

## The Influence of E-Service Quality on Customer Satisfaction and Loyalty in Online Transportation Applications

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**Abstract:** This article aims to investigate the mechanisms underlying the relationship between e-service quality, customer satisfaction, and customer loyalty in online transportation applications. This study adopts relevant theoretical approaches, including customer satisfaction theory and loyalty theory, to analyze the role of e-service quality in driving satisfaction and loyalty. By involving 400 respondents who are users of online transportation applications, the research results show that e-service quality has a significant and positive impact on customer satisfaction and customer loyalty. In addition, customer satisfaction also proved to mediate the relationship between e-service quality and customer loyalty, although the mediating effect was smaller compared to the direct effect.

**Keywords:** E-Service Quality; Customer Satisfaction; Customer Loyalty; Online Transportation Application; Electronic Service Quality.

**Abstrak:** Artikel ini bertujuan untuk menyelidiki mekanisme yang mendasari hubungan antara kualitas layanan elektronik, kepuasan pelanggan, dan loyalitas pelanggan dalam aplikasi transportasi daring. Studi ini mengadopsi pendekatan teoretis yang relevan, termasuk teori kepuasan pelanggan dan teori loyalitas, untuk menganalisis peran kualitas layanan elektronik dalam menghasilkan kepuasan dan loyalitas. Dengan melibatkan 400 responden yang merupakan pengguna aplikasi transportasi online, hasil penelitian menunjukkan bahwa kualitas layanan elektronik memiliki dampak signifikan dan positif terhadap kepuasan pelanggan dan loyalitas pelanggan. Selain itu, kepuasan pelanggan juga terbukti menjadi perantara dalam hubungan antara kualitas layanan elektronik dan loyalitas pelanggan, meskipun efek perantara tersebut lebih kecil dibandingkan dengan efek langsung.

**Kata Kunci:** E-Service Quality; Kepuasan Pelanggan; Loyalitas Pelanggan; Aplikasi Transportasi Online; Kualitas Layanan Elektronik.

## INTRODUCTION

The increase in internet users affects the number of mobile device users in Indonesia. This is evidenced by research from We Are Social, where almost all internet users in Indonesia access the internet using mobile devices. As many as 98 percent 171 million people from the total internet users in Indonesia access the internet using mobile devices, which are divided into 96 percent using smartphones and 4 percent using feature phones (Alfianto, 2019). The millennial generation is one of the groups with the highest internet usage penetration based on data from the Indonesian Internet Service Providers Association (APJII), with a penetration rate of 91 percent for the age range of 15 to 19 years, 88.500 percent for the age range of 20 to 24 years, and 82.700 percent for the age range of 25 to 29 years (Haryanto, 2019).

The increasingly "mobile" behavior of Indonesian society is also reflected in the transportation choices they make. The survey results from the Indonesian Consumer Community (KKI) regarding urban land transportation show that 99.700 percent of the total 625 respondents frequently use online transportation services, whether in the form of two-wheeled or four-wheeled vehicles (KKI, 2020). Online transportation service providers in Indonesia continue to grow with many companies competing in this industry. These providers offer various services, ranging from transportation, goods delivery, to food delivery services, making online transportation increasingly popular among urban communities.

The online transportation industry has shown significant development in terms of the number of users and operational areas throughout Indonesia. Based on data from 2019, online transportation services have reached hundreds of cities in Indonesia and even expanded into markets in Southeast Asian countries. The intense competition in this industry drives service providers to continuously enhance innovation and expand their reach, making it easier for the public to enjoy convenient access to transportation anytime and anywhere (Umah, 2019).

Based on the services provided, online transportation platforms in Indonesia offer various services including transportation, food delivery, shopping, shipping, digital payments, daily needs, health, business, news, and entertainment within their applications. The number of services offered by each platform can vary, depending on the strategies and innovations of each provider (Prasya, 2020). The results of the Alvara Research Center survey show that several online transportation platforms excel in three main service categories, namely ride-hailing, food delivery, and digital payment. This advantage is often associated with the integration of various services within a single application, providing convenience for users to meet their needs without having to switch applications (Thomas, 2019).

One of the concepts that has become attractive in the online transportation industry is the development of Super Apps, which are applications that provide various services within a single platform. With this concept, users can access various needs ranging from transportation to entertainment all within one application (Harianja, 2019). This innovation helps enhance the user experience, with features that are easier to use, faster, and more cost-effective (Ali, 2019).

The Alvara Research Center survey also shows that the millennial generation, particularly in the age range of 17 to 29 years, constitutes the main user group of online transportation services. This generation tends to be active users (heavy users), where the frequency of service usage increases among the younger age group (Movanita, 2019). The popularity of online transportation applications is supported by service quality, numerous features, and ease of access that attract consumers in various cities in Indonesia.

The author took samples in the form of user reviews of online transportation applications on the App Store and Play Store, with 30 reviews each, as preliminary data. According to (Winchester et al., 2018), preliminary data refers to data with a small sample size aimed at providing proof of concept, supporting the working hypothesis, and evaluating feasibility before proceeding with further research.

The determination of the sample size is based on (Echdar's, 2019) opinion, which states that to obtain reliable results, the minimum sample size for correlational research is 30 subjects. The author analyzes user reviews indicating dissatisfaction, where (Mothersbaugh & Hawkins, 2018) explain that when consumers feel dissatisfied with services that do not meet their expectations, they tend to file complaints with the company

and exhibit negative emotions such as disappointment and frustration.

