

# Applying Structural Equation Modeling to Explore the Intention to Use Midi Kriing App

Suwandi S. Sangadji<sup>1,\*</sup>, Tanti Handriana<sup>2</sup>, Nugrahini Susantinah Wisnujati<sup>3</sup>, Sarbaini A. Karim<sup>4</sup>

<sup>1,2</sup> Faculty of Economics and Business, Universitas Airlangga, Surabaya 60115, Indonesia

<sup>3</sup> Master's Program in Agribusiness, Faculty of Agriculture, Universitas Wijaya Kusuma Surabaya, Surabaya 60225, Indonesia

<sup>4</sup> Faculty of Health, Universitas Bumi Hijrah Tidore, Tidore 97852, Indonesia

(Received: November 23, 2023; Revised: December 8, 2023; Accepted: January 14, 2024; Available online: January 29, 2024)

## Abstract

In the rapidly evolving digital landscape, the surge in e-commerce transactions underscores the need for innovative strategies to enhance user satisfaction, trust, and sustainable app usage. This research focuses on the Midi Kriing App, operated by PT Midi Utama Indonesia Tbk, a key player in the e-commerce industry. The study aims to bridge knowledge gaps by investigating factors influencing user intention, specifically e-service quality and e-trust, and their impact on user satisfaction. Employing a quantitative approach with an associative design, data was gathered from 190 Midi Kriing App users in Surabaya, Indonesia. Structural Equation Modeling (SEM), particularly Partial Least Squares (PLS) in SmartPLS, was utilized to explore relationships between variables. Research findings indicate that e-service quality and e-trust significantly impact user satisfaction, with a p-value of 0.00. Similarly, user satisfaction significantly influences the intention to use the Midi Kriing App, with a p-value of 0.00. Among these hypotheses, the statistical t-value of user satisfaction with the intention to use the Midi Kriing App, at 9.871, is higher than the relationship between e-service quality and e-trust with user satisfaction. Nevertheless, these hypothesis tests confirm statistically significant relationships, supporting the reliability and significance of each construct's measurement instruments. In conclusion, this research emphasizes the pivotal role of satisfaction in its relation to e-service quality, e-trust, and the intention to use the Midi Kriing App. Managerial implications stress the importance of enhancing these factors to drive app usage. Improving e-service quality can be achieved through active efforts such as enhancing responsiveness, reliability, and user-friendliness. Similarly, building e-trust involves securing user data and providing a positive user experience.

**Keywords:** User Satisfaction; E-Service Quality; E-Trust; Intention to Use Midi Kriing App.

## 1. Introduction

In the current digital era, the transformation of information technology has shifted consumer behavior paradigms, particularly in their inclination towards conducting transactions through e-commerce platforms [1],[2],[3]. A significant manifestation of this change is the Midi Kriing App, an e-commerce application garnering attention and operated by PT Midi Utama Indonesia Tbk. Its presence is not merely an additional element but an integral part of the new landscape in electronic commerce, offering a diverse range of products and services to consumers. Despite the substantial opportunities created by the increasing adoption of e-commerce applications, challenges need to be addressed. The key to success lies in the importance of maintaining user satisfaction, building trust, and stimulating users' intentions to continue using the application [4], [5]. Therefore, companies, especially PT Midi Utama Indonesia Tbk, are expected to implement innovative and effective strategies to overcome these challenges. By focusing on these aspects, the company can leverage the positive momentum of digital transformation and strengthen its position in the continually evolving e-commerce industry.

The Midi Kriing App possesses significant advantages as an e-commerce platform that can be a key factor in understanding consumer usage trends. This uniqueness is realized through innovative features, transaction convenience, and the variety of products offered. Innovative features, such as intuitive navigation systems and sophisticated personalization capabilities, enhance the shopping experience and captivate users. Transactional ease, including secure and efficient payment processes, adds to the attractiveness of this application as consumers' preferred

\*Corresponding author: Suwandi S. Sangadji (suwandi.s.sangadji-2022@feb.unair.ac.id)

DOI: <https://doi.org/10.47738/jads.v5i1.157>

This is an open access article under the CC-BY license (<https://creativecommons.org/licenses/by/4.0/>).

© Authors retain all copyrights

choice. Moreover, Midi Kriing App distinguishes itself by presenting a diverse range of products, encompassing various categories and renowned brands. Consequently, the application can meet diverse consumer needs, making it a comprehensive choice in the e-commerce market. Given the fierce competition in this industry, a deep understanding of factors influencing user interest becomes crucial. Therefore, Midi Kriing App not only offers products and services but also builds strong relationships with consumers through intelligent marketing strategies and responsive customer support. With this approach, Midi Kriing App can position itself as a market leader not only in technology but also in understanding and meeting the needs and expectations of modern consumers.

Research on the intention to use Midi Kriing App is grounded in the significant growth of its presence among Alfamidi consumers. While e-service quality and e-trust are acknowledged as key factors influencing user satisfaction [6], [7], [8] and the intention to use an application [9], [10], there is no specific research exploring these relationships in the context of Midi Kriing App. With this empirical foundation, the research aims to fill this knowledge gap by identifying the extent to which e-service quality and e-trust influence user satisfaction with Midi Kriing App. Additionally, the research aims to understand how user satisfaction influences the user's intention to continue using the application. Through the applied empirical approach, this research is expected to provide deeper insights into the factors shaping user intentions to use Midi Kriing App. Thus, the research results can significantly contribute to the literature in the e-commerce field, particularly in further understanding the interaction between e-service quality, e-trust, user satisfaction, and the intention to use the application.

Theoretical enrichment of the literature is achieved by investigating the relationships between e-service quality, e-trust, user satisfaction, and intention to use in the context of Midi Kriing App. Through comprehensive analysis, the research not only explores correlations between variables but also seeks to integrate these findings with existing conceptual frameworks in the literature of online consumer behavior and information technology. This approach provides deep theoretical insights, identifying factors driving the use of e-commerce applications, specifically Midi Kriing App. The motivation for this research is driven by the desire to make a significant contribution to understanding consumer behavior in the digital era. By uncovering critical factors influencing the user's intention to use Midi Kriing App, the research not only provides a better understanding of consumer preferences but also offers valuable guidance for e-commerce companies in optimizing marketing strategies and product development. Thus, this research not only enriches the literature but also has practical implications that can lead to improved performance and competitiveness for companies in the increasingly complex e-commerce market.

