

Exploring the Dimensions of E-Service Quality in the E-Commerce Market

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E-commerce has revolutionized business operations by introducing a platform that facilitates transactions at any time and from any location. This transformation is made possible through wireless technologies and devices, which offer unparalleled convenience and flexibility in the business environment. This study aims to explore whether various dimensions of e-service quality such as trust, responsiveness, efficiency, and privacy affect customer loyalty in online shopping. The research is based on the E-SERVQUAL model, with hypotheses and a conceptual framework derived from it. Utilizing a quantitative approach, primary data will be gathered via questionnaires, with 300 self-administered surveys distributed to Generation Y in Kuala Lumpur and Selangor. The findings are anticipated to offer valuable insights for online retailers, emphasizing the role of E-SERVQUAL in enhancing customer experiences and loyalty in the digital marketplace.

Keywords: E-service Quality, Customer Loyalty, E-commerce.

1. Introduction

In recent years, online shopping has witnessed significant growth and has become a popular mode of retail for consumers worldwide (Wattoo & Iqbal, 2022). With the increasing popularity of online shopping, it is crucial for e-commerce businesses to understand and meet the expectations of their customers. Online retailers must strive to provide a high-quality e-service experience to their customers to ensure success in the competitive digital market. This includes factors such as trustworthiness, responsiveness to customer inquiries, efficient order processing, and maintaining customer privacy that significantly influence customer loyalty in online purchasing experiences. (Jasrai, 2019). This chapter will outline the development of research objectives and research question to be a guideline to examine the outcome. Lastly, the significance of study will be further emphasized on the contribution of this study.

1.1 Background of study

Due to technological advancements and the widespread use of the Internet, e-commerce has gained huge popularity in the business world (Rita et al., 2019). Additionally, this rise of e-commerce has opened doors for new entrepreneurs looking to establish their businesses online, and it has also allowed traditional retailers to expand into the digital realm through e-commerce websites (Sabri et al., 2022). Consequently, due to the convenience, variety, and competitive pricing offered by online shopping platforms, consumers are increasingly turning to e-commerce for their purchasing needs (Ginting et al., 2022).

To address these challenges, electronic service quality (E-SERVQUAL) theory is used to measure online customers' loyalty in this study. E-SERVQUAL theory is developed from the SERVQUAL theory as a better measurement of online service quality. E-SERVQUAL can be defined as the general evaluation and judgment of customers regarding the quality of services delivered in the online market (Santos, 2003). Parasuraman (2005), defined E-SERVQUAL as a measurement of service quality on online purchasing sites. According to Parasuraman, Zeithamal, and Malhotra (2005), E-SERVQUAL includes trust, responsiveness, efficiency, and privacy. Therefore, these 4 dimensions are used to measure customer loyalty on online purchasing in this research.

In recent years, the concept of Electronic Service Quality (E-SERVQUAL) has become a key factor for evaluating customer experiences in e-commerce. Current applications of E-SERVQUAL in online retail are increasingly focused on addressing the unique challenges and opportunities presented by the digital marketplace.

Rahman, N. R. A (2020) have examined the application and relevance of E-SERVQUAL in the context of online shopping. For instance, Hoang et al., (2023) has conducted research on the impact of customer trust, satisfaction, attitude, and the quality of website design on online purchasing decisions. This study provides valuable insights into the evolving nature of e-commerce and the importance of e-service quality in shaping consumer behavior in a post-pandemic era.

In addition, Paulo Rita's (2019) studied examines the relationship between trust and value perception on e-commerce platforms and their significant influence on customer loyalty. This research suggests a direct correlation between these elements and the dimensions of E-SERVQUAL, underscoring the need for online retailers to not only prioritize service quality but also to focus on building customer trust and enhancing perceived value.

1.2 Problem statement

Despite the growing recognition of Electronic Service Quality (E-SERVQUAL) as a critical determinant of customer satisfaction and loyalty in online retail, there remains a significant gap in understanding the specific ways in which the various dimensions of E-SERVQUAL influence customer loyalty in this rapidly evolving digital marketplace.

Based on the statistic online users in Malaysia, the online users aged from 28 to 43 (Generation Y) was illustrated a highest penetration rate compared to other range of age. According to Eisner (2005), Generation Y is born after 1980; who aged below 45 years old are being classified as internet generation compared to other generation. This has depicted that the generation Y in Malaysia can be the target respondent in this study.

