

Examining Service Quality, Word-of-Mouth, Satisfaction and Trust in SaaS Contexts

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Abstract. This study analyzed the influence of service quality and word-of-mouth (WOM) on customer satisfaction and trust in software-as-a-service (SaaS) platforms. Self-reported survey data was collected from 342 customers of an online printing SaaS business. Structural equation modeling performed using Smart Partial Least Square (SmartPLS) revealed service quality has a significant positive effect on satisfaction and trust. However, WOM did not significantly moderate these relationships as hypothesized. The findings provide new empirical insights on the drivers of customer satisfaction and trust specifically for SaaS platforms, contributing to the limited literature on SaaS service quality dynamics. Further research can build upon these results by exploring additional factors that shape customers' service perceptions, satisfaction and loyalty in SaaS models.

Keywords: Online Printing, Software as a service, E-service Quality, Customer Satisfaction, Word-of-Mouth

1. Introduction

Due to the Covid-19 pandemic's effects on the economy and the quick advancement of technology, small and medium-sized enterprises (SMEs) are turning more and more to cloud computing solutions in an effort to stay competitive. Utilizing cloud computing technology allows businesses to operate under a certain business model that gives them the ability to establish and maintain a competitive edge (Marcysiak and Pleskacz, 2021). Therefore, it is critical that companies choose the right cloud computing model with great caution. The three paradigms that comprise cloud computing services are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Myhre and Aalvik (2020) defined IaaS as infrastructure services for cloud computing, Platform as a Service (PaaS) refers to a variety of cloud apps that give platform services, and Software as a group of cloud applications that provide software services.

The remarkable success of cloud computing in numerous industries during the Covid pandemic, especially in recent years, has encouraged small and medium-sized businesses (SMEs) to adopt the Software as a Service model as a means of overcoming the difficulties presented by lockdown restrictions. Where conventional buying and selling activities when customers meet directly with sellers are hindered. According to Loten (2021) The capacity to support remote users could significantly increase the adoption of Software as a Service during the COVID-19 pandemic. By 2021, it is anticipated that 85% of small firms will allocate resources to invest in SaaS solutions, according to data supplied by Kidd (2020). In contrast, this figure is 73% among all the organizations polled, indicating that smaller and medium-sized businesses (SMEs) are more interested in SaaS than larger companies. In addition, empirical evidence shows that Software as a Service is more popular with small and medium-sized businesses than on-premise software across a variety of nations and industries (Z.-J. Wang et al., 2023 ; Van De Weerd et al., 2016). Small businesses find SaaS appealing for a variety of reasons, including its simplicity of use, automatic upgrades, adaptable scalability, and many other benefits. Notably, the significant decrease in operational and deployment costs significantly lessens the financial burden on small and medium-sized businesses (Karunagaran et al., 2019).

One of the SMEs that has adopted the Software as a Service (SaaS) model is Nyetakin. Nyetakin an Indonesian SMEs engaged in the printing business adopted Software as a Service through website services to survive in the lockdown situation. Through the use of SaaS, Nyetakin can operate its business online, flexible with low costs, this is considered very profitable for the business so that after Covid, Nyetakin continues to use the SaaS model. The application of Software as a Service has also opened a new window for the nyetakin business through the creation of a competitive advantage of design customization in collaboration with gig workers. This can happen because through SaaS customer service can be done remotely (Marston et al., 2011). According to Hamouche & Chabani (2021) gig workers are linked to the idea of "the gig economy," which describes a scenario in which people interact with customers and consumers through digital platforms. They work as independent contractors, connecting with people or businesses that need their services through middleman digital platforms. Additionally, gig workers act as the main service providers on platforms, acting as the vital connection between the platform and its users. Consequently, client satisfaction levels are greatly influenced by the efficiency and performance of gig workers (Davidson et al., 2023). Through the collaborative efforts of gig workers, organizations and online work platforms can now efficiently tap into a global pool of workers, instantly fulfilling the demand for digital work at more affordable rates (Anwar and Graham, 2021) . Many academics have praised the gig economy, highlighting its benefits via the post-Fordist viewpoint, and emphasizing the flexibility, autonomy, and importance of jobs. Precarious employment has exponentially increased in our society at the same time, with the number of gig workers worldwide approaching 70 million and growing at a rate of about 26% per year (Au and Tsang, 2023). Additionally, the COVID-19 pandemic brought about a significant increase in society's dependence on gig workers who offer crucial services. (Davidson et al., 2023). In digital SMEs businesses like Nyetakin, gig workers collaborate with the nyetakin platform to provide design services to customers. They work

independently and often only work on specific projects given by business platforms like nyetakin. In this context, the employment of gig workers can benefit nyetakin's business in terms of flexibility and cost efficiency. However, the use of gig workers can also bring challenges in maintaining design quality, which can affect customer satisfaction and trust.

