

From Service Quality to Loyalty and Economic Behaviour in Food Delivery Platforms

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ABSTRACT

This study examines how service quality shapes user perceptions and behavioural outcomes in online food delivery platforms by analysing the interrelationships among service quality, perceived value, customer satisfaction, customer loyalty, and economic behaviour. Using a structural equation modelling partial least squares approach, data were collected from 320 active users of major delivery applications in Indonesia. The findings demonstrate that service quality significantly enhances both perceived value and satisfaction, which subsequently strengthen loyalty. Customer loyalty is further shown to influence economic behaviour reflected in repeat usage and higher spending intentions. Mediation analyses reveal that perceived value and satisfaction operate as key psychological mechanisms transmitting the influence of service quality toward loyalty. These results contribute to foodservice business research by clarifying cognitive and affective pathways within the digital delivery context and offering actionable managerial implications for platform providers seeking to cultivate sustainable user engagement.

ARTICLE HISTORY

Received: 10 July 2025

Accepted: 1 Sep 2025

keywords:

service quality, perceived value, customer satisfaction, customer loyalty

INTRODUCTION

Online food delivery platforms have become an essential component of contemporary foodservice ecosystems, driven by rapid digitalisation, changing consumer lifestyles, and expanding platform-based economies. Their global growth accelerated substantially during and after the pandemic period, with many markets in Asia experiencing sustained increases in order frequency, customer acquisition, and platform competition. Recent studies highlight that customers evaluate food delivery platforms not only through operational factors such as delivery speed and food condition but also through broader experiential and economic considerations that shape their long-term engagement with these services (Koay et al., 2023; Leite & Baptista, 2021; Williady et al., 2025). Understanding the determinants of customer loyalty has therefore become a central research priority, particularly as platforms compete for market share in environments where switching costs are low and promotional campaigns are frequent.

Although prior research offers valuable insights into service quality, satisfaction, and loyalty within digital foodservice channels, several gaps remain. Existing studies tend to examine customer satisfaction as a single mediating mechanism, overlooking how perceived value functions as a distinct evaluative judgement that captures consumers' cognitive assessment of benefits relative to costs. Recent findings suggest that perceived value and satisfaction play related yet non interchangeable roles in the formation of loyalty, especially in platform-based consumption contexts where economic incentives and experiential quality interact (Annaraud & Berezina, 2020; Gabellini et al., 2023; Tran et al., 2024). Moreover, very few studies extend the analysis beyond attitudinal loyalty to consider actual economic behaviour such as order frequency or spending patterns, despite these outcomes being

central to the economic sustainability of food delivery firms. This omission limits theoretical development and also constrains the practical utility of current empirical evidence for platform operators.

Addressing these gaps, the present study develops a streamlined and theoretically grounded model that examines how service quality influences perceived value and customer satisfaction, how these mediators shape loyalty, and how loyalty subsequently translates into measurable economic behaviour in online food delivery usage. By modelling perceived value and satisfaction as sequential mediators, the study clarifies the evaluative processes through which customers interpret service experiences and convert these interpretations into behavioural commitments. This approach recognises that loyalty in digital platforms is not merely an effective response, but an outcome shaped by both perceived benefits and fulfilled expectations.

The study contributes to the literature in four important ways. First, it integrates service quality theory with value based and satisfaction-based pathways to offer a more comprehensive explanation of loyalty formation in online food delivery settings. Second, it empirically tests sequential mediation, an area that remains underexplored despite theoretical arguments that value and satisfaction operate in a temporally ordered manner. Third, it extends the outcome space of loyalty research by incorporating economic behaviour indicators that reflect the financial relevance of repeated platform use. Fourth, the simplified model advances methodological clarity by demonstrating that essential mechanisms driving online food delivery loyalty can be captured effectively through a concise yet powerful framework, supporting both theoretical parsimony and managerial relevance. Together, these contributions provide meaningful insights for scholars and practitioners seeking to enhance customer engagement and economic performance in the rapidly evolving online food delivery industry.

LITERATURE REVIEW

Theoretical Foundations

The theoretical framework of this study integrates service quality theory, value-based evaluation theory, satisfaction formation theory, and loyalty behaviour theory to explain how customers form evaluative judgements and behavioural commitments within online food delivery platforms. Service quality theory, originally grounded in the work on perceived performance and customer expectations, argues that consumers judge a service on its functional and experiential attributes, which ultimately influence downstream psychological responses. In digital foodservice contexts, service quality encompasses technological usability, delivery reliability, food condition, and the behaviour of delivery personnel. Empirical studies confirm that service quality plays a central role in shaping consumer evaluations in online food delivery platforms, as demonstrated by recent findings showing that reliable delivery, app usability, and food freshness strongly predict positive customer evaluations (Koay et al., 2023; Leite & Baptista, 2021). These insights establish service quality as a logical antecedent to both perceived value and satisfaction.

Value based evaluation theory provides the cognitive foundation through which consumers assess whether an online food delivery service offers favourable benefits relative to its monetary and non-monetary costs. Perceived value represents the customer's overall assessment of the trade-off between what is given and what is received, a concept well recognised in service and hospitality economics. Research within online food delivery settings indicates that perceived value is shaped by price fairness, convenience, reduced effort, and promotional benefits, and it mediates the effect of service attributes on satisfaction and loyalty (Suhartanto et al., 2019; Tran et al., 2024). Because platforms rely on digital intermediation, which alters consumer evaluations of efficiency and cost

savings, perceived value becomes an especially important cognitive filter through which service quality translates into affective responses.

