E-Commerce Application Adoption: Impact of Service Features, Speed of Access, and Customer Complaint Services

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Abstract :

E-commerce refers to buying and selling transactions conducted through electronic media, particularly the internet. Today, e-commerce is increasingly associated with digital technologies and online-based applications. The rapid development in this industry has intensified competition, resulting in some e-commerce platforms achieving top rankings in terms of user adoption, while others have experienced a decline in popularity, such as Blibli.com and Bukalapak. Based on preliminary observations, the decline in consumer decisions to use these e-commerce platforms is suspected to be due to a lack of understanding of service features, issues related to access speed, and the absence of complaint handling services within the applications. This study focuses on the population of all e-commerce users in Medan City, whose exact number is unknown. Therefore, the Lemeshow method was applied to determine the appropriate sample size under conditions of unknown population size, resulting in a total of 96 respondents. The sampling technique used was accidental sampling, in which respondents were randomly selected to participate in the study. The results of the research show that service features significantly influence users' decisions to use e-commerce applications. In addition, access speed also plays a role in shaping consumer decisions to adopt these platforms. Furthermore, the presence of complaint handling services has a notable impact on usage decisions. Simultaneously, service features, access speed, and complaint handling services collectively affect consumers' decisions in utilizing e-commerce applications.

Keywords: Service Features, Access Speed, Complaint Handling, Usage Decision

1. Introduction

The rapid growth of online application technologies, particularly in the realm of e-commerce, has transformed the way consumers engage with digital platforms. These platforms offer a wide array of innovative features and service options that enhance

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user convenience and drive purchasing behavior (Li et al., 2021; McIntyre et al., 2021). One of the most crucial considerations for users in choosing an e-commerce application is the accessibility of the platform and the availability of responsive complaint services (Malau & Sitanggang, 2024; Uzir et al., 2021). Before deciding to use a particular platform, users typically evaluate the system's service quality and responsiveness to user concerns (Ighomereho et al., 2022; Radu, 2022).

E-commerce involves the process of buying and selling through digital means, mainly via the internet. In the digital age, e-commerce applications have become vital tools for consumers to meet their needs in line with rapidly evolving lifestyle trends (Hadian et al., 2023; Lashitew, 2023). The flexibility offered by online platforms allows users to browse and purchase goods without visiting physical stores, aided by service features such as product filters, ratings, and instant customer service (Wattoo et al., 2025; Zakiyah et al., 2025). These functionalities are increasingly integrated with mobile applications, enhancing the digital shopping experience (Gajula, 2025).

For businesses, e-marketplaces offer opportunities to formulate more effective and efficient marketing strategies. Digital technologies in e-commerce allow for broader marketing reach and targeted promotion (Kurniawati et al., 2021; Khsroo et al., 2024). However, this digital shift also transforms consumer behavior. Unlike traditional in-store purchases where physical inspection of products was common, digital platforms rely heavily on perceived service quality, trust, and feature availability to influence purchasing decisions (Ma et al., 2024; Altay & Çetintürk, 2024).

Data from Katadata (2023) shows that Shopee, Facebook Marketplace, online food delivery services, and Instagram Shop are the most preferred e-commerce platforms in Indonesia. Their popularity is supported by feature-rich services and product variety. However, not all platforms have maintained strong user bases; platforms such as Blibli.com and Bukalapak have seen a decline in user engagement (Pramudita & Guslan, 2025). Preliminary observations suggest this decline may stem from inadequate feature usability, slow access speeds, and the lack of effective complaint-handling systems (Wang et al., 2024; Wu et al., 2025).

The gap in existing research lies in the limited understanding of how combinations of specific service features—such as service complaints, system access speed, and functional utility—affect user decisions in adopting or abandoning an e-commerce platform (Fu et al., 2020; Utami et al., 2024). While numerous studies explore general factors like trust or perceived value, few focus on the technical and service-layer experiences that directly influence user loyalty and satisfaction in highly competitive e-commerce ecosystems (Uzir et al., 2021; Wattoo et al., 2025). Furthermore, there is minimal empirical exploration regarding recurring user complaints related to feature breakdowns or platform lagging and how these factors translate into dissatisfaction or user churn (Zakiyah et al., 2025).

This study offers a novel contribution by explicitly focusing on the trilateral dimensions of feature functionality, system accessibility, and complaint handling

services within e-commerce applications. Unlike prior research that typically addresses broader satisfaction or trust metrics, this study zooms into platform-specific pain points experienced by users (Malau & Sitanggang, 2024; Ighomereho et al., 2022). For example, users frequently report issues with platform stability after software updates, unavailable service features such as "LazPayLater," and ineffective automated responses to complaints, all of which have not been systematically analyzed in existing literature (Altay & Çetintürk, 2024; Fu et al., 2020).