To categorize user complaints, the author uses the E-Service Quality dimensions as described by (Puriwat & Tripopsakul, 2019), along with the definitions of each dimension according to (Lee & Lin, 2018). The dimensions used include Interface Design, which refers to an attractive and user-friendly interface; Reliability, which refers to the consistency and dependability of the service provided; Responsiveness, which refers to the speed and promptness in responding to user needs; Trust, which refers to the level of user confidence in the service; and Personalization, which refers to the service's ability to meet individual user needs.

Every company strives to satisfy its consumers' needs, because consumer satisfaction not only provides direct benefits in the form of profit but also becomes an important factor for the company's sustainability. Satisfying consumer needs can also enhance competitive advantage in the competition (Tobagus, 2018). In an effort to improve service quality and create a competitive advantage, many online transportation companies invest time, costs, and technology in developing their applications. One example is the development of technology-based security systems such as machine learning and artificial intelligence to ensure the safety and comfort of users, partners, and drivers, which is one of the important elements in maintaining service quality (Nasir, 2020).

The concept of e-service quality offered by online transportation companies is realized through innovative features and services in the application, with the hope of enhancing user satisfaction and loyalty. However, even though good e-service quality has been implemented, user satisfaction and loyalty have not been fully achieved in some cases. This indicates that further research is needed to understand the factors influencing user satisfaction and loyalty in greater depth.

This study offers a novel approach by focusing on user dissatisfaction and complaints as the primary indicators in evaluating e-service quality in online transportation applications. (Konuk, 2019). While previous studies have examined e-service quality from a general perspective, this research delves deeper into negative user experiences and their impact on customer satisfaction and loyalty (Kusumawati & Rahayu, 2020). The novelty of this study lies in its emphasis on user-generated complaints as a critical metric, categorized based on E-Service Quality dimensions. By analyzing real user reviews from the App Store and Play Store, this research provides empirical evidence on service shortcomings that have not been extensively explored in prior studies. Furthermore, this study integrates user sentiment analysis with service improvement strategies, offering valuable insights for online transportation companies to enhance their platforms.

## THEORITICAL REVIEW

**Services Marketing.** A social and management process, service marketing generates and exchanges goods and services as well as value for both individuals and organizations. The social process of developing, providing, and trading service items that are valuable to others is known as social service marketing. The process of organizing, carrying out, developing, pricing, advertising, and disseminating concepts pertaining to service products in order to satisfy the demands of both individuals and businesses is known as managerial service marketing.

Marketing refers to a coordinated system of business activities focused on planning, pricing, promoting, and distributing products and services to meet consumer needs and preferences (Abdullah & Tantri, 2019). Meanwhile, services are defined as economic

activities offered by one party in the form of labor, professional skills, facilities, networks, and systems to another party, where the latter cannot take ownership of any of the physical elements involved (Bordoloi et al., 2019). The two components of service marketing are social and managerial, claim (Fatihudin & Firmansyah, 2019). A social process between individuals or organizations that aims to create, offer, and exchange valuable service products with others in order to achieve what is needed and desired is known as social service marketing. In contrast, management service marketing is the process of organizing, putting into practice, considering, pricing, advertising, and disseminating concepts pertaining to a service product in order to satisfy the demands of both individuals and organizations.

Thus, it can be concluded that service marketing is a social process between individuals or groups and other parties where one party provides a product in the form of a service that cannot be owned with the aim of fulfilling needs and providing value to that party.

**Consumer Behavior.** (Adwimurti & Sumarhadi, 2023), define consumer behavior as the study of how individuals, groups, and organizations choose, purchase, utilize, and dispose of products, services, ideas, or experiences to meet their needs and desires. This concept can be understood as an approach to analyzing consumer decision-making processes regarding the selection, acquisition, usage, and disposal of goods and services.

Furthermore, according to (Shelviana et al., 2019), consumer behavior in decision-making is shaped by various factors such as demographics, lifestyle, and cultural values. They emphasize that businesses, non-profit organizations, and regulatory agencies must comprehend these behavioral processes to make effective marketing decisions.

From these expert perspectives, it can be concluded that consumer behavior is a field of study that examines how consumers make choices regarding goods and services, influenced by multiple factors, with the goal of fulfilling their needs.

**Startup Business.** According (Pramana & Wahyuni, 2021), "A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty." This means that a startup is an organization founded by individuals with the goal of developing innovative products or services while navigating highly uncertain market conditions. According to (Sitanggang et al., 2021), a startup is a step in creating something new, and a startup company is a newly established or pioneering company that utilizes existing technological developments in an effort to accelerate its business growth and development.

Younger people, particularly those who are prepared to adjust and convert conventional market models into virtual markets, can benefit from the new opportunities that startup companies might provide. The traditional company model is beginning to give way to an online business model (startup), where digital products take the place of tangible things and inventory is replaced by information (Marhawati *et al.*, 2021). According to (Yanuarti & Dewi, 2018), startup companies have several characteristics. They typically lack financial historical data, which means they have no past financial records to rely on. These companies usually generate small or no revenue and may incur losses due to high operating costs. Additionally, startup companies are highly dependent on private or personal funding from the company owner. Another key characteristic is the high likelihood that the company will not survive long due to an inability to compete effectively. Every time a new investor joins the company, a new agreement is required between the old and new investors to protect their respective interests, leading to a lack of unity in the equity structure. Lastly, investments in startup companies are illiquid because they lack the

standardization of units or assets found in other public companies.

