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# The Role of Food Delivery Apps in Consumer Loyalty: A Study of GrabFood Users in Java

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## ABSTRACT

This research investigates the key factors influencing customer loyalty to the GrabFood app, with particular attention to price fairness, food quality, service quality, effort expectancy, and overall user satisfaction. The research employed a quantitative approach, using data collected from 250 GrabFood users residing on Java Island. selected through purposive sampling. Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM–PLS). The findings indicate that food quality, service quality, and satisfaction have significant direct effects on loyalty. Satisfaction also acts as a strong mediating variable, especially for the effects of price fairness and effort expectancy on loyalty. Interestingly, price fairness and food/service quality showed negative indirect effects through satisfaction, suggesting a gap between user expectations and actual experience. Meanwhile, effort expectancy did not significantly influence loyalty directly, but positively affected satisfaction. This study highlights the critical role of user satisfaction in strengthening consumer loyalty. and recommends aligning service delivery with customer expectations.

## INTRODUCTION

The rapid pace of urbanization and digital transformation in Southeast Asia, particularly in Indonesia, has profoundly reshaped consumer lifestyles, particularly within the F&B industry. One of the most visible impacts of this change is the widespread adoption of Online Food Delivery (OFD) services, which have grown exponentially due to their convenience, accessibility, and variety of offerings. In urban centers such as Java Island, OFD platforms have become deeply integrated into daily life, shifting consumer behavior toward digital consumption patterns. However, this rapid growth has led to a highly competitive market in which customer switching costs are low. With major players such as GoFood, ShopeeFood, and GrabFood competing aggressively on price and promotions, retaining customers has become significantly more difficult than acquiring them.

Existing research highlights that the rapid growth of online food delivery (OFD) services in Southeast Asia has transformed the traditional food consumption landscape. Studies by Yeo et al. (2017) report that countries such as Indonesia have experienced a

surge in OFD adoption due to smartphone penetration and shifting urban lifestyles. In this market, GrabFood and GoFood have emerged as dominant players. However, recent literature suggests a shift in market dynamics; as the market matures, the challenge for platforms has moved from mere acquisition to retention. While early studies focused on adoption barriers, current research emphasizes the need for localized insights into how these platforms can sustain usage in highly competitive regions like Java Island.

Among the leading players in this competitive landscape is GrabFood, which has captured a significant market share through its intuitive app interface, extensive merchant network, and robust logistics infrastructure. As the OFD market in Indonesia matures, the long-term sustainability of platforms depends increasingly on loyalty rather than mere adoption. Unlike in previous years, when market penetration was the primary objective, the current phase of Indonesia's digital economy requires a focus on user retention. This elevates user satisfaction and loyalty as critical business outcomes.

The relationship between customer satisfaction and loyalty is well documented in the service marketing literature. In the OFD context, satisfaction is viewed as the consumer's overall evaluation of the platform's performance (Su et al., 2022). High satisfaction levels are a prerequisite for loyalty, which encompasses both behavioral (repeat purchase) and attitudinal (commitment) dimensions. Alalwan (2020) argues that platforms consistently meeting expectations are more likely to retain customers. However, a gap remains in understanding the specific antecedents of satisfaction in emerging markets. This study posits that satisfaction acts as a critical mediator, filtering the effects of price, quality, and usability on user loyalty.

While price attracts users, quality keeps them. Literature distinguishes between two types of quality in OFD: Service Quality (app responsiveness, delivery speed) and Product Quality (food freshness, taste). Chinelato & Cruz (2025) argue that these dimensions jointly influence perceived value. A weakness in either, such as cold food or rude drivers, can undermine satisfaction regardless of the app's sophistication. Ray et al. (2019) emphasize that in high-density urban areas, expectations for both service and food quality are elevated. This study integrates both dimensions to determine which quality aspect carries greater weight among GrabFood users in Java.