From the customer side, SMEs that implement Software as a Service (SaaS) have the potential to cause distrust, because customers cannot interact directly with sellers. For customers to consider adopting or confiding their decision-making processes to computer agents in agent-mediated e-commerce, there must be substantial customer trust. Customers rely on their trust in a variety of elements when making online purchasing decisions, including the Internet itself, specific websites, the veracity of online information, and a company's capacity to deliver goods and offer satisfactory service. (Komiak and Benbasat, 2004). Behind the advantages offered in Software as a Service implementation, there are crucial things that Software as a Service users must consider. Software as a Service (SaaS), according to the research results published by Ramya et al., (2021) is a ground-breaking technical advancement. However, a major barrier to its market expansion is the lack of reliable trust management procedures. A safe trust management framework might provide workable solutions to help cloud service providers improve their commercial operations and grow a more dependable clientele. It is also important to note that, as demonstrated by Duggan et al. (2020) studies on gig work are more common in the fields of human resources and labor research. With a few exceptions, such as the studies carried out by Gleim et al. (2019) and Belanche et al. (2021), research on gig employment is still rather rare in the field of services. The research hypotheses presented in this study aim to investigate the correlation between e-service quality and customer satisfaction, as well as to establish customer trust within the framework of nyetakin's online printing services. By testing these hypotheses, the research aims to shed light on the factors that contribute to customer trust in this type of business, and how word-of-mouth recommendations from customers effectively build trust and drive business growth. Overall, Software as a Service and gig economy are two major trends that are shaping the future of SMEs business. Online printing business like nyetakin are well positioned to take advantage of these trends to drive growth and innovation in the printing and design industry.

2. Literature Reviews

2.1. Software as service

The rise of cloud computing has led to a growing preference for Software as a Service (SaaS) among providers of enterprise software. Li et al. (2017), argue that the SaaS model essentially functions as a software leasing agreement, where users rent software from suppliers and are charged based on the duration of usage. Choudhary (2007) outlined the differences between Software as a Service and the traditional perpetual software business and provided advice to software developers on how to prioritize SaaS quality. The core aspects of Software as a Service have since been the focus of numerous research projects, particularly those that address price and versioning issues like support for distant usage (Marston et al., 2011). Vendors retain ownership of apps and host them on their platforms under the Software as a Service paradigm. Because they can easily access the application through the Internet thanks to the vendor's service provision, consumers are no longer need to perform the installation and maintenance of the application (Van De Weerd et al., 2016). Software as a Service offers consumers numerous advantages as a result, including cost effectiveness because they only pay for what they use, increased flexibility, and the capacity to quickly respond to market changes. From the point of view of the customer, Software as a Service adaption results in minimal switching expenses when switching between online retailers (Mutum et al., 2014). This change causes customers to turn to e-commerce instead of traditional brick-and-mortar establishments for their buying needs (Rita et al., 2019). Due to the low entry barriers in the internet business sector, competitors can easily enter the market (Wang et al., 2016). Due to its critical role in developing and sustaining client trust, keeping a functional website takes utmost importance for organizations (Law et al., 2010).

2.2. Customer Trust

In this study, the idea of customer trust is our main point of attention. Within the field of online business literature, this idea of consumer trust has frequently been the focus of inquiry. According to (Falahat et al., 2019) Consumers may decrease the complexity and unpredictability of transactions and linkages in electronic marketplaces by using trust as a cognitive shortcut. One of the most commonly mentioned reasons why customers decide not to purchase from online vendors is a lack of confidence. Compared to typical purchasing habits, internet business, which is thought of as a distinct type of economic activity, carries a higher degree of risk and uncertainty (Lee and Turban, 2001). Consumer trust acquires even greater significance in the context of e-commerce because customers are unable to physically engage with, evaluate, or experience the actual goods. According to Fung et al. (1999) trust plays a crucial role in interactions between customers and online vendors As highlighted by Pavlou (2003) the effects of consumer trust have a substantial impact on their intents to use or keep making purchases from websites of online businesses. According to Falahat et al. (2019), trust boosts optimism and lowers perceived risks, which enhances the likelihood that a transaction will be made. The current corpus of research provides strong evidence in favor of the notion that there is a positive correlation between consumer trust and the inclination to do business online. Even while customer trust is essential to small and medium-sized enterprises' (SMEs) success. Amri et al. (2022); Sutanto & Melinda (2020) point out limited research has been conducted on the determinants of consumer trust within the online printing sector. We expand the study framework and carry out an empirical analysis into three important factors—Service Quality, Customer Satisfaction, and Word of Mouth—that may affect customer trust in the setting of online printing services in order to fill this research vacuum. This study attempts to fill this knowledge gap by adding to the body of existing literature. The customer trust model created by Falahat et al. (2019) is used in this study to explain how this model increases consumer trust. Although it is anticipated that these characteristics will have an effect on customer trust, it has not yet been empirically examined inside an Indonesian-specific consumer trust model.

2.3. e-Service Quality on Customer Trust

The capability of a website to facilitate transactions, deliveries, and online shopping in an efficient and effective manner is known as its e-service quality. Ginting et al. (2023) conduct a comprehensive examination of e-service quality, encompassing the entire customer journey. This analysis considers various aspects during the pre-purchase stage, such as usability, product information, ordering procedures, and the safeguarding of personal data. Additionally, it includes factors related to the post-purchase stage, such as delivery and return policies According to Sharma & Bahl (2018) assert that the most effective approach to comprehending and managing service quality is to adopt a client-centered perspective. By comparing the customer's perceptions before and after receiving the service, service quality may be evaluated. The "gap," or difference between these expectations and the actual experience, is frequently used as a measure of service quality. In the realm of e-commerce, the concept of perceived service quality relates to how consumers perceive the overall excellence and quality of e-service offerings in the virtual marketplace. This distinction arises from the limited number of face-to-face interactions in this context (Kassim and Ismail, 2009). The ability of the website to support seamless transactions must be in line with consumer demands in the setting where customer perception pertains to service retailing suppliers, on the other hand (Venkatakrisnan et al., 2023). Users' willingness to participate in online transactions is substantially influenced by the possibility of communicating with sellers to learn more about the products (Hoffman et al., 1999). Because of this, high-quality e-services have the ability to increase customer trust (Falahat et al., 2019). As a result, we create a hypothesis:

