index-GFI=0.90, Adjusted Goodness of Fit Index-AGFI=0.86, Normed Fit Index-NFI=0.98, and Comparative Fit Index-CFI=0.99. These values meet the goodness index of the measurement model (Hair et al., 2019). RMSEA value=0.068 and Chi-Square test value=485.69. The range of RMSEA values received is 0.05–0.08, where the value of 0.05 is a close fit, and 0.08 is a reasonable error in the population (Hair et al., 2019). Chi-Square test value ( $X^2=485.69$ , probability=0.000,  $df=171$ ). The Chi-Square value is still considered good if the Chi-Square value is two or three times higher than  $df$  (Carmines & McIver, 1981). Furthermore, CFA for customer outcomes (satisfaction, behavioral intention and behavioral loyalty) produces the Goodness of Fit Index-GFI=0.94, Adjusted Goodness of Fit Index-AGFI=0.91, Normed Fit Index-NFI=0.99, and Comparative Fit Index-CFI=0.99, RMSEA=0.040, Chi-Square test ( $X^2=281.70$ , probability=0.000,  $df=171$ ). Therefore, we can conclude that the fitness of the SST-Servqual measurement model and the customer outcome shown by the estimated value are satisfactory.

Evaluation of measurement indicators in each latent construct indicates that all indicators have a standardized loading factor (SLF) value higher than 0.5 (Bagozzi, Yi, & Phillips, 1991; Hair et al., 2019) and the t-test for each SLF is higher than 1.96 or twice more than the standard error (Gerbing & Anderson, 1988). These results show that each construct has high convergent validity. Similar to composite reliability (CR) and variance extracted (VE), SST-servqual produces a value of CR=0.97 and VE=0.61, the company's reputation produces a value of CR=0.93 and VE=0.59, customer satisfaction produces a value of CR=0.87 and VE=0.69, behavioral intention produces CR=0.84 and VE=0.64, and behavioral loyalty produces CR=0.89 and VE=0.62. All constructs have CR values higher than 0.7 (Hair et al., 2019) and VE values higher than 0.5 (Hair et al., 2019). Therefore, we can conclude that all indicators show high internal consistency.

### 4.2. Assessing the Structural Model

The results of testing the structural model of the influence of SST-servqual on the company's reputation and its impact on customer satisfaction, behavioral intention, and behavioral loyalty users of SST are presented in Figure 3. The emphasis of the structural model's value is a fit model. Then, whether the structural relationship is consistent with theoretical expectations was seen. We tested the structural models using Lisrel 8.71.

Table 2 shows the overall fitness statistics from testing the research model. Chi-Square ( $X^2$ ) test=2050.57 with degrees of freedom ( $df$ )=798 ( $p<0.05$ ) and normed chi-square ( $X^2/df$ )=2.56. Comparative Fit Index (CFI)=0.99 with RMSEA=0.063, which corresponds to the 90 percent confidence interval for RMSEA from 0.061 to 0.071. Overall, the structural model is consistent with the theoretical expectations.

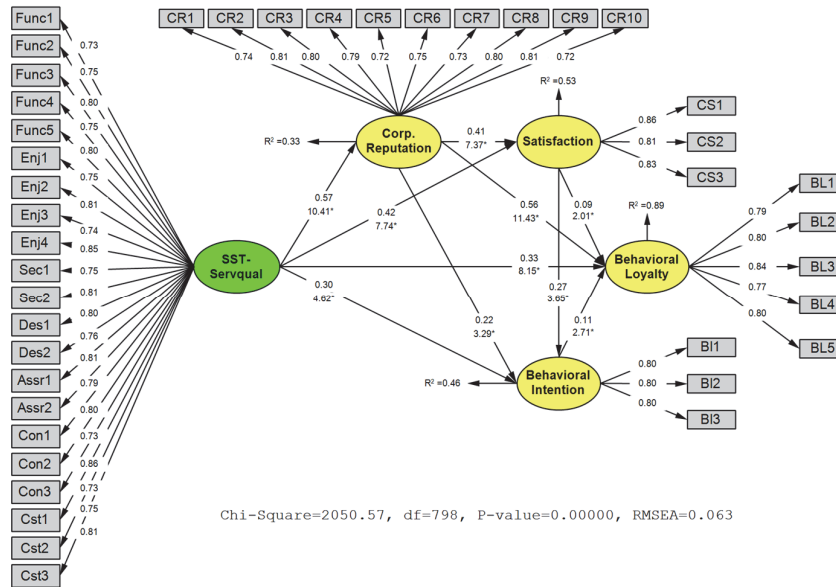
Based on the results of calculating the fitness of the model with several criteria for compatibility index (Table 2), the several criteria have measured, i.e., Absolute Measures (Chi-Square, Probability, RMSEA, SRMR, GFI, and Normed Chi-Square), Incremental Fit Indices (NFI, NNFI, CFI, RFI), and Parsimony Fit Indices (AGFI). Chi-Square ( $X^2$ ), and probability are very low to meet the model's fitness requirements, while the other indices have fitting criteria. The expected Chi-Square value for model compatibility is smaller than the Chi-Square-table, and the expected probability value is higher than 0.05 (Hair et al., 2019). Hair et al. (2019) explained that Chi-Square is very sensitive to the large samples used. If the number of extensive sample studies is