Service quality in OFD encompasses several aspects, including promptness, order accuracy, rider professionalism, and platform responsiveness. Food quality, meanwhile, involves freshness, taste, packaging, and temperature upon arrival. These two dimensions jointly influence users' perceptions of the platform's reliability and overall value (Chinelato & Cruz, 2025; Suhartanto, 2018). Negative experiences in either area, such as late deliveries or poor food presentation, can undermine satisfaction, even if other features (e.g., app usability) are strong. Ray et al. (2019) found that quality perceptions strongly predict customer retention and are more influential in high-density urban areas where expectations are elevated.

Beyond price and quality, the technical ease of using the app plays a pivotal role. Derived from the Unified Theory of Acceptance and Use of Technology (UTAUT) and TAM, Effort Expectancy refers to the degree of ease associated with the use of the system. Venkatesh et al. (2003) and Alalwan (2020) established that perceived ease of use

directly influences satisfaction. However, few studies have combined this technological variable (Effort Expectancy) with service marketing variables (Price & Quality) in a single comprehensive model for the Indonesian market. This research addresses this gap by testing whether a user-friendly interface can compensate for other service deficiencies or serve as a baseline expectation for satisfaction.

A growing body of literature has sought to understand the factors influencing OFD usage. Prior studies have investigated variables based on users' perceptions of usefulness and user-friendliness (Pitchay et al., 2022), service and food quality (Chinelato & Cruz, 2025; Koay et al, 2022), and price fairness (D'Souza, 2025). These factors have been consistently linked to user satisfaction, a key predictor of customer loyalty (Su et al., 2022; Prasetyo et al., 2021). Despite these contributions, a notable gap remains. Most existing research focuses on generalized markets or Western contexts that differ significantly from those in emerging economies. Furthermore, few studies have explicitly examined how Effort Expectancy interacts with the Price Fairness and Quality dimensions simultaneously to drive loyalty in a specific, high-density market such as Java Island.

This study distinguishes itself from prior research by focusing on the unique market dynamics of Java Island, Indonesia's economic epicenter, where digital literacy co-occurs with high price sensitivity. Unlike broad studies on OFD adoption, this research isolates GrabFood users to provide brand-specific insights that are critical for platform differentiation. To address the identified gap, this research aims to examine the roles of price fairness, food quality, service quality, and effort expectancy in user satisfaction and, subsequently, user loyalty. Using the Expectation-Confirmation Theory (ECT) and the Technology Acceptance Model (TAM), this study posits satisfaction as both a key outcome and a mediating variable linking service perceptions with behavioral loyalty.

The significance of this study lies in its ability to deliver both theoretical and practical contributions. From a theoretical perspective, the research synthesizes multiple determinants into an integrated model tailored to a region-specific context, providing empirical evidence from an emerging market that challenges or confirms Western-centric OFD theories. In practical terms, these insights can help online food delivery services, particularly GrabFood, improve their operations in designing strategies to enhance user experience, increase customer retention, and maintain a competitive advantage in Indonesia's rapidly evolving digital economy.

## METHOD

This research employed a quantitative cross-sectional survey design to examine the effects of perceived price fairness, food quality, service quality, and effort expectancy on user satisfaction and loyalty toward GrabFood. The rationale behind this design is to enable statistical generalization and to test the proposed hypotheses using structured numerical data.

The target population consisted of GrabFood users residing in major urban areas across Java Island, Indonesia. To ensure that the data reflected genuine user experiences, a purposive non-probability sampling technique was employed. Respondents were selected based on specific screening criteria, namely: currently residing in Java Island (covering key cities such as Jakarta, Bandung, and Surabaya); being at least 17 years old, as they are legally capable of conducting independent transactions; and having placed at least two (2) GrabFood orders within the last 30 days. This usage-frequency criterion was established to ensure that respondents had sufficiently recent experience with the service, thereby enabling them to provide accurate and reliable evaluations.

To ensure demographic diversity (addressing age, occupation, and income variations), the survey link was distributed through multiple digital channels, including general social media (Instagram, Twitter/X), specific culinary community groups, and university networks. Data collection took place between May and June 2025. Of 280 responses received, 250 were deemed valid for the final analysis after a rigorous data-cleaning process that removed incomplete responses and straight-lining (respondents who selected the same scale option for all questions).

