Author Accepted Manuscript (AAM)

Effects of Service Quality, Perceived Value, Customer Satisfaction on Behavioral Intentions in Platform-Based Online Food Delivery Services

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Journal:
British Food Journal, Emerald Publishing, Vol. 128 No. 5, 2026, pp. 1874–1892

DOI:

https://doi.org/10.1108/BFJ-05-2025-0611

Date accepted for publication:
8 November 2025

Publication status:
This is the Author Accepted Manuscript (AAM) of an article published by Emerald Publishing Limited in *British Food Journal*. The final published version (Version of Record) is available on Emerald Insight at: https://doi.org/10.1108/BFJ-05-2025-0611

Please cite this article as:
Thuannadee, S. and Praneetpholkrang, P. (2026), "Effects of service quality, perceived value, customer satisfaction on behavioral intentions in platform-based online food delivery services", *British Food Journal*, Vol. 128 No. 5, pp. 1874–1892, doi: https://doi.org/10.1108/BFJ-05-2025-0611

Abstract:

This study investigates how distinct dimensions of service quality influence consumer decision-making in the rapidly growing online food delivery (OFD) market, clarifying the pathways through which service attributes affect perceived value for money, satisfaction, and ultimately, customer behavioral intentions. Questionnaire data from 284 OFD customers in Nakhon Ratchasima, Thailand, were analyzed. Exploratory factor analysis identified key service quality dimensions, and confirmatory factor analysis with structural equation modeling was used to test a mediation model linking service quality to behavioral outcomes. Three service quality dimensions were identified: food quality, customer support, and application functionality. Food quality and customer support directly influenced perceived value for money, while application functionality directly affected customer satisfaction. Customer satisfaction was the strongest predictor of behavioral intentions and acted as a central mediator. It mediated the relationship between perceived value for money and behavioral intentions. Additionally, food quality and customer support shaped behavioral intentions through sequential mediation via value for money and satisfaction, whereas application functionality did so through satisfaction alone. This research advances OFD scholarship by empirically clarifying the multidimensional structure of service quality and demonstrating how different quality aspects follow distinct pathways to influence behavioral intentions. By focusing on Nakhon Ratchasima, a dynamic yet under-researched Thai urban center, the study contributes fresh insights into consumer behavior in emerging digital marketplaces and offers practical implications for OFD platforms.

Keywords:
Online food delivery, Service quality, Behavioral intentions, Satisfaction, Perceived value, Value for money

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Manuscript ID	BFJ-05-2025-0611.R1
Manuscript Type:	Research Paper
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Abstract

Purpose – This study investigates how distinct dimensions of service quality influence consumer decision-making in the rapidly growing online food delivery (OFD) market, clarifying the pathways through which service attributes affect perceived value for money, satisfaction, and ultimately, customer behavioral intentions.

Design/methodology/approach – Questionnaire data from 284 OFD customers in Nakhon Ratchasima, Thailand, were analyzed**.** Exploratory factor analysis identified key service quality dimensions, and confirmatory factor analysis with structural equation modeling was used to test a mediation model linking service quality to behavioral outcomes.

Findings – Three service quality dimensions were identified: food quality, customer support, and application functionality. Food quality and customer support directly influenced perceived value for money, while application functionality directly affected customer satisfaction. Customer satisfaction was the strongest predictor of behavioral intentions and acted as a central mediator. It mediated the relationship between perceived value for money and behavioral intentions. Additionally, food quality and customer support shaped behavioral intentions through sequential mediation via value for money and satisfaction, whereas application functionality did so through satisfaction alone.

Originality/value – This research advances OFD scholarship by empirically clarifying the multidimensional structure of service quality and demonstrating how different quality aspects follow distinct pathways to influence behavioral intentions. By focusing on Nakhon Ratchasima, a dynamic yet under-researched Thai urban center, the study contributes fresh insights into consumer behavior in emerging digital marketplaces and offers practical implications for OFD platforms.

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1. Introduction

Online food delivery (OFD) enables consumers to order meals and beverages via websites or mobile applications. Two main models dominate this market: restaurant-to-consumer (R2C) and platform-to-consumer (P2C). In R2C, restaurants manage online orders and deliveries directly. In contrast, P2C platforms aggregate multiple restaurants, enabling

users to browse menus, compare prices and services, and consider customer reviews before placing an order (Pandey *et al.*, 2022). Providers such as Delivery Hero, Foodpanda, and GrubHub oversee order processing, delivery, and customer support, while generating revenue primarily from restaurant commissions and delivery fees (Hirschberg *et al.*, 2016).

The global OFD sector has expanded rapidly due to mobile technology and rising consumer demand for convenience (Cheng *et al.*, 2021). In 2024, its market value was $84 billion, projected to reach $389 billion by 2033. P2C services dominate this expansion, expected to grow annually by 20% between 2025 and 2033, as they centralize restaurant access and promotions (Straits Research, 2024). Within this global growth, Asia-Pacific represents a key growth driver (Straits Research, 2024), with Thailand standing out in Southeast Asia (Ng, 2021). Thailand's OFD market is projected to grow 8% annually from 2025 to 2029 (Statista, 2025). However, the attractive market potential has intensified competition within Thailand's P2C segment, as providers battle for market share and customer loyalty (Ng, 2021).