H1: e-Service Quality positively and significantly affect the customer trust of online printing services

2.4. e-Service Quality on Customer Satisfaction

The establishment and maintenance of customer satisfaction is the main problem in the world of online

commerce. Adopting a strategy focused on service excellence is a crucial component of succeeding in the intensely competitive e-commerce industry. Customers must continually receive outstanding service from businesses (Rita et al., 2019). Customer satisfaction is significantly influenced by a website's quality, which also affects visitors' propensity to return and transact on the site (Liang and Lai, 2002). Service providers need to uphold high standards of service quality, especially in their core service offerings, in order to preserve their competitive advantage and improve consumers' views of service quality (Thaichon et al., 2014). Ginting et al. (2023) posit that elevated e-service quality standards offered by e-commerce platforms are linked to elevated levels of client contentment. On the other hand, poorer quality e-services are associated with decreased customer satisfaction. The concept of perceived quality models is consistently supported by the research literature on service quality. In order to close gaps in service performance, raise customers' perceptions of the value of systems, and ultimately increase customer satisfaction, it is imperative to match customer expectations with service quality standards, according to a conceptual service quality model proposed by Parasuraman et al. (1985). It is reasonable to conclude, given the information gleaned from the aforementioned literature, that customer satisfaction with online service providers corresponds favorably with the degree to which consumer expectations and views of online printing services differ. As a result, we propose the following theory: **H2: e-Service Quality positively and significantly affect the customer satisfaction of online printing services**

2.5. Customer Satisfaction on Customer Trust

Consumer satisfaction in the context of online shopping refers to the level of satisfaction a consumer feels as a result of previous purchasing experiences. Additionally, as described by Al-Adwan et al. (2022), it captures the emotional reactions that result from a comparison between a person's perceptions of performance (or results) within the online buying environment and their initial expectations. Al-Adwan et. al (2022) Service satisfaction is inextricably tied to one's belief in the dependability and integrity of an online merchant. In turn, this encourages the growth of trust. Jani & Han (2011) research has shed light on how experiences that meet or exceed customer expectations might strengthen trust. This phenomenon is due to the fact that customers are more likely to anticipate receiving the same satisfaction from service providers in the future after positive interactions (Mosavi et al., 2018). According to Kim et al. (2011) the relationship between customer pleasure and trust can be understood via the lens of adaptation-level theory. Customers' faith in the service provider tends to grow when they are happy with their recent or present purchases. When a customer feels satisfied, they frequently believe that the seller can be trusted and is dedicated to protecting their interests and well-being (Falihat et al., 2019). According to Meilatinova et al. (2021) customer satisfaction is crucial for fostering customer trust in the world of social commerce. This is because, according to Mosavi et al. (2018) customer pleasure turns into the source from which trustworthy perceptions about the company emerge. In light of this, we suggest the following:

H3: Customer satisfaction positively and significantly affect the customer trust of online printing services

