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The influence of mobile service quality on customer loyalty of Gojek with customer satisfaction as a mediated variable

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Abstract: The phenomenon discussed in this research focuses on the importance of service quality provided through mobile applications in creating a strong relationship between customers and the company. Customer satisfaction becomes a key factor that mediates the influence of service quality on customer loyalty. This research investigates how good mobile service quality can enhance customer satisfaction, which in turn contributes to increased loyalty among Gojek users. This research employs a quantitative approach, with non-probability sampling, data collected through online questionnaires via Google Forms, and involves 385 respondents who are active users of Gojek services in Indonesia. The analysis was conducted using Structural Equation Modeling (SEM) with AMOS software to test the relationships between variables and assess the fit of the research model with the obtained data. The results of this research are expected to provide insights for Gojek in improving service quality to strengthen customer loyalty amid the increasingly competitive digital service industry.

Keywords: *Customer loyalty, Customer satisfaction, Gojek application users, Mobile service quality.*

1. Introduction

Over the past decade, Indonesia experienced a significant rise in internet users, mainly due to the accessibility and affordability of internet services. By 2024, there were over 221 million internet users in Indonesia, accounting for over 79% of the country's total population, according to Asosiasi Penyelengara Internet Indonesia (APJII). This increase can be linked to the widespread use of mobile devices, especially smartphones, which have increased internet accessibility for a wider range of people, including those living in rural areas.

Based on a survey conducted by APJII [1] one of the main reason people in Indonesia uses internet is for accessing online transportation service application with a score of 2,57 and a maximum score of 4 in 2024. Based on the survey conducted, it can be seen that the online transportation market is very large and important in Indonesia. Between 2022 and 2023 there are 5 favorite online transportation service application in Indonesia that were downloaded which are Gojek, Maxim, InDriver, Grab, and Taxsee Driver [2]. Between the 5 application's Gojek rank as the most downloaded online transportation service application in Indonesia with 1.36 million downloads per month in 2022 and 957.000 downloads per month in 2023.

It shows that Gojek's growth even lower than the year before is generally positive, but on the other hand, there are many complaints not only from customers but also from drivers, especially regarding service quality to gain deeper insights into customer satisfaction regarding the service quality provided by Gojek, the author conducted observations on social media platforms used by Gojek such as Instagram, X, and TikTok for one month in November using sentiment analysis.

The result that concluded shows negative feedback on all three social media platforms are higher than 50%, with X having the highest percentage at 61.9%, Instagram at 56.3%, and TikTok at 58.1%. Among all social media platforms, X had the largest negative sentiment with 61.9%. This prior data of

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Gojek sentiment analysis in social media suggest that the service needs to be maintained or even increased. According to Liem, et al. [3] in the context of improving service quality, user complaints are an important indicator to boost service quality to ensure customer satisfaction and sustain business continuity. Based on the analysis Gojek's social media accounts has many negative comments with all of it being user complaints due to poor services from the application, to delays in orders from the predicted time of arrivals.

According to Gestari and Mariah [4] they state that service quality is the key to success in this highly competitive industry, service quality defined as the gap between consumer expectations and the way it is delivered plays a crucial role in customer satisfaction and retention. In the case of Gojek as an on demand online service company, providing consistent, reliable, and user-friendly experience is important for meeting consumer expectations. Studies say that higher service quality has a positive connection with customer loyalty, especially in industries where convenience and accessibility are crucial [5].

Moreover, the app's usability and the overall user experience are important factors of service quality. As the digital experience becomes a first impression for consumers, it shows app reliability, user friendliness, and various usefulness have increasingly determined customer loyalty. Gojek's consistent updates to improve app features, like real-time driver tracking and in-app payment options, show its commitment to meeting these expectations. Yet, technical glitches, app crashes, or poor interface design can quickly turn users toward competitor platforms, showing how sensitive consumer loyalty is to the digital experience [6].

Although being one of the biggest apps in Indonesia, Gojek still has problems with satisfying customers. Based on the social media analysis reveals that 56.3 % users on Instagram, 61.9% users on X, and 58.1% users on TikTok was negative toward gojek as customers complained on their services such as delays, problems experienced with the application, as well as poor services from the app. Prihartono, et al. [7] states that service quality plays a crucial role in maintaining a competitive advantage in the online transportation service, for instance gojek now offers real time ride tracking, flexible payment options, and promotional discounts.