In this competitive digital environment, identifying factors that sustain platform use and recommendations is crucial. Thailand's evolving market provides a timely setting to examine these underlying drivers. However, existing studies focus mainly on Bangkok (Chotigo and Kadono, 2021; Nivornusit *et al.*, 2024; Weiler and Gilitwala, 2024). To expand knowledge beyond the capital, this study purposefully investigates Nakhon Ratchasima Province, a region noted for rapid growth, high density (Chotchaiwong and Wijitkosum, 2019), and a strategic role under government-driven decentralization policies (Klinchuanchun, 2023). Its abundant food establishments (Wanderlog, 2024) and the expansion of major OFD platforms such as Foodpanda, GrabFood, LINE MAN, and Shopee Food (Econ Digest, 2023), have created a competitive market environment well-suited for investigating these drivers. Accordingly, this study examines the antecedents of behavioral intentions in Thailand's OFD sector, focusing on Nakhon Ratchasima Province as representative of Thailand's emerging regional markets and particularly on P2C services, which dominate in both scale and growth (Straits Research, 2024).

To analyze these antecedents, the study applies Cronin *et al*'s (2000) framework, which links service quality, perceived value, and customer satisfaction to behavioral intentions through direct and indirect paths. Although well established, the framework is rarely applied in OFD research. The closest parallel, to our knowledge, is the study by Suhartanto *et al.* (2019), which examined how food quality and e-service quality affect loyalty, with perceived value and satisfaction as mediators. Unlike prior OFD studies that adopted predefined service-quality dimensions (e.g., Koay *et al.*, 2022; Rombach *et al.*, 2023), this study employs an

empirical approach to derive context-specific dimensions suited to the service environment under study. The results advance theoretical understanding of how service quality influences behavioral intentions via perceived value and satisfaction in the OFD context, while also offering practical guidance for OFD providers to design strategies that foster customer retention.

2. Literature review

2.1 Service quality of OFD

Service quality is widely viewed as a multidimensional construct, assessed by comparing customer expectations with actual experiences (Grönroos, 1984; Parasuraman *et al*., 1988). Firms use customer feedback for continuous improvement, making service-quality dimensions a central focus of research (Bolton and Drew, 1991). SERVQUAL (Parasuraman *et al.*, 1988) is among the most influential frameworks, defining five dimensions: tangibles, responsiveness, reliability, assurance, and empathy. However, later studies have shown these dimensions vary across service settings (e.g., Carman, 1990), underscoring their context dependency.

Service quality is consistently linked to outcomes such as perceived value, satisfaction, and behavioral intentions (e.g., Chen and Chen, 2010; Keshavarz and Jamshidi, 2018; Slack *et al*., 2021; Supriyanto *et al*., 2021). OFD studies often adopt predefined dimensions but vary in conceptualization and application. Researchers have applied frameworks like e-SELFQUAL (Annaraud and Berezina, 2020) and Grönroos's technical–functional quality (Su *et al*., 2022), or have adapted constructs from prior studies, identifying factors such as food quality, application usability, customer service, delivery staff, and marketing elements like promotions (e.g., Annaraud and Berezina, 2020; Cheng *et al.*, 2021; Koay *et al.*, 2022; Rombach *et al.,* 2023; Sharma *et al.,* 2023, Sidharta *et al*.; 2021; Su *et al.,* 2022; Suhartanto *et al.,* 2019; Wu *et al.,* 2024). Food-related and application-related aspects receive the most consistent attention, while others appear less often or vary in definition. This diversity underscores the need to derive context-specific dimensions, as this study undertakes, to capture OFD service characteristics beyond standardized scales.

2.2 Perceived value

Perceived value reflects a cognitive evaluation of benefits relative to costs, (McDougall and Levesque, 2000; Zeithaml, 1988), such as money, time, and effort. Subsequent research has broadened this view to include emotional, social, and quality/performance dimensions (Sweeney and Soutar, 2001; Williams and Soutar, 2009). Despite this expansion, Williams and

Soutar (2009) found in the tourism context that value for money was the strongest predictor of satisfaction and behavioral intentions, underscoring its central importance.

Service quality is widely recognized as an antecedent of perceived value. Although related, the two are distinct judgments. Bolton and Drew (1991) argued that service quality reflected performance relative to expectations, whereas perceived value reflected a broader trade-off between received benefits and incurred sacrifices. Their multistage model demonstrated that service quality directly and positively affected perceived value, confirming its role as a core predictor in structural models.

Research across service industries—tourism (Chen and Chen, 2010), hotels (Goeltom *et al*., 2020; Keshavarz and Jamshidi, 2018), and restaurants (Slack *et al*., 2021)—consistently confirms the effect of service quality on perceived value. This link has also been evident in OFD, though the relevant service-quality dimensions have varied across studies. For example, Rombach *et al*. (2023) and Suhartanto *et al*. (2019) found that food quality and e-service quality influenced perceived value, whereas Sidharta *et al*. (2021) reported that e-service quality and promotions affected perceived value but food quality did not. Su *et al*. (2022), drawing on Grönroos's framework, showed that both functional and technical quality shaped value perceptions. Given the central role of value for money in service outcomes (Williams and Soutar, 2009) and the recurring focus on price–cost trade-offs in OFD research, this study examines which service-quality dimensions influence perceived value for money in Thailand's underexplored OFD market. This focus is reinforced by findings that Thai OFD users are price-sensitive, seeking to save money and time (Nivornusit *et al*., 2024; Weiler and Gilitwala, 2024). The study ultimately offers practical guidance to strengthen value perceptions in competitive delivery markets.

2.3 Customer satisfaction

Satisfaction has traditionally been conceptualized as a cognitive process, with Oliver (1980) describing it as a judgment formed by comparing expectations with performance under the expectation–disconfirmation paradigm. Later, Westbrook and Oliver (1991) showed that satisfaction judgments were also influenced by emotional responses experienced during consumption, finding that patterns of joy, surprise, or anger significantly shaped satisfaction levels. Together, these studies indicated that satisfaction arises from both rational evaluations and emotional experiences.