**E-service Quality.** E-service quality, also known as electronic service quality, measures a website's capacity to offer effective and efficient shopping facilities in order to gauge customer satisfaction with internet-based service providers, including the shopping process and product or service delivery. Based on the characteristics of service quality, the measurement is carried out by evaluating how the service that consumers receive compares to the service that they anticipate receiving (Ulum & Muchtar, 2018).

E-service quality involves all stages of customer interaction with a company, as electronic systems offer efficient and effective facilities in service delivery. E-service quality, in the context of the internet, can be defined as the evaluation and assessment made by customers regarding the quality of service provided online. Based on these definitions, it can be concluded that e-service quality is a process where customers assess the quality of services and facilities offered by service providers through the internet by comparing the actual services they receive with their expectations, based on the dimensions of service quality.

Several dimensions of e-service quality have been studied in previous research. According to (Ashoer et al., 2019), there are seven key dimensions that define e-service quality. These include efficiency, which refers to the ease and speed of accessing and using the site; fulfillment, which measures how well the site meets its promises regarding order and item availability; and system availability, which concerns the accuracy and functionality of the site's technical operations. Another important dimension is privacy, which assesses the level of security the site provides to protect user information. Responsiveness focuses on the effectiveness of problem handling and returns through the site, while compensation evaluates how the site compensates customers for any issues. Lastly, contact refers to the availability of assistance through phone or online representatives.

In this study, the author chose the dimensions of e-service quality used in the research by (Damayanti & Harsono, 2021), which consist of several key factors. These include interface design, which refers to customer perception of the appearance and ease of operating the application or website; reliability, which measures customer perception of the security and functionality of services, ensuring that the application or website operates correctly and smoothly; responsiveness, which reflects customer perception of how issues are addressed and handled by the service on the application or website; trust, which pertains to the level of trust customers have in the application or website service; and personalization, which refers to the customer perception of the ability of the application or website to offer specific features and services tailored to meet customer needs.

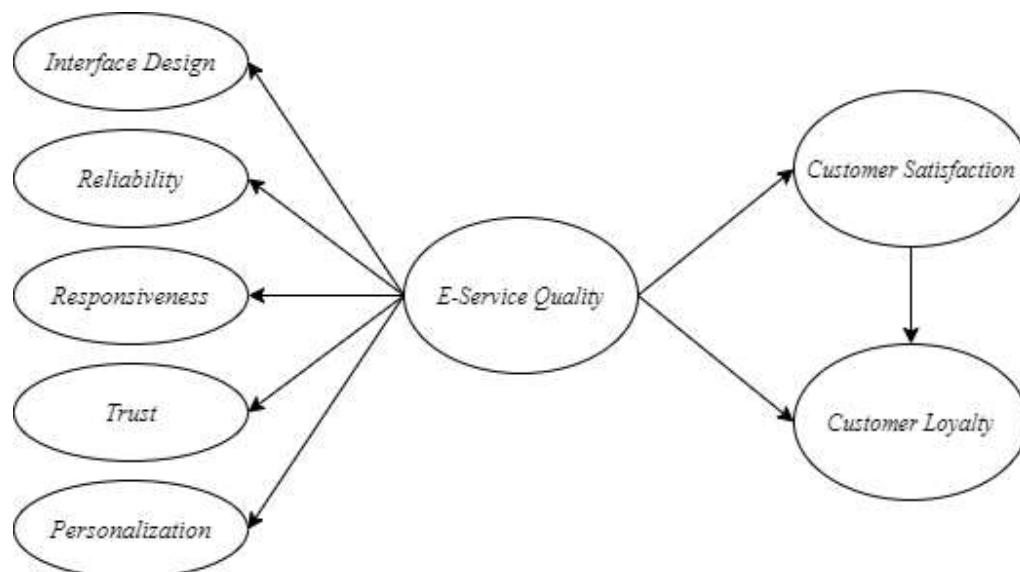
**Customer loyalty.** Customer loyalty is a commitment by customers to continue using a company's products or services over the long term, despite the presence of many alternatives in the market (Vilela, M.J., & Oluyemi, 2022). Customer loyalty is not only reflected in the frequency of service usage but also in the tendency of customers to recommend the service to others. Several key factors influence customer loyalty, including customer satisfaction, service quality, trust, emotional attachment to the brand, and attractive loyalty programs. Customer satisfaction plays a crucial role in building loyalty, as satisfied customers are more likely to remain loyal and make repeat transactions. Additionally, consistent and reliable service quality significantly enhances customer trust in a brand. When customers have a high level of trust in a product or service, they are more likely to continue using it despite the availability of alternatives. (Chen & Lin, 2019) Customer loyalty can also be formed through emotional attachment, which is built through

repeated positive experiences that make customers feel comfortable and connected to the brand. In the business world, there are several types of customer loyalty, such as behavioral loyalty, where customers continue using a service out of habit; attitudinal loyalty, which arises due to customers' emotional attachment to a brand; and cognitive loyalty, where customers rationally perceive that the product or service they choose is the best compared to competitors.