over 200 samples, then Chi-Square ( $X^2$ ) must be accompanied by another test. Carmines and McIver (1981) confirmed that the value of Chi-Square is still acceptable if the value of Chi-Square is two or three times higher than  $df$  ( $2,395 > 2050.57$ ). This study used a sample of 400 respondents so that the low value of the Chi-Square ( $X^2$ ) test and probability can still be considered reasonable. The other index criteria tested have met the fitness of the model.

**Table 2**  
The Goodness of Fit Model

Absolute Measures	Rules of thumb	Statistic test	Decision
Chi-Square – $X^2$	$X^2$ -test < $X^2$ -table (864.83)	2050.57	Low
$df$ – degree of freedom	-	798	-
Probability	> 0.05	0.00	Low
RMSEA	< 0.07 with CFI of 0.92 or higher	0.063	High
Normed Chi-Square – $X^2/df$	< 5	2.56	High
RMR	-	0.074	-
SRMR	0.08 or less with CFI > 0.92	0.060	High
Confidence interval of RMSEA	-	0.061; 0.071	-
GFI	0 – 1	0.80	High
<b>Incremental Fit Measures</b>			
NFI	0 – 1 or > 0.90	0.98	High
NNFI	0 – 1 or > 0.90	0.98	High
CFI	0 – 1 or > 0.90	0.99	High
RFI	0 – 1 or > 0.90	0.97	High
<b>Parsimony Measures</b>			
AGFI	0 – 1 or > 0.90	0.78	Middle

Source: Hair et al. (2019)



**Fig. 3.** Estimation Model - SST-Servqual and Customer Outcomes Model

**4.3. Hypotheses Testing**

The estimation model in Figure 3 comprises two structural equation models based on latent variables that match theoretical models (Figure 1), and measurement models for latent constructs. Figure 3 and Table 3 show that all relationships between constructs are significant and have a positive direction.

SST-servqual has a positive and significant correlation with company reputation ( $\beta_1=0.57$ ;  $t$ -test=10.41 > 1.96), so that the statement of hypothesis 1 is accepted. SST-servqual contributed to the company's reputation by 33%, and other factors influenced the remaining 67%. SST-servqual has a positive and significant correlation with customer satisfaction ( $\beta_2=0.42$ ;  $t$ -test 7.74 > 1.96). So, hypothesis 2 is accepted. The company's reputation has a positive and significant correlation with customer satisfaction ( $\beta_6=0.41$ ;  $t$ -test=7.37 > 1.96). So, hypothesis 6 is accepted. SST-servqual and company reputation contributed to creating customer satisfaction by 53%, and other factors influenced the remaining 47%.

SST-servqual has a positive and significant correlation with behavioral intention ( $\beta_3=0.30$ ;  $t$ -test =4.62 > 1.96). Therefore, hypothesis 3 is accepted. The company's reputation has a positive and significant correlation with behavioral intention ( $\beta_5=0.22$ ;  $t$ -test=3.29 > 1.96) so that hypothesis 5 is accepted. Customer satisfaction has a positive and significant correlation



with behavioral intention ( $\beta_8=0.27$ ;  $t\text{-test}=3.65 > 1.96$ ), so that Hypothesis 8 is accepted. SST-servqual, company reputation, and customer satisfaction contributed 46% to customer behavior intention, and other factors influenced the remaining 54%.

SST-servqual has a positive and significant correlation with behavioral loyalty ( $\beta_4=0.33$ ;  $t\text{-test}=8.15 > 1.96$ ), so that hypothesis 4 is accepted. The company's reputation has a positive and significant correlation with behavioral loyalty ( $\beta_7=0.56$ ;  $t\text{-test}=11.43 > 1.96$ ), so that hypothesis 7 is accepted. Customer satisfaction has a positive and significant correlation with behavioral loyalty ( $\beta_9=0.09$ ;  $t\text{-test}=2.01 > 1.96$ ), so that hypothesis 9 is accepted. Behavioral intention has a positive and significant correlation with behavioral loyalty ( $\beta_{10}=0.11$ ;  $t\text{-test}=2.71 > 1.96$ ), so that hypothesis 10 is accepted. Other factors that influence SST-servqual, company reputation, customer satisfaction, and behavioral intention contribute to behavioral loyalty by 89% and the remaining 10%.