In summary, Gojek has been attempting to provide service quality through new service efforts such as GoTagihan, GoInvestasi, and many more, and has also introduced a loyalty program called Gojek PLUS to push customer satisfaction and customer loyalty. However, the impact of Gojek's loyalty remains unachieved. Based on the data collected, the author felt the need to conduct a study on how the influence of service quality and customer satisfaction pursued by Gojek affects Gojek's customer loyalty. while Gojek has turned itself into a super app from delivery and ride hailing services to GoPay and GoInvestasi creating a larger customer market demand, it also faces challenges in maintaining service quality across such a broad range of offerings while trying to keep customer satisfaction high. The challenges of managing multiple services under one platform can lead to issues with consistency, particularly in customer support and service delivery.

The study by Yum and Yoo [8] provides a valuable framework for understanding the relationship between mobile service quality, customer satisfaction, and loyalty. Key dimensions such as convenience, design, security/privacy, and usefulness can be applied to analyze Gojek's unique challenges as an online on-demand multi-service platform. Their findings offer insights into how maintaining mobile service quality consistency influences customer satisfaction and loyalty in complex service ecosystems like super apps.

2. Literature Review

2.1. Marketing Management

Marketing management is a tool for analyzing, planning, implementing, and controlling programs to create and communicate value propositions, including strategies for goods and services, pricing, location, and promotion [9]. It aims to satisfy the target market's needs to fulfill business goals. Sudarsono [10] defines it as an administrative function for planning, controlling, and supervising

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marketing activities to achieve organizational objectives. Tjiptono [11] views it as a process involving planning, pricing, placement, and promotion of products and services to meet the target market's needs. According to Kotler and Armstrong [12] marketing strategy focuses on how a firm plans to influence demand in its targeted market.

2.2. Consumer Behavior

Consumer behavior, as defined by Kotler and Keller [9] is the study of the buying process for goods, services, and ideas by individuals and organizations. Firmansyah [13] emphasizes that it involves decisions regarding the purchase, use, and disposal of products or services to satisfy needs or wants. Understanding consumer thinking is crucial for influencing decisions in various areas, such as product choices, education, charitable support, and recycling. According to Hawkins and Mothersbaugh [14] a key goal of quantitative studies is to measure consumer behavior in a more specific and detailed manner.

2.3. Customer Loyalty

Customer loyalty is the tendency to repeatedly buy from a company due to positive experiences and emotional connections. Kotler and Keller [9] define it as a behavior and psychological state driven by satisfaction. While Candiwan and Wibisono [15] note that in e-commerce, website quality is crucial for maintaining loyalty.

2.4. Customer Satisfaction

Customer satisfaction is when a product or service meets or exceeds customer expectations [9]. Satisfied customers tend to be frequent buyers and loyal, enhancing profitability. Sharma, et al. [16] emphasize that satisfaction also depends on digital factors like convenience, privacy & security, and service quality. Yum and Yoo [8] highlight the impact of convenience, design, and security on satisfaction, which influences loyalty and word-of-mouth promotion. For sustained competition, companies must provide integrated and responsive customer service across digital channels.

Quality refers to the features and characteristics that influence a product's ability to satisfy needs Kotler and Keller [9]. Tjiptono [11] emphasizes the importance of meeting customer needs and expectations. Ghaffar and Indrawati [17] highlight service quality's role in e-commerce, focusing on usability and customer satisfaction. Alamsyah and Rachmadiansyah [18] discuss how factors like accessibility and customer service affect service quality in transportation.

2.5. Mobile Service Quality

Mobile service quality refers to the perceived excellence of services in meeting user expectations, defined by dimensions such as usefulness, convenience, design, and security/privacy Yum and Yoo [8]. Zhou, et al. [19] view it as an assessment of a mobile app's effectiveness, focusing on interface design, system quality, and security. Azzahra and Kusumawati [20] highlight that mobile service quality is crucial for customer satisfaction and long-term app retention.