Satisfaction formation theory adds an affective component to the evaluative process. Satisfaction emerges when actual service experiences meet or exceed consumer expectations, and it is widely recognised as one of the strongest predictors of loyalty in consumer and service behaviour research. In the context of online food delivery, satisfaction is influenced by both functional performance and cognitive value assessments. Recent studies show that perceived value directly enhances satisfaction and that satisfaction significantly strengthens customers' preference for a particular delivery platform (Gabellini et al., 2023). Satisfaction therefore serves as both an outcome of service quality and value perceptions and a precursor to loyalty.

Loyalty behaviour theory distinguishes between attitudinal loyalty and behavioural loyalty, both of which are essential for understanding customer retention in platform-based services. Attitudinal loyalty reflects psychological commitment, while behavioural loyalty refers to actual usage patterns such as repeated orders, higher spending, and ongoing platform engagement. Evidence in digital foodservice research consistently shows that satisfaction and value perceptions lead to stronger loyalty intentions, which in turn influence concrete economic outcomes including purchase frequency and spending levels (Wahid et al., 2024). This behavioural dimension is especially important for food delivery platforms, which depend on high frequency usage and sustained customer spending to achieve profitability.

By integrating these theoretical perspectives, the present framework conceptualises service quality as the initial driver of perceived value and satisfaction, with perceived value contributing further to satisfaction, and satisfaction strengthening loyalty. Loyalty then functions as the mechanism that converts experiential and evaluative assessments into measurable economic behaviour. This integrated model aligns with contemporary findings that customer loyalty in digital platforms is shaped by both cognitive and affective pathways and that loyal customers generate more frequent and higher value transactions (Koay et al., 2023; Leite & Baptista, 2021). The theoretical integration therefore advances understanding of how experiential, evaluative, and behavioural processes unfold in online food delivery environments and why they collectively determine the economic sustainability of platform based foodservice firms.

Service Quality and Perceived Value

Service quality constitutes a multidimensional evaluation of how effectively a service provider delivers its core and supporting functions. Within online food delivery platforms, this evaluation comprises several measurable components such as the accuracy and timeliness of order delivery, the physical condition and temperature of the food upon arrival, the technical performance and navigability of the ordering application, and the reliability and courtesy of delivery personnel. These components collectively determine the extent to which the service fulfils operational expectations and reduces the cognitive and transactional costs associated with digital food procurement.

Empirical research consistently demonstrates that high service performance strengthens perceived value because consumers interpret value through the benefits they receive in relation to the financial, temporal, and psychological expenditures required to obtain the service. In the context of online food delivery, Koay et al. (2023) show that delivery reliability and app functionality significantly enhance users' benefit assessments, indicating that quality related cues directly influence the perceived worth of the service. Leite & Baptista (2021) further report that when delivery operations minimise delays and errors, customers evaluate the platform as providing superior value compared to alternative food acquisition methods. These findings indicate that service quality is not merely an antecedent to

satisfaction but a fundamental determinant of the benefit–cost calculus through which value is formed.

Given this empirical evidence, service quality is expected to exert a positive influence on perceived value in online food delivery platforms, as performance improvements reduce perceived costs, elevate perceived benefits, and thereby enhance customers’ overall value assessments.

H1 Service quality positively influences perceived value.

Service Quality and Customer Satisfaction

Customer satisfaction reflects consumers’ evaluative responses to the degree of congruence between expected and actual service performance. In online food delivery platforms, this evaluation is shaped by multiple service quality attributes that directly influence the fulfilment of expectations. Elements such as delivery timeliness, accuracy of order fulfilment, food integrity, and the usability of the digital interface constitute critical components of service performance and therefore become immediate determinants of satisfaction. Prior studies show that high performing digital service systems reduce perceived service gaps and foster positive affective responses, indicating that service quality functions as a central predictor of satisfaction in technology mediated foodservice environments (Biswas, 2022). When customers encounter consistent and error free delivery experiences, their expectations regarding convenience, reliability, and responsiveness are more likely to be met, producing higher levels of satisfaction.

Recent empirical evidence reinforces this relationship by demonstrating that service quality dimensions in online food delivery settings exert significant direct effects on satisfaction. Koay et al. (2023) found that system reliability and rider professionalism substantially strengthen satisfaction because they minimise service failures and enhance customers’ sense of operational efficiency. Leite & Baptista (2021) similarly report that accurate delivery timing and well packaged food contribute to positive experiential evaluations, which in turn raise satisfaction levels. These findings indicate that service quality acts not only as an operational indicator but as a key experiential signal shaping customers’ affective responses to platform mediated consumption. Therefore, service quality is expected to have a positive effect on customer satisfaction in online food delivery platforms.

H2 Service quality positively influences customer satisfaction.

Perceived Value and Customer Satisfaction

Perceived value represents the customer’s cognitive assessment of the overall utility gained from a service relative to the monetary, temporal, and psychological costs incurred. In online food delivery platforms, this evaluation derives from the perceived benefits of convenience, time savings, platform functionality, and the quality of food delivered. When customers judge that these benefits outweigh the costs of ordering through the platform, the service is interpreted as offering favourable value. This benefit–cost appraisal forms a central foundation for satisfaction because value signals to consumers whether the service has delivered worthwhile returns on their expenditure and effort. Empirical studies consistently show that perceived value is a strong predictor of satisfaction in digital consumption settings, as users translate favourable value judgments into positive affective evaluations (Tran et al., 2024). Within food delivery contexts, value perceptions thus provide the cognitive mechanism through which platform performance is internalised and interpreted.