The survey instrument was adapted from validated measures in previous studies. As the original items were developed in English, a back-translation method was employed to translate them into Bahasa Indonesia in order to ensure linguistic accuracy and conceptual equivalence for local respondents. All constructs were measured using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Specifically, Price Fairness (3 items) was adapted from Artuğer et al. (2024); Food Quality (4 items) from Chinelato & Cruz (2025); Service Quality (5 items) from Chan & Gao (2021); Effort Expectancy (4 items) from Pitchay et al. (2022); Customer Satisfaction (3 items) from Prasetyo et al. (2021); and Customer Loyalty (6 items) from Su et al. (2022). Prior to full-scale distribution, a pilot test involving 30 respondents was conducted. The results indicated that all items were clearly understood, and preliminary reliability testing produced Cronbach's alpha values exceeding 0.7 for all variables, confirming that the instrument was reliable and robust.

Participants were briefed on the study's objectives, assured of the anonymity of their responses, and informed that participation was entirely voluntary. The survey link was distributed via WhatsApp, Instagram, and online communities dedicated to food delivery services, and respondents completed the questionnaire in approximately 7-10 minutes. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software. This method was chosen for its suitability to exploratory research and its capacity to handle complex models involving multiple constructs and mediation effects.

The analysis was conducted in two primary phases. The measurement model evaluation assessed internal consistency reliability using Cronbach's Alpha and Composite Reliability (CR), convergent validity through the examination of Average Variance Extracted (AVE), and discriminant validity using both the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT). Subsequently, the structural model evaluation examined path coefficients ($\beta$), along with their corresponding t-values

and p-values obtained through bootstrapping with 5,000 resamples, the coefficient of determination ($R^2$) to assess the model's explanatory power, effect size ($f^2$) to determine the contribution of each predictor variable, and predictive relevance ($Q^2$) using the blindfolding procedure.

## RESULTS AND DISCUSSION

The findings of this research demonstrate the influence of core factors, namely price fairness, food quality, service quality, and effort expectancy, on user satisfaction and loyalty toward GrabFood. The data were collected from 410 respondents who are active GrabFood users in Java. The survey items were measured on a 5-point Likert scale, and responses were analyzed using Structural Equation Modeling (SEM) in SmartPLS 4.

### Demographic Analysis of Respondents

Table 1. Age Respondents

| Age | Number |
| --- | --- |
| 17–22 years old | 34 |
| 23–27 years old | 81 |
| 28–32 years old | 81 |
| 33–37 years old | 26 |
| 38–42 years old | 10 |
| Over 42 years old | 18 |
| **Total** | **250** |

As mentioned in Table 1, the majority of respondents were young adults, predominantly within the 23–27 and 28–32 age groups, with 81 individuals in each category. Combined, these two groups represent 64.8% of the total sample, suggesting that most GrabFood users in this study are either early in their professional careers or pursuing higher education. The 17–22 age group accounted for 34 respondents (13.6%), followed by 26 respondents (10.4%) in the 33–37 age group. The least represented age groups were 38–42 (4.0%) and over 42 years old (7.2%)