The urgency of this research stems from the increasing dissatisfaction among users due to poor service responsiveness and inaccessible features, which significantly impact brand perception and user loyalty (Radu, 2022; Uzir et al., 2021). As the digital economy intensifies, platforms must not only innovate but also ensure that core functionalities operate seamlessly. A failure to do so may lead users to abandon platforms, even if those platforms once dominated market share (Wattoo et al., 2025; Wu et al., 2025). E-commerce businesses, particularly in developing markets like Indonesia, must understand these dynamics to retain competitiveness (Kurniawati et al., 2021; Khsroo et al., 2024).

This study aims to examine the impact of service features, access speed, and complaint-handling quality on user decisions to use e-commerce platforms. The goal is to identify which of these variables significantly influence consumer loyalty and what interventions platforms should prioritize to reduce dissatisfaction and increase adoption rates. By integrating user experience feedback with empirical data analysis, the research intends to offer actionable insights for platform developers and policymakers to improve e-commerce service standards in Indonesia and other emerging markets (Gajula, 2025; Lashitew, 2023).

2. Theoretical Background

Definition of Service Features
Service features are fundamental elements embedded in a product or service offered within a service package. Features enhance the core functionality of a product and serve as strategic tools in marketing because they influence consumers' decisions in choosing a product. According to Lashitew (2023), well-developed digital service features increase consumer convenience and efficiency. Li et al. (2021) emphasize that features like personalized recommendations and real-time tracking increase customer engagement. Indicators of service features include:
1. Feature completeness
2. Ease of use
3. Integration with external services

Definition of Access Speed
Information access refers to an individual's activity in retrieving the information they need. Efficient access enables both consumers and the general public to obtain accurate and timely data. McIntyre et al. (2021) highlight that seamless platform performance and quick application loading times are key to improving the user

experience. According to Wang et al. (2024), fast access enables users to find products more easily and complete transactions more effectively. Indicators of access speed include:
1. Application loading time
2. Application performance
3. Network optimization

Definition of Complaint Services

Service quality refers to a provider's ability to deliver services that meet users' expectations. Radu (2022) states that service quality reflects customers' perceptions of the services they experience. Utami et al. (2024) argue that good service quality plays a critical role in customer decision-making and satisfaction. According to Uzir et al. (2021), high-quality complaint handling services build customer trust and loyalty. Indicators of complaint services include:
1. Reliability
2. Responsiveness
3. Assurance
4. Empathy
5. Tangibles

Definition of Purchase Decision

A purchase decision is a critical stage in the mental and physical process consumers undergo when buying products within a certain time and context. According to Zakiyah et al. (2025), this decision is the final act resulting from evaluating several available alternatives. Ma et al. (2024) emphasize that factors such as product consistency, habitual buying behavior, and speed of transaction influence this decision. Indicators of purchase decision include:
1. Product confidence
2. Buying habit
3. Speed of purchase

Relationship Between Variables and Research Hypotheses

In the context of e-commerce applications, service features, access speed, and complaint handling services are key variables that influence users' decision-making processes. These variables contribute significantly to the overall user experience and satisfaction, which ultimately determine whether or not users continue using a particular platform.

1. Service Features and E-Commerce Application Usage Decision

Service features are essential elements that enhance the core value of e-commerce platforms. They include functions such as product search filters, real-time order tracking, multiple payment options, and personalized product recommendations. These features create a more convenient, efficient, and enjoyable shopping experience, which positively influences users' decision to use the application (Lashitew, 2023; Li et al., 2021). When service features meet user expectations, they contribute to higher satisfaction and long-term usage intentions.

H1: Service Features have a significant effect on the Decision to Use E-Commerce Applications.

2. Access Speed and E-Commerce Application Usage Decision

Access speed refers to how quickly and smoothly users can interact with an e-commerce application. This includes app loading time, transaction speed, and overall system responsiveness. Fast access enhances efficiency and reduces user frustration, leading to a more positive user experience (McIntyre et al., 2021; Wang et al., 2024). A responsive application allows consumers to complete purchases quickly, which can increase both satisfaction and repeat usage.

H2: Access Speed has a significant effect on the Decision to Use E-Commerce Applications.

3. Complaint Services and E-Commerce Application Usage Decision

Complaint handling services are critical in maintaining trust and user satisfaction, especially when users face problems or submit feedback. A responsive and empathetic complaint resolution process reflects the platform's commitment to user well-being (Radu, 2022; Uzir et al., 2021; Malau & Sitanggang, 2024). Platforms that offer timely and effective resolutions to user complaints tend to foster stronger loyalty and better reputations, which influence users' decisions to continue using the service.

H3: Complaint Services have a significant effect on the Decision to Use E-Commerce Applications.