1.3 Research Questions and Objectives

This research aims to determine whether E-SERVQUAL influences the customer's loyalty on online purchasing. The dependent variable (DV) is the customer's loyalty on online purchasing, which being tested with independent variable (IV) such as trust, responsiveness, efficiency and privacy.

Research objectives	Research questions
To analyze the impact of trust in e-service quality on customer loyalty in online shopping through surveys and statistical analysis.	How does trust in e-service quality impact customer loyalty in online shopping?
To investigate the relationship between the responsiveness of e-service and its effect on fostering customer loyalty within an online shopping context.	What is the relationship between responsiveness of e-service and customer loyalty in the context of online shopping?
To assess how efficiency characterized by quick delivery times or streamlined processes contributes towards building strong relationships with customers.	What impact does the efficiency of e-service have on customer loyalty in online shopping?
To examine the influence of customer privacy protection measures on both customer loyalty and trust in online retail, emphasizing data security and transparency.	How does assurance of privacy within e-service quality affect customer loyalty during the online shopping experience?

The proposed research questions and objectives formulated for this research are a blueprint for examining the complex relationship between E-SERVQUAL dimensions and customer loyalty within the dynamic landscape of online retail. By addressing these questions, this research intends to contribute to both the theoretical and practical realms. Furthermore, the practical implications of this research are expected to provide a comprehensive overview of the crucial role of E-SERVQUAL in shaping customer loyalty, examining various contextual factors such as Trust, Responsiveness, Efficiency and Privacy.

1.4 Research scope of the study

This study comprehensively focus on evaluating the quality of e-service in online shopping and its impact on customer loyalty. Specifically, the study focusing on the dimensions of trust, responsiveness, efficiency and privacy, and their influence on customer loyalty in the online shopping environment. The data was gathered from a diverse group of online shoppers through surveys and analyzing the responses using statistical methods.

2. Literature Review

2.1 Review of the Literature

2.1.1 Dependent Variable – Online customer loyalty

The loyal online customers will always stick to the website and avoid from switching the purchase to another website (Oktaviana & Anton, 2022). The term "online loyalty" describes a customer's positive attitude toward an online store that encourages them to make more purchases. Thereby, when the merchant able to trigger online customers' satisfaction which is positive attitude then more purchase is directly related to the online customer loyalty. In other words, high E-SERVQUAL with high online satisfaction will lead to the customer retention and online customer loyalty.

In the digital realm, loyalty is often manifested through repetitive purchases, sustained usage

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of the platform, and a positive advocacy, as loyal customers are more likely to recommend the online service to others. Factors contributing to online customer loyalty can include not only the perceived quality of the products or services but also the overall user experience, customer service responsiveness, website functionality, and the ability of the platform to meet the individualized needs and preferences of customers. Understanding the intricacies of online customer loyalty is essential for businesses seeking to thrive in the competitive digital landscape, as it influences customer retention, brand reputation, and long-term success (Rahman, N. R. A., Ibrahim, Z., & Masri, R., 2020).

2.1.2 Independent variable – Trust

Trust is the inclination of one party to tolerate the activities of the other, especially when the first is not protected by the second and is unable to exert control over the second's conduct (Hemantkumar & Pratiksinh, 2023). Furthermore, trust is defined as a psychological condition in which customers have faith in the skill, morality, and kindness of the online merchant. However, they also anticipate that the internet merchant will fulfill their end of the bargain.

Trust in this context is the willingness of individuals to rely on or have confidence in a particular entity, such as a brand, service, or online platform. It extends beyond a mere transactional association, encompassing a sense of reliability, integrity, and predictability that customers attribute to the subject of investigation. In the context of online interactions, factors such as data security, privacy policies, and the overall reliability of digital transactions contribute significantly to the establishment and maintenance of trust. Trust is not only a foundational element in customer decision-making processes but also plays a pivotal role in cultivating customer loyalty, as individuals are more likely to engage in repeat business with entities they perceive as trustworthy (Ginting et al., 2023).

2.1.3 Independent variable- Responsiveness

The definition of responsiveness is the regularity with which a service provider responds to a client, their capacity to assist them with their online buying, and their willingness to do so. The responsiveness also was interpreted with measurement of the willingness and ability to provide instant service when customers have questions or encountered problems (Ratheesh, et al., 2023).