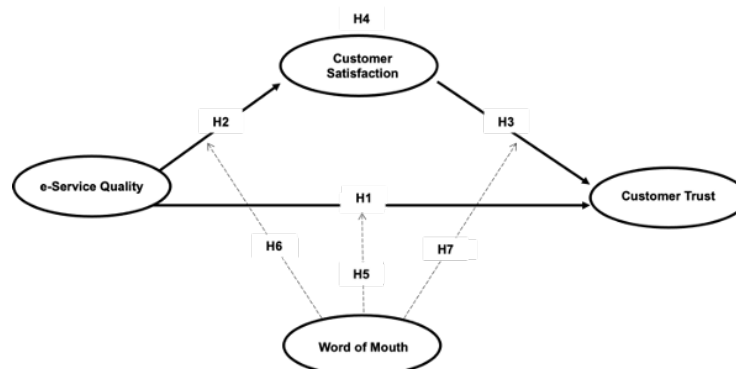


Fig 1: The conceptual research framework

2.6. e-Service Quality and Customer Satisfaction on Customer Trust

The interplay between e-Service Quality, Customer Satisfaction, and Customer Trust is a pivotal dynamic within the digital business landscape. Firstly, e-Service Quality pertains to the caliber of services delivered through online channels, encompassing elements such as efficiency, reliability, user-friendliness, and responsiveness (Mir et al., 2022). When customers encounter high e-Service Quality, they tend to have smoother and more satisfactory interactions with digital platforms or businesses (Ting et al., 2016). On the flip side, Customer Satisfaction denotes the level of happiness and fulfillment that customers experience as a result of their interactions with a specific product, service, or brand. When e-Service Quality is high, it often leads to enhanced Customer Satisfaction because customers are more likely to achieve their desired outcomes with ease and efficiency (Alarifi and Husain, 2023; Mir et al., 2022). These factors collectively contribute to the formation of Customer Trust. When customers consistently encounter top-tier e-Service Quality and derive high levels of satisfaction from their digital interactions, they are more inclined to trust the brand or platform (Mir et al., 2022). Trust, in this context, is the customers trust place in the company's reliability, credibility, and commitment to delivering value. Customer Trust is a cornerstone of long-term relationships in the digital realm, as it influences decisions regarding repeat business, loyalty, and referrals. It signifies that customers believe in the company's ability to meet their needs and deliver on promises (Ahmed et al., 2020). Therefore, the synergy between e-Service Quality, Customer Satisfaction, and Customer Trust is a fundamental driver of success in the digital age. Businesses that prioritize and excel in these areas are better positioned to foster enduring customer relationships and thrive in the competitive online landscape. While service quality has been widely linked to satisfaction and trust, few studies have analyzed these relationships specifically for SaaS platforms as compared to general e-commerce contexts.

H4: Customer satisfaction mediates the relationship between e-service quality and customer trust of online printing services

2.7. e-Service Quality and Word of Mouth on Customer Trust

According to prior research, trust is positively influenced by the quality of a complimentary service (Cho and Hu, 2009). Word of Mouth (WOM) plays a crucial role in this process, involving the exchange of opinions, experiences, and recommendations regarding products or services. This phenomenon is often amplified through digital channels, such as online reviews and social media. (Zeqiri et al., 2023). High e-service quality and positive WOM serve as external factors that work in tandem to enhance trust in a brand (Handi et al., 2018). Customers who are consistently experience excellent e-Service Quality and receive positive recommendations from their peers, they tend to build a more robust trust in the brand or platform (Ting et al., 2016). Trust is the bedrock of long-term relationships, influencing repeat business, loyalty, and willingness to engage with a brand (Wani et al., 2023). When customers personally experience high-quality e-services and then hear others share similar positive experiences, it reinforces their belief in the brand's capabilities and trustworthiness (Sharma et al., 2020).

H5: Word of mouth moderates the impact of e-service quality and customer trust of online printing services

2.8. e-Service Quality and Word of Mouth on Customer Satisfaction

Word of Mouth (WOM) plays a crucial role in shaping customer satisfaction at various stages of the customer journey. The combination of high e-service quality and positive Word-of-Mouth (WOM) that serve as external factors, significantly enhance customer satisfaction (Ginting et al., 2023b). When customers hear positive reviews or recommendations, they enter the purchasing process with higher expectations. Meeting or exceeding these expectations can lead to greater satisfaction because the customer perceives that they got what they were promised (Khoo, 2020). Conversely, negative WOM can have a detrimental effect on customer satisfaction. If customers hear negative reviews or complaints about a product or service, it can create doubts or concerns, potentially leading to lower satisfaction if those issues are not addressed or if the negative experiences are confirmed (Kuo and Nakhata, 2019).

Therefore, it can be said that WOM as an external factor plays a crucial role in influencing customer satisfaction. This happens because word of mouth marketing naturally emerges from genuine social opinions that are perceived as more sincere, with no particular motivations for sharing information with fellow consumers (Mulyadi et al., 2023)

H6: Word of mouth moderates the impact of e-service quality and customer satisfaction of online printing services

2.9. Customer Satisfaction and Word of Mouth on Customer Trust

Within the field of marketing, it is widely recognized that customers generally perceive information originating from sources other than the seller to be more reliable compared to information provided directly by the seller (Mpinganjira, 2016). Customer Trust is the linchpin of this relationship. It signifies the reliance and trust that customers place in a business. When customers consistently encounter high e-Service Quality and are exposed to positive WOM from their peers, they tend to develop a stronger sense of trust in the brand or platform (Zeqiri et al., 2023). Customer Trust is the culmination of this interaction. It signifies the reliance and trust that customers place in a brand or business. When individuals encounter consistent positive WOM and see evidence of high Customer Satisfaction, they are more likely to trust the brand (Rajaobelina et al., 2021). Therefore, the reputation of a brand or offering, as shaped by WOM, directly affects the trust levels of prospective customers (Zia et al., 2022).

H7: Word of mouth moderates the impact of customer satisfaction and customer trust of online printing services

3. Methodology

3.1. The development of the research instrument

We thoroughly examined the body of knowledge on customer satisfaction, the quality of e-services, and the role of word-of-mouth (WOM) in boosting consumer trust. From this thorough examination, we chose the most appropriate research tools. The research materials were modified for this study from a variety of trustworthy sources, as shown in Table 1. In particular, we used the frameworks created by (Venkatakrisnan et al., 2023) for e-service quality construction, (Lee et al., 2022) customer satisfaction construction, (Mohiuddin Babu and Dey, 2018) for word-of-mouth construction, and (Falahat et al., 2019) employed a five-point Likert scale to assess the framework for building consumer trust. The scale ranged from "strongly disagree" (1) to "strongly agree" (5)." The final study materials were initially translated into Indonesian because people from that country made up our target audience. Furthermore, we have provided a clear and understandable overview of the components we are analyzing in Table 1 by explaining our present definitions of the study constructs.

