

# Analyzing the Key Drivers of Satisfaction and Loyalty Among Food Delivery App Users

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## Article Info

### Article history:

Submission March 7, 2025

Revised April 14, 2025

Accepted May 29, 2025

### Keywords:

Actual Usage

Food Delivery App Services

Satisfaction and Loyalty

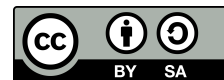
Usage Intention



## ABSTRACT

**This study investigates** the factors affecting user satisfaction and loyalty in food delivery apps, particularly focusing on variables such as information quality, privacy and security, and perceived danger of Covid-19. **The research adopts a quantitative**, causal-explanatory design, with a sample size of 208 respondents. **Data were collected** using a structured survey, and the analysis was conducted with SPSS Amos and Partial Least Squares Structural Equation Modeling (PLS-SEM). The study reveals significant relationships between usage intention, actual usage, and customer satisfaction, with a specific emphasis on the role of promotion in increasing user satisfaction and loyalty. Variables such as ease of use, navigation design, and packaging safety, however, **were found to have no significant impact** on usage intention or actual usage. This study also highlights the evolving consumer behavior in the food delivery industry, especially post-pandemic, where safety and convenience remain critical. The findings provide valuable insights for businesses in the digital marketplace, helping them understand the changing dynamics of consumer preferences. **By refining service offerings** and focusing on key influencing factors, food delivery companies can enhance their market competitiveness and customer retention strategies.

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DOI: <https://doi.org/10.33050/atm.v9i2.2449>

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## 1. INTRODUCTION

For nearly a third of a decade, the Covid-19 pandemic has dramatically altered the course of human civilization. People, from individuals and small groups to large organizations, have been compelled to make significant efforts to adapt, employing both reactive and anticipatory changes across various aspects of life. The pandemic, while causing many adverse effects and posing significant threats, also created opportunities that could lead to benefits as a spillover effect. One undeniable outcome of the pandemic has been its profound impact on the creation and strengthening of digital systems, reinforcing technology as an essential resource that every organization must integrate in order to continue to thrive. With the intensive application of advanced virtualization technologies, the business world is now more aligned with the challenges and conditions of our time.

In today's rapidly advancing "Uber civilization," every facet of human life is being redefined by the optimization of technological advancements. A few defining characteristics of this new era include the shift from time series to real-time data processing, enabling instant decision-making based on big data. Moreover, the rise of the sharing economy, which promotes the sharing of consumable assets rather than ownership, has

significantly impacted the way businesses operate. At the same time, the on-demand economy has emerged, where technology and big data algorithms facilitate the availability of products and services precisely when consumers need them. In this new business ecosystem, competitors are often invisible, operating seamlessly in cyberspace, and the rapid proliferation of breakthrough applications has created a vast network that accelerates disruption, making supply and demand interconnected with thousands of parties [1].

These internal changes, driven by the evolving attitudes and behaviors of stakeholders in response to the external changes brought about by the pandemic, have led to the emergence of new business ecosystems. These ecosystems are now thriving, influencing the evolution of business models across industries. As these models undergo dramatic transformations, consumer behavior has also shifted. Purchases are now easily made online, facilitated by the convenience of smartphones, laptops, and other devices. While traditional in-store transactions have not disappeared, their prominence has waned in favor of online shopping, which offers numerous advantages, such as the ability to shop at any time, access to a wider variety of products at lower prices, and the convenience of avoiding crowds and reducing impulse buying [2]. These benefits have positioned online shopping as an increasingly attractive option for consumers.

The growth of the online shopping sector, particularly in countries like Indonesia, where the e-commerce market has seen exponential growth since the pandemic, highlights the potential of this new business paradigm [3, 4]. Statistically, Indonesia has emerged as the leader in e-commerce revenue among the tiger cub economies, with an average annual growth rate of 37.4%. In 2022, Indonesia’s Gross Merchandise Volume (GMV) surpassed USD 59 billion, and it is projected to reach USD 95 billion by 2025. These figures underscore Indonesia’s significant potential for digital marketplace development, particularly in the food delivery sector [5].