Furthermore, this research makes a significant contribution through three main dimensions: practical, theoretical, and methodological. From a practical perspective, the research results have the potential to provide valuable insights to the management of Midi Kriing App. The generated information can be used to design strategies to improve service quality and build user trust, ultimately enhancing user satisfaction and encouraging sustained application use. Theoretical contributions involve enriching the literature by introducing a new perspective on understanding consumer behavior in the digital era. The construction of a solid and in-depth conceptual framework is expected to serve as a foundation for further research and theory development. Meanwhile, from a methodological standpoint, the research adopts a quantitative approach using questionnaires distributed to Midi Kriing App users. The data collection process will be thorough, and statistical analysis, particularly structural equation modeling, will be employed to test research hypotheses, making the research methodology advanced and detailed. Thus, this research not only provides direct practical contributions but also deepens theoretical understanding and presents a robust methodology.

## **2. Literature Review and Hypothesis**

### **2.1. The Relationship between E-Service Quality and User Satisfaction.**

E-Service Quality (e-SQ) is a concept encompassing dimensions of service quality [11], [12], [13] related to customer experiences in using e-commerce applications. These dimensions span from tangibles, covering the visual aspects and user-friendliness of the application, to reliability, measuring the application's ability to meet customer expectations [14], [15]. Responsiveness is a key factor, assessing the speed and accuracy of the application's response to customer requests [16]. Assurance plays a crucial role by evaluating the application's ability to provide a sense of security and comfort to customers [17]. Lastly, empathy highlights the application's ability to understand customer needs and desires

[18], [19]. Through these dimensions, e-SQ becomes a holistic framework for evaluating and enhancing service quality in the context of e-commerce. The optimal use of e-commerce applications depends on how well each dimension is fulfilled. By focusing on tangibles, reliability, responsiveness, assurance, and empathy, service providers can shape a better digital environment, ensuring customer satisfaction [11], and strengthening their reputation in this competitive market.

Meanwhile, customer satisfaction in the context of e-commerce applications can be measured through evaluations of various aspects. These factors involve satisfaction with the products or services offered, evaluations of the purchasing and delivery processes, and satisfaction with customer service [20], [21]. Customer satisfaction indicators are crucial in determining the extent to which customers feel satisfied after interacting with e-commerce applications. The importance of customer satisfaction is not only reflected in the quality of products or services but also in the overall experience of choosing, purchasing, and using application services. Evaluations of these aspects provide a holistic picture of the extent to which the application can meet customer expectations and needs. Therefore, e-commerce companies need to continuously monitor and improve customer satisfaction indicators to ensure that the customer experience remains positive and builds long-term loyalty.

Several studies have indicated a positive and significant relationship between e-SQ and customer satisfaction [6], [7], [8]. Specifically, aspects such as an attractive interface, ease of application use, timely delivery, quick response to customer requests, a sense of security, and understanding customer needs contribute to increased customer satisfaction [22], [23]. In the context of digital shopping applications, digital service quality aspects such as application interface design, reliability, responsiveness, and trust have also been proven to positively influence customer satisfaction [24], [25]. Some studies emphasize the importance of digital service quality dimensions, such as system quality, information quality, and cognitive trust, in shaping customer satisfaction perceptions [6], [8], [26]. Therefore, within the framework of this research, a hypothesis is proposed indicating that the higher the customer's perception of the e-service quality of an application, the higher the level of customer satisfaction with the use of the Midi Kriing application.

**H1:** E-Service Quality influences user satisfaction with the Midi Kriing application.

## 2.2. The Relationship between E-trust and Satisfaction

E-trust and satisfaction are fundamental concepts in digital marketing that are interrelated and play a crucial role in shaping consumer behavior. E-trust, defined as consumer trust in websites or e-commerce applications, and significantly impacts user satisfaction [7], [27], [28]. The relationship between the two is positive, implying that the higher the level of consumer trust in a digital platform, the higher the satisfaction they experience. One primary reason for the influence of e-trust on satisfaction is its ability to mitigate perceived risks in online transactions [29], [30]. Consumers with high trust levels in a website or e-commerce application tend to feel more confident that their transactions will proceed smoothly and securely [31], [32]. Consequently, this trust directly enhances their satisfaction with the shopping or digital service experience.

Moreover, e-trust can also elevate consumer expectations. Consumers who trust a digital platform have higher expectations regarding the quality of service they will receive [33], [34]. These heightened expectations can trigger satisfaction if the website or application manages to meet or exceed them. In this context, several studies have indicated that e-trust not only directly affects consumer satisfaction but also does so through increased expectations and risk reduction [7], [35]. A study on e-service quality and satisfaction found that trust significantly influences customer loyalty, with satisfaction acting as a mediator in this relationship [36]. Similar findings have been observed in other studies, affirming that e-trust has a substantial impact on satisfaction [37]. Furthermore, these findings underscore that e-trust and satisfaction are interconnected, playing a pivotal role in shaping user intentions in using e-commerce applications. Therefore, the following hypothesis is proposed:

**H2:** E-trust influences user satisfaction with the Midi Kriing application.

## 2.3. The Relationship between User Satisfaction and Intention to Use the Midi Kriing Application

The relationship between user satisfaction and the intention to use an e-commerce application, such as Midi Kriing, is a key factor in understanding the acceptance and utilization of the application. User satisfaction with the features, performance, and overall user experience offered by Midi Kriing can directly influence their intention to continue using

the application. When users are satisfied with the functionality and quality of service provided by Midi Kriing, it is likely that they will have a stronger intention to use the application consistently. Therefore, enhancing user satisfaction through innovation, security, and user-friendly features in Midi Kriing has the potential to increase users' intention to continue utilizing the application in their daily financial activities.

In the context of technology usage behavior theory, two main theories are relevant to this discussion: the Technology Acceptance Model (TAM) [38] and the Expectation-Confirmation Model (ECM) [39]. According to Davis [38] in TAM, satisfaction is viewed as the outcome of user experience with technology or applications, while the intention to use the application is seen as a predisposition to accept and use the technology. In the TAM context, satisfaction can influence the intention to use the application, meaning that the more satisfied users are with the application experience, the higher the likelihood they will have the intention to continue using it.