Because satisfaction drives outcomes such as repeat usage, recommendations (e.g., Ghorbanzade *et al.,* 2019; Slack *et al.,* 2021), and financial performance (e.g., AbuRaya *et al*.,

2023; Williams and Naumann, 2011), research has examined its antecedents extensively. Multiple studies have identified perceived service quality as a primary determinant (Ding *et al*., 2021; Keshavarz and Jamshidi, 2018). In OFD, satisfaction is influenced by functional quality factors like food quality, hygiene, system usability, and application performance (Annaraud and Berezina, 2020; Rombach *et al*., 2023; Suhartanto *et al*., 2019; Wu *et al*., 2024) as well as service-related factors such as reliability, assurance, and customer support (Annaraud and Berezina, 2020; Cheng *et al*., 2021; Su *et al*, 2022; Wu *et al*., 2024). Given that service quality's effect on satisfaction varies across contexts, this study investigates how empirically derived service-quality dimensions shape customer satisfaction in OFD.

Beyond service quality, perceived value is a critical antecedent of satisfaction (Eggert and Ulaga, 2002; Woodruff, 1997). Despite their close relationship, scholars distinguish them based on timing: value can be assessed before, during, or after consumption, whereas satisfaction represents a post-consumption judgment (Eggert and Ulaga, 2002). Eggert and Ulaga (2002) empirically confirmed value and satisfaction as separate constructs, showing value acted as a cognitive antecedent to satisfaction, with satisfaction being a better predictor of repurchase and word-of-mouth. McDougall and Levesque (2000) demonstrated this relationship by incorporating perceived value into a service-satisfaction model across four services. They found that service quality and value strongly drove satisfaction, which then predicted loyalty. Their findings warned that managers focusing on only service quality may underestimate the influence of value, which should be treated as a fundamental rather than peripheral concept. This value-satisfaction relationship has been empirically confirmed across various settings, spanning tourism, restaurants, and healthcare (Cronin *et al*., 2000; Gallarza *et al*., 2013; Keshavarz and Jamshidi, 2018), with recent OFD research confirming the connection (Suhartanto *et al*., 2019; Rombach *et al*., 2023). Building on this evidence, this study examines how perceived value shapes satisfaction in Thailand's OFD market.

2.4 Behavioral intentions

Behavioral intentions describe customers' planned future actions toward providers, including positive behaviors (repeat purchases and recommendations) and negative ones (switching and complaints) (Zeithaml *et al.*, 1996). They represent conative loyalty, a stage demonstrating customers' commitment to repurchase (Oliver, 1999). Yang and Peterson (2004) noted that although actual repeat behavior was ideal to measure, researchers commonly employed behavioral intention measures as a practical alternative. Because favorable behavioral

intentions enhance revenue and efficiency (Zeithaml *et al.*, 1996), research has sought to identify their drivers. Among these, satisfaction consistently emerges as one of the strongest direct predictors (Kwon *et al.*, 2023; Parvin *et al.*, 2017; Patterson and Spreng, 1997; Pisnik *et al.*, 2016). Satisfaction also mediates links between other constructs and behavioral intentions. Perceived value, for instance, often shapes behavioral intentions indirectly by fostering satisfaction (Armbrecht, 2021; Patterson and Spreng, 1997; Pisnik *et al*., 2016; Williams and Soutar, 2009), but evidence also shows perceived value can exert a significant direct effect (Armbrecht, 2021; Williams and Soutar, 2009).

Perceived service quality has been shown to influence behavioral intentions through direct and indirect pathways (Cronin *et al*., 2000). Yet some studies argued that its effect was only indirect, mediated by satisfaction and/or value, with no significant direct link (Chen and Chen, 2010; Keshavarz and Jamshidi, 2018; Parvin *et al*., 2017; Patterson and Spreng, 1997; Supriyanto *et al.*, 2021). Moreover, different service-quality dimensions exert varying influences on loyalty outcomes, with some dimensions showing significant effects while others do not (Bloemer *et al.*, 1999; Sheng and Liu, 2010).

In OFD, service quality, perceived value, and satisfaction emerge as important predictors of behavioral intentions. However, studies have varied in both the service-quality dimensions examined and their relative importance. For example, Suhartanto *et al*. (2019) examined food quality and e-service quality, finding food quality to be most influential, whereas Su *et al*. (2022) studied technical and functional quality dimensions, with functional aspects proving more critical. Similarly, perceived value has shown mixed patterns, exerting direct effects on behavioral intentions in some contexts (Su *et al*., 2022; Suhartanto *et al*., 2019) but proving non-significant elsewhere. For instance, Rombach *et al*. (2023) found strong value-intention relationships in Indonesia and Taiwan but not in New Zealand, suggesting cultural or market moderation. In contrast, satisfaction demonstrates more consistent patterns, being reliably linked with repeat use and recommendations across studies (Alalwan, 2020; Annaraud and Berezina, 2020; Rombach *et al*., 2023). While the influence of satisfaction appears stable, the mixed findings for service quality and value suggest more complex, context-dependent relationships that warrant further investigation. This study addresses these inconsistencies by examining Thailand's emerging OFD sector to clarify how these constructs interact to shape behavioral intentions.