Table 2. Region Respondents

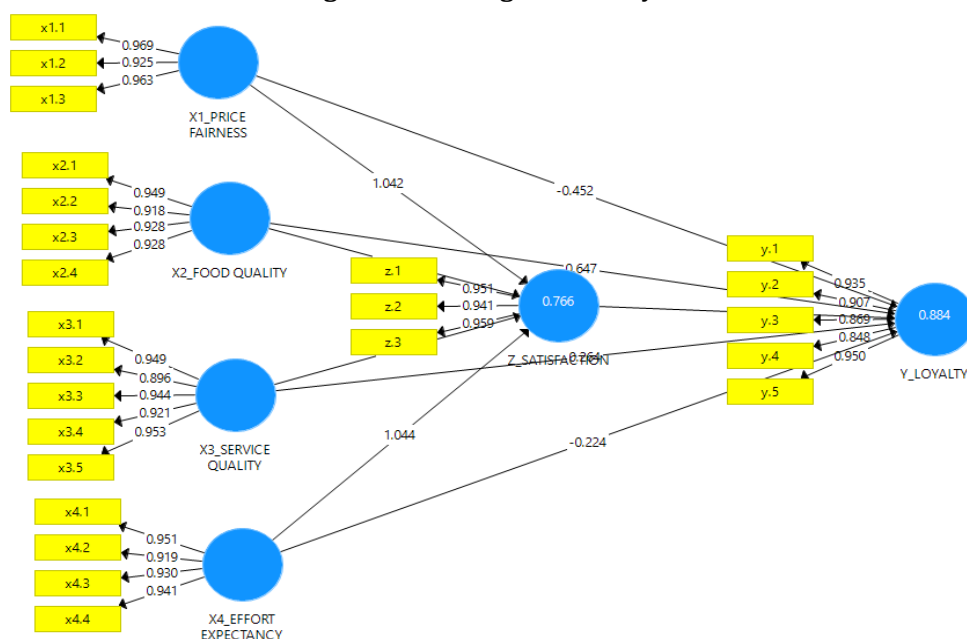| Region of Origin | Number |
| --- | --- |
| DKI Jakarta Province | 177 |
| West Java | 56 |
| Central Java | 2 |
| Special Region of Yogyakarta | 5 |
| East Java | 10 |
| **Total** | **250** |

The majority of respondents in this study were from DKI Jakarta Province, comprising 177 individuals (70.8%). The second-largest group was from West Java with 56 respondents (22.4%). Other regions, including Central Java (0.8%), the Special Region of Yogyakarta (2.0%), and East Java (4.0%), were minimally represented. Table 2 results suggest that the GrabFood user base in this sample is heavily concentrated in urban and densely populated areas, particularly in the Greater Jakarta metropolitan region. This reflects the high demand for online food delivery services in the capital and surrounding cities of Indonesia.

**Table 3**. Frequency Using Respondents

| Frequency of Using GrabFood | Number |
|---|---|
| Every day | 103 |
| Every 2 days | 87 |
| Every 3 days | 32 |
| Once a week | 19 |
| Once a month | 9 |
| **Total** | **250** |

Regarding frequency of use, the majority of respondents report using GrabFood regularly. Specifically, 103 respondents (41.2%) use the application daily, while 87 respondents (34.8%) use it every two days. An additional 32 respondents (12.8%) use the service every three days. Less frequent use is reported by 19 respondents (7.6%), who use the service once a week, and by 9 respondents (3.6%), who use it only once a month. Table 3 findings indicate that GrabFood is a highly integrated service in the daily routines of most users in this sample, suggesting a strong level of habitual engagement and reliance on food delivery platforms in urban Indonesian settings.

**Figure 1**. Convergent Validity Test

The measurement model's reliability and validity (Figure 1) were assessed by examining the outer loadings of each indicator. As noted by Hair et al. (2021), indicators with outer loadings exceeding 0.70 are considered acceptable, and loadings above 0.90 indicate excellent reliability. All constructs met the recommended threshold: Price Fairness (X1) was measured using three items (x1.1–x1.3), all of which showed exceptionally high outer loadings, ranging from 0.925 to 0.969. This suggests that each indicator makes a strong contribution to its respective construct, confirming excellent indicator reliability; the item strongly reflects the underlying construct of price fairness. Food Quality (X2) was assessed using four indicators, with loadings ranging from 0.918 to 0.949. These results confirm strong convergent validity and internal consistency for the construct. Service Quality (X3) consisted of five measurement items, and all indicators showed high reliability, with loadings ranging from 0.896 to 0.953. This suggests that the indicators consistently represent the construct. Effort Expectancy (X4) was measured using four items (x4.1–x4.4), all with outer loading values exceeding 0.91. This confirms the indicator's excellent reliability and supports the construct's robustness within the model. Customer Satisfaction (Z), as a mediating variable, was measured using three indicators, each with loadings above 0.94. These results provide strong evidence for the precision of satisfaction measurement. Customer Loyalty (Y) was measured with five items, with loadings ranging from 0.848 to 0.950. All values exceed the minimum threshold, indicating that the indicators are highly reflective of loyalty behavior.