Meanwhile, the ECM perspective also considers the role of satisfaction in the context of technology usage. According to ECM, the intention to use the application is influenced by the confirmation of expectations and user satisfaction [39]. Confirmation of expectations relates to the extent to which the user experience aligns with their initial expectations [40], [41]. Satisfaction can strengthen the relationship between confirmation of expectations [42], [43], [44] and the intention to use the application, indicating that the more satisfied users are, the greater the likelihood they will have the intention to continue using the application [45], [46]. Based on these two theories, it can be argued that satisfaction has an impact on the intention to use the application. In other words, the better the user experience and the more satisfied users are with the application, the higher the likelihood they will have the intention to continue using the application. Thus, the hypothesis can be formulated as follows:

**H3:** User satisfaction influences the intention to use the Midi Kriing application.

### 3. Method

The research adopted a quantitative approach utilizing an associative research design. Data collection was executed through a survey method, employing a questionnaire as the primary research tool. The primary data were obtained from users of the Midi Kriing app in Surabaya, Indonesia, who had completed purchases in the preceding three months. A sample size of 190 respondents was selected following the guidelines set by Hair et al. [47] for Structural Equation Model (SEM) analysis, that is 10 times the number of research indicators ( $10 \times 19$ ). The survey aimed to investigate the relationships between various factors and their impact on consumer behavior within the Midi Kriing app context. Participants were required to share insights into their purchasing patterns, preferences, and overall satisfaction with the app. The study focused on analyzing three primary variables: e-service quality and e-trust as independent variables, the intention to use the Midi Kriing app as the dependent variable, and user satisfaction as an intervening variable. The examination of these variables aimed to provide a comprehensive understanding of the relationships among them. Firstly, e-service quality and e-trust were explored as factors influencing users' intention to use the Midi Kriing app. Secondly, the study investigated the role of user satisfaction in mediating the connection between e-service quality, e-trust, and the intention to use the app. This dissection of components aimed to enhance insights into user behavior dynamics within the Midi Kriing app context. This analytical approach aligns with the broader objective of advancing our understanding of the factors contributing to the successful adoption and satisfaction of users in the digital services realm.

The measurement and hypothesis testing in this research are based on the respective indicators of each variable, namely E-service quality (E-SQ), which consists of the indicators Quick and easy shopping, Fast application usage, User-friendly, Well-organized, and Issue resolution capability [48]. E-trust (E-T) is composed of the indicators Trust in purchasing process, Security in transactions, Confidentiality of personal data, Transaction verification, and Overall trust in the app [49]. User satisfaction (E-S) consists of the indicators Added value, Happiness, Positive experience, Meeting expectations, and Overall satisfaction [50]. Intention to Use Midi Kriing App comprises indicators such as Intention to continue usage, Likelihood of reuse, Future usage, and Future preference for purchases [51]. These indicators were subsequently developed into a research questionnaire using a Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) to elicit responses from research participants, forming primary data for the necessary measurement and statistical testing in data analysis. In this context, data analysis was conducted using SmartPLS

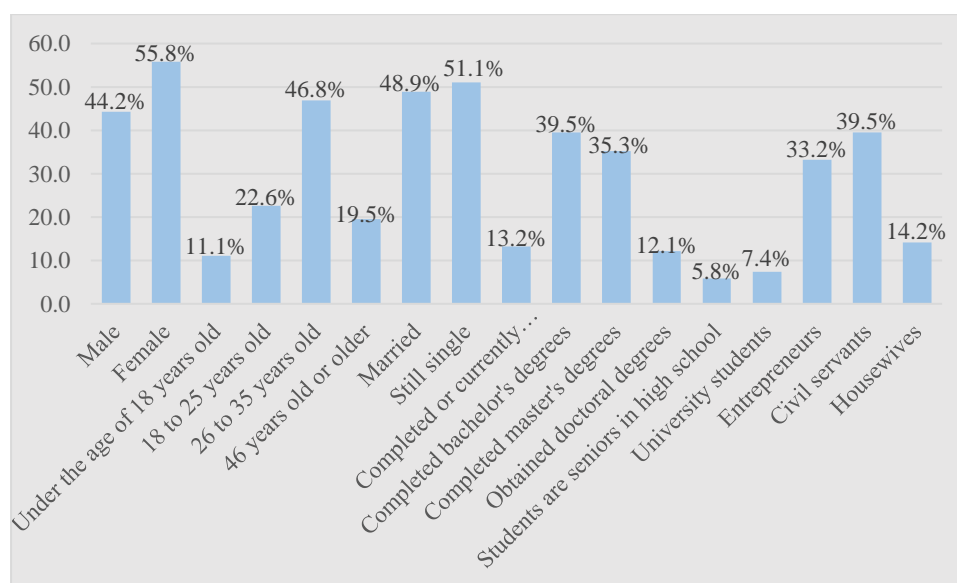
software, operated through computer media. Partial Least Squares (PLS) is a variance-based SEM analysis that can simultaneously perform measurement model testing and structural model testing.

The rationale for employing SEM analysis in this research is grounded in its status as a potent statistical tool capable of examining intricate theoretical models that encompass relationships among variables. SEM proves particularly valuable for investigating causal relationships, latent variables, and intricate models [52]. By integrating structural equations and measurement models, SEM allows researchers to investigate causal relationships between variables, test hypotheses, and gain a more comprehensive understanding of the intricate relationships within a specific concept or phenomenon. The data testing process in this analysis involves a rigorous assessment of validity and reliability. Model validity is scrutinized through convergent and discriminant validity tests, applying specific criteria, including factor loading thresholds  $> 0.7$  and Average Variance Extracted (AVE)  $> 0.5$ . To ensure robust results, data reliability is carefully examined, including measures of internal consistency, such as Cronbach's alpha coefficient, with criteria  $> 0.7$  considered acceptable. This comprehensive analysis is conducted to instill confidence and accuracy in the collected data, laying a strong foundation for further statistical analysis. The final stage of this analysis involves hypothesis testing using the Bootstrapping technique provided by the Smart PLS application.

## 4. Result and Discussion

### 4.1. Respondent Profile

The analysis of research findings commences by examining the characteristics of the respondents as an initial step to comprehend the research participant profiles. The analysis of respondent characteristics encompasses variables such as gender, age, marital status, educational level, and occupation. The objective of this analysis is to gain in-depth insights into the research participants, providing a rich context for the forthcoming findings. The approach utilized in this analysis is descriptive statistical analysis, aimed at systematically detailing and illustrating respondent characteristics. The results of this analysis are manifested in the form of frequency distributions, graphically illustrated in Figure 1. The frequency distribution offers a comprehensive view of the distribution of respondent characteristic values, aiding researchers and readers in better understanding the data spread. Through this approach, the research not only presents quantitative findings but also provides a comprehensive overview of the respondents who are the subjects of the study. The analysis of respondent characteristics not only serves as an essential initial step in this research but also establishes a solid foundation for interpreting subsequent results, enriching our understanding of the social context of these research respondents.