Tabel 1. Construct definition of the conceptual research framework

Construct	Test Item	Construct Definition	Reference
E-service Quality (SQ)	Six	The perception of customer towards perceives service quality in online printing services	(Venkatakrisnan et al., 2023)
Customer Satisfaction (CS)	Four	The perception of customer towards perceives satisfaction in online printing services	(Lee et al., 2022)
Word-of-Mouth (WOM)	Four	The perception of customer towards good recommendation word of mouth in online printing services	(Mohiuddin Babu and Dey, 2018)
Consumer Trust	Four	The perception of customer towards level of trust in online printing services	(Falahat et al., 2019)

3.2. Sample

This study is on customer trust in online printing services, and hence the respondents are individuals were aged over 17 years who had purchasing experience in nyetakin online printing. We hope that people who have had these experiences will be able to evaluate how e-service quality, customer satisfaction, and word-of-mouth marketing work together to increase consumer trust. Through the use of an online survey, we collected our data using non-probability convenience sampling. A total of 350 people answered the questionnaire and participated in the study. Due to missing data or non-compliance with the sample conditions, eight replies were disqualified. As a result, 342 valid surveys, or 97.8% of the total replies, made up the final dataset. 52.7% of them were female, and the majority were between the ages of 18 and 29. Table 3 is an overview of the demographic data from the respondents. We use Structural Equation Model (SEM) and Smart PLS software to evaluate the data gathered from survey questionnaires. The reason for this decision is that Structural Equation Model is a preferred method used by marketing researchers to assess large theoretical models with sophisticated social dynamics (Wang et al., 2018). It offers comprehensive details about the Smart PLS software estimating process (Elisa et al., 2022). Partial Least Squares Path Modeling (PLS-SEM) is considered the best approach for this study because of the intricacy of the present model, which includes two variables—one serving as a mediator and the other as a moderator—for a total of four variables. The next part will address the data analysis and result interpretation.

3.3. Stastistical analysis technique

The Partial Least Squares Path Modeling (PLS-SEM) technique and Smart Partial Least Square (SmartPLS) software were used in the current experiment. The main advantages of using PLS-SEM include its increased flexibility and greater statistical robustness. According to Hair et al. (2019) the two primary steps of the statistical analysis performed using Partial Least Squares Path Modeling are the scrutiny of the structural model and the evaluation of the measurement model. Additionally, Table 2 offers a thorough breakdown of the procedures needed to complete The Partial Least Squares Path Modeling analysis along with helpful instructions for each unit of analysis.

Tabel 2. The step of PLS-SEM Analysis			
Step of Analysis	Analysis Unit	Basic Theshold	Reference
Measurement model evaluation	Indicator reliability: indicator loadings	≥ 0.70	Hair et.al. (2019)
	Internal consistency reliability: Composite reliability	0.70-0.90	
	Convergent validity: average variance extracted (AVE)	≥ 0.50	
	Discriminant validity: HTMT	< 0.90	Fong and Law, 2013
Structural model evaluation	p-value	$p < 0.05$	
	R ² value	0.75 (substantial), 0.50 (moderate), 0.25 (weak)	
	f ² (effect size) Direct effect	> 0.02 (small), > 0.15 (medium), > 0.35 (large)	
	f ² (effect size) indirect effect	$> 0,005$ (small), > 0.01 (medium), > 0.025 (large)	Hair et.al 2021

	Upsilon (ν) effect size mediasi	>0.01 (small), 0.075 (medium), 0.175 (large)	Ogbeibu (2020)
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Tabel 3. The overview of the respondent			
Profil	Criteria	Frequency	Percentage
Gender	Male	162	47,3%
	Female	180	52,7%
Age	17-25	186	54.3%
	26-35	101	29.5%
	36-45	55	16,2%
	Over 46	-	-
Income (USD)	243.18 or less	144	42.1%
	243.18-312.67	99	28.9%
	312.67-382.15	65	18.9%
	382.15 and above	34	10.1%
Purchase experience	1-3 times	194	56,7%
	4-9 times	118	34,6%
	Over 9 times	30	8.7%

4. Result

4.1. Measurement model evaluation

Before establishing the relationships between variables, it is crucial to ensure that the data meets the criteria of validity and reliability when assessing the measurement model (Fanaja et al., 2023). As shown in Table 2, evaluating measurement models entails carefully examining each concept's validity and reliability. Correlations with the topic under consideration are shown by the validity assessment. According to Hair et al. (2019) values where outer loading is ≥ 0.7 and average variance extracted (AVE) is ≥ 0.5 are the main criterion for determining convergent validity. Cronbach's alpha and composite reliability obtained from indicator blocks that gauge structures are two benchmarks that can be used in the context of PLS reliability testing (Ramayah et al., 2018).

To ensure robust reliability, it is necessary for the Cronbach's alpha or composite reliability values of each variable to surpass the 0.7 threshold. As all variables demonstrate a high level of reliability, both the Cronbach's alpha and composite reliability values for all four latent variables exceed 0.7, we can thus state with confidence that the data is reliable. For each construct, the CR values are as follows: 0.891 (SQ), 0.946 (CS), 0.852 (WOM), and 0.963 (CT). According to Table 4, all four variables had AVE values greater than the target value of 0.5. The AVE values are as follows: 0.645 (SQ), 0.859 (CS), 0.688 (WOM), and 0.897 (CT) for each component. Additionally, every construct's outer loading indicator exceeds the predicted value of 0.7, demonstrating that the validity requirements have been met.