The convergent validity of all constructs is strongly established, as the Average Variance Extracted (AVE) values for Price Fairness (0.907), Food Quality (0.867), Service Quality (0.870), Effort Expectancy (0.875), Loyalty (0.814), and Satisfaction (0.903) all exceed the recommended threshold of 0.50. These results indicate that each construct accounts for more than half of the variance in its indicators. AVE values ranging from 0.814 to 0.907 indicate a high degree of shared variance between the constructs and their observed measures, confirming that the indicators adequately represent their underlying latent variables and that the requirement for convergent validity has been met.

Discriminant validity was assessed using the Fornell–Larcker criterion. The square root of the AVE for each construct, Price Fairness (0.952), Food Quality (0.931), Service Quality (0.933), Effort Expectancy (0.935), Loyalty (0.902), and Satisfaction (0.950), exceeds the corresponding inter-construct correlations. This indicates that each construct accounts for more variance among its indicators than among indicators of other constructs in the model. Therefore, discriminant validity is established across all variables in this study, confirming that price fairness, food quality, service quality, effort expectancy, satisfaction, and loyalty are empirically distinct and not redundant. Respondents were able to distinguish among the concepts being measured.

Discriminant validity at the indicator level was further examined through cross-loading analysis. The results indicate that each indicator loads highest on its respective construct compared to other constructs in the model. Specifically, all measurement items demonstrate stronger loadings on their intended latent variables—Price Fairness, Food Quality, Service Quality, Effort Expectancy, Loyalty, and Satisfaction—than on any

unrelated constructs. This pattern confirms that the indicators are well-aligned with their designated constructs and do not exhibit problematic cross-loadings. Therefore, discriminant validity at the indicator level is established, supporting the reliability of the measurement model and confirming that each item contributes appropriately to its corresponding latent variable.

Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability (CR). The Cronbach's Alpha values for Price Fairness (0.949), Food Quality (0.949), Service Quality (0.963), Effort Expectancy (0.952), Loyalty (0.943), and Satisfaction (0.946) all exceed the recommended threshold of 0.70 and are above 0.90, indicating a very high level of internal consistency among the indicators for each construct. Similarly, the Composite Reliability values—ranging from 0.956 to 0.971—are well above the acceptable threshold of 0.70, further confirming the strong reliability of the measurement model. These findings demonstrate that the indicators associated with each latent construct consistently and accurately represent their respective variables, supporting the robustness of the measurement model for subsequent structural analysis.

With an $R^2$ of 0.884, the model indicates that nearly 88.4% of user loyalty is explained by the independent variable constructs Price Fairness, Food Quality, Service Quality, Effort Expectancy, and the mediating variable Satisfaction. This suggests a very strong level of explanatory power within the model for predicting user loyalty. Similarly, the $R^2$ value for Satisfaction (Z) is 0.766, meaning that 76.6% of the variance in user satisfaction is accounted for by the four independent variables. These results demonstrate that the proposed model is highly effective in explaining the variability of both endogenous constructs. The adjusted $R^2$ values (0.881 for Loyalty and 0.762 for Satisfaction) are also close to the original $R^2$ values, reinforcing the model's robustness and stability, particularly in the context of PLS-SEM analysis, where high $R^2$ values (above 0.75) are considered substantial (Hair et al., 2021).

Predictive relevance was assessed using the $Q^2$_predict values. The results show that Loyalty ($Q^2$ = 0.750; RMSE = 0.512; MAE = 0.278) and Satisfaction ($Q^2$ = 0.760; RMSE = 0.504; MAE = 0.237) both exhibit $Q^2$ values well above the recommended benchmark of 0.35, indicating strong predictive relevance. These findings suggest that the model exhibits substantial out-of-sample predictive performance and that the exogenous variables included effectively predict user satisfaction and loyalty among GrabFood users on Java Island.