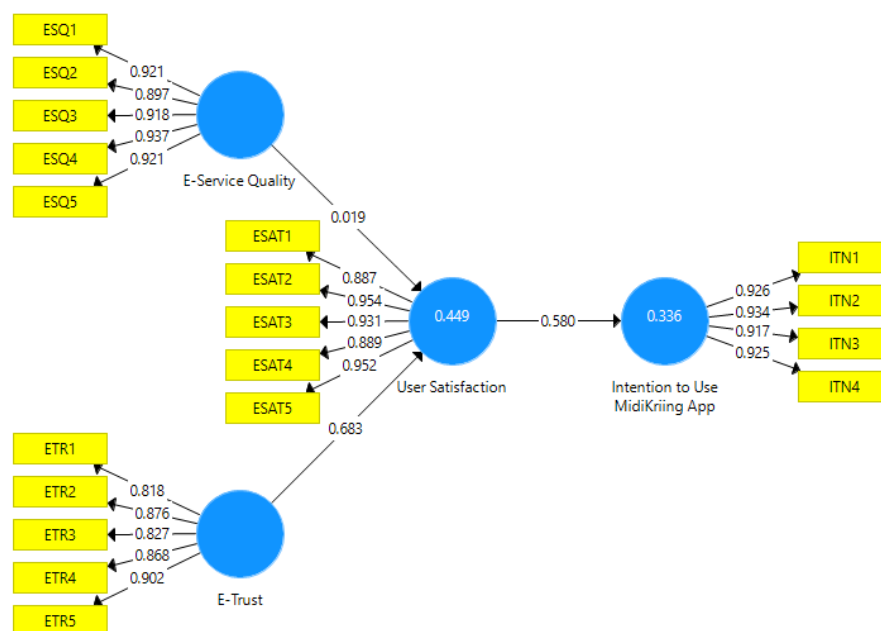
**Figure 1.** Respondent profile

The respondent profile for the Midi Kriing app reveals a diverse user base. In terms of gender, there is a relatively balanced representation, with 44.2% male and 55.8% female users. Age distribution shows that the majority of users

fall within the 26 to 35 years old category (46.8%), followed by those aged 18 to 25 years old (22.6%). Marital status indicates a nearly equal split between married (48.9%) and single (51.1%) users. Education levels vary, with the highest percentage completing or currently completing high school (13.2%), followed closely by those with bachelor's degrees (39.5%). Users with master's degrees account for 35.3%, while those with doctoral degrees represent 12.1% of the respondents. In terms of occupation, the app is used by a diverse group, with entrepreneurs constituting 33.2%, civil servants at 39.5%, and housewives at 14.2%. The findings suggest that Midi Kriing appeals to a broad demographic, attracting users across different genders, age groups, marital statuses, educational backgrounds, and occupations.

## 4.2. Structural Equation Modeling Analysis

After analyzing the characteristics of the respondents, the next step is to conduct testing and measurement of the research model. This model analysis consists of two main parts: the measurement model and the structural model. The measurement model is designed to assess the validity and reliability of the indicators used to measure variables within the model. Validity refers to the extent to which these indicators can measure what should be measured, while reliability measures the consistency of these indicators in measuring the same variable. Meanwhile, the structural model is used to test the relationships between latent variables in the model. In the context of this research, the relationships between latent variables involve e-service quality, e-trust, user satisfaction, and intention to use the Midi Kriing app. Testing these relationships helps to understand the interconnections between variables and their impact in the context of Midi Kriing app usage. The overall process provides a deeper understanding of the factors influencing user satisfaction and intention to use the application.



**Figure 2.** Structural Model

The results of the measurement model indicate that all items in the utilized instrument exhibit high and significant factor loadings. Factor loadings range from 0.818 to 0.954, as depicted in Figure 2 and Table 1. This signifies a strong correlation of each item with the measured construct. Thus, it can be concluded that this measurement instrument possesses good validity, effectively measuring the intended variables accurately. The high factor loadings indicate that each question or statement in the instrument contributes significantly to the overall construct. Therefore, this instrument can be relied upon to assess user satisfaction, trust, and intention to continue using the Midi Kriing App. These findings provide a strong foundation for the sustainability of application usage and reinforce confidence in the measurement results obtained from the instrument.



**Table 1.** Construct Reliability and Validity

Constructs	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
User Satisfaction	ESAT1: I gain added value from using the Midi Kriing App.	0.887	0.954	0.964	0.844
	ESAT2: Using the Midi Kriing App brings me happiness.	0.954			
	ESAT3: The Midi Kriing App provides a positive experience.	0.931			
	ESAT4: Midi Kriing App meets my expectations.	0.889			
	ESAT5: Overall, I am satisfied with using the Midi Kriing App.	0.952			
E-Service Quality	ESQ1: The Midi Kriing application makes shopping quick and easy for me.	0.921	0.911	0.933	0.737
	ESQ2: The Midi Kriing application is very fast in its usage.	0.897			
	ESQ3: The Midi Kriing application is very user-friendly.	0.918			
	ESQ4: The Midi Kriing application is well-organized.	0.937			
	ESQ5: Midi Kriing is capable of resolving my issues effectively.	0.921			
E-Trust	ETR1: I trust the purchasing process on the Midi Kriing App.	0.818	0.944	0.960	0.856
	ETR2: I feel secure when conducting transactions with the Midi Kriing App.	0.876			
	ETR3: The Midi Kriing App ensures the confidentiality of my personal data.	0.827			
	ETR4: Midi Kriing App verifies all transaction requests.	0.868			
	ETR5: Overall, I have complete trust in the Midi Kriing App.	0.902			
Intention to Use Midi Kriing App	ITN1: I intend to continue using the Midi Kriing App to fulfill my needs.	0.926	0.956	0.966	0.852
	ITN2: I am likely to reuse the selected Midi Kriing App.	0.934			
	ITN3: I will use the chosen Midi Kriing App in the future.	0.917			
	ITN4: If I have to make another purchase, I will use the chosen Midi Kriing App.	0.925			

The reliability test results in Table 1 depict that the user satisfaction construct exhibits a very high level of reliability, with a Cronbach's Alpha value reaching 0.954, Composite Reliability of 0.964, and Average Variance Extracted (AVE) reaching 0.844. These findings indicate that the instrument used to measure satisfaction levels can consistently be relied upon. Additionally, both the E-Service Quality and E-Trust constructs also demonstrate good reliability levels, with Cronbach's Alpha values of 0.911 and 0.944 respectively, Composite Reliability of 0.933 and 0.960, and AVEs of 0.737 and 0.856 respectively. The measurement of Intention to Use the Midi Kriing App also shows a high level of reliability, with a Cronbach's Alpha of 0.956, Composite Reliability of 0.966, and AVE of 0.852. Overall, these findings instill confidence that the measurement instruments applied in this study possess consistency and reliability in measuring the constructs under investigation.