Food delivery services have become one of the most promising sectors in Indonesia’s digital marketplace. As one of the most basic human needs, food consistently drives demand, and food delivery apps have emerged as a convenient way to meet that demand. These mobile platforms, which embody the principles of offline-to-online (O2O) service delivery, efficiently connect restaurants and customers, optimizing real-time location tracking and calculating the shortest delivery distances [6]. As the largest category in the marketplace, the online food delivery market in Indonesia is expected to generate revenues of USD 10.81 billion by 2023, with a projected market volume of USD 23.40 billion by 2027, fueled by a compound annual growth rate (CAGR) of 21.30% [7].

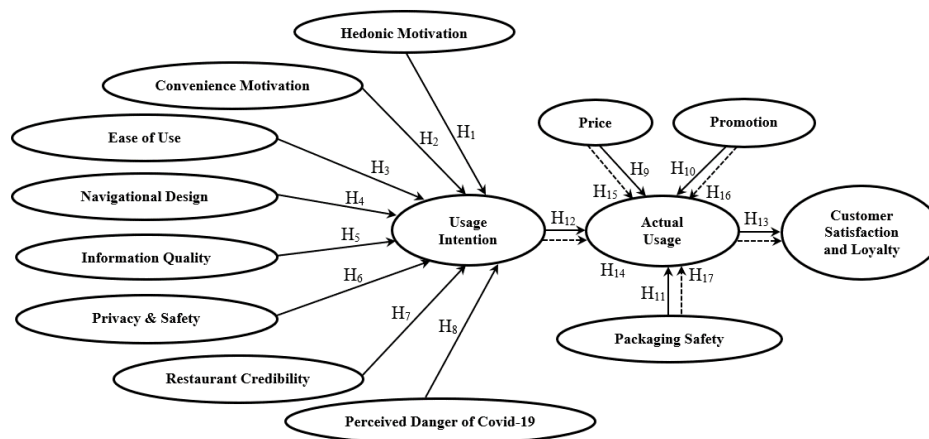


Figure 1. Research Model: Factors Influencing Usage Intention and Customer Satisfaction in Food Delivery Services

Source: A number of resultant data processed (2025)

Figure 1 shows the research model that illustrates the hypothesized relationships between various factors influencing the Usage Intention and Customer Satisfaction and Loyalty in food delivery services [8]. The model includes direct effects of Hedonic Motivation, Convenience Motivation, Ease of Use, Navigational Design, Information Quality, Privacy & Safety, Restaurant Credibility, and Perceived Danger of Covid-19 on Usage Intention. Additionally, Price, Promotion, and Packaging Safety are posited to directly influence Actual Usage. Actual Usage is also hypothesized to mediate the relationship between Usage Intention and Customer

Satisfaction and Loyalty, as well as between Promotion and Customer Satisfaction and Loyalty. The figure provides a visual representation of these relationships, which are tested through the hypotheses in this study.

## 2. RESEARCH METHOD

This study adopts a quantitative, causal-explanatory research design to investigate the factors influencing user satisfaction and loyalty in food delivery apps. The population consists of all online food delivery app users in Bandung, with an assumption that the number of users is infinite, as it is not feasible to determine the exact population size. In line with standard social research practices, a 5% error margin is applied, and given that the study examines continuous variables, the minimum sample size required is 200 respondents [9]. To gather a representative sample, convenience sampling was used, wherein participants were selected based on their accessibility and willingness to participate. While this method is practical, it does come with limitations in terms of generalizability, as it may not fully represent the entire population of food delivery app users in Bandung, which could affect the external validity of the results [10].