**Table 4. Direct Hypothesis**

| No | | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|---|---|---|
| 1 | X1_Price Fairness -> Y_Loyalty | -0.452 | -0.420 | 0.125 | 3.610 | 0.000 |
| 2 | X1_Price Fairness -> Z_Satisfaction | 1.042 | 1.046 | 0.077 | 13.491 | 0.000 |

| 3 | X2_Food Quality -> Y_Loyalty | 0.647 | 0.599 | 0.153 | 4.221 | 0.000 |
|---|---|---|---|---|---|---|
| 4 | X2_Food Quality -> Z_Satisfaction | -0.729 | -0.695 | 0.211 | 3.454 | 0.001 |
| 5 | X3_Service Quality -> Y_Loyalty | 0.264 | 0.259 | 0.126 | 2.091 | 0.037 |
| 6 | X3_Service Quality -> Z_Satisfaction | -0.458 | -0.461 | 0.172 | 2.656 | 0.008 |
| 7 | X4_Effort Expectancy -> Y_Loyalty | -0.224 | -0.169 | 0.186 | 1.203 | 0.230 |
| 8 | X4_Effort Expectancy -> Z_Satisfaction | 1.044 | 1.009 | 0.228 | 4.573 | 0.000 |
| 9 | Z_Satisfaction -> Y_Loyalty | 0.739 | 0.707 | 0.109 | 6.793 | 0.000 |

Table 4 above provides a comprehensive explanation of the determinants of loyalty among GrabFood users in Java Island. This study aimed to determine the antecedents of user loyalty, and the empirical findings reveal a unique landscape in which platform attributes (Price Fairness and Effort Expectancy) significantly outweigh product attributes (Food Quality and Service Quality) in driving satisfaction.

First, Price Fairness emerges as the strongest driver of user satisfaction ($\beta = 1.042$, $p < 0.001$). This finding aligns with the economic characteristics of consumers in Java Island, who are widely recognized as price-sensitive and promotion-oriented. In a highly competitive OFD market, users perceive value primarily through affordability, promotional availability, and transparent pricing. This supports Artuğer et al. (2024), confirming that in emerging markets, service excellence cannot compensate for a perceived lack of price fairness. However, Price Fairness demonstrates a statistically significant but negative direct effect on Loyalty ($\beta = -0.452$, $p < 0.001$). This suggests that while fair pricing enhances satisfaction, perceived inconsistencies or overpricing may quickly erode loyalty in markets characterized by low switching costs.

Similarly, Effort Expectancy has a significant positive effect on Satisfaction ($\beta = 1.044$, $p < 0.001$), supporting the Technology Acceptance Model (TAM) assumption that perceived ease of use strongly shapes user evaluations. For modern urban consumers, the app experience is effectively the service experience. In fast-paced metropolitan environments such as Java's cities, frictionless navigation and transaction efficiency are not optional features but essential expectations. Nevertheless, Effort Expectancy does not significantly influence Loyalty directly ($\beta = -0.224$, $p = 0.230$), indicating that usability functions more as a baseline requirement rather than a source of differentiation in mature digital markets.

In contrast, product-related attributes demonstrate a more complex pattern. Food Quality positively influences Loyalty ($\beta = 0.647$, $p < 0.001$), confirming that consistent taste, freshness, and presentation remain fundamental drivers of repeat usage. Service Quality also positively affects Loyalty ($\beta = 0.264$, $p = 0.037$), suggesting that punctual

delivery and responsive service contribute to long-term relational bonds. However, both Food Quality (β = -0.729, p = 0.001) and Service Quality (β = -0.458, p = 0.008) exhibit significant negative effects on Satisfaction. Although this appears counterintuitive and contradicts traditional service marketing theories (Chinelato & Cruz, 2025), it can be interpreted through the lens of Expectation-Confirmation Theory (ECT).

This phenomenon may reflect a condition of hyper-expectation among GrabFood users in Java. Having been exposed to high service standards for years, users likely possess elevated baseline expectations. When expectations are set extremely high, for instance, perfect food condition or instant delivery, even objectively good performance may fall into the negative disconfirmation zone (reality < expectation), thereby reducing satisfaction. Additionally, this negative relationship may imply that users who prioritize premium quality standards are inherently more critical and more difficult to satisfy. These findings suggest that managing customer expectations is as crucial as managing operational performance in highly competitive digital ecosystems.