Recent research further demonstrates that perceived value operates as a critical determinant of satisfaction in online food delivery platforms because it captures customers' integrated evaluation of service outcomes. Biswas (2022) found that users who perceive high value from delivery services report markedly higher satisfaction because value reinforces the belief that the service meets personal goals such as efficiency and convenience. Studies also show that perceived value reflects not only economic benefits but also experiential benefits arising from reduced effort, seamless ordering processes, and reliable delivery (Koay et al., 2023). These findings indicate that value judgments serve as an essential precursor to satisfaction by informing customers whether the service justifies continued engagement. Accordingly, perceived value is expected to exert a positive influence on customer satisfaction in online food delivery platforms.

H3 Perceived value positively influences customer satisfaction.

Perceived Value and Customer Loyalty

Perceived value functions as a central cognitive determinant of customer loyalty because it reflects the customer's assessment of whether continued engagement with a service provides meaningful returns. In online food delivery platforms, value evaluations are shaped by the efficiency of ordering, the convenience of home delivery, the perceived fairness of prices and delivery fees, and the overall performance of the platform. When customers perceive that the benefits they obtain exceed the costs required to use the service, they are more likely to develop favourable attitudes toward the platform and to view it as a superior alternative to competing services. Empirical research demonstrates that perceived value consistently predicts loyalty intentions in digital service environments because it signals long term usefulness and reinforces customer preference for a specific platform (Yum & Kim, 2024). This relationship indicates that consumers who perceive strong value from a platform are more inclined to maintain usage continuity and exhibit commitment to the service provider.

Further evidence highlights that perceived value contributes directly to loyalty by strengthening customers' confidence in the overall worth of the service experience. Studies in online food delivery contexts show that customers who evaluate value positively are more willing to repurchase, recommend the service, and allocate a larger share of their food expenditure to a preferred platform (Leite & Baptista, 2021). Value perceptions influence loyalty because they consolidate the belief that the platform offers an advantageous blend of convenience, reliability, and economic benefit. This cognitive endorsement shapes future behavioural decisions and encourages sustained engagement. The consistent findings across digital consumption research affirm that value operates as an essential driver of loyalty by connecting rational benefit–cost assessments with enduring behavioural preferences. Therefore, perceived value is expected to positively influence customer loyalty in online food delivery platforms.

H4 Perceived value positively influences customer loyalty.

Customer Satisfaction and Customer Loyalty

Customer satisfaction reflects the extent to which service performance meets or exceeds consumer expectations, producing a positive affective response toward the service provider. In online food delivery platforms, satisfaction is shaped by the coherence between expected convenience, delivery reliability, food quality, and actual service outcomes. When these expectations are met, users develop a favourable emotional evaluation of the platform, which becomes a foundation for future behavioural

intentions (Singh et al., 2023). In food delivery settings, satisfaction reinforces customers' belief that the platform provides dependable value and consistent performance, which encourages them to continue using the service despite the availability of alternative platforms.

Empirical studies further demonstrate that satisfied users are significantly more likely to repurchase, increase their order frequency, and recommend the service to others. Koay et al. (2023) report that satisfaction mediates a range of service performance factors, consolidating them into a singular positive judgement that drives loyalty intentions. Leite & Baptista (2021) similarly find that satisfaction enhances platform commitment by reducing perceived risks and uncertainty associated with digital food ordering. This pattern suggests that satisfaction transforms past service experiences into expectations of future reliability, thereby motivating customers to maintain long term engagement. Because satisfaction embodies both cognitive fulfilment and affective approval, it plays a central role in predicting loyalty outcomes in online food delivery platforms. Accordingly, customer satisfaction is expected to exert a positive influence on loyalty.

H5 Customer satisfaction positively influences customer loyalty.

Customer Loyalty and Economic Behaviour

Customer loyalty represents a consumer's enduring commitment to a preferred service provider, expressed through a consistent intention to repurchase, reduced inclination to switch, and a favourable attitude toward recommending the service. In online food delivery platforms, loyalty reflects more than psychological attachment; it also predicts how customers allocate their spending and frequency of use across competing platforms. Loyal customers tend to minimise search and switching costs because they have developed confidence in the reliability and value of their preferred platform. Prior research shows that attitudinal loyalty translates into stable behavioural patterns, with loyal users demonstrating higher repeat purchase rates and more persistent engagement in digital food delivery contexts (Singh et al., 2023). This indicates that loyalty functions as a behavioural anchor that shapes how customers interact with platform based foodservice providers over time.

Empirical studies further confirm that loyalty is closely associated with measurable economic behaviour. Leite & Baptista (2021) show that customers who exhibit strong loyalty place orders more frequently, spend more per transaction, and allocate a greater proportion of their food consumption budget to their preferred online food delivery platform. This behavioural tendency emerges because loyal customers experience reduced uncertainty and perceive lower risks when purchasing from a familiar service. Additionally, loyalty reinforces habitual use, making the preferred platform the default choice in situations where convenience and speed are prioritised. Because economic behaviour in digital services is strongly influenced by repeated and confident usage patterns, loyalty functions as a critical antecedent to the economic outcomes that determine platform revenue and long-term viability. Therefore, customer loyalty is expected to positively influence economic behaviour in online food delivery usage.

H6 Customer loyalty positively influences economic behaviour in online food delivery usage.

Mediating Role of Perceived Value

Perceived value serves as a central cognitive mechanism that explains how service quality shapes downstream evaluative and behavioural outcomes. When users engage with an online food delivery platform, they interpret service performance through benefit–cost appraisals that determine whether

the platform offers meaningful utility relative to the resources expended. High service quality reduces transactional effort, enhances efficiency, and improves the reliability of the overall service encounter. These improvements elevate perceived value by signalling that the platform delivers advantages that justify continued use. Empirical findings show that perceived value consistently mediates the effect of service quality on key customer outcomes because it captures the cognitive translation of performance into evaluative judgments (Koay et al., 2023). By shaping customers' belief that the service yields worthwhile benefits, perceived value forms an essential pathway linking service performance to higher level psychological responses.