The survey instrument consisted of 56 question items, each measured on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). These questions were designed to assess 14 primary variables related to the factors influencing user satisfaction and loyalty. Additionally, 7 demographic items were included to collect data on the respondents' age, gender, educational background, and frequency of food delivery app usage, adapted from previous studies [11]. A thorough literature review was conducted to inform the development of the survey and ensure a comprehensive understanding of the relevant variables and their complex relationships [12]. The data were processed using SPSS Amos version 21, which facilitated validity and reliability checks as well as goodness-of-fit analysis for the measurement model. Hypothesis testing was carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM), a robust method suitable for testing causal relationships in complex models involving multiple latent variables. Additionally, the Hayes method was employed to examine mediation effects and test both direct and indirect relationships among the variables [13].

Despite the practical application of convenience sampling, it is important to acknowledge its limitations, particularly in terms of sample bias and reduced generalizability. Future research should consider using random sampling or increasing the sample size to enhance the representativeness of the findings. As noted by Reviewer 1, the exclusion of variables such as hedonic motivation and convenience motivation due to reliability issues should be recognized. These variables may be reconsidered in future studies once their reliability is confirmed [14]. In conclusion, the research methodology employed in this study offers valuable insights into the factors influencing food delivery app user satisfaction and loyalty, but it is crucial to address the limitations of the sampling approach and explore additional variables in future studies to further enrich the understanding of consumer behavior in this domain [15].

## 3. RESULTS AND DISCUSSION

### 3.1. Results

After several attempts to obtain the data, a total of 208 respondents were successfully gathered for this study. The data analysis, conducted using Microsoft Excel and supporting applications, revealed key demographic characteristics. A majority of the respondents were women (56.7%), with the largest age group being under 21 years old (52.4%). The educational background showed that 51.9% held a bachelor's degree. Additionally, 90.4% of the respondents were students, which likely influences their frequent use of food delivery services, given their busy academic schedules. In terms of income, 72.6% of the participants reported monthly expenditures of IDR 3 million or below, indicating a strong presence of budget-conscious users in the sample.

Regarding usage frequency, 67.3% of respondents used food delivery apps at least two to three times a week, highlighting the widespread adoption of these services. This high usage frequency demonstrates how deeply integrated food delivery apps have become in the daily routines of many consumers. Additionally, the data reveals important demographic trends, with the majority of respondents being young, educated, and frequent users, who exhibit a clear preference for affordability when selecting food delivery services. These trends are vital for understanding the behavior, motivations, and purchasing decisions of food delivery app users. Such insights are key to identifying what drives customer satisfaction and loyalty in this sector. Furthermore, these trends provide valuable guidance for food delivery services looking to tailor their offerings and improve user experiences. The following visual representation offers a concise summary of these six crucial demographic characteristics that influence consumer behavior.

Table 1. Recapitulation of Research Respondent Profiles

<b>Profile</b>	<b>Absolute Number</b>	<b>Relative Amount</b>
<b>Gender Category</b>		
Female users	118	56.7
Male users	90	43.3
<b>Age Category</b>		
<20 years old	109	52.4
>20-25 years old	88	42.3
>25-30 years old	6	2.8
>30-35 years old	2	1.0
>35-40 years old	2	1.0
>40 years old	1	0.5
<b>Education Category</b>		
Senior high school	81	38.9
Diploma	5	2.4
Bachelor	108	51.9
Post Bachelor	9	4.4
Others	5	2.4
<b>Status Category</b>		
Student	188	90.4
Employee	12	5.8
Employer	8	3.8
<b>Expenditure Category</b>		
≤ IDR 3.000.000	151	72.6
IDR 3.000.001 - IDR 5.000.000	45	21.6
IDR 5.000.001 - IDR 7.000.000	3	1.4
IDR 7.000.001 - IDR 9.000.000	2	1.0
>IDR 9.000.000	7	3.4
<b>Usage Frequency Category</b>		
1 time a week	68	32.7
2-3 times a week	100	48.1
4-6 times a week	21	10.1
Everyday	19	9.1

Source: A number of resultant data processed (2025)

Table 1 presents the demographic profile of the 208 respondents in this study. The majority of respondents were female (56.7%) and under 21 years old (52.4%). A large portion of the sample had a bachelor's degree (51.9%) and identified as students (90.4%). The respondents primarily fell within the lower income category, with 72.6% earning IDR 3 million or less per month. In terms of usage frequency, 48.1% of respondents used food delivery services 2-3 times a week, while 32.7% used the services once a week. This profile reflects a young, student-heavy demographic with a relatively lower income, who frequently use food delivery applications. These characteristics provide valuable context for understanding consumer behavior in the food delivery app market in Bandung.