3. Method

3.1. Research Type

This research uses a quantitative approach. The quantitative method is based on the philosophy of positivism and is applied to study a specific population or sample. These methods are formal and involve using tools like questionnaires, testing, and achievement tests to collect measurable and statistically quantifiable data. Data is gathered through questionnaires, by using questionnaires, data can be collected from a wide range of participants, even those in different geographic locations, enhancing the credibility and authenticity of the results [21].

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3.2. Population and Sample

A survey conducted by Alvara Research Center states that Gojek users who fall into the heavy user category are aged 17 – 29 years, where the younger the user, the higher the frequency of using the services on the app [22]. The author chose individuals who use the Gojek application in Indonesia, categorized as heavy users, as the population in this study, totaling 50,8 million users [23].

From the calculation results using the Heir et al formula, the minimum respondents needed is 384.16. Therefore, to facilitate the calculation process, the author determines the number of respondents to be taken in this study by rounding the minimum number of samples to 385 respondents.

4. Result

4.1. Characteristics of Respondents

To determine the influence of mobile service quality and customer satisfaction on customer loyalty of the Gojek application, the characteristics of the respondent data obtained in this study are active users of the Gojek application classified as heavy users based on gender and age. Below are the results:

Table 1.
Characteristics of respondents based on gender.

Gender	Respondents	Percentage
Female	208	52%
Male	192	48%
Total	400	100%

Based on Table 1, it shows that majority of the respondents are female, totaling up to 208 respondents or 52%, and the other 192 respondents are male, making up 48%, with a total of 400 respondents.

Table 2.
Characteristics of respondents based on age.

Age	Respondents	Percentage
<18	24	6%
18-25	206	51,5%
26-30	13	33,75%
>30	35	8,75%
Total	400	100%

Based on Table 2, it shows that majority of respondents are aged 18-25 years, with a total of 206 people or 51.5% of the 400 respondents. Meanwhile, 33.75% or 135 respondents are aged 26-30 years, respondents over 30 years old make up 8.75% or 35 respondents, and respondents under 18 years old account for 6% or 24 respondents. The data shows that Gojek application users are dominated by those aged 18-25 and 26-30.

4.2. Measurement Model Test

The stages of analysis conducted by the author in this study involve creating a research model using the AMOS software. The form and model of this research align with the theory and framework used in this study, and the measurement model test is presented in Figure 1 as follows:

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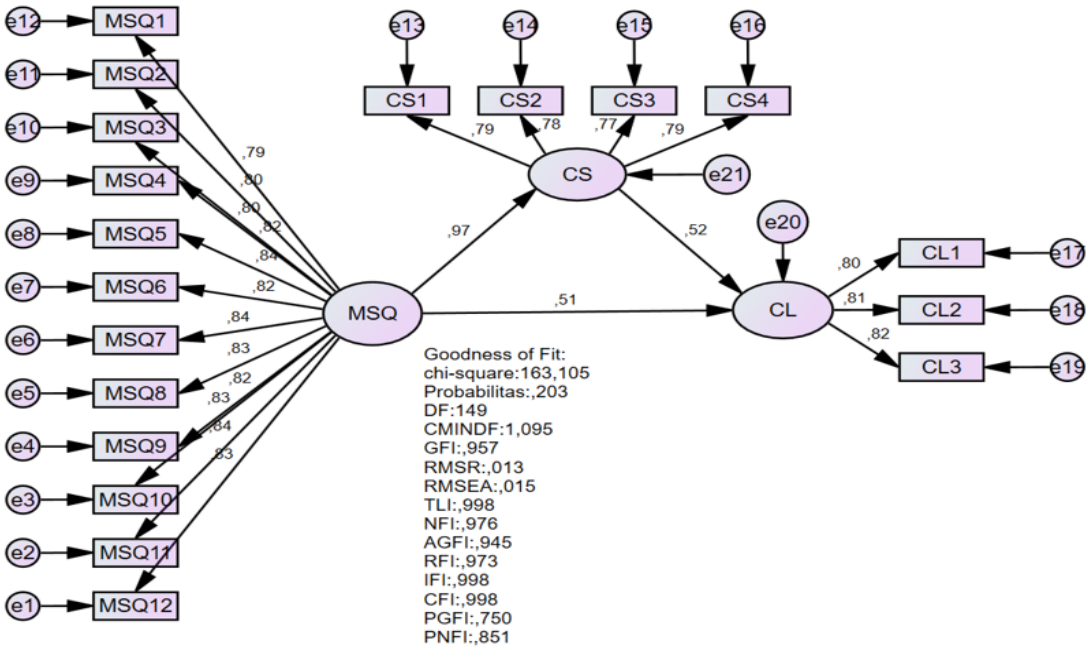

Figure 1.
Research Model.