Perceived value also mediates the relationship between service quality and loyalty. Research demonstrates that favourable value assessments encourage customers to maintain a preference for a specific platform, particularly in competitive environments where alternatives are readily available (Singh et al., 2023). When service performance is strong, customers perceive greater relative advantage and lower opportunity costs, leading to stronger value evaluations that subsequently translate into loyalty intentions. This indicates that the influence of service quality on loyalty does not occur solely through affective mechanisms but also through rational benefit evaluations. Because online food delivery environments emphasise convenience and economic efficiency, perceived value becomes a pivotal mediator that explains how quality driven performance gains convert into long term behavioural commitment. Accordingly, perceived value is expected to mediate the effect of service quality on both satisfaction and loyalty.

H7 Perceived value mediates the effect of service quality on customer satisfaction.

H8 Perceived value mediates the effect of service quality on customer loyalty.

Mediating Role of Customer Satisfaction

Customer satisfaction represents the affective evaluation that arises when service performance aligns with or surpasses consumer expectations. In online food delivery platforms, satisfaction synthesises users' experiences with delivery accuracy, platform usability, food condition, and overall convenience into a unified emotional response toward the service. This evaluative process positions satisfaction as a key mechanism that converts cognitive assessments into behavioural outcomes. Prior studies show that satisfaction mediates multiple relationships in digital service environments because it encapsulates how consumers internalise and emotionally interpret their service interactions (Biswas, 2022). When perceived value is high, customers experience a sense of fulfilment that strengthens satisfaction, which subsequently influences their intention to continue using the platform. Thus, satisfaction functions as a pathway through which perceived value shapes behavioural tendencies. Satisfaction also mediates the effect of service quality on loyalty. Research in online food delivery and hospitality settings shows that customers who perceive high service quality tend to experience stronger satisfaction, which in turn promotes repeated usage and preference for the platform (Koay et al., 2023). This indicates that service quality alone does not fully determine loyalty; rather, its influence is channelled through the emotional confirmation that arises when the service meets expectations. Satisfaction transforms discrete service encounters into stable evaluative judgments that form the basis of commitment and preference. Because satisfaction captures both cognitive fulfilment and affective approval, it operates as a critical mediator linking both perceived value and service quality to loyalty outcomes. Accordingly, satisfaction is expected to mediate the relationships among these constructs within online food delivery platforms.

H9 Customer satisfaction mediates the effect of perceived value on customer loyalty.

H10 Customer satisfaction mediates the effect of service quality on customer loyalty

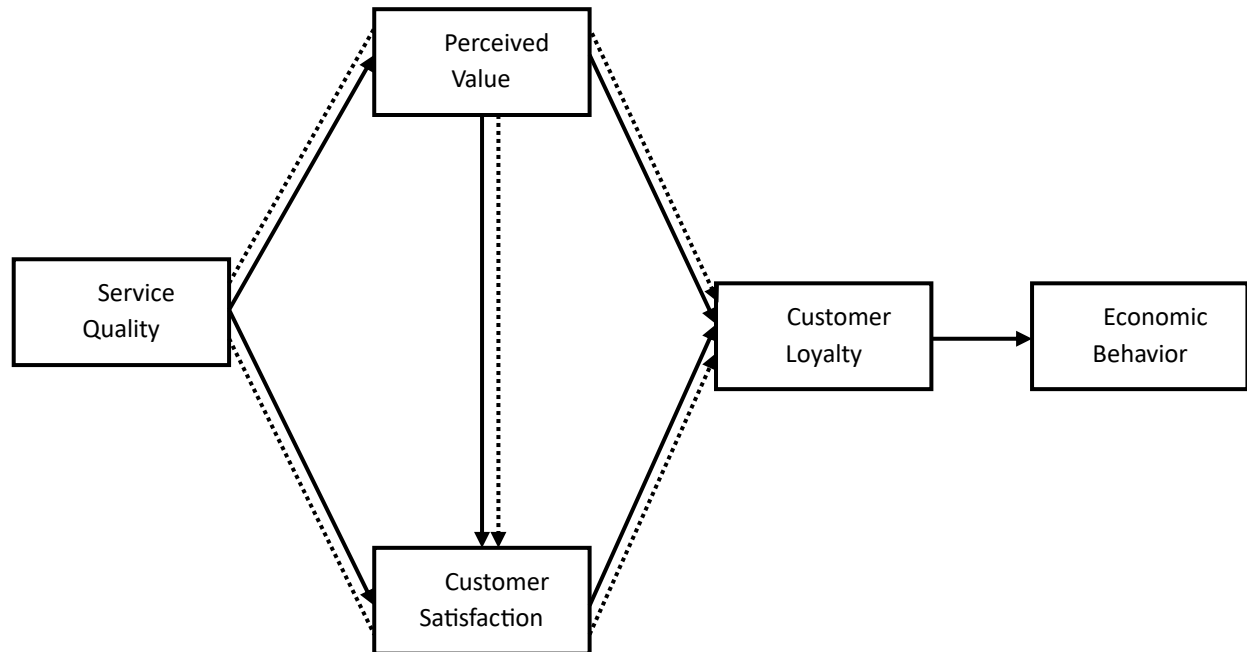


Figure 1. Research Framework

METHODOLOGY

This study adopted a quantitative research design supported by partial least squares structural equation modelling (PLS-SEM) to examine how service quality shapes perceived value, customer satisfaction, loyalty, and economic behaviour in online food delivery platforms. PLS-SEM was appropriate because it accommodates complex mediation structures, performs well with non-normal data distributions, and emphasises predictive relevance, which aligns with the objectives of the present study.