**Table 2.** Discriminant Validity

Constructs	E-Service Quality	E-Trust	Intention to Use Midi Kriing App	User Satisfaction
E-Service Quality	0.919			
E-Trust	0.696	0.859		
Intention to Use Midi Kriing App	0.362	0.511	0.925	
User Satisfaction	0.456	0.670	0.580	0.923

The results table of the discriminant validity test utilizes the Fornell-Larcker Criterion approach, indicating that the diagonal values of each construct (main diagonal) represent the square root of the reliability of that construct, while values outside the main diagonal represent the correlation between constructs. Based on these results, it can be concluded that the E-Service Quality construct has a square root reliability value of 0.919, E-Trust of 0.859, Intention to Use Midi Kriing App of 0.925, and user satisfaction of 0.923. Furthermore, the correlation between constructs indicates that each value outside the main diagonal (inter-construct correlation) is lower than the square root of the reliability of the respective construct, meeting the Fornell-Larcker criteria. Thus, it can be interpreted that the results of this discriminant validity test support the adequacy of discriminant validity for these constructs, as the inter-construct correlations do not exceed the reliability of each construct.

**Table 3. R Square**

Constructs	R Square	R Square Adjusted
Intention to Use Midi Kriing App	0.336	0.333
User Satisfaction	0.449	0.443

From the research findings presented in Table 3, it can be stated that e-service quality and e-trust have a significant influence on the Intention to Use the Midi Kriing App. The R Square for the Intention to Use Midi Kriing App is 0.336, indicating that approximately 33.6% of the variability in the intention to use the Midi Kriing application can be explained by the variables of e-service quality and e-trust. Furthermore, Satisfaction also makes a strong contribution to the Intention to Use Midi Kriing App, with an R Square of 0.449. This suggests that around 44.9% of the variability in the intention to use the Midi Kriing application can be explained by the satisfaction variable. These results indicate that satisfaction acts as a mediator, strengthening the influence of e-service quality and e-trust on the intention to use the Midi Kriing application. The nearly parallel Adjusted R Square with the R Square for both constructs indicates that this model has a sufficiently high reliability in explaining the relationship between variables.

**Table 4. Fit Summary for Saturated and Estimated Models**

Fit Summary	Saturated Model	Estimated Model
SRMR	0.050	0.064
d_ULS	0.476	0.786
d_G	0.810	0.818
Chi-Square	708.977	715.966
NFI	0.836	0.834

The fit summary table for saturated and estimated models presents a comparison of results between the saturated model and the estimated model in the context of statistical analysis. Specifically, the Structural Equation Modeling Root Mean Square Residual (SRMR) value indicates that the estimated model has a score of 0.064, whereas the saturated model has a lower value of 0.050. Additionally, other indices such as d\_ULS and d\_G also depict significant differences between the two models, with the saturated model showing lower values compared to the estimated model. Despite an increase in the Chi-Square from the saturated model to the estimated model, other indicators like NFI demonstrate good consistency between the two, with values of approximately 0.836 and 0.834, respectively. Thus, these findings may suggest that the estimated model exhibits a good level of fit, even though some indicators indicate differences compared to the saturated model.

**Table 5. Hypothesis test results**

Hypothesis test	T Statistics	P Values
E-Service Quality -> User Satisfaction	0.181	0.000
E-Trust -> User Satisfaction	7.653	0.000
User Satisfaction -> Intention to Use Midi Kriing App	9.871	0.000

The hypothesis testing results indicate a significant relationship between E-SQ and user satisfaction, with a T-statistic value of 0.181 and a p-value of 0.000. Similarly, a strong relationship exists between E-Trust and user satisfaction, as



evidenced by a T-statistic of 7.653 and a p-value of 0.000. Furthermore, the level of user satisfaction also positively influences the user's intention to use the Midi Kriing application, with a T-statistic value of 9.871 and a p-value of 0.000. These findings suggest that all relationships tested in this study are statistically significant, indicating the importance of these factors in influencing user satisfaction and intention to use the Midi Kriing App.

### 4.3. Discussion

This research demonstrates a close theoretical and empirical relationship in the context of the connection between E-SQ, E-Trust, user satisfaction, and user intention to use the Midi Kriing application. Theoretically, E-SQ has a positive impact on user satisfaction, in line with theoretical frameworks emphasizing that excellent electronic services can enhance user satisfaction. In this context, the positive results of hypothesis testing indicate a significant relationship between E-SQ and user satisfaction with a low p-value (0.000), providing strong support for this view. In other words, better electronic service quality significantly enhances user satisfaction. These findings are consistent with related literature, supporting the assumption that users experiencing better electronic services tend to have higher satisfaction levels. Additionally, the influence of e-service quality on satisfaction in the context of Midi Kriing app usage is due to its crucial role in user satisfaction, encompassing factors such as navigational ease and responsive interfaces that enhance user efficiency, reliable system performance and feature availability supporting a seamless experience, secure data handling providing user confidence, responsive customer support enhancing satisfaction by addressing issues or queries promptly, and technological innovation and regular updates creating a current and engaging user experience. Furthermore, positive e-service quality also positively influences user perceptions, creating a positive satisfaction cycle and reinforcing user attachment to the Midi Kriing app. These findings underscore the importance of prioritizing electronic service quality to achieve optimal user satisfaction, a concept applicable to the development and enhancement of Midi Kriing and other electronic platforms.

Meanwhile, the strong relationship between E-Trust and user satisfaction indicated by a high T-statistic value (7.653) and a low p-value (0.000) also supports the theory. Electronic trust theories emphasize that user trust in online platforms or services can influence their satisfaction. These results confirm that higher user trust levels in the platform correlate with higher user satisfaction. The Technology Trust Theory (TTT) [53] and Web Trust Theory (WTT) [54] support these findings by indicating that user trust in security, integrity, and service availability can enhance their satisfaction. The influence of e-trust on satisfaction in the context of Midi Kriing app usage is also attributed to its crucial role in affecting user satisfaction, creating a secure online environment, reducing the risk of fraud and data leaks, strengthening interactions between users and the app, enhancing transactional comfort and confidence, and building a positive reputation through recommendations and positive feedback.

On the other hand, the positive relationship between user satisfaction and user intention to use the Midi Kriing App aligns with the theory of user intention behavior. According to the Theory of Planned Behavior [55], user satisfaction is a crucial factor in shaping user intentions to adopt or use a technology or application [56]. The hypothesis testing results showing a T-value of 9.871 and a p-value of 0.000 confirm that user satisfaction significantly influences the intention to use the Midi Kriing App. The influence of user satisfaction on the intention to use the Midi Kriing application is also attributed to the pivotal role of satisfaction in shaping users' intent to continue utilizing the application. In this regard, happiness, as a key satisfaction indicator, emerges as the most significant contributing factor in the context of the intention to use the Midi Kriing App. Emotional well-being directly affects users' perceptions of their shopping experiences, making it a crucial aspect. The satisfaction and joy derived from using the application create positive associations, establish trust, and enhance customer loyalty. Furthermore, the happiness associated with Midikriing App usage can generate intrinsic motivation for customers to persist in using the service, as enjoyable shopping experiences psychologically act as strong drivers for customers to consistently uphold their decisions in repeatedly utilizing the application. Therefore, understanding happiness as a primary indicator of customer satisfaction becomes essential in designing marketing and development strategies for shopping applications, such as the Midikriing App.