4.3. Validity Test

The validity test goal is to evaluate the extent to which the measuring instrument can accurately measure the dimensions desired by the researcher. Validity can be evaluated if an element or indicator possesses a loading factor, The subsequent outcomes of the validity test utilizing the AMOS software are presented below:

Table 3.
Validity Test.

Variable	Item	Loading Factor	Statement
Mobile Service Quality	MSQ1	0.793	Valid
	MSQ2	0.804	Valid
	MSQ3	0.801	Valid
	MSQ4	0.821	Valid
	MSQ5	0.842	Valid
	MSQ6	0.818	Valid
	MSQ7	0.838	Valid
	MSQ8	0.831	Valid
	MSQ9	0.819	Valid
	MSQ10	0.825	Valid
	MSQ11	0.837	Valid
	MSQ12	0.826	Valid
Customer Satisfaction	CS1	0.787	Valid
	CS2	0.785	Valid
	CS3	0.774	Valid
	CS4	0.793	Valid
Customer Loyalty	CL1	0.646	Valid
	CL2	0.651	Valid
	CL3	0.664	Valid

Based on the validity test results in Table 1, it shows that all items in the questionnaire are declared valid because they meet the requirement of having a loading factor value greater than 0.5.

4.4. Reliability Test

In this study, the author will conduct a reliability test of the data using the Average Variance Extracted (AVE) and Construct Reliability (CR) formulas. There are criteria for making reliability test decisions as described by Hair, et al. [24] namely if the AVE value ≥ 0.5 and the CR value ≥ 0.7, then indicator is declared reliable. In this study, the author conducted a reliability test with the help of AMOS software, and the results of the reliability test are presented.

Table 4.
Reliability Test.

Variable	Item	AVE	CR	Statement
Mobile Service Quality	MSQ1	0.821	0.961	Reliable
	MSQ2			
	MSQ3			
	MSQ4			
	MSQ5			
	MSQ6			
	MSQ7			
	MSQ8			
	MSQ9			
	MSQ10			
	MSQ11			
	MSQ12			
Customer Satisfaction	CS1	0.785	0.865	Reliable
	CS2			
	CS3			
	CS4			
Customer Loyalty	CL1	0.809	0.850	Reliable
	CL2			
	CL3			

Based on the results of the reliability test in Table 2, it shows that all items in the questionnaire are declared reliable because they meet the criteria of having AVE value ≥0.5 and CR value ≥0.7.

4.5. Goodness-of-Fit (GoF)

The next step after conducting the measurement model test is to perform the goodness-of-fit (GoF) test. The Goodness-of-fit (GoF) is used to indicate how well the user defined model mathematically reproduces the observed covariance matrix among indicator items, which is the similarity between the observed and estimated covariance matrixes.

Table 5.
Goodness-of-Fit.

Fit Category	Fit Measure	Result	Statement
Absolute Fit	CMIN/DF	1.095	Good Fit
	GFI	0.957	Good Fit
	RMSEA	0.015	Good Fit
Incremental Fit	AGFI	0.945	Good Fit
Parsimony Fit	PNFI	0.851	Good Fit
	PCFI	0.870	Good Fit

Based on the result of the Goodness-of-fit test shown in table 5, the CMIN/DF value is 1.095, indicating a fit value. In this study, the Goodness-of-Fit Index (GFI) value is 0.957, indicating a good

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fit. The Root Mean Square Error of Approximation (RMSEA) value in this study is 0.015, which can be considered fit. Parsimony Normed Fit Index (PNFI) and Parsimony Comparative Fit Index (PCFI) are acceptable if their values range from 0 to 1, with values closer to 1 as a good fit. Based on table 5, it is known that all goodness-of-fit test results meet the good fit criteria, so it can be stated that this model is acceptable and suitable to continue with the research hypothesis testing.