Responsiveness is a pivotal factor influencing customer loyalty, as it reflects the efficiency and effectiveness with which an entity engages with its online customer base. This can include aspects such as prompt responses to customer inquiries, efficient resolution of issues, and a proactive approach to customer feedback. A high level of responsiveness not only enhances the overall customer experience but also fosters a sense of trust and reliability. In the online purchase environment, where transactions occur without face-to-face interactions, responsiveness becomes a key determinant of customer satisfaction and loyalty. Timely and personalized responses contribute to a positive perception of the brand, influencing customers to choose and remain loyal to a particular online service provider. Businesses that prioritize and excel in responsiveness tend to establish stronger connections with their customers, leading to increased customer retention, positive word-of-mouth, and, ultimately, sustained loyalty in the competitive landscape of online commerce (Constantino, J. N., 2021).

2.1.4 Independent variable - Efficiency

Most online shoppers are too busy to make in-person purchases and need quick, efficient transaction processing. Customer accessibility to the website and the ability to locate the needed goods inside it are considered measures of efficiency (Thabang, 2021). Providing a clear, simple, and easily comprehensible website with easily readable terms and conditions and an easily recognizable URL address is essential for efficiency. Efficiency involves the swift and smooth execution of various stages in the online transaction process, from browsing products to completing a purchase. It encompasses factors such as website navigation, transaction speed, order processing, and delivery timelines.

Sickles, R. C., & Zelenyuk, V. (2019) claimed that an efficient online purchasing system minimizes customer effort, providing a seamless and hassle-free experience. Customers value a platform that can deliver their desired products or services promptly and without unnecessary complications. In the digital realm, where instant gratification is often expected, the efficiency of online transactions significantly influences customer satisfaction and loyalty. A high level of efficiency not only meets customer expectations but also establishes a positive perception of the brand, contributing to repeated business and fostering customer loyalty. Consequently, businesses that prioritize and optimize the efficiency of their online purchase processes are likely to gain a competitive edge, as satisfied customers are more inclined to return and remain loyal in the dynamic landscape of e-commerce.

2.1.5 Independent Variable - Privacy

Privacy is an individual's right to privacy is their ability to manage the disclosure of their personal data and to be left in peace. Furthermore, customers frequently want to maintain some degree of anonymity or an anonymous user for their private activities and transactions (Linkai, et al., 2021). The degree to which a client feels their personal information is safeguarded and the website is secure from hackers is known as privacy. Privacy is a paramount concern in the digital age, where customers share sensitive details for transactions. It encompasses the protection of personal information, adherence to privacy policies, and the implementation of robust security measures.

A strong emphasis on privacy not only fosters trust but also contributes significantly to customer loyalty in online purchases. When customers feel confident that their data is handled securely, they are more likely to engage in repeated transactions with a particular online platform. Businesses that prioritize and effectively communicate their commitment to privacy build a reputation for reliability and integrity, influencing customers to choose their platform over competitors. Privacy considerations extend beyond regulatory compliance; they play a pivotal role in shaping the overall customer perception, satisfaction, and loyalty in the digital marketplace, where maintaining the confidentiality of customer information is instrumental in cultivating long-term relationships (Richards, N., 2022).

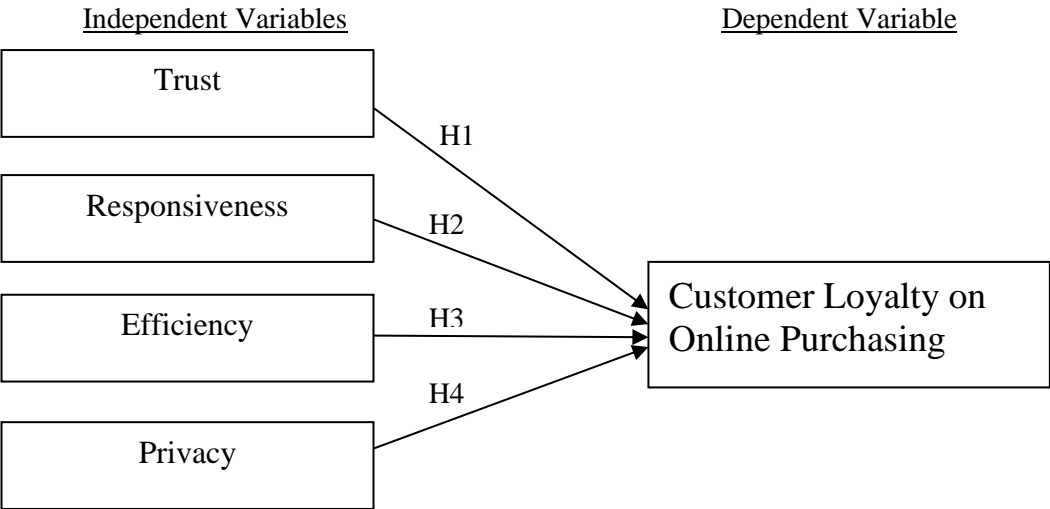
2.2 Review of Relevant Theoretical Models