**Customer Satisfaction.** According to (Kotler & Armstrong, 2018), "customer satisfaction depends on the product's perceived performance relative to a buyer's expectations." If the product falls short of expectations, the customer experiences dissatisfaction. If it meets expectations, satisfaction occurs, and if it surpasses expectations, the customer feels highly satisfied or delighted. This implies that customer satisfaction is determined by how well a product's performance aligns with consumer expectations. A significant gap between expectations and actual performance leads to disappointment, while meeting or exceeding expectations results in customer satisfaction and happiness. According to (Irwansyah & Mappadeceng, 2018), customer satisfaction is the result of a post-purchase evaluation by customers where the goods or services consumed at least meet or exceed user expectations, while dissatisfaction occurs because the results obtained do not meet user expectations. Customer satisfaction indicators can be measured through three factors, namely overall satisfaction with the received service, confirmation that the received service meets expectations, and the received service being close to the consumer's ideal service. Based on the above opinion, it can be concluded that customer satisfaction is an assessment or evaluation conducted by customers regarding the products or services consumed, which yields results that are at least equal to or exceed the users' expectations.

The framework of thought explains how a phenomenon or certain variables are interconnected with each other based on the theory that supports the existence of relationships between these variables.

**Figure 1** presents the research framework, depicting the influence between variables and the resulting hypothesis.



**Figure 1.** The Research Model

In this study, the author uses the same variables, namely the e-service quality variable as the independent variable, and the customer satisfaction and customer loyalty variables as the dependent variables. The author also uses e-service quality dimensions, which consist of interface design, reliability, responsiveness, trust, and personalization.

The reason for using these dimensions is that they align with the research object, which is online transportation applications. For the dependent variables, customer satisfaction and customer loyalty, the author uses the same variable indicators.

The difference between this study and previous research lies in the selection of the research object; this study focuses on online transportation applications, whereas previous research used mobile banking as the research object.

**Hypothesis.** A research hypothesis is a proposition that will be tested for its validity or serves as a temporary answer to the research question. A causal hypothesis or cause-and-effect hypothesis includes two variables, describes a cause-and-effect relationship, can predict possible outcomes, is logically connected to the research question, and can be tested for validity.

Based on the explanation, the hypothesis to be tested in the research "The Influence of E-Service Quality on Customer Satisfaction and Loyalty in Online Transportation Applications." Therefore, the author formulates the following research hypothesis:

**H1:** There is a significant influence of e-service quality on customer satisfaction of online transportation application users.

**H2:** There is a significant influence of e-service quality on customer loyalty of online transportation application users.

**H3:** There is a significant influence of customer satisfaction on customer loyalty among users of online transportation applications.

**H4:** Customer satisfaction mediates the influence of e-service quality on customer loyalty among users of online transportation applications.

## METHODS

In this study, the author employs a quantitative research method. According to (Johnson & Christensen, 2019), quantitative research is a structured and systematic method designed to analyze numerical data for scientific inquiry. It involves data collection, interpretation, and statistical analysis to derive conclusions. The type of investigation used is causal research, which, according to (Creswell, 2018), aims to determine cause-and-effect relationships by analyzing how one variable influences another.

The research strategy adopted in this study is a survey. According to (Bell et al., 2019), surveys are a commonly used method to gather information from respondents, allowing researchers to describe, compare, or explain behaviors, attitudes, and perceptions. Surveys are frequently utilized in descriptive research to collect data on individuals, groups, or specific situations. The unit of analysis in this study is the individual, as described by (Saunders et al., 2019), where data is collected at the personal level to examine individual perspectives and behaviors.

Research involvement, as discussed by (Quinlan et al., 2019), can be categorized into minimal, moderate, and extensive. In this study, the level of research involvement is

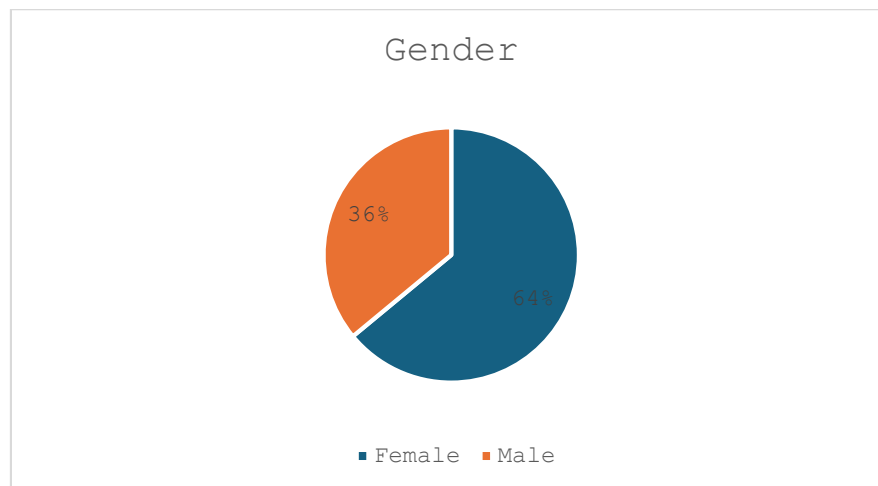
minimal, meaning the researcher does not intervene in the responses and only distributes questionnaires to potential respondents. The research follows a cross-sectional timeframe, where, according to (Bryman & Bell, 2019), data collection occurs at a single point in time, whether in a day, a week, or a month, to address the research objectives.

This study utilizes an ordinal scale, which provides a ranked order of attributes without defining the precise differences between them (Zikmund et al., 2020). The measurement index used is a Likert scale, which systematically presents statements to capture respondents' attitudes. The scale typically consists of five response categories: "strongly agree," "agree," "neutral," "disagree," and "strongly disagree" (Hair et al., 2020).