Likewise, The Heterotrait-Monotrait correlation ratio (HTMT), which states that each correlation should have an HTMT value below 0.90, is related to the discriminant validity of constructs (Fong and Law, 2013). Table 5 can be used to conclude that the HTMT values adhere to well recognized norms, demonstrating a high level of discriminant validity. Based on empirical standards, discriminant validity evaluates how much a notion differs from other constructs. Therefore, proving discriminant validity supports a construct's distinctiveness and confirms that it can capture events that are not taken into consideration by other constructs in the model.

The second method to evaluate discriminant validity is the Fornell-Larcker criteria (Fornell, C., & Larcker, 2016). It looks at the square root of the AVE metric in addition to the associations between latent variables. In particular, the square root of the AVE for each construct should be greater than the greatest correlation between any two constructs. According to the Fornell-Larcker criterion (Table 5),

the root AVE value of each construct or latent variable reaches the highest correlation value between the two variables in the model, establishing discriminant validity. Consequently, the variables in this study provide compelling evidence for their satisfaction of the discriminant validity requirements, so confirming once more that all of the data satisfies the standards of the measurement model. Consequently, the data is deemed reliable and legitimate.

The following results were obtained from the reliability and validity test using the Smart Partial Least Square program.

Table 4. The summary of the measurement model evaluation						
Variabel	Indicator	Outer Loadings	Reliability Test		Validity Test	
			Cronbach's Alpha	Composite Reliability	Convergent Validity (AVE)	Discriminant Validity (HTMT & Fornell-Lacker)
e-Service Quality (SQ)	SQ1	0.820	0.890	0.891	0.645	Valid
	SQ2	0.817				
	SQ3	0.783				
	SQ4	0.801				
	SQ5	0.803				
	SQ6	0.793				
Customer Satisfaction (CS)	CS1	0.926	0.945	0.946	0.859	Valid
	CS2	0.922				
	CS3	0.925				
	CS4	0.933				
Word of Mouth (WOM)	WOM1	0.827	0.849	0.852	0.688	Valid
	WOM2	0.858				
	WOM3	0.807				
	WOM4	0.825				
Customer Trust (CT)	CT1	0.950	0.962	0.963	0.897	Valid
	CT2	0.947				
	CT3	0.954				
	CT4	0.938				

Table 5. The Summary of Discriminan Validity Test				
Heterotrait – Monotrait Criterion (HTMT)				
	Customer Satisfaction	Customer Trust	e-Service Quality	Word of Mouth
Customer Satisfaction				
Customer Trust	0.849			
e-Service Quality	0.783	0.819		
Word of Mouth	0.858	0.890	0.813	
The Fornell-Lacker Criteria				
	Customer Satisfaction	Customer Trust	e-Service Quality	Word of Mouth
Customer Satisfaction	0.927			
Customer Trust	0.810	0.947		
e-Service Quality	0.719	0.759	0.803	
Word of Mouth	0.770	0.810	0.710	0.830

4.2. Structural model evaluation

Prior to proceeding with the data analysis, we conducted a verification of the items' SRMR to ensure the adequacy of the model. Any value more than 0.08 and lower than 0.10, according to (Henseler et

al., 2015), denotes a reasonable model fit. We can infer from the SRMR value of 0.061 that the goodness of fit is sufficient for further estimate. The structural model will be investigated after selecting an appropriate assessment model (Jr. et al., 2017). In order to detect common method bias (CMB) in Partial Least Squares Path Modeling, a thorough method of evaluating collinearity is utilized (Kock, 2015). A significant correlation between two or more exogenous constructs or independent variables suggests that the model's capacity to predict outcomes is reduced (Sekaran and Bougie, 2016). In order to analyze CMB, one must look at the value of the Variance Inflation Factor (VIF). The VIF numbers need to be lower than the 3.3 criterion for the model to be CMB-free (Jr. et al., 2017; Kock, 2015). High VIFs might skew standardized estimates and make it challenging to find significant connections. Our results show that the observed VIF values are in the range of 2.126 to 2.944, indicating that the model is devoid of any indications of CMB. Table 6 presents the outcomes.

The next phase is analyzing the structural model when the evaluation findings validate a suitable measurement model (Jr. et al., 2017). According to (Fong and Law, 2013) each hypothesis in the structural model correlates to a causal link that is commonly evaluated using a route coefficient. The t-value establishes the statistical significance of these coefficients (Jr. et al., 2017; Urbach N., 2010). We may assess the importance of each path by looking at the t-values. According to Hair et al. (2017) a t-value greater than 1.96 denotes a meaningful association, whereas a t-value less than this cutoff denotes an inconsequential path. Our findings show that not all hypotheses, particularly those relating to moderating effects, were accepted. According to Table 6, the variables' t-values are less than 1.96. Comparing the path coefficient value with the dependent construct's R-value is how the structural model (Inner Model) in PLS is evaluated (Ghozali & Latan, 2015). For the suggested research model, a higher R-square value denotes a more accurate prediction model (Abdillah & Hartono, 2015). The endogenous construct's coefficient of determination, or R-square value, indicates the percentage of variation that is explained.