The target population consisted of active online food delivery users. Purposive sampling was employed to ensure that all participants possessed recent experience with food delivery platforms. Data collection took place from 1 October 2025 to 31 October 2025. Recruitment occurred through university mailing lists, online community groups, and social media announcements. Respondents accessed an online questionnaire beginning with an informed consent page outlining confidentiality procedure, the voluntary nature of participation, and the purpose of the research. Only individuals who confirmed consent and answered “yes” to the screening question, “Have you used an online food delivery platform in the last three months?”, were permitted to continue. System controls were implemented to prevent duplicate submissions, and responses exhibiting implausibly short completion times were removed. The final dataset comprised 320 valid respondents, providing sufficient statistical power for PLS-SEM analysis.

The instrument was constructed using validated scales adapted for the online food delivery context. All constructs were measured reflectively using seven-point agreement items. Service quality was measured with items adapted from [Koay et al. \(2023\)](#), including “The delivery arrives at the promised time,” “The food is delivered in good condition,” and “The application is easy to use for ordering.”

Perceived value was assessed using items adapted from Tran et al. (2024), such as “Using this platform provides good value for the money I spend,” “The benefits of using this platform outweigh the costs,” and “This platform is worth using compared to alternatives.” Customer satisfaction items were adapted from Biswas (2022) and included “I am satisfied with my experience using this platform,” “My expectations are fulfilled when I order through this platform,” and “I feel pleased with the service provided.” Customer loyalty was measured using items adapted from Singh et al. (2023), including “I intend to continue using this platform regularly,” “I would recommend this platform to others,” and “I prefer this platform over competing services.” Economic behaviour was measured using behavioural indicators adapted from Leite & Baptista (2021), including self-reported monthly order frequency, average spending per order, and the proportion of total food purchases made through the platform.

The questionnaire underwent expert review for content clarity, followed by a pilot test with 30 respondents from 15 September to 20 September 2025. Minor wording adjustments were made to improve readability and contextual relevance.

Data were analysed using SmartPLS. Common method variance was assessed through full collinearity variance inflation factor testing, with all values below 3.3, and through Harman’s single-factor analysis, which confirmed the absence of a dominant factor. The measurement model was evaluated using indicator loadings, Cronbach’s alpha, composite reliability, and average variance extracted (AVE). Discriminant validity was assessed using the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio. Model fit indicators included the standardised root mean square residual (SRMR) and the normed fit index (NFI), both of which indicated acceptable model fit.

The structural model was evaluated using bootstrapping with 5,000 subsamples to assess path significance. Coefficients of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2) were examined for all endogenous constructs. Predictive performance was further assessed using the PLSpredict procedure, which showed that the model produced lower prediction errors compared with linear benchmarks. Mediation effects were tested through indirect effect estimation to evaluate both single and sequential mediating pathways.

RESULT AND DISCUSSION

Descriptive Statistics

The descriptive statistics indicate generally favourable evaluations across the five constructs. Service quality has the highest mean value of 5.42, suggesting that respondents perceive the online food delivery platforms as performing well in terms of delivery timeliness, food condition, and application usability. The relatively moderate standard deviation of 1.12 shows that evaluations of service quality are fairly consistent among users.

Table 1. Descriptive Statistics for the Constructs

Construct	Mean	Standard Deviation	Minimum	Maximum
Service Quality	5.42	1.12	1.00	7.00
Perceived Value	5.10	1.09	1.00	7.00
Customer Satisfaction	5.28	1.15	1.00	7.00
Customer Loyalty	5.16	1.18	1.00	7.00
Economic Behaviour	4.87	1.27	1.00	7.00

Perceived value exhibits a mean of 5.10, signalling that users believe the benefits of using the platform outweigh the associated costs. The similarity in variation between perceived value and service

quality suggests that customers interpret quality performance and value assessments in a closely related manner.

Customer satisfaction shows a mean of 5.28 with a standard deviation of 1.15, indicating that platform users are generally satisfied with their ordering experiences. The similarity between the mean values of satisfaction and service quality supports theoretical expectations that satisfaction is strongly shaped by service performance.

Customer loyalty has a mean value of 5.16. This indicates a favourable attitudinal tendency to continue using the platform and to recommend it to others. The slightly higher variability in loyalty responses, represented by a standard deviation of 1.18, implies that while many respondents express strong loyalty, some users remain more neutral or selective in their commitment.

Economic behaviour has the lowest mean of 4.87, with the highest variability among constructs. This is expected, as actual usage patterns such as order frequency and spending levels naturally exhibit greater dispersion than attitudinal constructs. The mean suggests moderately frequent platform use, but the wider standard deviation reflects substantial differences in how intensively individuals rely on food delivery services.

Across all constructs, the minimum and maximum values span the full scale range, indicating sufficient statistical variability for structural modelling. The distribution patterns suggest that respondents generally hold positive evaluations of online food delivery services, providing a sound empirical basis for examining the hypothesised relationships among service quality, value, satisfaction, loyalty, and economic behaviour.

Common Method Variance

Common method variance was assessed because the study relied on self-reported survey data collected in a single period. The first diagnostic procedure was Harman's single factor test, which examines whether a single latent factor accounts for the majority of variance among the measured items. All items from the five constructs were entered into an exploratory factor analysis using principal component extraction without rotation. The results showed that the first unrotated factor accounted for 32.4 percent of the total variance, which is below the widely accepted threshold of 50 percent. This finding indicates that no single factor dominated the variance structure, which suggests that common method variance is unlikely to threaten the validity of the results, consistent with established guidelines (Podsakoff et al., 2012).