This research utilizes several data analysis techniques, including Structural Equation Modeling (SEM), Goodness-of-Fit (GoF), and hypothesis testing. The data analysis was performed using AMOS (Analysis of Moments Structure) software. AMOS is widely used because it was among the first SEM programs to feature a graphical interface, enabling researchers to perform analyses without relying on syntax commands or coding (Hair et al., 2019). The use of AMOS involves two main stages: first, developing a model based on a theoretical framework, and second, testing whether the collected data aligns with the proposed theoretical model (Santoso, 2018).

## RESULTS

**Respondent Characteristics.** Figure 2 shows Users of online transportation application services are divided into two genders, namely male and female. The following is a pie chart diagram of the respondents' characteristics based on gender.



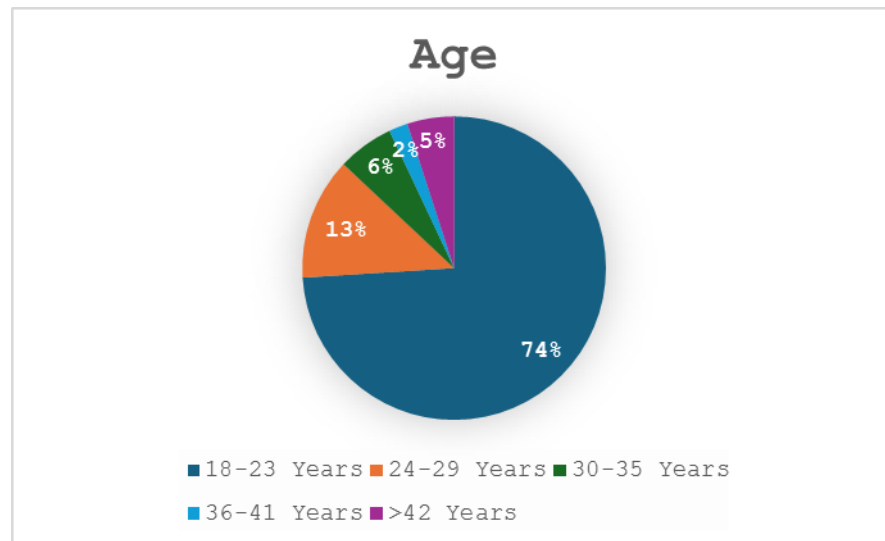
**Figure 2.** Characteristics Based on Gender

Users of online transportation application services are categorized into two genders: male and female. Figure 2 shows the data shows that 64 per cent of users are female, while 36 per cent are male, indicating that women dominate the use of online transportation services. This suggests that factors such as convenience, safety, and accessibility may play a significant role in their preference for these services.

Figure 3 shows Users of the online transportation application are divided into five age groups, namely 18 to 23 years, 24 to 29 years, 30 to 35 years, 36 to 41 years, and over 42 years old. The following is a pie chart diagram of the respondents' characteristics based



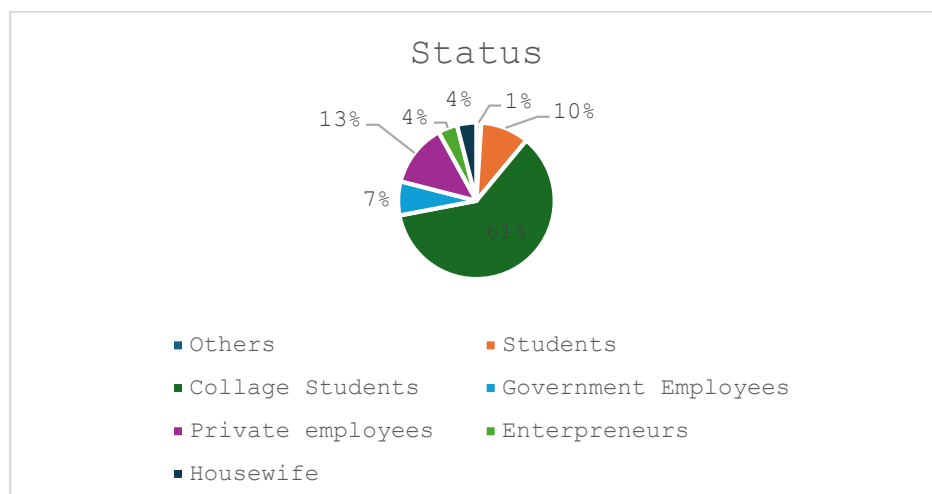
on age.



**Figure 3.** Characteristics Based on Age

**Figure 3** shows the data indicates that the age group of 18 to 23 years dominates users, accounting for 74 per cent. The 24 to 29 age group represents 13 per cent, followed by the 30 to 35 age group at 6per cent, the 36 to 41 age group at 2 per cent, and those over 42 years at 5 per cent. This suggests that the service is primarily used by younger users.