**Table 3.**  
Hypothesis Testing

Path	$\beta$	$t\text{-test}$	R-Square	Error Variance	Decision
H1. SST-servqual→corporate reputation.	0.57	10.41	33%	67%	Support
H2. SST-servqual→customer satisfaction.	0.42	7.74			Support
H6. Corporate reputation→customer satisfaction.	0.41	7.37	53%	47%	Support
H3. SST-servqual→behavioral intention.	0.30	4.62			Support
H5. Corporate reputation→behavioral intention.	0.22	3.29	46%	54%	Support
H8. Customer satisfaction→behavioral intention.	0.27	3.65			Support
H4. SST-servqual→behavioral loyalty.	0.33	8.15			Support
H7. Corporate reputation→behavioral loyalty.	0.56	11.43	89%	10%	Support
H9. Customer satisfaction→behavioral loyalty.	0.09	2.01			Support
H10. Behavioral intention→behavioral loyalty	0.11	2.71			Support
CR = 0.57*SST, Errorvar.= 0.67, R <sup>2</sup> = 0.33					
Satis = 0.41*CR + 0.42*SST, Errorvar.= 0.47, R <sup>2</sup> = 0.53					
BI = 0.22*CR + 0.27*Satisfaction + 0.30*SST, Errorvar.= 0.54, R <sup>2</sup> = 0.46					
BL = 0.56*CR + 0.09*Satisfaction + 0.11BI + 0.33*SST, Errorvar.= 0.10, R <sup>2</sup> = 0.89					

#### 4.4. Testing Mediation Effects

This study discusses the effect of SST-servqual on corporate reputation and its impact on customer satisfaction, behavioral intention, and behavioral loyalty. Because it includes the constructs of mediation, which is the company's reputation in the research model, we apply a mediation effect test using PROCESS 3.5 (Hayes, 2017; Xinshu Zhao, Lynch, & Chen, 2010). In more detail, our model further shows that customer satisfaction mediates the relationship between corporate reputation with behavioral intention and behavioral loyalty. Besides, behavioral intention mediates the relationship between customer satisfaction and behavioral loyalty.

The information presented in Tables 4 shows that corporate reputation is complementary mediates between SST-servqual with customer satisfaction, behavioral intention, and behavior loyalty. Also, customer satisfaction is a complementary mediates between corporate reputation with behavioral intention and behavior loyalty. Behavioral intention is complementary mediates between corporate reputation and behavioral loyalty. Finally, behavioral intention is complementary mediates between customer satisfaction and behavioral loyalty. For example, SST-servqual "a" × corporate reputation "b" is significant, and the direct effect on behavioral intention "c" is significant. The direction of these two relationships is the same, i.e., positive (Xinshu Zhao et al., 2010). We conclude that all mediation hypotheses are satisfactory to create excellent customer outcomes. The company's reputation is an essential factor to examine by companies.

## 5. Discussion and Conclusions

This study has examined the role of a company's reputation as a mediator of the SST-servqual relationship with customer satisfaction, behavioral intention, and behavioral loyalty. Because of the rapid development of self-service technology, researchers need to understand overall customer perceptions (satisfaction, behavioral intention, and behavioral loyalty) in using technology by linking to corporate reputation. However, there has been no empirical evidence regarding the role of the company's reputation related to SST. We need to investigate as it relates to user experience and how users perceive the company's reputation as part of customer trust. SST-servqual and corporate reputation both can be controlled by the firm. At the same time, satisfaction, behavioral intention, and behavioral loyalty are customer assessment outcomes interacting with companies, which cannot be controlled by the firm.

This study also examines relevant literature to explain the effect of SST-servqual on corporate reputation and its impact on customer satisfaction, behavioral intention, and behavior loyalty to SST company. We developed and empirically tested the research framework and hypotheses to provide input to decision-makers when designing service interfaces, providing service innovations, and planning customer-based marketing strategies.