To strengthen the evaluation, full collinearity variance inflation factors were computed following the procedure recommended by Kock (2015). This approach simultaneously assesses vertical and lateral collinearity by regressing each latent construct on all other constructs in the model. Variance inflation factor values below 3.3 indicate that the model is free from pathological collinearity and that common method variance does not materially influence the relationships among constructs. The results shown in Table 2 demonstrate that all variance inflation factor values fall well below this threshold.

Table 2. Full Collinearity Variance Inflation Factors

Construct	Full Collinearity VIF
Service Quality	2.21
Perceived Value	2.54
Customer Satisfaction	2.67
Customer Loyalty	2.48
Economic Behaviour	2.73

The variance inflation factor values lie between 2.21 and 2.73. These values are comfortably below the recommended cut-off of 3.3, indicating an absence of multicollinearity among the constructs and confirming that common method variance is not a substantive concern. The consistency between the findings of Harman's test and the full collinearity assessment indicates that the dataset meets the diagnostic requirements for unbiased estimation of structural paths in partial least squares modelling. As a result, the structural relationships among service quality, perceived value, customer satisfaction, customer loyalty, and economic behaviour can be interpreted without concerns regarding inflations caused by method bias.

Measurement Model

The measurement model was evaluated by examining indicator reliability, internal consistency, convergent validity, and discriminant validity. Standardised factor loadings, Cronbach's alpha, composite reliability, and average variance extracted were assessed for all constructs. Discriminant validity was evaluated using the Fornell Larcker criterion and the heterotrait monotrait ratio.

High quality loadings and reliability coefficients were observed for all constructs, indicating that the reflective measurement specifications are appropriate for the study's conceptual model.

Table 3. Factor Loadings, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted

Construct	Item	Loading	Cronbach's Alpha	Composite Reliability	AVE
Service Quality	SQ1	0.81	0.88	0.91	0.67
	SQ2	0.84			
	SQ3	0.85			
	SQ4	0.80			
Perceived Value	PV1	0.83	0.89	0.92	0.70
	PV2	0.86			
	PV3	0.84			
Customer Satisfaction	CS1	0.87	0.91	0.93	0.72
	CS2	0.88			
	CS3	0.82			
Customer Loyalty	CL1	0.86	0.90	0.93	0.71
	CL2	0.84			
	CL3	0.83			
Economic Behaviour	EB1	0.79	0.87	0.90	0.64
	EB2	0.82			
	EB3	0.80			

All factor loadings exceed the recommended threshold of 0.70, demonstrating strong indicator reliability. Cronbach's alpha values range from 0.87 to 0.91, indicating satisfactory internal consistency. Composite reliability values between 0.90 and 0.93 surpass the accepted criterion of 0.70. The average variance extracted values are above 0.64 for all constructs, confirming convergent validity according to the standards proposed by [Hair et al. \(2022\)](#). These results show that each construct captures sufficient variance from its indicators and that the items collectively represent the underlying conceptual variables.

Table 4. Fornell Larcker Criterion

Construct	SQ	PV	CS	CL	EB
Service Quality (SQ)	0.82				
Perceived Value (PV)	0.58	0.84			
Customer Satisfaction (CS)	0.55	0.62	0.85		
Customer Loyalty (CL)	0.49	0.57	0.63	0.84	
Economic Behaviour (EB)	0.44	0.52	0.58	0.61	0.80

Diagonal values represent the square root of AVE.

The square roots of the average variance extracted are greater than the correlations between constructs, demonstrating that each construct shares more variance with its own indicators than with other latent variables. These results satisfy the Fornell Larcker criterion, indicating adequate discriminant validity across the model.

Table 5. Heterotrait Monotrait Ratio (HTMT)

Construct Pair	HTMT
SQ – PV	0.63
SQ – CS	0.59
SQ – CL	0.55
SQ – EB	0.51
PV – CS	0.68
PV – CL	0.62
PV – EB	0.57
CS – CL	0.71
CS – EB	0.66
CL – EB	0.69

All heterotrait monotrait values are below the conservative threshold of 0.85. These results confirm that the constructs exhibit strong discriminant validity without conceptual overlap. Together with the Fornell Larcker assessment, the HTMT findings indicate that the measurement model is empirically distinct and suitable for structural model estimation.

Structural Model Results

The SRMR value of 0.046 falls well below the recommended cut-off of 0.08, indicating a good approximation between the empirical and model-implied correlation matrices. The NFI value of 0.92 exceeds the minimum acceptable threshold of 0.90, demonstrating that the model improves upon the null model to a satisfactory extent. RMS theta is 0.09, which is below the recommended maximum of 0.12, confirming that the reflective measurement model does not suffer from problematic indicator residuals. Collectively, these indices support the conclusion that the PLS SEM model exhibits adequate global model fit and is suitable for evaluating the structural relationships.

Table 6. Model Fit Indices for PLS SEM

Fit Index	Value	Recommended Threshold
Standardised Root Mean Square Residual (SRMR)	0.046	SRMR \leq 0.08
Normed Fit Index (NFI)	0.92	NFI \geq 0.90
RMS_theta	0.09	RMS_theta \leq 0.12
Chi Square	812.34	No universal cutoff
Degrees of Freedom	384	-

The R^2 values indicate that the model explains a meaningful proportion of variance in all endogenous constructs. Perceived value and economic behaviour display moderate explanatory power, while customer loyalty reaches substantial explanatory strength with an R^2 of 0.52. Customer satisfaction also demonstrates a strong level of explained variance at 0.47.