2.5 Mediating roles of perceived value and customer satisfaction

Consumer decision-making is complex, and focusing only on direct links between service quality and behavioral intentions risks oversimplification. Cronin *et al*. (2000) argued that service quality affected behavioral intentions directly and indirectly through perceived value and satisfaction, consistent with cognitive–affective–behavioral frameworks (Bagozzi, 1992; Oliver, 1999). Eggert and Ulaga (2002) demonstrated that including satisfaction as a mediator between value and intentions yielded better model fit than direct-effect approaches, underscoring the benefit of integrated frameworks. Evidence across industries further supports this mediation model. Studies consistently show that perceived value and satisfaction, individually or together, mediate the relationships between service quality and loyalty or behavioral intentions (Chen and Chen, 2010; Parvin *et al*., 2017; Patterson and Spreng, 1997; Supriyanto *et al*., 2021).

In OFD, mediation research examining perceived value and satisfaction remains limited in scope. Suhartanto *et al*. (2019) tested both mediators and found that perceived value and satisfaction partially mediated the effects of food quality and e-service quality on customer loyalty; however, their study examined only parallel mediation pathways without exploring sequential relationships among these constructs. Subsequent studies narrowed their focus to single mediators: Su *et al*. (2022) found that perceived value partially mediated the effect of functional quality on loyalty and fully mediated the relationship between technical quality and loyalty, while Wu *et al*. (2024) reported that customer satisfaction partially mediated the relationship between most service quality dimensions and reuse intention. This limited scope prevents a comprehensive understanding of how service quality influences behavioral intentions through value and satisfaction in OFD. The present study addresses this gap by testing both mediators within a single framework examining direct, parallel, and sequential mediation pathways, clarifying how OFD providers can strategically prioritize service efforts to drive behavioral intentions.

2.6 Conceptual framework

Grounded in Cronin *et al*. (2000) integrative framework, this study examines relationships among service quality, perceived value, satisfaction, and behavioral intentions in Thailand's OFD context. The model incorporates direct, parallel, and sequential mediation pathways, extending the scope of prior OFD mediation research. This study emphasizes value for money, defined as customers' evaluation of benefits relative to monetary costs (Zeithaml, 1988), reflecting its importance in OFD contexts. Recognizing service quality as multidimensional

(Grönroos, 1994; Parasuraman *et al*., 1988), the study empirically derives context-specific OFD dimensions rather than applying predetermined ones. The complete framework is therefore presented in the results section.

3. Research method

3.1 Participants, data collection, and data screening

Data were collected using a self-administered questionnaire from respondents aged 18 or older residing in Nakhon Ratchasima, Thailand, in accordance with ethical standards that ensured informed consent. Eligible participants had used OFD services within the past year to guarantee recent experiences. The questionnaire had two parts. The first captured demographic information and OFD usage. The second contained 35 items evaluating the most recently used OFD service (e.g., GrabFood, Foodpanda). Items were grouped as follows: 24 for service quality, 4 for value for money, 4 for satisfaction, and 3 for behavioral intentions. Responses used a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree." Service quality measures were adapted from Cheng *et al.* (2021), Rombach *et al.* (2023), Su *et al.* (2022), and Suhartanto *et al.* (2019). Measures for perceived value for money, satisfaction, and behavioral intentions were adapted from Alalwan (2020), Kwon *et al.* (2023), Parasuraman *et al. (*2005), Slack *et al.* (2021), and Su *et al.* (2022).

To ensure validity, the questionnaire items were adapted from these established scales and underwent a pilot test with five participants (a restaurant owner, a research assistant, and three regular OFD users). They were asked to carefully review the questionnaire; read each item in detail; and provide comments on wording, clarity, and flow. Although limited in size, the pilot test served its intended purpose of confirming face validity and comprehensibility before the main survey.

Data were collected from October 2023 to June 2024. Online surveys were initially distributed via Google Forms using snowball sampling (Goodman, 1961). To enhance representativeness and response rate, paper questionnaires were also distributed in restaurants and high-traffic public areas. Convenience sampling was adopted due to the absence of a comprehensive list of OFD users. This mixed-mode approach secured sufficient responses and broadened coverage by including users who may have been unreachable through a single format. To minimize possible mode effects, the same questionnaire and Likert scale were applied across both formats, consistent with the unified mode design principle (Stadtmüller *et al*., 2021).

Of 493 responses, 317 remained after excluding those with missing OFD service data. To screen inattentiveness, the longest string of identical ratings was detected with the *careless* R package (Yentes and Wilhelm, 2023). Responses in which the longest string exceeded half of the 35 items (i.e., more than 18; Curran, 2016) were removed. After screening, 284 responses (online = 115, paper = 169) were retained for final analysis.

3.2 Data analysis method and software

Service quality dimensions were identified using exploratory factor analysis (EFA). All latent constructs (service quality, value for money, satisfaction, and behavioral intentions) were validated through confirmatory factor analysis (CFA), and hypothesized relationships were tested using structural equation modeling (SEM). Analyses were conducted in R version 4.2.3 (R Core Team, 2023). Packages included MVN (Korkmaz *et al.*, 2014) for multivariate normality, dplyr (Wickham *et al.*, 2023) for data manipulation, psych (Revelle, 2023) for EFA, and lavaan (Rosseel, 2012) for CFA and SEM.

3.3 Ethical approval and informed consent

The study complied with international ethical standards. Approval was granted as a Certificate of Exemption by the Human Research Ethics Committee of Suranaree University of Technology (COE No. 2/2566). Participants received information sheets outlining research objectives before data collection. Participation was voluntary, with informed consent implied by completing the questionnaire. Confidentiality and anonymity were strictly maintained. The study followed approved ethical procedures, ensuring transparency, respondent autonomy, and the absence of coercion.