Each test result, aimed at ensuring the eligibility of the validity and reliability levels related to the constructs in this research, is presented through the following visualization. The validity and reliability tests are crucial to confirm that the measurement instruments used in the study accurately assess the intended constructs and produce consistent results. This involves evaluating the composite reliability (CR) and average variance extracted (AVE) for each variable, ensuring that they meet the standard thresholds for establishing the robustness of the measurement model. By conducting these tests, we can verify the soundness of the data and ensure that the constructs are both reliable and valid, providing a solid foundation for subsequent analysis and hypothesis testing. The results are visualized in the following table, which summarizes the key values of CR and AVE for each of the variables included in the study.

Table 2. Recapitulation of Validity and Reliability Resultants

Lists of Variables	CR	AVE
Hedonic motivation	0.6833	0.4187
Convenience motivation	0.6988	0.4464
Ease of use	0.8893	0.6680
Navigational design	0.9317	0.6610
Information quality	0.8644	0.6187
Privacy and security	0.8832	0.7168
Restaurant credibility	0.8847	0.6577
Perceived danger of Covid-19	0.8750	0.5881
Price	0.8901	0.7299
Promotion	0.8627	0.6772
Packaging safety	0.8674	0.6868
Usage intention	0.8958	0.6835
Actual usage	0.8269	0.5474
Satisfaction and loyalty	0.8850	0.5644

Source: A number of resultant data processed (2025)

Table 2 presents the composite reliability (CR) and average variance extracted (AVE) values for each variable. A CR value above 0.70 and an AVE value above 0.50 indicate good reliability and validity. Most variables meet these thresholds, confirming the robustness of the measurement model. However, hedonic motivation and convenience motivation have CR and AVE values below the required thresholds, leading to their exclusion from further analysis. The remaining variables were deemed reliable and valid for the subsequent analysis.

Referring to the numbers in the table, it can be seen that almost all variables in this research are proven to be valid and reliable, which is identified from the amount of CR with a value exceeding 0.70 and the amount of AVE with a value exceeding 0.50. However, there are two variables that do not qualify to be involved in the next stage of analysis, namely hedonic motivation and convenience motivation because they have CR and AVE values that do not exceed their standard limits, which range from 0.4 to 0.6. Thus, testing the first hypothesis (H1) and the second hypothesis (H2) cannot be done because the two related variables do not meet the rules of a qualified research instrument (invalid and unreliable). Each test result, aimed at ensuring the goodness of fit of the research data, is presented in the following visualizations.

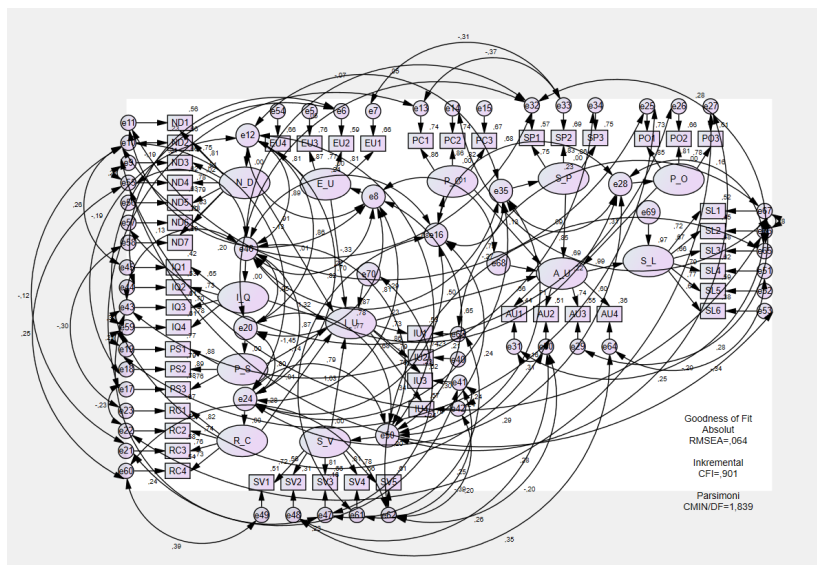


Figure 2. Goodness of Fit of the Research Data  
Source: A number of resultant data processed (2025)