4.6. Hypothesis Test

After conducting validity testing, reliability testing, measurement model testing, and goodness of fit testing, the next step is to conduct hypothesis testing. A causal relationship is considered insignificant if the critical ratio (C.R) value is below 1.96 and the probability (P) value is above 0.05. Below are the result:

Table 6.
Hypothesis test.

Hypothesis	Effect	Estimate	C.R	T Value	P	Result
H1	MSQ ⟶ CS	0.818	18.276	1.96	***	H1 accepted
H2	CS ⟶ CL	0.549	2.274	1.96	***	H2 accepted
H3	MSQ ⟶ CL	0.451	2.260	1.96	***	H3 accepted

Based on the hypothesis testing results in table 4, it is known that all hypotheses in this study are accepted because H1, H2, and H3 have a critical ratio (C.R) value greater than 1.96 and a probability (P) value below 0.05, indicated by the symbol (***), which signifies a significant relationship. Therefore, it can be concluded that Mobile Service Quality has a significant impact on customer satisfaction and loyalty for the Gojek application.

The fourth hypothesis (H4) test is conducted using the Sobel test to determine if there is a significant indirect effect through mediation. The sobel test evaluates the significance of the indirect effect by calculating a z-value. The standard errors for these coefficients are obtained from the regression output in the AMOS software, where they are provided alongside the coefficients in the estimate matrices.

If the Sobel test result has a z-value greater than 1.96, the indirect effect is considered statistically significant, indicating the presence of a mediating role by customer satisfaction in the relationship between mobile service quality and customer loyalty. But, if the z-value is below 1.96, it suggests that the indirect effect is not significant, meaning there is no mediation effect. Below are the results of the sobel test:

Table 7.
Hypothesis Test (Direct and indirect effects).

	T value	Results
Z value	1.96	2.2603
One tailed probability	1.96	0.0119
Two tailed probability	1.96	0.0238

Based on the hypothesis testing results in table 7, The z-value (2.2603) is greater than the critical t-value (1.96). Therefore, it indicates a significant indirect effect of mobile service quality on customer loyalty through customer satisfaction. This means that customer satisfaction mediates the relationship between mobile service quality and customer loyalty among Gojek application users, and H4 is accepted.

Based on the Hypothesis test above the author can conclude that:

1. H1: Mobile service quality has a significant positive impact on customer satisfaction for the Gojek application users. This can be seen from the critical value (18.276) being greater than the T value (1.96)

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2. H2: Customer satisfaction has a significant positive impact on customer loyalty for the Gojek application users. This can be seen from the critical value (2.274) being greater than the T value (1.96)
3. H3: Mobile service quality has a significant positive impact on customer loyalty for the Gojek application users. This can be seen from the critical value (2.260) being greater than the T value (1.96)
4. H4: Customer satisfaction mediates the relationship between mobile service quality and customer loyalty of Gojek application users. This can be seen from the Z value (2.2603) which is greater than the T value (1.96)

5. Discussion

H_1: Mobile Service Quality has a significant influence on Customer Satisfaction of Gojek application users

The first hypothesis (H1) in this study is accepted because it has a critical ratio (C.R) value of 18.276, which is greater than the critical T value of 1.96. The probability value in this hypothesis also has a P value smaller than 0.05, indicated by the symbol (***), meaning as having a significant relationship. The research by Yum and Yoo [8] reveals that key dimensions of mobile service quality, such as usefulness, convenience, design, and security/privacy, have a substantial impact on customer satisfaction. By optimizing these factors, Gojek can enhance user satisfaction and create positive perceptions among its customers.

The results of this hypothesis are supported by the research conducted by Alamsyah and Rachmadiansyah [18] their study indicates that issues within service quality dimensions, such as accessibility, availability, and information, greatly influence negative customer sentiments, which in turn affect their satisfaction. This finding is further supported by Bakti Setyadi, et al. [25] who emphasize the critical role of service quality in shaping customer satisfaction and loyalty. The research suggests that high service quality can positively influence customer experiences and satisfaction, highlighting its importance in enhancing overall customer relationships.