Empirically, this research reinforces previous findings that have investigated similar relationships. Several previous empirical studies, especially those focusing on E-Service Quality and user satisfaction in the context of applications or online services, consistently show a positive and significant relationship. For example, Ghane et al. [57] found that e-

trust and e-service quality have a strong direct effect on user satisfaction. Similar findings are evident in previous research on electronic trust and user satisfaction, validating this relationship empirically. This research aligns with earlier findings emphasizing that user trust is a significant predictor for user satisfaction in the context of online services. Prihandoko & Siwabessy's research [58] supports this concept by finding that e-service quality, trust, and perceived value simultaneously influence customer satisfaction. Therefore, the overall results of this research provide significant and consistent empirical contributions to existing literature, enriching the understanding of the relationship between E-Service Quality, trust, and user satisfaction in the context of online services.

Moreover, the significant findings related to user satisfaction influencing the user's intention to use the Midi Kriing App align with a series of previous studies highlighting the crucial role of user satisfaction in shaping user intentions towards technology use. For instance, a study in Uzbekistan asserts that website design, perceived usability, and customer satisfaction positively influence the user's intention to utilize e-commerce platforms for product purchases [59]. Another study, conducted in a different context, reveals that factors such as external locus of control and ease of use significantly impact user intentions to use e-commerce applications [60]. Similarly, results from a study in Indonesia show that system quality and service quality significantly influence the user's intention to use fast trading applications, ultimately impacting user satisfaction [61]. Collectively, these findings reinforce the view that customer satisfaction plays a central role in influencing user intentions to adopt e-commerce applications, including the Midi Kriing App. These findings not only contribute theoretically but also solidify the empirical foundation of previous research connecting user satisfaction closely with user intentions to use applications or online services. Therefore, a deep understanding of this relationship becomes not only a theoretical foundation but also a robust basis for designing application development strategies to ensure optimal user satisfaction and retention.

## 5. Conclusion

This research unveils profound insights into the factors influencing the intention to use the Midi Kriing App, elucidating the pivotal roles of e-service quality and e-trust in shaping user behavior. The explicit findings of the study identify satisfaction as a factor playing a primary role in the relationship between these factors. The analysis reveals that over one-third of the variability in usage intention can be explained by the crucial combination of e-service quality and e-trust, underscoring their significant relevance in this application context. From a managerial perspective, these findings contribute significantly by outlining practical implications and emphasizing that improving e-service quality and e-trust can drive app usage. Therefore, development strategies focusing on enhancing these factors become paramount. The importance of e-service quality involves active efforts by developers and service providers to enhance the electronic service quality, encompassing aspects such as responsiveness, reliability, and user-friendliness of the Midi Kriing App. This includes improving the functionality and performance of the application, ensuring users can easily access and utilize the services without hindrance. On the other hand, building e-trust involves establishing user trust in the Midi Kriing App, encompassing measures to safeguard user data, providing clear information about privacy policies, and delivering an overall positive user experience. The success of these strategies is reinforced by the critical role of user satisfaction as a mediator, emphasizing the need to integrate user satisfaction at every strategic step to ensure the Midi Kriing App remains relevant and effective in meeting user expectations. Theoretical contributions of this research enrich the conceptual framework in understanding the underlying factors influencing app usage intention.

It is crucial to acknowledge the limitations of this study, especially in generalizing findings only to specific contexts and industries. Therefore, readers and practitioners should exercise caution when applying these findings in different contexts, considering potential significant differences. The research specifically focused on certain variables, such as e-service quality, e-trust, and satisfaction. However, focusing on these variables may overlook other factors that could have a significant contribution to the research outcomes. Thus, in interpreting and applying these findings, it is essential to consider a broader context and additional factors that may play a crucial role in understanding the studied phenomenon. By recognizing and acknowledging these limitations, we can enhance the quality of understanding this research's findings and design a more holistic and contextual approach in applying research outcomes to practical settings. Further studies could expand the scope by investigating additional variables, such as user experience, perceived value, and social influence, to gain a deeper understanding of the factors motivating users to use the Midi Kriing App.

## 6. Declarations

### 6.1. Author Contributions

Conceptualization: S.S.S. and T.H.; Methodology: T.H.; Software: S.S.S.; Validation: S.S.S. and T.H.; Formal Analysis: S.S.S. and T.H.; Investigation: N.S.W.; Resources: S.A.K.; Data Curation: N.S.W.; Writing Original Draft Preparation: S.S.S., N.S.W. and S.A.K.; Writing Review and Editing: S.S.S., T.H., N.S.W. and S.A.K.; Visualization: S.A.K.; All authors have read and agreed to the published version of the manuscript.

### 6.2. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

### 6.3. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

### 6.4. Institutional Review Board Statement

Not applicable.

### 6.5. Informed Consent Statement

Not applicable.