4. Results

4.1 Respondent demographics and OFD usage behavior

Table I presents the demographic profile and OFD usage behavior of the final sample (N = 284) used for all subsequent analyses. Most respondents were women, and most were aged 25–34 years. This age range aligns with industry reports identifying this demographic as the leading segment of Thai OFD users (Chhatwal, 2025). Most respondents held at least a bachelor's degree and reported monthly incomes of 10,000–30,000 THB. Government and state enterprise employees constituted the largest occupational group, followed by private sector employees.

Usage behavior showed that most respondents ordered food online one to three times per week. Average spending per order was typically 101–200 THB, consistent with survey evidence of Thai consumers' spending (Rakuten Insight, 2025). Most respondents paid a delivery fee of 1–20 THB per order. Deliveries were usually within 1–5 kilometers, and orders peaked between 12:01 and 15:00 h. GrabFood was the most recently used platform, consistent with its market leadership in Thailand (Rakuten Insight, 2025).

---**Table I.** Respondent demographics and OFD usage behavior---

4.2 Factor analysis for service quality dimensions

An EFA was conducted on 24 OFD service-quality items using 284 valid responses. This sample met the recommended 10:1 response-to-variable ratio (Hair *et al.*, 2014, p.100). The Kaiser–Meyer–Olkin value of 0.87 indicated good sampling adequacy, and Bartlett's test confirmed significant correlations (χ^2 = 3,195.458, df = 276, $p < 0.001$), suggesting the data were appropriate for EFA (Maskey *et al*., 2018). Mardia's test revealed non-normality (Skewness = 4,417.988; Kurtosis = 20.830; both p-values < 0.001; McDonald and Ho, 2002). Accordingly, principal axis factoring with oblimin rotation and a loading threshold of 0.45 was applied (Arifin, 2019). One item, "application provides reliable delivery information," had a loading of 0.44, slightly below the threshold, but was retained as a key OFD attribute. After item removal, 16 items remained, loading onto three exogenous constructs: food quality (6 items), customer support (4 items), and application functionality (6 items). Together, these constructs explained about 50% of the variance.

4.3 Results of CFA

Confirmatory factor analysis (CFA) was conducted on six latent constructs—three exogenous (food quality, customer support, and application functionality, from the 16 EFA-retained items) and three endogenous (value for money, customer satisfaction, and behavioral intentions)—comprising 27 observed indicators. The final sample of 284 respondents yielded a participant-to-indicator ratio of 10.5:1 (284/27), exceeding the recommended 10:1 ratio for CFA and SEM analyses, indicating an adequate sample size (Kyriazos, 2018). Multivariate normality was reassessed before CFA. Mardia's test indicated non-normality (Skewness = 5,950.615; Kurtosis = 24.943; both $p < 0.001$). Accordingly, the maximum likelihood robust estimator was applied to generate robust standard errors and test statistics (Gana and Broc, 2019).

The initial CFA model showed acceptable fit for most indices—$\chi^2/df = 2.094$ (≤ 5), comparative fit index (CFI) = 0.902 (≥ 0.90), root mean square error of approximation (RMSEA) = 0.066 (≤ 0.08), and standardized root mean squared residual (SRMR) = 0.063 (≤ 0.08)—but the Tucker-Lewis index (TLI; 0.889) was slightly below the 0.90 threshold (Gana and Broc, 2019). To improve model fit, two highly correlated value-for-money items—"The food is worth the money spent" and "The service is worth the money spent" (r = 0.611) —were combined into a parcel labeled "The food and service are worth the money spent" (Little *et al.*, 2002). After parceling, Mardia's test again indicated non-normality (Skewness = 5,264.353; Kurtosis = 22.940; both $p < 0.001$). The maximum likelihood robust estimator was therefore applied. The final CFA demonstrated good fit: $\chi^2/df = 2.013$, CFI = 0.913, TLI = 0.901, RMSEA = 0.063, and SRMR = 0.061.

---**Table II.** Descriptive statistics, reliability, and validity of constructs---

Table II reports descriptive statistics (mean, standard deviation [SD]), reliability (Cronbach's alpha, composite reliability [CR]), and validity (factor loadings, average variance extracted [AVE]) of all constructs. All constructs in this study demonstrated good reliability, as indicated by Cronbach's alpha (ranging from 0.805 to 0.868) and CR values (ranging from 0.804 to 0.876), all of which exceeded the 0.70 benchmark commonly recommended in literature (Cheung *et al*., 2024). Convergent validity is typically supported when AVE reaches at least 0.50 (Fornell and Larcker, 1981). In this study, all constructs except food quality (AVE = 0.448) and application functionality (AVE = 0.421) met this threshold. However, because AVE is a more conservative measure than CR, Fornell and Larcker (1981, p. 46) acknowledged that adequate CR alone can justify convergent validity, even when AVE values are below 0.50 (see also Lam, 2012). Accordingly, we retained food quality and application functionality, as their CR values were well above 0.80, and removing them would reduce service quality to a single dimension, thereby limiting conceptual coverage and weakening content validity in the OFD context. Discriminant validity, assessed via the heterotrait-monotrait ratio, showed all values < 0.85 (Table III), confirming adequate discriminant validity (Cheung *et al*., 2024).

---**Table III.** Heterotrait-monotrait ratio ---

4.4 Final conceptual framework and hypotheses

Figure 1 illustrates the hypothesized relationships among constructs after validating the measurement model through CFA. Service quality is represented by three dimensions: food quality, customer support, and application functionality.

---**Figure 1.** Final conceptual framework of service quality, perceived value for money, customer satisfaction, and behavioral intentions---

Based on this framework, the following hypotheses examine direct and indirect relationships:

Effects on Value for Money

H1: Each service quality dimension influences value for money.