Finally, Satisfaction exerts a strong and positive effect on Loyalty (β = 0.739, p < 0.001), confirming its central mediating role. This supports the broader consensus in consumer behavior literature (Su et al., 2022) that loyalty in the digital economy is not structurally locked in. Users remain loyal not because they lack alternatives, but because they are satisfied. The implication is clear: GrabFood cannot rely solely on aggressive promotional strategies to sustain retention. Instead, the platform must translate price attractiveness and technological convenience into a consistently satisfying emotional experience to secure long-term behavioral loyalty.

**Table 5. Indirect Hypothesis**

| No | | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---|---|---|---|---|---|---|
| 1 | X1_Price Fairness -> Z_Satisfaction -> Y_Loyalty | 0.770 | 0.743 | 0.140 | 5.489 | 0.000 |
| 2 | X2_Food Quality -> Z_Satisfaction -> Y_Loyalty | -0.539 | -0.491 | 0.171 | 3.157 | 0.002 |
| 3 | X3_Service Quality -> Z_Satisfaction -> Y_Loyalty | -0.339 | -0.337 | 0.155 | 2.179 | 0.030 |
| 4 | X4_Effort Expectancy -> Z_Satisfaction -> Y_Loyalty | 0.772 | 0.718 | 0.214 | 3.605 | 0.000 |

Table 5 presents a mediation analysis that further clarifies the mechanism by which the independent variables influence loyalty through customer satisfaction. The results

confirm that satisfaction plays a substantial mediating role in the relationship between platform attributes, product attributes, and user loyalty toward GrabFood.

First, Price Fairness exerts a significant positive indirect effect on Loyalty through Satisfaction ($\beta$ = 0.770, T = 5.489, p < 0.001). This indicates that when customers perceive pricing as fair and transparent, it enhances their satisfaction, thereby strengthening loyalty. The mediation effect is both strong and meaningful, demonstrating that satisfaction serves as a critical bridge connecting fair pricing to long-term customer retention (Qur'ani, 2023). This finding reinforces the earlier conclusion that price perceptions in emerging markets are central not only to satisfaction but also to sustained loyalty through affective evaluation.

Similarly, Effort Expectancy shows a strong and significant positive indirect effect on Loyalty through Satisfaction ($\beta$ = 0.772, T = 3.605, p < 0.001). Although its direct effect on loyalty was not significant, ease of use significantly increases satisfaction, which in turn drives loyalty. This confirms that in digital service contexts, user-friendly interfaces and frictionless interactions enhance emotional evaluations, ultimately leading to behavioral commitment. In fast-paced urban environments, convenience operates as an indirect yet powerful loyalty mechanism.

In contrast, Food Quality has a significant negative indirect effect on Loyalty via Satisfaction ($\beta$ = -0.539, t = 3.157, p = 0.002). While food quality positively affects loyalty directly, its negative mediated effect suggests a disconfirmation dynamic. Even when food quality meets acceptable standards, it may fall short of heightened consumer expectations, thereby lowering satisfaction and indirectly weakening loyalty. This finding implies that expectation management is as crucial as actual product performance.

A similar pattern is observed for Service Quality, which shows a significant negative indirect effect on Loyalty via Satisfaction ($\beta$ = -0.339, T = 2.179, p = 0.030). This indicates that perceived service shortcomings, such as delivery delays or minor inefficiencies, can reduce satisfaction, thereby diminishing loyalty. In dense urban markets, where service standards are implicitly high, even technically adequate service may not be sufficient to generate positive confirmation.

Overall, the results confirm that Price Fairness, Food Quality, Service Quality, and Effort Expectancy each shape customer loyalty through their impact on Satisfaction. Among these variables, Price Fairness emerges as the strongest predictor of satisfaction, highlighting the high price sensitivity of users in Java Island. In the competitive OFD market, perceptions of fairness, not merely affordability, shape trust and emotional evaluation. When users perceive that the value received matches or exceeds the price paid, satisfaction increases, and loyalty follows.