4. The Joint Effect of Service Features, Access Speed, and Complaint Services

Individually, each variable influences user decisions, but their combined presence enhances the overall functionality and perceived quality of the e-commerce platform. When users encounter a platform that offers complete features, fast and stable access, and effective complaint handling, they are more likely to develop trust, satisfaction, and loyalty toward the platform (Wattoo et al., 2025; Wu et al., 2025; Zakiyah et al., 2025). The synergy among these variables creates a comprehensive and seamless user experience that strongly affects the decision to adopt and continuously use the application.

H4: Service Features, Access Speed, and Complaint Services jointly have a significant effect on the Decision to Use E-Commerce Applications.

3. Methodology

This study targets all users of e-commerce applications in Medan city, though the exact number of users is unknown or uncertain. Therefore, the sample size was determined using the *Lemeshow formula*, which is appropriate when the population is unknown. Based on this approach and an assumed maximum proportion (P) of 50% with a 10% margin of error, the required sample size was calculated to be 96 respondents. The sampling technique used was accidental sampling, where respondents were selected randomly from among e-commerce users encountered during the data collection process.

This study employs a quantitative research approach. Data sources consist of primary data, gathered directly through surveys or questionnaires distributed to respondents, and secondary data, obtained from existing literature, databases, and other supporting documents. According to Sholihin (2020), primary data originates directly from the object of study, while secondary data involves processed information sourced from prior research or institutional databases.

The research model is analyzed using multiple linear regression, where the dependent variable is purchasing decision, and the independent variables are service features, access speed, and complaint services. The model includes classical assumption tests such as normality, multicollinearity, and heteroscedasticity to ensure the validity of the regression. The analysis also includes descriptive statistics, coefficient of determination (Adjusted R^2), t-tests for partial hypothesis testing, and F-tests for simultaneous effects. The aim is to determine the significance of each independent variable on e-commerce application usage decisions.

4. Empirical Findings/Results

Descriptive Statistics

The descriptive statistical results show that the Service Features variable has values ranging from 14 to 28, with an average (mean) of 21.40. The Access Speed variable ranges from 12 to 27, with a mean of 21.07. The Complaint Services variable has values between 23 and 46, with a mean of 35.27. Meanwhile, the Usage Decision variable ranges from 13 to 27, with an average value of 21.23. These results indicate that all variables are relatively balanced in their distribution and variation among the 96 observations analyzed.

Classical Assumption Tests

1. Normality Test

Based on the histogram, the residuals form a bell-shaped curve that is symmetric, indicating a normal distribution. This is further supported by the Normal P-P Plot, where the data points closely follow the diagonal line, suggesting the residuals are normally distributed. The Kolmogorov-Smirnov test also confirms this with a significance value of 0.200, which is greater than 0.05. Thus, the data fulfills the normality assumption.

2. Multicollinearity Test

The results of the multicollinearity test indicate that all independent variables have tolerance values greater than 0.1 and VIF (Variance Inflation Factor) values less than 10. These results demonstrate that there is no multicollinearity problem among the variables, meaning the independent variables are not highly correlated with each other and can be used reliably in the regression model.

3. Heteroscedasticity Test

The scatterplot of residuals shows that the data points are spread randomly and do not form any clear pattern. They are distributed evenly above and below the zero point on the Y-axis. This indicates that there is no heteroscedasticity in the regression model. Additionally, the Glejser test results show that the significance values for all variables are greater than 0.05, confirming the absence of heteroscedasticity. Thus, the model meets the assumption of homoscedasticity and is suitable for further analysis.

Regression Model Analysis

The results of the multiple linear regression analysis are shown in the table below:

Table 1. Results of Multiple Linear Regression Coefficient Test

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)
(Constant)	2.003	1.664	–
Service Features (X1)	0.284	0.084	0.285
Access Speed (X2)	0.232	0.098	0.224
Complaint Services (X3)	0.234	0.055	0.392

Source: Research Results, 2025 (Processed Data)

The regression equation is:

Usage Decision (Y) = 2.003 + 0.284(Service Features) + 0.232(Access Speed) + 0.234(Complaint Services) + e

Interpretation of the equation:

1. The constant (a) = 2.003, which means that if all independent variables (X1, X2, X3) are 0, the predicted value of the **Usage Decision** (Y) is 2.003.
2. An increase in **Service Features** is associated with a 28.4% increase in Usage Decision.
3. An increase in **Access Speed** leads to a 23.2% increase in Usage Decision.

4. An increase in **Complaint Services** leads to a 23.4% increase in Usage Decision.

Coefficient of Determination (R²)

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.774	0.600	0.587	2.080

Source: Research Results, 2025 (Processed Data)

The adjusted R square value of 0.587 indicates that 58.7% of the variation in the Usage Decision can be explained by the independent variables: Service Features (X1), Access Speed (X2), and Complaint Services (X3). The remaining 41.3%is influenced by other variables not examined in this study.