Effects on Customer Satisfaction

H2: Each service quality dimension and value for money influence customer satisfaction.

H3: Each service quality dimension indirectly influences customer satisfaction through value for money.

Effects on Behavioral Intentions

H4: Each service quality dimension, value for money, and customer satisfaction influence behavioral intentions.

H5: Each service quality dimension indirectly influences behavioral intentions through value for money.

H6: Each service quality dimension and value for money indirectly influence behavioral intentions through customer satisfaction.

H7: Each service quality dimension indirectly influences behavioral intentions through sequential mediation of value for money and customer satisfaction.

4.5 Results of SEM

---**Table IV.** Results of structural equation modelling---

The structural model showed acceptable fit: $\chi^2/df = 2.014$, CFI = 0.913, TLI = 0.901, RMSEA = 0.063, SRMR = 0.061. Table IV summarizes direct and indirect effects among study constructs.

4.5.1 Direct effects on perceived value

Food quality was the strongest predictor (H1a: $\beta = 0.531$, $p < 0.001$), followed by customer support (H1b: $\beta = 0.273$, $p < 0.001$). Application functionality was non-significant (H1c: $\beta = 0.106$, $p = 0.134$). These results suggest that customers' value perceptions are primarily shaped by food quality and customer support, rather than application features.

4.5.2 Direct effects on customer satisfaction

Value for money was the strongest predictor of satisfaction (H2d: $\beta = 0.629$, $p < 0.001$). Among service quality dimensions, only application functionality had a significant effect on satisfaction (H2c: $\beta = 0.274$, $p < 0.001$). Food quality (H2a: $\beta = 0.060$, $p = 0.470$) and customer support (H2b: $\beta = 0.056$, $p = 0.382$) were non-significant. These findings indicate that satisfaction in the OFD context primarily depends on customers' assessment of value for money and the application's functionality.

4.5.3 Direct effects on behavioral intentions

Customer satisfaction was the strongest driver of behavioral intentions (H4e: $\beta = 0.953$, $p < 0.01$), whereas none of the service quality dimensions or value for money showed significant direct effects (H4a–H4d; all $p > 0.05$). This very large coefficient of satisfaction suggests that it is the overwhelming determinant of loyalty behaviors in the OFD context. Even small improvements in satisfaction can yield substantial gains in repeat usage and recommendations, while the direct influence of service quality and value remains minimal.

4.5.4 Indirect effects and mediation analysis

Mediation analysis identified several significant indirect paths. Although food quality and customer support did not directly influence satisfaction, both indirectly influenced satisfaction through value for money (H3a: $\beta = 0.334$, $p < 0.001$; H3b: $\beta = 0.172$, $p < 0.01$). In contrast, although application functionality had a significant direct effect on satisfaction (H2c), it showed no significant indirect effect on satisfaction via value for money (H3c: $\beta = 0.066$, $p = 0.148$), consistent with its non-significant direct effect on value for money.

Indirect effects on behavioral intentions via value for money were non-significant across service quality dimensions (H5a–H5c; all $p > 0.05$), consistent with the non-significant direct effect of value for money on behavioral intentions (H4d). However, value for money significantly influenced behavioral intentions indirectly through satisfaction (H6d: $\beta = 0.599$, $p < 0.01$), demonstrating that satisfaction fully mediated the relationship between value for money and behavioral intentions.

For indirect effects on behavioral intentions via satisfaction, only application functionality was significant (H6c: $\beta = 0.261$, $p < 0.05$). Food quality (H6a: $\beta = 0.057$, $p =$

0.460) and customer support (H6b: $\beta = 0.053$, $p = 0.433$) showed no significant indirect effects, which were consistent with their non-significant direct effects on satisfaction (H2a, H2b). Sequential mediation through value for money and satisfaction was significant for food quality (H7a: $\beta = 0.318$, $p < 0.05$) and customer support (H7b: $\beta = 0.164$, $p < 0.05$), but not for application functionality (H7c: $\beta = 0.063$, $p = 0.199$).

Overall, the mediation analysis revealed that food quality and customer support influenced satisfaction indirectly through perceptions of value for money, while application functionality directly contributed to satisfaction without requiring value mediation. Notably, perceived value for money strongly influenced behavioral intentions indirectly via satisfaction ($\beta = 0.599$, $p < 0.01$) despite having no direct effect. All service quality effects on behavioral intentions were fully mediated, operating through two pathways: (1) food quality and customer support via value for money and satisfaction; (2) application functionality through satisfaction alone.

5. Discussion

This study applied the service quality–value–satisfaction–behavioral intentions framework (Cronin *et al*., 2000) to Thailand's emerging OFD market. Service quality was classified into three dimensions—food quality, customer support, and application functionality—partly overlapping with prior OFD research (Annaraud and Berezina, 2020; Rombach *et al.*, 2023; Su *et al.*, 2022). Findings both confirm and challenge earlier work, enriching the understanding of OFD consumer behavior in emerging contexts.

5.1 Theoretical implications

Results revealed distinct pathways through which service quality dimensions influenced consumer perceptions, providing both theoretical and contextual insights. Food quality strongly influenced perceived value for money, but not satisfaction, aligning with Rombach *et al*.'s (2023) findings in Indonesia, and contrasting with their results in Taiwan and New Zealand, as well as Suhartanto *et al*. (2019), where food quality affected both outcomes.