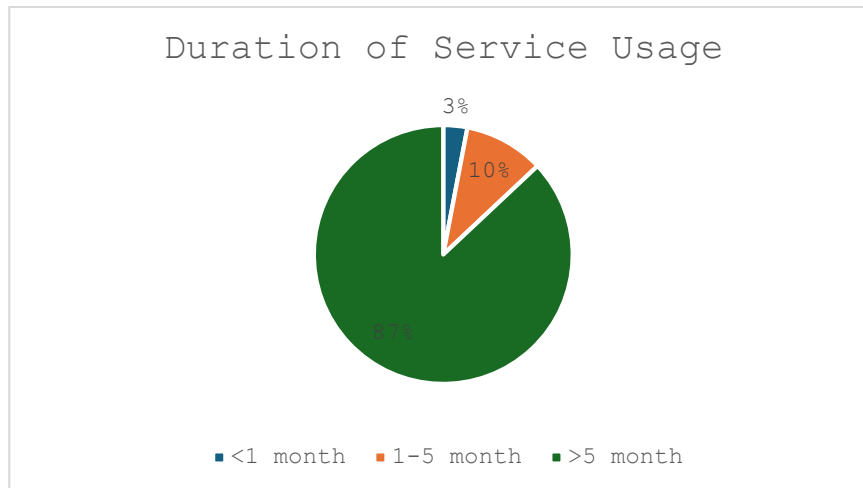
**Figure 4** shows Users of online transportation application services are divided into seven statuses or occupations, students, collage students, government employees, private employees, entrepreneurs, housewives, and others. The following is a pie chart diagram of the respondents' characteristics based on their status.



**Figure 4.** Characteristics Based on Status

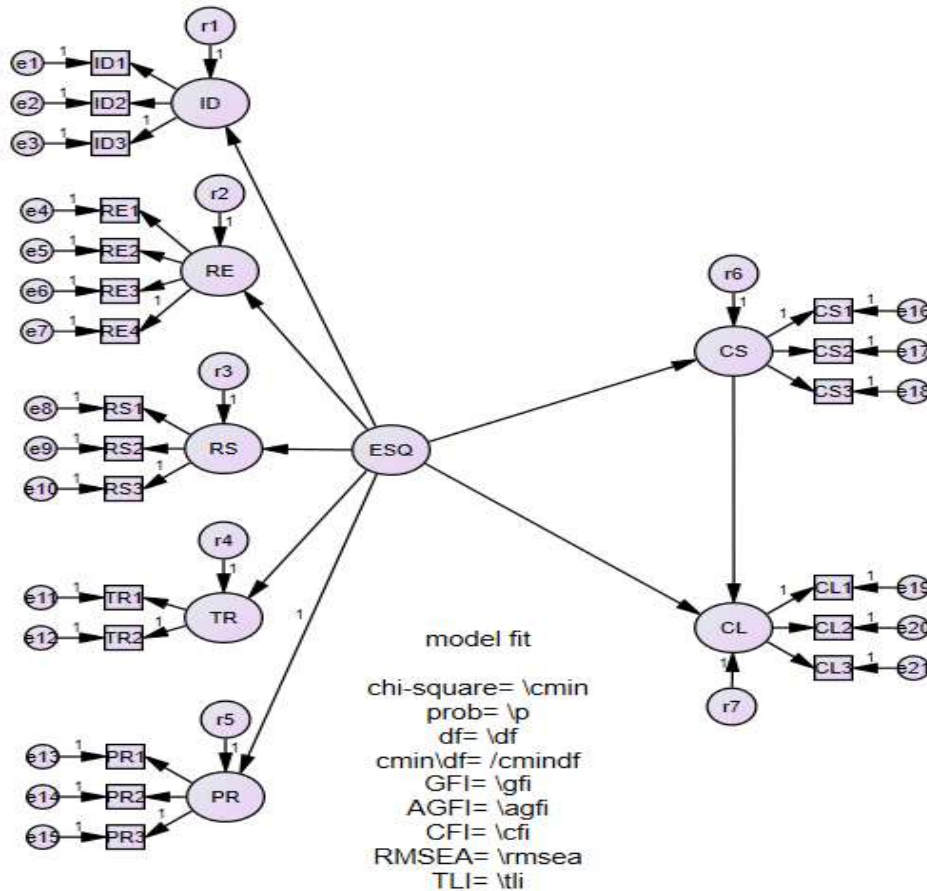
**Figure 4** shows the data shows that 61 per cent of users of online transportation applications are college students, indicating a strong preference among students for flexible and affordable mobility. Additionally, the data reveals that online transportation services cater to a diverse range of users, with students being the dominant group.

**Figure 5** shows Users of the online transportation application service are divided into three duration ranges of service usage, namely less than 1 month, 1 month to 5 months, and more than 5 months. The following is a pie chart diagram of the respondents' characteristics based on the duration of service usage.