Simultaneous Hypothesis Testing (F-test)

Table 3. ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	596.821	3	198.940	45.970	0.000
Residual	398.138	92	4.328		
Total	994.958	95			

Source: Research Results, 2025 (Processed Data)

The calculated F value is 45.970 with a significance value of 0.000, which is less than $\alpha = 0.05$. Since F_calculated > F_table (2.68) and Sig. < 0.05, it can be concluded that simultaneously, Service Features, Access Speed, and Complaint Services have a positive and significant effect on Usage Decision.

Partial Hypothesis Testing (t-test)

Table 4. Partial Hypothesis Test Results

Model	t	Sig.
Service Features (X1)	3.400	0.001
Access Speed (X2)	2.360	0.020
Complaint Services (X3)	4.229	0.000

Source: Research Results, 2025 (Processed Data)

Interpretation of t-test results:
1. The t-value for Service Features (X1) is 3.400 > 1.978 with a Sig. value of 0.001 < 0.05, indicating a significant positive partial effect on Usage Decision.
2. The t-value for Access Speed (X2) is 2.360 > 1.978 with a Sig. value of 0.020 < 0.05, indicating a significant positive partial effect on Usage Decision.
3. The t-value for Complaint Services (X3) is 4.229 > 1.978 with a Sig. value of 0.000 < 0.05, indicating a significant positive partial effect on Usage Decision.

5. Discussion

Based on the hypothesis testing results, the variables of service features, access speed, and complaint services all demonstrated significant and positive influence on usage decisions. This indicates that consumers' decision to use an e-commerce platform is largely shaped by the quality and responsiveness of the platform's services.

These findings are consistent with prior research that emphasizes the critical role of service quality and technological features in shaping user satisfaction and trust in e-commerce environments. For instance, Malau and Sitanggang (2024)found that trust and perceived service quality directly contribute to customer loyalty in online marketplaces. The positive impact of complaint services, in particular, supports the view that customer-centric problem resolution mechanisms enhance users' trust and engagement.

Similarly, Altay and Çetintürk (2024) highlighted that dissatisfaction often arises when chatbot services or digital customer support fail to address consumer concerns effectively. This aligns with the current finding that well-functioning complaint services significantly influence usage decisions.

The role of access speed, which also showed a significant positive effect, echoes findings by Fu et al. (2020), who noted that quick and intelligent response systems in large-scale e-commerce platforms help improve customer satisfaction and reduce dropout rates. Speed and ease of access are integral to creating seamless shopping experiences, especially as users become increasingly accustomed to fast, mobile-friendly platforms.

The impact of service features on usage decisions also supports prior work by Ighomereho et al. (2022), who extended the traditional service quality model to the e-service context, showing that well-designed digital features enhance user experience and satisfaction. Furthermore, Gajula (2025)noted the growing importance of personalized and sentiment-aware systems in recommendation engines, which form part of the broader service features influencing user engagement.

In a broader context, Hadian et al. (2023) and Khsroo et al. (2024) emphasized the role of technological readiness and trust in facilitating e-commerce adoption, particularly among small and medium enterprises. This indirectly reinforces the current findings, suggesting that when platforms optimize technical features and user-facing services, they are more likely to see increased adoption and sustained usage.

In summary, the results of this study validate the growing body of literature that positions service design, system performance, and responsive communication as key determinants of e-commerce platform usage. Enhancing these dimensions is essential for fostering user satisfaction, loyalty, and long-term engagement.

6. Conclusion

This study concludes that service features, access speed, and complaint services each have a significant and positive influence on users' decisions to utilize e-commerce platforms. These findings highlight the importance of enhancing digital service quality to drive user engagement and platform adoption. Efficient service features provide functional value, fast access ensures a smooth user experience, and responsive complaint handling builds trust and satisfaction—altogether shaping a favorable environment for e-commerce usage. The results reinforce existing literature that emphasizes user-centric service design and technological reliability as essential components of successful digital platforms.

Future studies could explore several avenues to build on these findings. First, researchers may incorporate additional variables such as user trust, digital literacy, or perceived security to provide a more comprehensive understanding of user behavior in e-commerce environments. Second, qualitative research methods—such as interviews or focus groups—could yield deeper insights into user expectations and frustrations, particularly related to automated service elements like chatbots or recommendation systems. Third, comparative studies across different demographics or geographic regions could help identify cultural or contextual differences in e-commerce adoption. Lastly, future research could investigate how emerging technologies like artificial intelligence, blockchain, or augmented reality affect service quality and customer decision-making in digital commerce.

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