### 6.6. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- [1] T. Petcharat and A. Leelasantitham, "A retentive consumer behavior assessment model of the online purchase decision-making process," *Heliyon*, vol. 7, no. 10, pp. 1–18, Oct. 2021, doi: 10.1016/j.heliyon.2021.e08169
- [2] J. Costa and R. Castro, "SMEs must go online—E-commerce as an escape hatch for resilience and survivability," *J. Theor. Appl. Electron. Commer. Res.*, vol. 16, no. 7, pp. 3043–3062, 2021.
- [3] S. S. Sangadji and T. Handriana, "The effect of consumption value on consumer changes behavior in usage of food delivery applications in the era of society 5.0," *Int. J. Data Netw. Sci.*, vol. 7, no. 2, pp. 729–736, 2023, doi: 10.5267/j.ijdns.2023.2.005.
- [4] A. S. Al-Adwan, H. Kokash, A. Al Adwan, A. Alhorani, and H. Yaseen, "Building customer loyalty in online shopping: the role of online trust, online satisfaction and electronic word of mouth," *Int. J. Electron. Mark. Retail.*, vol. 11, no. 3, pp. 278–306, 2020.
- [5] W. Zhou, Z. Tsiga, B. Li, S. Zheng, and S. Jiang, "What influence users'e-finance continuance intention? The moderating role of trust," *Ind. Manag. Data Syst.*, vol. 118, no. 8, pp. 1647–1670, 2018.
- [6] M. Miao, T. Jalees, S. I. Zaman, S. Khan, N.-A. Hanif, and M. K. Javed, "The influence of e-customer satisfaction, e-trust and perceived value on consumer's repurchase intention in B2C e-commerce segment," *Asia Pacific J. Mark. Logist.*, vol. 34, no. 10, pp. 2184–2206, 2022.
- [7] A. Juwaini et al., "The role of customer e-trust, customer e-service quality and customer e-satisfaction on customer e-loyalty," *Int. J. data Netw. Sci.*, vol. 6, no. 2, pp. 477–486, 2022.
- [8] V.-D. Tran and Q. H. Vu, "Inspecting the relationship among E-service quality, E-trust, E-customer satisfaction and behavioral intentions of online shopping customers," *Glob. Bus. Financ. Rev.*, vol. 24, no. 3, pp. 29–42, 2019.
- [9] B. Bavarsad, F. Rahimi, and M. A. Mennatyan, "A Study of the Effects of Website's Perceived Features on the Intention to Use E-shopping," *World Appl. Program.*, vol. 3, no. 6, pp. 252–263, 2013.
- [10] V. V. Tanus, "Analysis the impact of eTrust, perceived ease of use, perceived usefulness, attitude toward use, and intention to use Go-Jek mobile application in Surabaya." Widyad Mandala Catholic University Surabaya, 2017.
- [11] V. A. Zeithaml, A. Parasuraman, and A. Malhotra, A conceptual framework for understanding e-service quality: implications for future research and managerial practice, vol. 115. Marketing Science Institute Cambridge, MA, 2000.

- 
- [12] J. E. Collier and C. C. Bienstock, "Measuring service quality in e-retailing," *J. Serv. Res.*, vol. 8, no. 3, pp. 260–275, 2006.
- [13] S. Nandankar, A. Sachan, A. Mukherjee, and A. Adhikari, "Electronic service quality (e-SQ) measurement: a cross-functional review," *Int. J. Qual. Reliab. Manag.*, vol. 40, no. 1, pp. 148–168, 2023.
- [14] R. Ladhari, "Developing e-service quality scales: A literature review," *J. Retail. Consum. Serv.*, vol. 17, no. 6, pp. 464–477, 2010.
- [15] A. Sharma and D. S. Bahl, "Customer preferences for different service quality dimensions in selected e-commerce websites in India," *J. Manage.*, vol. 6, no. 3, pp. 77–95, 2019.
- [16] M. Jun and S. Cai, "The key determinants of internet banking service quality: a content analysis," *Int. J. bank Mark.*, vol. 19, no. 7, pp. 276–291, 2001.
- [17] M. M. Lau, R. Cheung, A. Y. C. Lam, and Y. T. Chu, "Measuring Service Quality in the Banking Industry: A Hong Kong Based Study," *Contemp. Manag. Res.*, vol. 9, no. 3, pp. 263–281, Sep. 2013, doi: 10.7903/cmr.11060.
- [18] C. L. Pedersen, "Empathy-based marketing," *Psychol. Mark.*, vol. 38, no. 3, pp. 470–480, 2021.
- [19] C. E. Postma, E. Zwartkruis-Pelgrim, E. Daemen, and J. Du, "Challenges of doing empathic design: Experiences from industry," *Int. J. Des.*, vol. 6, no. 1, pp. 59–70, 2012.
- [20] C. C. Lin, "A critical appraisal of customer satisfaction and e-commerce," *Manag. Audit. J.*, vol. 18, no. 3, pp. 202–212, 2003.
- [21] Y. U. Jie, N. Subramanian, K. Ning, and D. Edwards, "Product delivery service provider selection and customer satisfaction in the era of internet of things: A Chinese e-retailers' perspective," *Int. J. Prod. Econ.*, vol. 159, pp. 104–116, 2015.
- [22] T. S. H. Pham and M. F. Ahammad, "Antecedents and consequences of online customer satisfaction: A holistic process perspective," *Technol. Forecast. Soc. Change*, vol. 124, pp. 332–342, 2017.
- [23] R. R. Burke, "Technology and the customer interface: what consumers want in the physical and virtual store," *J. Acad. Mark. Sci.*, vol. 30, no. 4, pp. 411–432, 2002.
- [24] G. Lee and H. Lin, "Customer perceptions of e-service quality in online shopping," *Int. J. Retail Distrib. Manag.*, vol. 33, no. 2, pp. 161–176, 2005.
- [25] P. Rita, T. Oliveira, and A. Farisa, "The impact of e-service quality and customer satisfaction on customer behavior in online shopping," *Heliyon*, vol. 5, no. 10, pp. 1–14, Oct. 2019, doi: 10.1016/j.heliyon.2019.e02690.
- [26] M. U. H. Uzir et al., "The effects of service quality, perceived value and trust in home delivery service personnel on customer satisfaction: Evidence from a developing country," *J. Retail. Consum. Serv.*, vol. 63, no. 1–15, pp. 102721–102732, Nov. 2021, doi: 10.1016/j.jretconser.2021.102721.
- [27] M. I. Eid, "Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia," *J. Electron. Commer. Res.*, vol. 12, no. 1, pp. 78–93, 2011.
- [28] W. Aslam, A. Hussain, K. Farhat, and I. Arif, "Underlying factors influencing consumers' trust and loyalty in E-commerce," *Bus. Perspect. Res.*, vol. 8, no. 2, pp. 186–204, 2020.
- [29] M. G. Salimon, R. Z. Yusoff, and S. S. Mokhtar, "The impact of perceived security on e-trust, e-satisfaction and adoption of electronic banking in Nigeria: A conceptual review," *J. Bus. Manag.*, vol. 17, no. 10, pp. 64–69, 2015.
- [30] I. Tzavlopoulos, K. Gotzamani, A. Andronikidis, and C. Vassiliadis, "Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value and loyalty," *Int. J. Qual. Serv. Sci.*, vol. 11, no. 4, pp. 576–587, 2019.
- [31] P. Beatty, I. Reay, S. Dick, and J. Miller, "Consumer trust in e-commerce web sites: A meta-study," *ACM Comput. Surv.*, vol. 43, no. 3, pp. 1–46, 2011.
- [32] M. A. Patton and A. Jøsang, "Technologies for Trust in Electronic Commerce," *Electron. Commer. Res.*, vol. 4, no. 2, pp. 9–21, Jan. 2004, doi: 10.1023/B:ELEC.00000009279.89570.27.
- [33] L. Berg, D. Slettemeås, I. Kjørstad, and T. G. Rosenberg, "Trust and the don't-want-to-complain bias in peer-to-peer platform markets," *Int. J. Consum. Stud.*, vol. 44, no. 3, pp. 220–231, 2020.
- [34] F. Saberian, M. Amirshahi, M. Ebrahimi, and A. Nazemi, "Linking digital platforms' service dimensions to customers' purchase," *Bottom Line*, vol. 33, no. 4, pp. 315–335, 2020.
- [35] J. Mou, D.-H. Shin, and J. F. Cohen, "Trust and risk in consumer acceptance of e-services," *Electron. Commer. Res.*, vol. 17, no. 1, pp. 255–288, 2017.
- [36] H. Giao, B. Vuong, and T. Quan, "The influence of website quality on consumer's e-loyalty through the mediating role of e-