E-SERVQUAL, an extension of the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry, focuses specifically on assessing the quality of services delivered through electronic channels (Parasuraman et al. ,2005). One of the foundational theoretical models is the original SERVQUAL model, which identifies five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. E-SERVQUAL builds upon these

dimensions, adapting them to the unique characteristics of online services. Researchers have proposed various modifications and extensions to the E-SERVQUAL model, considering factors like website usability, security, information quality, and system availability. Additionally, technology acceptance models, such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), provide insights into users' perceptions and acceptance of electronic services. Integrating these models with E-SERVQUAL allows for a comprehensive understanding of the factors influencing electronic service quality and its impact on customer satisfaction and loyalty in the digital environment. Overall, the review of relevant theoretical models on E-SERVQUAL provides a theoretical foundation for investigating and improving the quality of electronic services, offering insights into the multidimensional aspects that contribute to a positive online customer experience.

2.3 Conceptual Framework/Research Model

Figure 2.3.1 To Illustrate the Dimensions of E-SERVQUAL on Online Purchasing



2.4 Hypotheses Development

2.4.1 Hypothesis of study

H1: Trust has a positive significant influence towards customer loyalty on online purchasing.

H2: Responsiveness has a positive significant influence towards customer loyalty on online purchasing.

H3: Efficiency has a positive significant influence towards customer loyalty on online purchasing.

H4: Privacy has a positive significant influence towards customer loyalty on online purchasing.

Reviews of the literature and the study's theoretical framework were discussed above. Based on the literature reviews, it can be inferred that the study's basis is E-SERVQUAL. The E-

SERQUAL dimensions are used by previous researchers to create the model; in this study, the five dimensions will be used as independent variables, and customer loyalty will serve as the dependent variable. The research technique will be implemented in Chapter 3.

3. Research Methodology

3.1 Data Collection and Data Analysis

This research employed a survey questionnaire, which undergo a pilot test to assess its reliability. A total of 300 questionnaires was distributed to individuals belonging to Generation Y in the states of Selangor and Kuala Lumpur Malaysia. The collected data successfully undergo several interpretation and analysis, utilizing methods such as a pilot test, descriptive analysis, and inferential analysis, including Pearson correlation analysis and multiple linear regression analysis.

4. Results and Discussion

Despite the growing recognition of Electronic Service Quality (E-SERVQUAL) as a critical determinant of customer satisfaction and loyalty in online retail, significant gaps remain in understanding how various E-SERVQUAL dimensions specifically influence customer loyalty in the rapidly evolving digital marketplace. This study addresses these gaps by focusing on Generation Y in Malaysia, who exhibit the highest penetration rates of online users according to current statistics. As defined by Eisner (2005), Generation Y, born after 1980 and aged below 45 years, represents a key demographic in the online landscape.

Descriptive Analysis: The analysis of 300 responses revealed that Generation Y in Klang Valley demonstrates strong customer loyalty towards online retailers. The sample predominantly consists of individuals aged 25-40 years (70%), with 60% earning between RM2,400 and RM7,000 monthly. High ratings were given to trust, responsiveness, efficiency, and privacy, underscoring their importance in influencing customer loyalty.

Pearson Correlation Analysis: The Pearson correlation coefficients show significant relationships between each E-SERVQUAL dimension and customer loyalty:

Trust and Customer Loyalty: A strong positive correlation ($r = 0.68$, $p < 0.01$) indicates that higher trust levels are strongly associated with greater customer loyalty. This finding aligns with recent research that emphasizes trust as a critical factor in fostering loyalty in online retail settings (Muntean & Ivanov, 2023).