Based on the figure 2, it is known that the absolute parameter value of goodness of fit does not exceed 0.08, the incremental parameter value of goodness of fit exceeds 0.90, and the parsimony parameter value of goodness of fit does not exceed 2.00. Thus, looking at the results of these three parameters, it can be interpreted that the data from this research meets the eligibility requirements of goodness of fit. All the results of testing, using the first tool for the hypotheses of this research, are presented through the following visualizations [16].

Table 3. Recapitulation of Hypothesis Testing with SPSS Amos 21

Causal Linkages Between Variables	Estimate	S.E.	C.R.	P
Ease of use → Usage intention	-0.399	0.208	-1.919	0.055
Navigational design → Usage intention	0.014	0.288	0.048	0.962
Information quality → Usage intention	1.945	0.454	4.289	****
Privacy and safety → Usage intention	-1.880	0.340	-5.536	****
Restaurant credibility → Usage intention	0.014	0.242	0.057	0.954
Perceived danger of Covid-19 → Usage intention	1.311	0.191	6.855	****
Price → Actual usage	0.102	0.076	1.340	0.180
Promotion → Actual usage	0.270	0.102	2.641	0.008
Packaging safety → Actual usage	0.101	0.140	0.719	0.472
Usage intention → Actual usage	0.379	0.057	6.684	****
Actual usage → Satisfaction and loyalty	1.095	0.100	11.004	****

Source: A number of resultant data processed (2025)

Table 3 shows the test results for the eleven hypotheses in this research. Using SPSS Amos, six hypotheses were proven true: information quality, privacy and security, perceived danger of Covid-19, promotion, usage intention, and actual usage affect customer satisfaction and loyalty. These results are based on p-values less than 0.05. On the other hand, five hypotheses were proven false, including ease of use, navigation design, restaurant credibility, price, and packaging safety. Since promotion and packaging safety had no effect on actual usage, further hypothesis testing for these variables on satisfaction and loyalty is unnecessary. These findings identify key factors influencing food delivery app user satisfaction and loyalty [17].

```

OUTCOME VARIABLE:
AU_Total

Model Summary
      R      R-sq      MSE      F      df1      df2      p
,6935    ,4809    6,5322  190,8666  1,0000  206,0000  ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant  4,3619    ,7939    5,4945  ,0000    2,7968    5,9271
IU_Total  ,6947    ,0503   13,8154  ,0000    ,5956    ,7938

OUTCOME VARIABLE:
SL_Total

Model Summary
      R      R-sq      MSE      F      df1      df2      p
,8378    ,7019    6,2731  241,3873  2,0000  205,0000  ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant  5,8364    ,8330    7,0062  ,0000    4,1940    7,4788
IU_Total  ,3386    ,0684    4,9511  ,0000    ,2038    ,4735
AU_Total  ,8186    ,0683   11,9894  ,0000    ,6840    ,9532

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_es
,9073    ,0641   14,1513  ,0000    ,7809    1,0327    ,7021

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI      c'_es
,3286    ,0684    4,9511  ,0000    ,2038    ,4735    ,2820

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
AU_Total  ,5687    ,0756    ,4297    ,7240
    
```

Figure 3. Recapitulation of Hypothesis Testing with Hayes

Source: A number of resultant data processed (2025)