H_2: Customer Satisfaction has a significant influence on Customer Loyalty of Gojek application users

The second hypothesis (H2) in this study is accepted because it has a critical ratio (C.R) value of 2.274, which is greater than the critical T value of 1.96. The probability value for this hypothesis also yields a P value less than 0.05, indicated by the symbol (***), The results of this hypothesis are supported by the research conducted by Raza, et al. [26] which demonstrates that electronic customer satisfaction (ECS) significantly impacts electronic customer loyalty (ECL) in the context of Internet banking. Their study found a strong positive relationship between satisfaction and loyalty, with satisfaction acting as a critical factor in driving customer loyalty. Similarly, the research by Alzaydi [27] supports this by showing that in the online Saudi banking sector, customer satisfaction plays a key role in fostering customer loyalty. Alzaydi [27] study highlights that customer satisfaction mediates the relationship between service quality and loyalty, underlining its essential role in enhancing customer retention. These findings confirm that customer satisfaction has a significant effect on customer loyalty, as shown in both the banking and digital service contexts.

H_3: Mobile Service Quality has a significant influence on Customer Loyalty of Gojek application users

The third hypothesis (H3) in this study is accepted because it has a critical ratio (C.R) value of 2.260, which is greater than the critical T value of 1.96. The probability value in this hypothesis also yields a P value smaller than 0.05, indicated by the symbol (***), which can be interpreted as having a significant relationship. The results of this hypothesis are further supported by the findings of Candiwan and Wibisono [15] which demonstrate that service quality, particularly information quality, plays a critical role in influencing customer loyalty in the e-commerce sector. Their study revealed that when customers are satisfied with the quality of information provided on the website, their loyalty towards the platform significantly increases. Similarly, Zhou, et al. [19] found that in the context of mobile banking, service quality directly impacts customer loyalty. They emphasized that when users perceive the mobile banking service to be of high quality, particularly in terms of responsiveness and reliability,

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their intention to remain loyal to the service increases. This reinforces the notion that service quality is a crucial determinant of customer loyalty, extending the findings to the digital service platforms such as the Gojek app. The alignment of these studies highlights the importance of maintaining high service quality to foster long-term customer loyalty.

H_4: Customer Satisfaction mediates the influence of Mobile Service Quality on Customer Loyalty among Gojek application users

The fourth hypothesis (H4) From the test results, it can be seen that customer satisfaction effects mobile service quality and customer loyalty, as indicated by the Z value (2.2603) being greater than the T value (1.96). It can be concluded that the fourth hypothesis (H4) is accepted. The results of this hypothesis are further supported by Yum and Yoo [8] further emphasize the role of customer satisfaction as a mediator in the relationship between service quality and customer loyalty, particularly in the mobile social media context. Their study demonstrated that service quality dimensions, including convenience, design, and security/privacy, significantly influenced customer satisfaction, which in turn enhanced customer loyalty. This finding aligns with the results of Andri, et al. [28] confirming that customer satisfaction serves as a vital mechanism in strengthening the relationship between service quality and loyalty. Thus, these studies support that improving mobile service quality is essential for maintaining customer loyalty, a conclusion that is true for Gojek application users as well.

6. Conclusion and Suggestions

This research examines how mobile service quality affects customer loyalty through customer satisfaction in the Gojek application. The findings show that service quality significantly impacts both satisfaction and loyalty, with satisfaction acting as a mediator. These results align with previous studies highlighting the role of service quality in driving loyalty, particularly in digital services. By improving factors like usability, security, and convenience, Gojek can boost customer satisfaction and foster long-term loyalty.

For future research, authors could explore the impact of additional variables such as customer trust, perceived value, or brand image on customer loyalty in the context of mobile services. Incorporating other factors like user demographics (e.g., age, income, or education level) and behavioral characteristics (e.g., frequency of use, service preferences) could provide a deeper understanding of the different dimensions influencing loyalty. Additionally, expanding the study to include comparisons across various mobile service platforms or geographic regions could offer valuable insights into universal and context-specific drivers of customer loyalty.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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