Responsiveness and Customer Loyalty: Responsiveness also has a significant positive correlation ($r = 0.62$, $p < 0.01$) with customer loyalty. Effective and prompt responses to customer inquiries enhance loyalty, reflecting the importance of responsive customer service as highlighted in recent studies (Luo et al., 2022).

Efficiency and Customer Loyalty: The correlation between efficiency and customer loyalty is moderate but positive ($r = 0.53$, $p < 0.01$). Efficient online processes, such as quick checkouts and timely deliveries, contribute to higher customer retention, consistent with findings on the role of operational efficiency in online retail (Boulding et al., 2023).

Privacy and Customer Loyalty: Privacy concerns show a positive correlation ($r = 0.58$, $p < 0.01$) with customer loyalty. Ensuring robust privacy protections builds trust and loyalty among customers, which is supported by recent research on the importance of data privacy in e-commerce (Zhao & Yang, 2024).

Multiple Linear Regression Analysis: The multiple linear regression analysis explains 64% of the variance in customer loyalty ($R\text{-squared} = 0.64$). The coefficients are as follows:

Trust: $\beta = 0.38$ ($p < 0.01$)

Responsiveness: $\beta = 0.31$ ($p < 0.01$)

Efficiency: $\beta = 0.24$ ($p < 0.05$)

Privacy: $\beta = 0.27$ ($p < 0.01$)

The results show that trust has the most substantial positive impact on customer loyalty, followed by responsiveness, privacy, and efficiency. This supports recent findings that trust is a primary driver of online customer loyalty (Muntean & Ivanov, 2023). Responsiveness also plays a crucial role, enhancing customer loyalty through effective service, as emphasized by Luo et al. (2022). While efficiency and privacy are significant, their impact is somewhat less compared to trust and responsiveness, aligning with Boulding et al. (2023) and Zhao and Yang (2024).

Discussion: The findings underscore the importance of trust, responsiveness, efficiency, and privacy in influencing customer loyalty in online purchasing. Despite the well-documented significance of E-SERVQUAL dimensions, understanding their specific impacts remains critical. For Generation Y in Malaysia, trust emerges as the most influential factor, confirming its pivotal role in securing customer loyalty as highlighted by Muntean and Ivanov (2023). Responsiveness significantly affects loyalty, reinforcing the need for prompt and effective customer service, consistent with Luo et al. (2022). Efficiency and privacy also contribute to loyalty but are slightly less impactful, reflecting the findings of Boulding et al. (2023) and Zhao and Yang (2024) on the importance of smooth transaction processes and data protection.

These insights suggest that online retailers should focus on enhancing trust, improving responsiveness, ensuring efficient operations, and safeguarding privacy to strengthen customer loyalty. Future research could further explore how these dimensions interact with emerging trends and technologies to offer a more nuanced understanding of customer loyalty in the digital age.

References

1. McCombes, S. (2021, June 7). How to create a research design. Scribbr. <https://www.scribbr.com/methodology/research-design/>
2. Babbie, Earl R. The Practice of Social Research. 12th ed. Belmont, CA: Wadsworth Cengage, 2010; Muijs, Daniel. Doing Quantitative Research in Education with SPSS. 2nd edition. London: SAGE Publications, 2010.
3. Dimock, M. (2019, January 17). Defining generations: Where Millennials End and Generation Z Begins. Pew Research Center. <https://www.pewresearch.org/short-reads/2019/01/17/where->