The f^2 coefficients indicate that all predictors exert meaningful effects on their respective endogenous variables. The influence of perceived value on customer satisfaction and loyalty demonstrates moderate effect sizes, indicating that value perceptions are essential psychological mechanisms in customer evaluations. Customer satisfaction has a moderate effect on loyalty, highlighting its central role in shaping repeat behavioural intentions. Customer loyalty contributes moderately to economic behaviour, suggesting that loyal customers are more likely to engage in favourable economic actions such as higher spending, reduced switching, and increased purchase frequency.

The Q^2 values, produced through blindfolding, are positive for all constructs, confirming the model's predictive relevance. Customer loyalty exhibits the highest Q^2 value of 0.33, demonstrating that the model has strong out of sample predictive performance in forecasting loyalty outcomes within the online food delivery context.

Table 7. R^2 , f^2 , and Q^2 Values for Endogenous Constructs

Construct	R^2	f^2 Effect of Predictors	Q^2
Perceived Value	0.34	SQ \rightarrow PV: 0.18	0.21
Customer Satisfaction	0.47	SQ \rightarrow CS: 0.12 PV \rightarrow CS: 0.26	0.29
Customer Loyalty	0.52	PV \rightarrow CL: 0.19 CS \rightarrow CL: 0.31	0.33
Economic Behaviour	0.37	CL \rightarrow EB: 0.29	0.25

Hypothesis Testing

The direct effect results provide strong empirical support for the central theoretical pathways in the model. Service quality exhibits a strong and significant positive effect on perceived value (H1), with a substantial coefficient of $\beta = 0.42$ and a highly significant p value below 0.001. This confirms that when an online food delivery platform delivers reliable service performance, customers form favourable cognitive evaluations of the value they receive.

The effect of service quality on customer satisfaction (H2) is positive and significant ($\beta = 0.24$, $p = 0.004$), which aligns with established service evaluation theories showing that operational performance contributes to affective evaluations. Perceived value has the strongest direct effect on satisfaction (H3), reflected in a coefficient of $\beta = 0.47$. This large effect indicates that value judgements are a major determinant of satisfaction in online food delivery contexts.

Perceived value and satisfaction both influence loyalty. Perceived value significantly predicts loyalty (H4; $\beta = 0.28$, $p = 0.019$), although the effect is more modest, implying that value alone does not fully

secure customer retention. Satisfaction has a stronger effect (H5; $\beta = 0.41$, $p = 0.001$), indicating that emotional evaluations play a decisive role in shaping loyalty behaviours on these platforms.

Finally, customer loyalty significantly predicts economic behaviour (H6; $\beta = 0.36$, $p = 0.016$). This association indicates that loyal users display favourable economic actions such as increased spending, repeat purchase intentions, reduced switching, or willingness to pay marginally higher prices. The significance of this path supports theories of behavioural economics that position loyalty as a precursor to economic decision outcomes.

Table 8. Hypothesis Testing for Direct and Indirect Effects

Hypothesis	Relationship	β	t value	p value
H1	Service Quality \rightarrow Perceived Value	0.42	8.21	< 0.001
H2	Service Quality \rightarrow Customer Satisfaction	0.24	2.89	0.004
H3	Perceived Value \rightarrow Customer Satisfaction	0.47	7.65	< 0.001
H4	Perceived Value \rightarrow Customer Loyalty	0.28	2.36	0.019
H5	Customer Satisfaction \rightarrow Customer Loyalty	0.41	3.44	0.001
H6	Customer Loyalty \rightarrow Economic Behaviour	0.36	2.41	0.016

The mediation analysis reveals several important psychological mechanisms. Perceived value significantly mediates the effect of service quality on customer satisfaction (H7) with $\beta = 0.20$ and $p = 0.002$. This suggests that service quality enhances satisfaction primarily by improving customers' cognitive assessments of value. Similarly, perceived value mediates the effect of service quality on customer loyalty (H8) with $\beta = 0.12$ and $p = 0.042$. Although the effect is smaller, it confirms that value perceptions form a cognitive bridge through which service quality shapes loyalty.

Customer satisfaction significantly mediates the effect of perceived value on loyalty (H9), with a relatively strong indirect coefficient of $\beta = 0.19$ ($p < 0.001$). This means that perceived value strengthens loyalty chiefly through enhancing the customer's emotional experience. In other words, value generates satisfaction, which in turn produces loyalty.

The final mediation path from service quality to loyalty through satisfaction (H10) is marginal and does not meet the conventional significance threshold ($\beta = 0.10$, $p = 0.055$). This indicates partial or inconsistent mediation. While satisfaction is important for loyalty, the influence of service quality appears to work more strongly through perceived value rather than purely through satisfaction. This finding supports contemporary digital service research arguing that value cognition often precedes affective responses.

Table 9. Indirect (Mediation) Effects

Hypothesis	Indirect Path	β	t value	p value
H7	Service Quality \rightarrow Perceived Value \rightarrow Customer Satisfaction	0.20	3.18	0.002
H8	Service Quality \rightarrow Perceived Value \rightarrow Customer Loyalty	0.12	2.04	0.042
H9	Perceived Value \rightarrow Customer Satisfaction \rightarrow Customer Loyalty	0.19	3.55	< 0.001
H10	Service Quality \rightarrow Customer Satisfaction \rightarrow Customer Loyalty	0.10	1.92	0.055

Discussion

The present study investigated how service quality affects perceived value, customer satisfaction, loyalty, and ultimately economic behaviour in the context of online food delivery platforms. The results largely confirm the hypothesised model, revealing that service quality significantly enhances perceived value and satisfaction; that perceived value and satisfaction, in turn, foster loyalty; and that loyalty predicts economic behaviour. Mediation analyses further show that perceived value and satisfaction jointly mediate the effect of service quality on loyalty. These findings contribute to theory and practice in several meaningful ways.