Looking at all parts of the figure 3, it is known that usage intention significantly affects actual usage, and actual usage significantly affects satisfaction and loyalty of food delivery application services. Both interpretations can be obtained from the p parameter worth 0.000 or below 0.05, which is displayed in the first and second part of the summary model. Then, because the indirect effect of exogenous variables on endogenous variables is significant, the next step is to calculate the variance accounted for (VAF) value [18]. The VAF value is used to determine the mediation effect. The VAF value can be calculated by dividing the indirect effect by the total effects. To find out how much the value of the indirect effect and total effect (as well as the coefficient of significance), it can be seen in the output results of the indirect and total effect contained in the last part of the figure above. The VAF calculation is  $(0.5687/0.9073) \times 100\%$ , so that 62.68% is obtained, which means that there is partial mediation, therefore this proves that actual usage becomes a mediating variable between usage intention and satisfaction and loyalty of food delivery application services (H14).

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OUTCOME VARIABLE:
AU_Total

Model Summary
R          R-sq      MSE      F          df1      df2      p
,6450     ,4160     7,3496  146,7253  1,0000  206,0000 ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant 3,8126   ,9468   4,0269 ,0001  1,9460  5,6792
PO_Total ,9311     ,0769  12,1132 ,0000  ,7795  1,0826

OUTCOME VARIABLE:
SL_Total

Model Summary
R          R-sq      MSE      F          df1      df2      p
,8310     ,6906     6,5125  228,7494  2,0000  206,0000 ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant 5,4899   ,9256   5,9297 ,0000  3,6639  7,3139
PO_Total ,3797     ,0547   4,0098 ,0001  ,1930  ,5663
AU_Total ,8834     ,0656  13,4699 ,0000  ,7641  1,0127

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
Effect      se      t      p      LLCI      ULCI      c'_cs
1,2022     ,0991  12,1310 ,0000  1,0068  1,3976  ,6455

Direct effect of X on Y
Effect      se      t      p      LLCI      ULCI      c'_cs
,3797     ,0547   4,0098 ,0001  ,1930  ,5663  ,2039