These findings indicate that the influence of food quality on perceptions is context-dependent, consistent with Nivornusit *et al*. (2024), who showed that Thai consumers are highly price-sensitive, carefully weighing whether food quality justifies the costs. This pattern suggests food quality operates mainly through rational cost–benefit judgments rather than emotional satisfaction, reflecting Thai consumers' traits and cultural orientations toward value in digital services. Customer support showed a similar pattern, shaping value for money but

not satisfaction. This contrasts with Annaraud and Berezina (2020), who found customer service predicted satisfaction. One possible explanation is that when perceived value is included in the model, customer support may be evaluated more in terms of economic trade-offs than emotional satisfaction.

In contrast, application functionality directly enhanced satisfaction without affecting perceived value for money, suggesting seamless digital experiences trigger immediate affective responses rather than cognitive evaluations. This aligns with Wu *et al*. (2024), who found that system operations, a conceptually similar construct to our application functionality, directly influenced satisfaction among Chinese OFD users in a model that excluded perceived value. Therefore, our findings extend this evidence by demonstrating that application functionality directly influences satisfaction without affecting value, even when both constructs are explicitly modeled.

The study confirms known links between perceived value and satisfaction (Suhartanto *et al.*, 2019) and between satisfaction and behavioral intentions (Annaraud and Berezina, 2020). It found that service quality and value for money influenced behavioral intentions only through mediated pathways, aligning with studies reporting indirect-only effects (Parvin *et al*., 2017; Patterson and Spreng, 1997) but diverging from research reporting both direct and indirect effects (Armbrecht, 2021; Cronin *et al*., 2000; Su *et al*., 2022). The findings indicate mechanisms whereby food quality and customer support shape intentions through a sequential value–satisfaction chain involving cognitive trade-offs, while application functionality influences intentions solely through satisfaction, suggesting a more immediate affective route that bypasses value assessments.

This study contributes to OFD consumer behavior theory by refining the service quality–value–satisfaction–behavioral intentions framework (Cronin *et al*., 2000; Eggert and Ulaga, 2002). Supporting full mediation models (Patterson and Spreng, 1997), our findings demonstrate that service dimensions activate distinct psychological mechanisms in OFD contexts—some following the cognitive–affective–behavioral sequence (Bagozzi, 1992; Oliver, 1999) involving rational value judgments, while others trigger more immediate affective responses. This differential pattern contributes to theory by demonstrating that quality-to-loyalty pathways vary by service attribute characteristics.

5.2 Managerial implications

The findings offer practical guidance for OFD service providers. Our results reveal that different service quality dimensions influence behavioral intentions through distinct pathways,

indicating that each dimension requires tailored management strategies to optimize customer outcomes. Since perceived value for money strongly drives satisfaction, which in turn drives behavioral intentions, strengthening value perceptions should be a strategic priority. Managers should prioritize food quality and reliable customer support—key factors in customers' cost–benefit evaluations that shape value perceptions. Strict quality control should be implemented to ensure that food is hygienic and palatable, delivered in proper condition and temperature, and packaged appropriately. For customer support, platforms should provide accessible reporting channels and guarantee prompt responses. Effective support not only resolves issues but also builds trust, reinforcing customers' sense that expenditures are justified.

In contrast, application functionality operates through a different mechanism—it directly influences satisfaction without shaping value perceptions. This suggests that these digital features primarily enhance users' affective responses rather than their cognitive evaluations of value. Continuous investment is therefore required to maintain secure, user-friendly platforms with accurate tracking systems. Although strong application functionality may not enhance value perceptions, poor performance can erode satisfaction and discourage repeat use. Accordingly, digital features should be positioned as experience enhancers rather than as economic value propositions.

5.3 Limitations and future research

This study advances the understanding of OFD customer behavior by identifying pathways linking service quality, value for money, satisfaction, and behavioral intentions. It extends prior work by examining consumers in Nakhon Ratchasima to offer insights into Thailand's emerging OFD market beyond Bangkok. However, some limitations should be noted. First, while Nakhon Ratchasima was strategically selected for its rapid growth, competitive OFD market, and role in Thailand's decentralization policies, the single-region focus may limit generalizability to other cities with different market characteristics. Second, data collection employed both online and paper surveys; although identical instruments were used to ensure consistency, minor mode-related effects may still exist. Third, the empirical analysis focused on three service quality dimensions, leaving other potentially important factors unexplored. Finally, demographic variables were not incorporated into the structural model. Future research should extend this framework by testing it across other Thai regions or emerging economies, investigating additional service quality factors, such as delivery efficiency, platform trust, promotional strategies, and cultural influences, and incorporating demographic characteristics to reveal how consumer profiles moderate these relationships in digital service contexts.

6. Conclusions

The findings extend Cronin *et al.*'s (2000) service quality–value–satisfaction–behavioral intentions framework by demonstrating how distinct service quality dimensions shape consumer responses in Thailand's emerging OFD market. Food quality and customer support influence behavioral intentions indirectly through value for money and satisfaction, whereas application functionality shapes intentions only through satisfaction. Notably, this study confirms the role of satisfaction as a strong predictor of behavioral intentions while also serving as the primary pathway through which value perceptions translate into behavioral outcomes.

These insights offer clear priorities for OFD managers. Investments in food quality and customer support are essential for strengthening value perceptions; application functionality must remain seamless to sustain satisfaction; and satisfaction-reinforcing strategies are critical for securing loyalty and repeat usage. The distinct pathways identified underscore the need for dimension-specific strategies rather than treating service quality as a single, undifferentiated construct. Although the study is limited by its focus on a Thai province, mixed-mode data collection, and three service quality dimensions, its examination of an important yet under-researched Thai urban market provides fresh insights into digital consumer behavior while offering practical guidance for OFD platforms operating in rapidly evolving markets. Future research should extend this study through geographical expansion, investigation of additional service quality factors, and incorporation of consumer demographics to deepen the understanding of OFD customer behavior.