- trust and e-satisfaction: An evidence from online shopping in Vietnam,” *Uncertain Supply Chain Manag.*, vol. 8, no. 2, pp. 351–370, 2020.
- [37] R. Ashiq and A. Hussain, “Exploring the effects of e-service quality and e-trust on consumers’ e-satisfaction and e-loyalty: insights from online shoppers in Pakistan,” *J. Electron. Bus. Digit. Econ.*, vol. 1, no. 1, pp. 1-12, 2023.
- [38] F. D. Davis, “Technology acceptance model: TAM,” Al-Suqri, MN, Al-Aufi, AS *Inf. Seek. Behav. Technol. Adopt.*, pp. 205–219, 1989.
- [39] R. L. Oliver, “A cognitive model of the antecedents and consequences of satisfaction decisions,” *J. Mark. Res.*, vol. 17, no. 4, pp. 460–469, 1980.
- [40] A. Bhattacharjee, “An empirical analysis of the antecedents of electronic commerce service continuance,” *Decis. Support Syst.*, vol. 32, no. 2, pp. 201–214, 2001.
- [41] S. Hakkarainen, “Expectations and user experiences as determinants of technology adoption and continued use.” 2013.
- [42] A. Bhattacharjee, “Understanding information systems continuance: An expectation-confirmation model,” *MIS Q.*, vol. 1, no. 1, pp. 351–370, 2001.
- [43] C. Ofir and I. Simonson, “The effect of stating expectations on customer satisfaction and shopping experience,” *J. Mark. Res.*, vol. 44, no. 1, pp. 164–174, 2007.
- [44] Y. Yi and S. La, “What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty,” *Psychol. Mark.*, vol. 21, no. 5, pp. 351–373, 2004.
- [45] S. Kang, “Factors influencing intention of mobile application use,” *Int. J. Mob. Commun.*, vol. 12, no. 4, pp. 360–379, 2014.
- [46] S.-C. Chen, D. C. Yen, and M. I. Hwang, “Factors influencing the continuance intention to the usage of Web 2.0: An empirical study,” *Comput. Human Behav.*, vol. 28, no. 3, pp. 933–941, 2012.
- [47] J. F. Hair, G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, “An Introduction to Structural Equation Modeling,” 2021, pp. 1–29. doi: 10.1007/978-3-030-80519-7\_1.
- [48] G. Stamenkov and Z. Dika, “A sustainable e-service quality model,” *J. Serv. Theory Pract.*, vol. 25, no. 4, pp. 414–442, 2015.
- [49] H. Hermawan, E. Brahmanto, and F. Hamzah, *Pengantar manajemen hospitality*. Penerbit NEM, 2018.
- [50] A. Ahmad, O. Rahman, and M. N. Khan, “Exploring the role of website quality and hedonism in the formation of e-satisfaction and e-loyalty: Evidence from internet users in India,” *J. Res. Interact. Mark.*, vol. 11, no. 3, pp. 246–267, 2017.
- [51] K. Kimppa, D. Whitehouse, T. Kuusela, and J. Phahlamohlaka, *ICT and Society*, vol. 431, no. 431. Berlin, Heidelberg: Springer Berlin Heidelberg, 2014. doi: 10.1007/978-3-662-44208-1.
- [52] S. S. Sangadji, “Management research methods,” *Procur. J. Manaj. Bisnis*, vol. 2, no. 1, pp. 43–44, 2023.
- [53] H. McKnight, M. Carter, and P. Clay, “Trust in technology: Development of a set of constructs and measures,” 2009. [Online]. Available: <https://aisel.aisnet.org/digit2009/10>
- [54] Gefen, Karahanna, and Straub, “Trust and TAM in Online Shopping: An Integrated Model,” *MIS Q.*, vol. 27, no. 1, pp. 51–63, 2003, doi: 10.2307/30036519.
- [55] I. Ajzen, “The theory of planned behavior,” *Organ. Behav. Hum. Decis. Process.*, vol. 50, no. 2, pp. 179–211, 1991.
- [56] M.-H. Hsu, C.-H. Yen, C.-M. Chiu, and C.-M. Chang, “A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior,” *Int. J. Hum. Comput. Stud.*, vol. 64, no. 9, pp. 889–904, 2006.
- [57] S. Ghane, M. Fathian, and M. R. Gholamian, “Full relationship among e-satisfaction, e-trust, e-service quality, and e-loyalty: The case of Iran e-banking,” *J. Theor. Appl. Inf. Technol.*, vol. 33, no. 1, pp. 1–6, 2011.
- [58] D. Prihandoko and A. A. Siwabessy, “E-Service Quality, Trust and Perceived Value Impact on Customer Satisfaction,” in 2022 5th International Seminar on Research of Information Technology and Intelligent Systems (ISRITI), Dec. 2022, pp. 763–768. doi: 10.1109/ISRITI56927.2022.10052935.
- [59] V. Lee, S. Park, and D. Lee, “The effect of E-commerce service quality factors on customer satisfaction, purchase intention, and actual purchase in uzbekistan,” *Glob. Bus. Financ. Rev.*, vol. 27, no. 3, pp. 56–68, 2022.
- [60] M. Aref and N. B. AlShahri, “The Effect of Introjected perceived locus of control and Trust on Intention to Use Ecommerce Applications,” *Int. J. Adv. Comput. Syst. Softw. Eng.*, vol. 2, no. 2, pp. 16–21, 2021.
- [61] S. T. M. Hanjaya, S. K. Kenny, and S. S. S. E. F. Gunawan, “Understanding Factors influencing Consumers Online Purchase intention Via Mobile App: Perceived Ease of use, Perceived Usefulness, System Quality, information Quality, and Service

Quality,” *Mark. Sci. Res. Organ.*, vol. 32, no. 2, pp. 175–205, Jun. 2019, doi: 10.2478/minib-2019-0035.