**Table 4**  
Hypothesis Testing (Mediation)

Path	Hypothesis	Direct	Sig	Indirect			Indirect			Total Effect	Sig	Std. In-direct effect	Decision	
				CR	Boot LLCI	Boot ULCI	CS	Boot LLCI	Boot ULCI					BI
SST-servqual and CR		0.248	0.000	-	-	-	-	-	-	-	-	-	Complementary (mediation)	
SST-servqual and BI	H5a	0.056	0.000	0.025	0.016	0.034	-	-	-	-	0.081	0.000	0.163	Complementary (mediation)
CR and BI		0.099	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
SST-servqual and CR		0.248	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
SST-servqual and CS	H6a	0.064	0.000	0.033	0.024	0.043	-	-	-	-	0.097	0.000	0.200	Complementary (mediation)
CR and CS		0.132	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
SST-servqual and CR		0.248	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
SST-servqual and BL	H7a	0.099	0.000	0.076	0.064	0.089	-	-	-	-	0.175	0.000	0.314	Complementary (mediation)
CR and BL		0.307	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and CS		0.206	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and BI	H11	0.099	0.000	-	-	-	0.065	0.045	0.085	-	0.164	0.000	0.199	Complementary (mediation)
CS and BI		0.315	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and CS		0.206	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and BL	H12	0.336	0.000	-	-	-	0.086	0.065	0.101	-	0.422	0.000	0.164	Complementary (mediation)
CS and BL		0.418	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and BI		0.164	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CR and BL	H13	0.358	0.000	-	-	-	-	-	-	0.064	0.422	0.000	0.122	Complementary (mediation)
BI and BL		0.391	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CS and BI		0.478	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)
CS and BL	H14	0.710	0.000	-	-	-	-	-	-	0.259	0.969	0.000	0.175	Complementary (mediation)
BI and BL		0.543	0.000	-	-	-	-	-	-	-	-	-	-	Complementary (mediation)

Note: CR= Corporate Reputation; CS: Customer Satisfaction; BI=Behavioral Intention; BL=Behavioral Loyalty.  
LLCI= Low Level Confidence Interval (95%,  $\alpha=5\%$ ); ULCI= Up Level Confidence Interval (95%,  $\alpha=5\%$ )

We have identified four main results by testing theory-based modeling. *First*, SST-servqual provides a positive contribution to improving corporate reputation. The better the company provides an easy to use interface technology, reliable system security, and service stability, the better the customers evaluate the company. Surely, this will impact on the company's reputation. *Second*, SST-servqual and corporate reputation have a positive and significant effect on customer satisfaction. Customer satisfaction in using SST is determined by how good the company is in providing self-service with the support of interface technology and information related to services. *Third*, SST-servqual, corporate reputation, and customer satisfaction have a positive and significant effect on customers' behavioral intentions. In other words, the better the performance of SST-servqual and positive perceptions of the company's reputation and customer satisfaction while using self-service technology, the more likely the customers will have positive behavioral intentions related to self-service technology. *Finally*, this study confirms that to produce customer satisfaction, positive behavioral intentions, and behavioral loyalty, managers must pay attention and redesign self-service technology by giving a touch of innovation to features and providing call center services. It can increase positive perceptions of the company's reputation. In conclusion, our research model provides guidelines for decision makers to review self-service technology and pay attention to the truth of information conveyed to customers when using self-service technology. Of course, all of this must focus on customer needs.

### 5.1. Managerial and Practical Implications

The output of this study provides input for firms in planning their SST. Managers can use the findings of this research to investigate customers' attitudes and behavior in using SST, related to customer satisfaction, behavioral intention, and behavior loyalty to SST. The trick is to identify the advantages/strengths and vulnerabilities of the current system and the company's communication strategy. This research can help various decision-makers in several industries related to SST understand the importance of SST-servqual and its reputation.

Managers should actively and massively make various efforts in understanding the factors that can create satisfaction or dissatisfaction, behavioral intention positively or negatively, and behavioral loyalty or disloyal, from the customer side that uses SST. Besides, they are expected to maintain system security standards, high system and service stability, system operating time, and service information to enhance their reputation. All teams in companies involved in each process must ensure that SST-servqual aligns with the company's strategy to achieve goals and objectives and to satisfy and invite other customers to use SST. The better performance of SST-servqual can strengthen the company's image, leading to an increase of the company's reputation and ultimately impacts customer satisfaction, behavioral intention positively, and behavioral loyalty in adopting SST. Therefore, managers need to be careful in developing profitable SST-servqual to create a positive impression.

Finally, this research provides knowledge for Indonesian service companies to allocate funds for technological innovations in business processes. Of course, they are oriented to the needs and desires of customers in the future because Indonesian people are very enthusiastic about welcoming technological developments. There is a need for technology literacy to customers to know and accept every new system that the company introduces.

### 5.2. Research Limitation and Future Research

This research has some limitations which impacts on its generalization. The first is the number of samples. Indonesia has 34 provinces spreading across seven islands. The samples were only taken from the island of Java, comprising six provinces, because of limited resources. So, the results only provide limited insights into the attitudes and behavior of customers in the island of Java. Second, this research is a quantitative study. This limits the practical and managerial implications to the knowledge of researchers based on this research. Therefore, further research should conduct FGDs involving SST companies and conduct in-depth interviews with SST users, thus providing comprehensive insights. We propose the addition of the construct of online customer service as an independent variable and corporate image as mediation in the research model we have tested.

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