Although Food Quality exhibits a relatively smaller indirect effect than price, it remains a critical determinant. As a food-centered platform, GrabFood cannot neglect taste, freshness, and presentation, as poor product performance can quickly undermine overall satisfaction. Meanwhile, Service Quality and Effort Expectancy, though modest in magnitude, remain statistically significant contributors to satisfaction, underscoring that reliability and usability are essential components of a seamless digital experience.

Finally, the significant relationship between Satisfaction and Loyalty supports the view that Satisfaction is the central mediating mechanism within the model. Satisfied users are more likely to engage in repeat usage and recommend the platform to others, contributing to organic growth. These findings suggest that improving user satisfaction in OFD services requires a multidimensional strategy. Isolated improvements, such as lowering prices without enhancing usability, or improving food quality without managing expectations, may be insufficient. Instead, a balanced integration of fair pricing, reliable product performance, responsive service, and intuitive technology is essential for building sustainable customer loyalty in Indonesia's competitive digital economy.

**Managerial Implications**

The findings of this study provide important strategic implications not only for GrabFood but also for the broader online food delivery (OFD) and digital logistics industry in emerging markets.

First, the results highlight what may be termed the "Price–Tech Imperative." Since Price Fairness and Effort Expectancy emerge as the dominant drivers of satisfaction, OFD platforms must prioritize pricing transparency and application stability as core strategic priorities. For competitors such as GoFood or ShopeeFood, this suggests that marketing investments should emphasize perceived value through well-designed promotional mechanisms, whereas technological investments should focus on ensuring a seamless, frictionless user interface. In highly price-sensitive environments such as Java Island, a stable, intuitive, and transparent platform experience may generate more satisfaction than premium service attributes delivered through a poorly optimized application.

Second, the negative effects of Food Quality and Service Quality on satisfaction reveal the importance of managing the expectation gap. The findings serve as a caution against over-promising in marketing communications. Hyper-realistic portrayals of food quality or overly optimistic delivery-time claims may create inflated expectations that are difficult to consistently meet. When actual performance merely meets average standards, users may experience negative disconfirmation. Therefore, platforms should adopt proactive expectation management strategies, such as providing realistic delivery estimates, transparent tracking systems, and authentic food imagery. Aligning expectations with operational realities can help prevent dissatisfaction, even when service performance remains technically adequate.

Third, although this study focuses on GrabFood users in Java Island, the results may be generalizable to other high-density, price-sensitive markets in Southeast Asia, such as Vietnam or the Philippines. In such contexts, the value-for-money logic tends to dominate over premium differentiation strategies. This suggests that regional managers in emerging markets may benefit more from cost-efficiency and technological optimization strategies rather than positioning their services as luxury or premium offerings.

From a theoretical perspective, this study challenges the traditional assumption that "Quality is King." Within digital platform ecosystems in developing regions, usability operationalized as Effort Expectancy functions as a foundational dimension of perceived

quality. The findings demonstrate that in digitally mediated services, the medium (the application interface) is as critical as, and in some cases more influential than, the product itself. By integrating Expectation-Confirmation Theory (ECT) and the Technology Acceptance Model (TAM), this study enriches marketing and digital service literature, showing that in emerging digital economies, technological experience and pricing fairness may supersede traditional product-centric quality dimensions in shaping satisfaction and loyalty.

## CONCLUSION

This study examined the determinants of user loyalty in the highly competitive online food delivery (OFD) market in Java Island by integrating the Technology Acceptance Model (TAM) with service marketing theories. The findings reveal that Price Fairness and Effort Expectancy are the primary drivers of User Satisfaction, confirming that economic value and convenience form the core value proposition for Javanese consumers. In contrast, Food Quality and Service Quality have negative effects on satisfaction, suggesting that expectations are higher in urban markets, where these dimensions function more as hygiene factors than as motivators. Satisfaction plays a strong mediating role, indicating that loyalty in the gig economy is not automatic but must be earned through consistently satisfying experiences.

In terms of originality, this study moves beyond prior research that examines price and quality separately by demonstrating the trade-off between platform attributes and product attributes in an emerging market context. The findings suggest that in mature digital markets such as Java, competitive advantage depends more on technological usability and pricing strategy than on traditional service excellence alone.

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