Table 6 shows the R-square (R²) values for the customer trust and satisfaction variables, which are, respectively, 0.782 and 0.641. The effect of word-of-mouth and e-service quality on customer happiness, as indicated by the R-square value of 0.652, accounts for 65.2% of the variance in customer satisfaction; the remaining 34.8% is attributable to other factors that were not included in this study. Similarly, the customer trust variable's R-square value is 0.793, meaning that e-service quality, consumer happiness, and word-of-mouth variables account for 79.3% of the customer trust, with external factors accounting for the remaining 20%. As a result, although the variables used in this study explain a sizable chunk of the constructs of customer pleasure and customer trust, a sizable chunk is still unaccounted for by other variables. In conclusion, all of the research-dependent constructs have R-square values that are in the moderate to considerable range. The effect size, sometimes referred to as f^2 , is taken into account while evaluating structural models. The influence of eliminating particular independent factors on the R² value of the dependent variable must be assessed using this technique Hair et al. (2019). The various effects of all the documented associations looked at in this study are shown in Table 6.

5. Discussion

This study explores the influence of service quality and word-of-mouth (WOM) on customer satisfaction and trust within the context of Software as a Service (SaaS). The paper aims to dissect how perceived service quality and customer referrals impact the customer's trust and satisfaction, which are pivotal for the sustained adoption of SaaS solutions.

The results shown in Table 6 indicate that there is a strong and favorable relationship between consumer trust and the quality of e-services. The fact that these interactions are good suggests that people will be more likely to trust the service provider when the quality of the e-service rises. Moreover, as the study's sample comprises users of the Nyetakin online printing product, the substantial correlation between e-service quality and consumer trust may be applied to the whole population. Previous research results also support the notion that e-service quality can influence customer trust (Venkatakrishnan et

al., 2023). Putra and Antonio (2021) observed that perceived e-service quality in the ecommerce industry directly and positively impacts customer trust. It is worth noting that trust in online shopping extends beyond the relationship between the merchant and the customer; it also encompasses the trust between the customer and the computer system through which the transaction is conducted. Hence, the perceived e-service quality plays a significant role in establishing consumer trust (Rita et al., 2019).

According to hypothesis 2, customer satisfaction and e-service quality are significantly and favorably correlated. As expected, our results validate that customer happiness is significantly influenced by the perceived quality of the services. These findings are in line with other studies and show that improved service quality levels significantly improve customer satisfaction. Researchers in this area have looked closely at the processes by which perceived satisfaction is influenced by service quality (Hsin Chang and Wang, 2011; Jasin and Firmansyah, 2023). Additionally, studies by Kundu and Datta, (2015); Walker et al. (2006) have demonstrated that effective implementation and delivery of core service quality attributes can justifiably enhance customer satisfaction.

A robust and noteworthy correlation is shown between customer pleasure and customer trust, supporting hypothesis 3. A company builds trust when it satisfies the expectations of its customers, which lowers perceived risk and uncertainty. Customers are then more inclined to show repurchase intention and sustain a valued relationship with an online shop as a result (Sharma and Bahl, 2018). The study's findings show that, via customer satisfaction, e-service quality has a favorable and substantial influence on consumer trust. The primary aim of this study is to investigate how e-service quality affects customer happiness, which in turn helps to build consumer trust. These findings are consistent with the findings of Mir et al. (2022) which suggest that when customers consistently experience excellent e-service quality and derive high levels of satisfaction from their digital interactions, they tend to develop a greater level of trust in the brand or platform.

Additionally, the study's findings revealed that word-of-mouth (WOM) did not significantly and favorably affect the link between e-service quality and consumer trust. This suggests that H5 isn't approved. The outcomes deviate from several study discoveries. This may occur as a result of WOM's tendency to be very subjective and unreliable as a source of knowledge. Individuals differ in their experiences and viewpoints, thus what one person has to say about a good or service could not agree with what another has to say (Jumanazarov et al., 2020). Besides, WOM can be lack of consistency thus lead to uncertainty and may not be a strong determinant of trust. Moreover, nowadays customers are often exposed to a wide range of information, including both positive and negative WOM. Some customers may be naturally skeptical and require more than just WOM to strengthen the relationship between service quality on building trust in a business or product (Cheng et al., 2021; Hsieh and Li, 2020)

The study's findings also show that, although WOM has a little impact on the relationship, there is still a positive correlation between the quality of e-services and customer satisfaction, rejecting hypothesis H6. This is consistent with research by Shi et al. (2016) that found consumers are more influenced by their assessment of the quality of the product or service than by word-of-mouth (WOM) and that WOM had no effect on customer satisfaction. WOM has less of an impact on the perception of quality than consumer preferences and product consistency. Furthermore, a number of elements, such as product quality, cost, customer service, and individual expectations, influence consumer happiness (Pei et al., 2020; Prasetyo et al., 2021) While WOM can be positive relationship of e-service quality on customer satisfaction, it competes with these other factors, and its impact may be diluted.