Indirect effect(s) of X on Y:
AU_Total  Effect  BootSE  BootLLCI  BootULCI
,8226     ,0956   ,6427    1,0167

```

Figure 4. Recapitulation of hypothesis testing with Hayes

Source: A number of resultant data processed (2025)

Looking at all parts of the figure 4, it is known that promotion significantly affects actual usage, and actual usage significantly affects satisfaction and loyalty of food delivery app services. Both interpretations can be obtained from the p parameter worth 0.000 or below 0.05, which is displayed in the first and second part of the summary model. Then, because the indirect effect of exogenous variables on endogenous variables is significant, the next step is to calculate the variance accounted for (VAF) value [19]. The VAF value is used to determine the mediation effect. The VAF value can be calculated by dividing the indirect effect by the total effects. To find out how much the value of the indirect effect and total effect (as well as the coefficient of significance), it can be seen in the output results of the indirect and total effect contained in the last part of the figure above. The VAF calculation is  $(0.8226/1.2022) \times 100\%$ , so that 68.43% is obtained, which means that there is partial mediation, therefore this proves that actual usage becomes a mediating variable between promotion, and satisfaction and loyalty of food delivery application services (H16).

As for testing a hypothesis of this research on the role of actual usage as a mediator of the effect of price on satisfaction and loyalty of food delivery app services (H15), there is no need to do so. Similarly, testing of a hypothesis of this research on the role of actual usage as a mediator of the effect of packaging safety on satisfaction and loyalty of food delivery app services (H17), was also not necessary. Both of these decisions were taken because it has been shown previously that price and package safety has no effect on actual usage of food delivery app services.

### 3.2. Discussion

The influence of hedonic and convenience motivation on the intention to use food delivery app services cannot be further analyzed as both variables did not meet eligibility criteria [11]. This suggests that hedonic motivation and convenience motivation have no effect on the intention to use food delivery apps, which is

consistent with studies conducted during the Covid-19 pandemic. Post-pandemic, consumers no longer seek hedonic benefits as much, focusing more on practical factors [20]. Similarly, ease of use had no significant effect (p-value = 0.055), aligning with previous studies from both during and after the pandemic. However, a mean score of 4.13 suggests food delivery services are relatively easy to use, but improvements are needed [21].

Navigation design also proved insignificant (p-value = 0.962), with respondents rating it 4.16. Efforts to enhance navigation for a smoother experience would be beneficial. Information quality significantly influenced usage intention (p-value < 0.05), consistent with earlier findings [22]. Privacy and security also had a significant effect (p-value < 0.05), contrasting with pandemic-era studies [23], reflecting a post-pandemic increase in digital concerns [24].

Restaurant credibility had no significant effect (p-value = 0.954), and perceptions of Covid-19 risks influenced usage intention post-pandemic (p-value < 0.05), which differs from earlier studies [25]. Price (p-value = 0.180) did not impact actual usage, contradicting pre-pandemic findings [26], while promotion significantly affected usage (p-value = 0.008) [27].

Actual usage was shown to mediate the effects of intention and promotion on satisfaction and loyalty, reinforcing the role of usage as a mediator [28]. The unique finding in this study is that promotion has a greater impact on satisfaction and loyalty than the intention to use, which is a novel contribution [29]. This is particularly relevant for cost-sensitive student users who are highly responsive to promotional offers, shaping their purchasing behavior.

#### **4. MANAGERIAL IMPLICATIONS**

The results of this study offer valuable insights for managers and decision-makers in the food delivery industry. Based on the findings, several implications can be drawn for enhancing customer satisfaction and fostering loyalty within food delivery services. The following subsections highlight key strategies that can be implemented to improve user experience and retention.

##### **4.1. Improving Information Quality**

Information quality plays a significant role in shaping user satisfaction and loyalty, as it was shown to influence the intention to use food delivery apps. Managers should prioritize delivering clear, accurate, and up-to-date information about available restaurants, menus, promotions, and delivery statuses. Ensuring that users have reliable information in real-time can enhance their trust and engagement with the app. Additionally, detailed and consistent information about the food items and delivery process can reduce uncertainties and improve the overall customer experience.

##### **4.2. Enhancing Privacy and Security Measures**

Privacy and security were found to significantly affect users' intentions to use food delivery apps, especially after the pandemic. This highlights the increasing importance of protecting user data and ensuring safe online transactions. Managers should invest in robust security protocols, such as encrypted payment systems and secure user authentication processes. Clear communication regarding data protection policies can also build trust and reduce privacy concerns, which can directly contribute to customer retention and loyalty.

##### **4.3. Focusing on Promotions to Drive Usage**

Promotion was found to have a significant impact on actual usage and user satisfaction. Food delivery app providers should focus on creating attractive promotional offers to incentivize repeat usage, especially for price-sensitive users such as students. Personalized discounts, loyalty programs, and time-limited promotions could encourage frequent ordering and create a sense of value for the customer. Moreover, aligning promotions with key user behaviors and preferences can increase their effectiveness and foster customer loyalty.

##### **4.4. User-Centered Interface Design and Navigation**

While ease of use and navigational design were not found to significantly affect user intention in this study, the results suggest that these factors still play a role in the overall user experience. Managers should focus on refining app interfaces to make them more intuitive and user-friendly. Implementing features such as easy-to-navigate menus, quick order placement, and smooth transaction processes can enhance convenience, even if it is not the primary driver for usage intention. Improving navigation and interface design is important for maintaining positive user experiences in the long term.