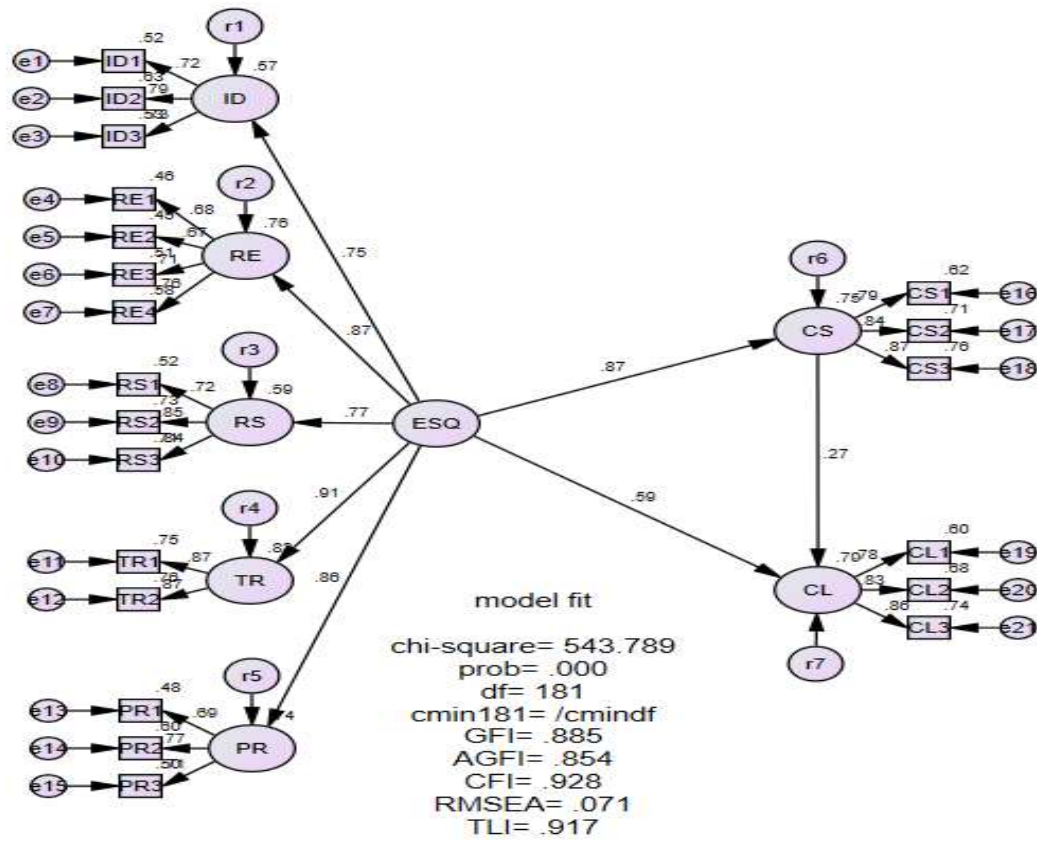
**Figure 5.** Characteristics Based on Duration of Service Usage

**Measurement Model Test.** The stages of analysis conducted by the author in this study involve creating a research model in the AMOS application. Figure 6 shows the form and model of this research align with the theory and framework used in this study, as shown in the measurement model test results.



**Figure 6.** Research Model in AMOS

The author conducts a test on the research model that has been illustrated in the AMOS 24 software by looking for the degree of freedom (df) value. AMOS estimates the variances and covariances present in the research model framework that has been depicted in the AMOS 24 software. The following is the research model framework that has been run on the AMOS 24 software, presented in **Figure 7**.



**Figure 7.** Research Model Results on AMOS

In the process of data input in the AMOS software, the names of each indicator and variable are abbreviated as ID (interface design), RE (reliability), RS (responsiveness), TR (trust), PR (personalization), ESQ (e-service quality), CS (customer satisfaction), and CL (customer loyalty). The following are the results of the processing of the research model framework in **Figure 7** and presented in **Table 1**.

**Table 1.** Degree of freedom computation

<i>Computation of degree of freedom</i>	<i>Value</i>
Number of distinct sample moments	231
Number of distinct parameters to be estimated	50
Degrees of freedom (252 - 66)	181
Chi-square	543.789
Degrees of freedom	181
Number of distinct sample moments	231

Source: Data Processed

**Table 1**, it can be identified that the model in this study is overidentified. According to (Hair et al., 2019), there are three identification models: overidentified, just-identified, and underidentified. Overidentified is a model with a smaller number of estimated parameters compared to the number of data variances and covariances, resulting in a positive degree of freedom. An overidentified model can be said to exist if the number of estimated parameters is smaller than the number of known data (df less than 0). In this



study, the degree of freedom (df) value is 181 less than 0, so this research can be identified as an overidentified model.

**Goodness-of-Fit (GoF).** The next step after conducting the measurement model test is to perform the Goodness-of-Fit (GoF) test. According to (Hair et al., 2019), GoF assesses how well the specified model mathematically replicates the observed covariance matrix among indicator items, measuring the similarity between the observed and estimated covariance matrices. (Santoso, 2018) proposes three model evaluation tools for GoF testing: Absolute Fit Indices, Incremental Fit Indices, and Parsimony Fit Indices. The results of the goodness-of-fit test, conducted using AMOS 24 software, are presented in **Table 2**.

**Table 2** Goodness-of-Fit

Fit Category	Fit Measure	Result	Description
Absolute Fit	CMIN\DF	3.004	Fit
	GFI	0.885	Good Fit
	RMSEA	0.071	Fit
Incremental Fit	AGFI	0.854	Fit
	PNFI	0.773	Good Fit
Parsimony Fit	PCFI	0.800	Good Fit

Source: Data Processed

According to (Hair et al., 2019), a CMIN/DF value below 5 is considered an acceptable measure. In this study, the CMIN/DF value is 3.004, indicating a good fit since it remains within the acceptable range. The Goodness-of-Fit Index (GFI), which is considered well-fitted when ranging from 0.900 to 1, has a value of 0.885 in this study, suggesting an acceptable fit. The recommended threshold for the Root Mean Square Error of Approximation (RMSEA) is below 0.080; in this study, the RMSEA value is 0.071, which qualifies as a good fit.

Additionally, the Parsimony Normed Fit Index (PNFI) and Parsimony Comparative Fit Index (PCFI) are considered acceptable if they range between 0 and 1, with values closer to 1 indicating a better fit. Based on **Table 2**, most of the goodness-of-fit test results align with the good fit criteria, confirming that the model is suitable for further hypothesis testing.