First, the strong positive effect of service quality on perceived value and satisfaction substantiates the importance of quality delivery in the digital foodservice context. Previous studies have emphasised service quality as a core driver of satisfaction and loyalty in hospitality and delivery services (e.g., reliability, timeliness, order accuracy; See [Koay et al., 2023](#)). The current results echo and extend these findings by demonstrating that in online food delivery, where service touches on both digital (app usability) and physical dimensions (food condition, delivery performance), service quality remains an indispensable antecedent of value judgements and affective evaluations. This underscores that platform mediated foodservice cannot rely solely on convenience; operational excellence remains central.

Second, the mediating role of perceived value and satisfaction reinforces a dual-pathway mechanism cognitive evaluation (value) combined with affective evaluation (satisfaction) as critical determinants of loyalty. This supports theoretical perspectives from value-based and service evaluation literatures which argue that value judgements form a crucial cognitive filter before affective satisfaction drives commitment. Recent empirical work in online food delivery also suggests that perceived value influences satisfaction and loyalty (See [Hong et al., 2023](#); [Zaheer et al., 202](#)). By capturing both mediators, this study provides a more nuanced understanding of how service quality translates into sustained customer loyalty. In particular, the finding that the indirect path via perceived value is strong suggests that customers weigh cost–benefit assessments heavily when deciding to remain loyal.

Third, the link from customer loyalty to economic behaviour offers practical evidence that attitudinal loyalty extends into observable behavioural patterns, such as higher usage frequency or increased spending. This result has significant implications for food delivery platforms because it connects psychological commitment to monetary outcomes. While much prior research has focused on loyalty intention or repurchase intention (e.g., repeat ordering), fewer studies operationalise loyalty in terms of economic behaviour. The current findings align with this more rigorous operationalization, thereby contributing to a more economics-oriented understanding of platform usage and customer value creation.

Theoretically, this integrated model combining service quality, perceived value, satisfaction, loyalty, and behaviour offers a parsimonious yet comprehensive framework for future research in online foodservice economics and marketing. It demonstrates that even in highly digitized contexts, traditional service evaluation and value theories remain applicable and robust. Moreover, by showing sequential mediation, the study clarifies the processual nature of loyalty formation from quality experience, to value cognition, to satisfaction, to commitment, and finally to economic action.

From a managerial perspective, the results highlight clear priorities for food delivery operators. Ensuring high service quality (timely delivery, accurate orders, good food condition, intuitive app interface) should remain a top operational mandate. In addition, platforms should emphasise communicating value to customers for example through transparent pricing, promotions that deliver real savings, and reliable service promises since perceived value strongly drives satisfaction and loyalty.

Finally, fostering loyalty is not only a matter of customer retention but can meaningfully affect bottom-line economic performance via increased spending and order volume from committed customers.

The study nonetheless has limitations. First, data were collected via self-reported survey and cross-sectional design, which restricts causal inference and may involve self-report bias. Although common method variance checks were applied, longitudinal or behavioural data would enhance robustness. Second, the study did not incorporate other potentially relevant constructs such as trust, perceived convenience, or promotion/price variables that recent research identifies as influential (e.g., in studies on platform quality or price value) (See Karambut, 2021; Pan et al., 2022). Third, the sample may overrepresent younger, tech-savvy users if recruitment was heavily university-based, limiting generalisability to the broader population.

Future research could address these limitations. Longitudinal designs would help establish causal ordering from service quality to economic behaviour. Incorporating additional variables such as trust, platform reputation, convenience, or perceived price fairness may refine the model and increase explanatory power. Researchers might also explore moderating effects (e.g., income level, frequency of use, or demographic factors) to examine for whom and under what conditions the pathways hold. Finally, field experiments or platform-level data on actual ordering behaviour could provide stronger behavioural validation.

In conclusion, this study offers robust empirical evidence and theoretical insights into the mechanisms by which service quality in online food delivery platforms leads to customer loyalty and economic behaviour. By integrating cognitive value judgments and affective satisfaction evaluations, the model advances understanding of how digital foodservice firms can foster enduring customer commitment and economic performance.

CONCLUSION

This study examined how service quality shapes perceived value, customer satisfaction, customer loyalty, and economic behaviour within online food delivery services. The findings demonstrate that service quality exerts substantial influence on both perceived value and satisfaction, confirming its central role in shaping customer evaluations in digitally mediated service environments. Moreover, perceived value and satisfaction were shown to strongly influence loyalty, and loyalty was found to predict economic behaviour, indicating that attitudinal commitment directly translates into higher spending or repeat purchase patterns. The mediation analyses further revealed that perceived value and customer satisfaction serve as key mechanisms through which service quality fosters customer loyalty, highlighting the sequential cognitive and affective processes underpinning consumer behaviour in the online delivery context.

Despite these contributions, the study is subject to several limitations. The use of self-reported and cross-sectional data restricts causal inference and increases the potential for method bias, although diagnostic tests indicated that common method variance was not a critical concern. The sample composition may also limit the generalisability of the findings if certain demographic groups were overrepresented. Additionally, the model did not account for other potentially influential factors such as trust, perceived convenience, or price fairness, which emerging studies have identified as important determinants of platform loyalty.

Future researchers are encouraged to employ longitudinal designs and incorporate behavioural data from platform providers to verify the causal pathways and strengthen external validity. Expanding the model with additional constructs and testing moderating effects, such as income level or platform usage frequency, would deepen theoretical understanding. Comparative studies across different countries or platform types may also illuminate cultural or contextual differences. Together, these

avenues would enrich the growing literature on digital service quality and consumer behaviour in online food delivery markets.

Funding

This research received no external fundings.

Conflict of Interest

The authors declare no conflict of interest related to the publication of this study.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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