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#### 4.5. Adapting to Post-Pandemic User Behavior

The study's findings indicate that perceptions of the dangers of Covid-19 have a lasting effect on user behavior. Even after the pandemic, users continue to prioritize convenience and safety in their choices. Food delivery app managers should consider offering features such as contactless delivery options, hygiene guarantees, and the ability to track deliveries in real-time. By aligning services with the evolving preferences and concerns of customers, food delivery companies can better cater to the post-pandemic market and maintain high levels of customer satisfaction.

#### 4.6. Monitoring Restaurant Credibility and Quality

Restaurant credibility did not significantly affect user intention in this study, but it is still essential for managers to monitor and maintain partnerships with credible and high-quality restaurants. Ensuring that restaurants featured in the app meet certain quality standards can enhance the perceived value of the service. Additionally, transparent reviews and ratings from customers can help users make informed decisions and contribute to overall satisfaction.

#### 4.7. Continuous Improvement and Feedback Integration

Given the evolving nature of consumer preferences and behavior, it is essential for food delivery app providers to continuously gather and analyze user feedback. Managers should implement regular user satisfaction surveys, conduct usability tests, and track customer complaints to identify areas for improvement. Engaging with users and adapting to their needs can lead to long-term loyalty and a competitive edge in the market.

### 5. CONCLUSION

This research has been successful in proving a number of empirical truths. Information quality, privacy and security, and perceived danger of Covid-19 have an influence on the intention to use food delivery app services. Promotion and usage intention, respectively, have an influence on the actual usage of food delivery app services. Actual usage has an influence on customer satisfaction and loyalty of food delivery app services. Actual usage mediates the influence of usage intention and promotion (respectively) on customer satisfaction and loyalty of food delivery app services. Hedonic motivation, convenience motivation, ease of use, navigation design, and restaurant credibility (respectively) have no influence on the intention to use food delivery app services. Price and packaging safety, respectively, have no influence on actual usage of food delivery app services. Actual usage does not mediate the effect of price and packaging safety (respectively) on customer satisfaction and loyalty of food delivery app services.

In the conceptual realm, once again through an explanatory study, the research that has been carried out is a medium that has the goal of proving theories that have been proposed, especially in consumer behavior as one of the major studies of marketing management. In the context of food delivery app services, the presence of existing stimuli (both external and internal) can be a driver of the emergence of a person's intention to buy, which in turn can continue his decision to do actual buying (reinforced by the encouragement of attractive factors in terms of cognitive and affective). After evaluating each result of the actual purchase experience, various perceptions will be created regarding the level of satisfaction felt, which if it tends to be good (positive), it will lead to the formation of satisfaction and loyalty as a customer.


In the practical realm, the study that has been carried out can be an inspiring source of information in providing constructive feedback for food delivery application service providers, which they should always make proactive and active efforts in managing and presenting high-quality information for digital users, monitor and maintain privacy and safety related to customer data, as well as design and evaluate the effectiveness of promotional programs (type, moment, duration, nominal, validity period, terms and conditions) that are able to foster positive perceptions in the minds and hearts of their customers through the emergence of interest, intention, purchase action, to the existence of high satisfaction and strong loyalty on an ongoing basis.


The research that has been carried out is certainly not free from any limitations. The number of respondents in this research only consists of about two hundred people, so it would be better for future research to involve three hundred and or more customers in order to achieve a better quality of research generalization. The antecedent variables in this research are a replication and development of a previous study conducted during the Covid-19 pandemic, so it would be better for future research to include other stimulus variables in the research model, such as driver attitude and proficiency, delivery time speed, completeness of restaurants

served by the app, and any other relevant matters in order to collect more comprehensive data and analyze causality information more meaningfully. More than half of the variables involved in this research were only measured using three indicator items of questions or statements, so it would be better for future research to be able to empower more than three indicator items for all variables equally in order to avoid unfavorable events, such as for example there must be research instruments that inevitably must be ruled out due to not meeting the rules of reliability and validity in a research model on structural equations.

## 6. DECLARATIONS

### 6.1. About Authors

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### 6.2. Author Contributions

Conceptualization: RS; Methodology: AA; Software: AA; Validation: RS and AA; Formal Analysis: AA; Investigation: RS; Resources: AA; Data Curation: AA; Writing Original Draft Preparation: AA; Writing Review and Editing: RS and AA; Visualization: AA; All authors, RS and AA, have read and agreed to the published version of the manuscript.

### 6.3. Data Availability Statement

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

### 6.4. Funding

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

### 6.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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