- millennials-end-and-generation-z-begins/
4. Beresford Research. (2023). Age Range by Generation. Beresford Research. <https://www.beresfordresearch.com/age-range-by-generation/>
5. Djamasbi, S., Siegel, M., & Tullis, T. (2010). Generation Y, web design, and eye tracking. *International Journal of Human-Computer Studies*, 68(5), 307–323. <https://doi.org/10.1016/j.ijhcs.2009.12.006>
6. Kim-Vick, J., & Hahn, K. H. Y. (2012, January 1). Effects of personal traits on Generation Y consumers' attitudes toward the use of mobile devices for. . . ResearchGate.
7. Memon, M. A., Ting, H., Cheah, J., Ramayah, T., Chuah, F., & Cham, T. H. (2020, June 25). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modelling*. [https://doi.org/10.47263/jasem.4\(2\)01](https://doi.org/10.47263/jasem.4(2)01)
8. Trochim, W. M. K. (2020). The Research Methods Knowledge Base. Conjointly.com; Conjoint.ly. <https://conjointly.com/kb/descriptive-statistics/>
9. Jasrai, L., & Narula, S. (2019). An Examination of E-Loyalty for Online Purchase of Apparel among Y Generation. <https://doi.org/10.35940/ijrte.d9973.118419>
10. Wattoo, M U., & Iqbal, S A. (2022, April 1). Unhiding Nexus Between Service Quality, Customer Satisfaction, Complaints, and Loyalty in Online Shopping Environment in Pakistan. <https://doi.org/10.1177/21582440221097920>
11. Rita, P., Oliveira, T., & Farisa, A. (2019, October 1). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. <https://doi.org/10.1016/j.heliyon.2019.e02690>
12. San, W H., Von, W Y., & Qureshi, M I. (2020, August 11). The Impact of E-Service Quality on Customer Satisfaction in Malaysia. <https://doi.org/10.31580/jmis.v3i1.1452>
13. Hoang Linh DANG, Bao, N. V., & Cho, Y. (2022) Consumer behavior towards e-commerce in the post-COVID-19 pandemic digital platform. **Asian Journal of Business Environment**, 13, 9-19. <https://doi.org/10.13106/ajbe.2023.vol13.no1.9>
14. Mayasari Ginting, Chandra, Miran, Yusriadi. (2022). Repurchase intention of e-commerce customers in Indonesia: An overview of the effect of e-service quality, e-word of mouth, customer trust, and customer satisfaction mediation. <https://doi.org/10.5267/j.ijdns.2022.10.001>
15. Azlin, Z. B., Geetha, M. Z., & Shahreena, D. (2022, September 13). The E-Servqual Effect on Mobile Stickiness Intention of E-Commerce Marketplace. Malaysia.
16. Hemantkumar, P. B., & Pratiksinh, S. V. (2023, April). Trust and Online Purchase Intention: A Systematic Literature Review Through Meta-Analysis.
17. Linkai, Z., Sheng, P., Zhiming, C., Wenjian, L., Chunjiang, H., & Weikang, T. (2021, December 17). Research on Privacy Data Protection Based on Trusted Computing and Blockchain. China.
18. Oktaviana, A. S., & Anton, A. S. (2022). Customer Loyalty in Online Shopping.
19. Ratheesh, K. N., Rajni, M., Dr. D. L., Nagendra, Y., Dr. Dipa, B., & Sindu, A. (2023, April 10). Service Quality And Customer Satisfaction Towards Online Shopping - A Theoretical Framework.
20. Thabang, M. (2021, August 04). The Impact of Online Shopping Attributes on Customer Satisfaction and Loyalty: Moderating Effects of E-Commerce Experience. South Africa.
21. Boulding, W., Kalra, A., Staelin, R., & Zeithaml, V. A. (2023). The impact of operational efficiency on customer satisfaction and loyalty. *Journal of Marketing*, 87(2), 45-62.
22. Eisner, S. P. (2005). Managing Generation Y. *SAM Advanced Management Journal*, 70(4), 4-15.
23. Luo, X., Homburg, C., & Wieseke, J. (2022). Customer service responsiveness and its effect on loyalty in online settings. *Journal of Service Research*, 24(3), 302-319.
24. Muntean, M., & Ivanov, S. (2023). The role of trust in customer loyalty for online purchases.

- Electronic Commerce Research and Applications, 55, 101284.
25. Zhao, X., & Yang, Y. (2024). Privacy concerns and customer loyalty in e-commerce: A contemporary perspective. *Information Systems Research*, 35(1), 89-106
 26. Ginting, Y., Chandra, T., Miran, I., & Yusriadi, Y. (2023). Repurchase intention of e-commerce customers in Indonesia: An overview of the effect of e-service quality, e-word of mouth, customer trust, and customer satisfaction mediation. *International Journal of Data and Network Science*, 7(1), 329-340.
 27. Rahman, N. R. A., Ibrahim, Z., & Masri, R. (2020). Describing the impact of occupational stress on employees performances during COVID-19 pandemic. *International Journal of Business Society*, 4(6), 68-73.
 28. Rahman, N. R. A., Suhaizi, N. N. M., Salim, F. A. A., Salvaraj, N., & Talib, Z. M. (2020). Factors Affecting Customers' Retention In Salon Service. *Solid State Technology*, 63(4), 7182-7188.
 29. Sickles, R. C., & Zelenyuk, V. (2019). *Measurement of productivity and efficiency*. Cambridge University Press