Following the validity tests, reliability tests, measurement model tests, and goodness-of-fit tests, the next step is hypothesis testing. (Santoso, 2018) explains that hypotheses are formulated based on the relationships between independent and dependent variables in a structural model. Hypothesis testing involves assessing the coefficients or parameters that define causal relationships between variables. Using AMOS 24 software, the hypothesis testing calculations are presented in the following section.

**Table 3.** Regression Weight

Hypothesis	Effect	Estimate	C.R	Critical t-value	P	Result
H <sub>1</sub>	ESQ □ CS	0.967	10.994	1.960	***	H <sub>1</sub> accepted
H <sub>2</sub>	ESQ □ CL	0.884	5.204	1.960	***	H <sub>2</sub> accepted
H <sub>3</sub>	CS □ CL	0.362	2.560	1.960	***	H <sub>3</sub> accepted

Based on the hypothesis testing results in **Table 3**, all hypotheses in this study are accepted, as H1, H2, and H3 have a critical ratio (C.R) greater than 1.960 and a probability (P) value below 0.050, indicated by the symbol (\*\*\*) , which signifies a significant relationship. This confirms that e-service quality significantly influences customer satisfaction and loyalty in the Gojek application.

For the fourth hypothesis (H4), the test was conducted by comparing standardized direct effects and standardized indirect effects to determine whether the influence is direct or mediated. These values were obtained from the AMOS 24 output table in the estimates matrices column. According to (Hair et al., 2019), if the standardized direct effects value is greater than the standardized indirect effects value, it indicates a direct effect, meaning there is no mediating role. Conversely, if the standardized direct effects value is smaller than the standardized indirect effects value, it suggests an indirect effect, indicating the presence of mediation.

**Table 4.** Direct and Indirect Effects

	<b>Influence</b>	<b>Estimate</b>
<i>standardized direct effects</i>	ESQ □ CL	0.593
<i>standardized indirect effects</i>	ESQ □ CL	0.234

Based on the hypothesis testing results in **Table 4**, the standardized direct effects value (0.593) is greater than the standardized indirect effects value (0.234). This indicates that e-service quality has a direct impact on customer loyalty through customer satisfaction. Consequently, H4 is rejected, as customer satisfaction does not serve as a mediator in the relationship between e-service quality and customer loyalty among online transportation app users.

## DISCUSSION

The research findings highlight the significant impact of e-service quality on customer satisfaction among online transportation app users. Key dimensions of e-service quality, such as interface design, reliability, responsiveness, trust, and personalization, play a vital role in enhancing the user experience. The study confirms that when these factors meet customer expectations, users are more likely to feel satisfied with the service. This aligns with previous research emphasizing the importance of e-service quality in creating positive consumer experiences.

Furthermore, the results indicate that customer satisfaction strongly influences customer loyalty. Satisfied users are more likely to continue using the application, recommend it to others, and demonstrate repeat usage behavior, reinforcing the critical role of customer satisfaction in fostering long-term user engagement. This finding aligns with the theoretical framework that suggests customer satisfaction serves as a key determinant of loyalty, reinforcing the idea that businesses must prioritize customer-centric strategies to retain their user base. The study also corroborates previous research, which emphasizes that when customers perceive value in a service, they are less likely to switch to competitors despite the availability of alternatives.

Moreover, the research (Kusumawati, & Rahayu, 2020) underscores that e-service quality has a direct impact on customer loyalty. Factors such as ease of use, quick transactions, and a trustworthy service environment contribute to the development of a

strong connection between the customer and the application. This suggests that even in the absence of high customer satisfaction, a well-structured e-service quality framework can still encourage loyalty. However, this finding differs from certain studies that propose satisfaction as a necessary mediator between e-service quality and loyalty. The variation in results may stem from differences in sample characteristics, user preferences, or the level of competition in the online transportation sector.

Interestingly, the study finds that customer satisfaction does not mediate the relationship between e-service quality and customer loyalty. This implies that while e-service quality directly influences loyalty, customer satisfaction does not necessarily strengthen or weaken this effect. This contradicts some previous studies that argue satisfaction serves as an intermediary factor in driving loyalty. The discrepancy highlights the need for further exploration into contextual factors, such as market conditions, user demographics, and technological advancements, that may shape customer behavior differently across studies (Vilela & Oluyemi, 2022).

The implications of these findings are significant for online transportation service providers. First, improving e-service quality should be a primary focus, as it directly affects both satisfaction and loyalty. Enhancing features like user-friendly interfaces, responsive customer support, and seamless transaction processes can contribute to long-term customer retention. Second, while customer satisfaction remains important, businesses should recognize that loyalty can still be fostered through direct improvements in service quality. Finally, understanding the diverse perspectives from previous research allows companies to develop more nuanced strategies that cater to different user segments and market conditions.

Overall, this study reinforces the critical role of e-service quality in the online transportation industry and contributes to ongoing discussions regarding the interplay between satisfaction and loyalty. Future research can explore additional variables that may further explain consumer behavior, such as perceived value, brand image, and technological innovation.

## CONCLUSION

Based on research examining the impact of e-service quality on customer satisfaction and loyalty in online transportation applications, which involved 400 respondents, several key findings emerged. Firstly, e-service quality significantly enhances customer satisfaction among users of these apps. Secondly, it also positively influences customer loyalty. Thirdly, customer satisfaction plays a crucial role in strengthening customer loyalty in online transportation services. However, it does not function as a mediator between e-service quality and customer loyalty, as the direct effect of e-service quality on loyalty outweighs its indirect impact through satisfaction.



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