In addition, the research results also show that WOM as an indirect effect does not moderate and have negative impact of customer satisfaction on customer trust. this can be influenced by the fact that customer trust is influenced by various factors, not just WOM or customer satisfaction. Trust can be influenced by the brand's reputation, consistency in delivering quality, customer service, and other intangible factors (Qalati et al., 2021). Building costumer trust doesn't rely on just a couple of elements; instead, it is formed through the intricate connections among various components. WOM alone may not

override these other considerations in influencing trust (Ha, 2004). In addition, the impact of WOM can vary depending on who is providing the recommendation and their credibility. A recommendation from a trusted friend or family member may carry more weight than a recommendation from a stranger. If the source of WOM lacks credibility, its impact on satisfaction and trust may be limited (Huete-Alcocer, 2017).

Table 6. The summary of the relationship testing										
Hypothesis	Relationship	Coefficient (β)	Sampel mean	Standard Deviation	t-statistic	p-value	Verdict of the hypotheses	VIF	R ²	f ² / Upsilon V
Direct Effect										
H1	e-Service Quality → Customer Trust	0.189	0.189	0.071	2.655	0.008	Accepted	2.502	0.782	0.069 (small)
H2	e-Service Quality → Customer Satisfaction	0.344	0.348	0.097	3.560	0.000	Accepted	2.126	0.641	0.160 (medium)
H3	Customer Satisfaction → Customner Trust	0.369	0.364	0.100	3.692	0.000	Accepted	2.944	0.782	0.224 (medium)
Indirect Effect										
H4	e-Service Quality → Customer Satisfaction → Customner Trust	0.127	0.126	0.049	2.572	0.010	Accepted	-	-	0,016 (small)
H5	Word of Mouth x e-Service Quality → Customer Trust	-0.047	-0.042	0.059	0.804	0.421	Not Accepted	-	-	0.006 (small)
H6	Word of Mouth x e-Service Quality → Customer Satisfaction	-0.006	0.013	0.050	1.125	0.900	Not Accepted	-	-	0.000 (No effect)
H7	Word of Mouth x Customer Satisfaction → Customer Trust	-0.113	-0.113	0.081	1.406	0.160	Not Accepted	-	-	0.024 (medium)

6. Conclusion

6.1. Theoretical Implication

This study makes an important empirical contribution by investigating service quality and WOM impacts on customer satisfaction and trust in the growing but understudied SaaS context, specifically online printing services. The findings demonstrate the significant positive effects of service quality, extending prior knowledge on e-commerce quality models to the SaaS domain. However, the lack of WOM moderation effects suggests distinct dynamics may be at play for SaaS compared to e-commerce and traditional service contexts. This provides a foundation for future research to further unpack customer behaviors in SaaS environments. Finally study makes a valuable contribution by being among the first to quantify the impacts of service quality and WOM on customer satisfaction and trust in the understudied but growing SaaS context. While limitations exist such as the single industry focus, this quantitative study advances understanding of how to drive customer satisfaction and trust in SaaS platforms through service quality improvements.

6.2. Managerial contribution

The study's conclusions provide managers with useful information that will help them better understand the aspects that affect how customers establish trust as well as the importance of word-of-mouth advertising, high-quality e-services, and customer satisfaction. The retention of online clients is a result of this awareness. By enhancing the service quality of Nyetakin online printing and bringing it in line with current market trends, managers can take advantage of the research findings. Particular focus should be placed on privacy and security issues, especially with regard to the protection of credit card information. According to ecommerceIQ's (2018) report, cash on delivery makes up the majority of payment methods in Indonesia (52%), followed by ATM/bank transfers (45%), and credit cards account for just 2% of all transactions. Customers' worries regarding the security of their payment card information might be allayed by including choices for cash on delivery.

Managers must carefully analyze the traits linked to high-quality e-services while creating their online stores. Companies should concentrate on developing a well-designed website that includes comprehensive information, visually appealing content, user-friendly payment processes, easily readable text, appealing discounts and promotions, and quick loading times in order to deliver exceptional service quality through the implementation of SAAS (software as a service). Businesses must also prioritize fast deliveries and ensure the security and privacy of client information.

Nyetakin online printing can include tools that let customers quickly exchange comments with their peers in order to promote good word-of-mouth (WOM) behavior. Customers might be encouraged to share positive experiences by providing tiny incentives like exclusive discounts on future purchases. This increases customer satisfaction and trust. Online retailers frequently have feedback features on their websites (Rita et al., 2019). Customers have the option to post reviews directly on the Nyetakin website by using the "share feedback to friends" feature after receiving their ordered goods. Following that, customers are given the option to use WOM actions to tell their peers about their experiences.

6.3. Limitation and Future research perspectives

Like any research project, this one has some restrictions that may open the door for additional research. The paper presents a well-considered conceptual model but needs empirical validation and enhanced methodological rigor to be a strong contribution to the field. Although the focus of our study was on analyzing customer satisfaction as a potential mediator between the quality of e-services and consumer trust, it's possible that interesting results can also be found by looking at customer satisfaction as a moderator in the connection. Subsequent research should delve into the exploration of word-of-mouth (WOM) in the realm of online printing services. Understanding the impact of WOM on consumers' perceptions of products, online services, and customer satisfaction is crucial for fostering customer trust

within the online printing industry. A comparison analysis of corporate clients and SME (small and medium enterprises) customers in the field of online printing would be a useful addition to this study. Such an analysis would offer light on how differently the two different client populations perceived the modeled variables. Given that corporate firms have separate identities in the perspective of their clients, this comparison approach is particularly important when considering trust. Future research is also expected to examining additional factors that may influence trust in SaaS contexts.

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