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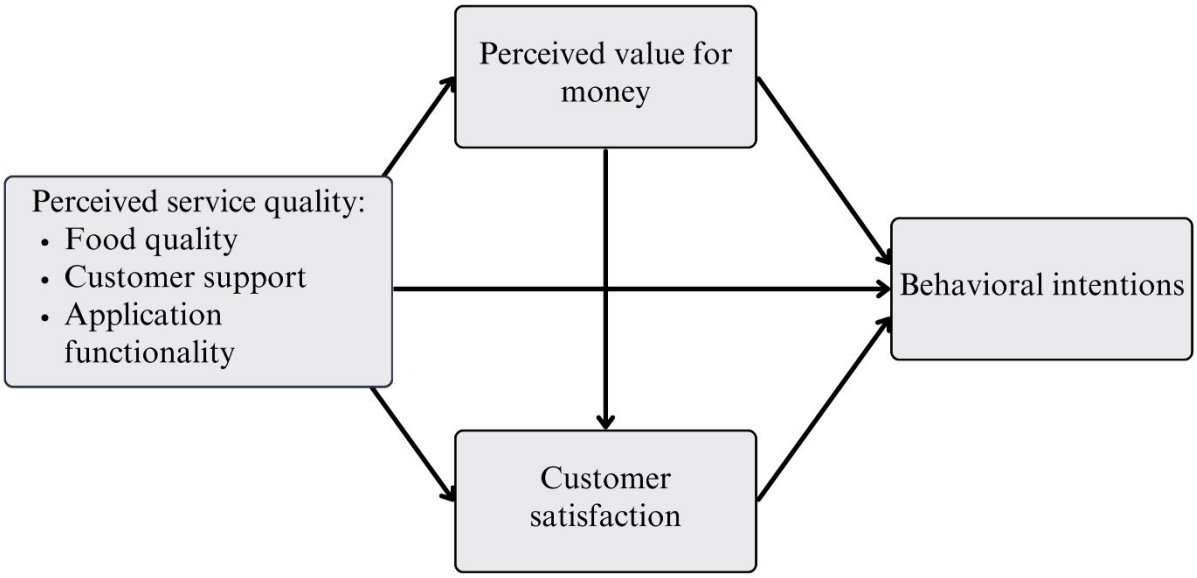

Figure 1. Final conceptual framework of service quality, perceived value for money, customer satisfaction, and behavioral intentions
Source: Authors' own work

Table I. Respondent demographics and OFD usage behavior

	Category	Frequency	Percentage
Gender	Men	80	28.17
	Women	186	65.49
	Other	18	6.34
Age	18–24 years	68	23.94
	25–34 years	109	38.38
	35–44 years	54	19.01
	45–54 years	39	13.73
	55–64 years	14	4.93
Education level	Below bachelor's degree	82	28.87
	Bachelor's degree	154	54.23
	Graduate degree	48	16.90
Income per month	Less than 10,000 THB	48	16.90
	10,000–30,000 THB	134	47.18
	30,001–50,000 THB	65	22.89
	Over 50,000 THB	33	11.62
	N/A	4	1.41
Occupation	Government officials/state enterprise employees	85	29.93
	Private sector employees	81	28.52
	Business owners/self-employed	49	17.25
	Students	44	15.49
	Homemakers	15	5.28
	Other	10	3.52
Frequency of online food delivery orders in the past year	1–3 times per week	197	69.37
	4-6 times per week	58	20.42
	7–9 times per week	9	3.17
	More than 9 times per week	20	7.04
Average price of food per order	Less than 101 THB	45	15.85
	101–200 THB	148	52.11
	201–300 THB	55	19.37
	301–400 THB	23	8.10
	401–500 THB	8	2.82
	Over 500 THB	5	1.76
Average delivery fee per order	Free	70	24.65
	1–20 THB	161	56.69
	21–40 THB	41	14.44
	41–60 THB	9	3.17
	Over 60 THB	3	1.05
Average delivery distance	Less than 1 kilometer	20	7.04
	1–5 kilometers	181	63.73
	6–10 kilometers	76	26.76

	Over 10 kilometers	7	2.46
Most frequent ordering time	6:00 – 9:00	13	4.58
	9:01–12:00	56	19.72
	12:01–15:00	93	32.75
	15:01–18:00	42	14.79
	18:01–21:00	70	24.65
	Other	10	3.52
Most recently used online food delivery provider	GrabFood	189	66.55
	LINE MAN	54	19.01
	Shopee Food	32	11.27
	Foodpanda	9	3.17

Source: Authors' own work

Table II. Descriptive statistics, reliability, and validity of constructs

Constructs/Indicators	Mean	SD	Standard factor loadings	Cronbach's alpha	CR	AVE
Food quality	3.965	0.785		0.827	0.829	0.448
Received food is clean.	4.292	0.674	0.638			
Received food matches the image shown in the application.	3.757	0.816	0.704			
Received food tastes good.	4.007	0.752	0.658			
Received food has an appropriate temperature.	3.778	0.804	0.647			
Received food is in good condition.	4.004	0.745	0.727			
Food packaging is suitable for the ordered food.	3.951	0.796	0.634			
Customer support	3.556	0.978		0.868	0.876	0.641
Service provider offers channels for reporting issues related to the service.	3.711	0.940	0.707			
Service provider has a customer service team available 24/7.	3.525	0.978	0.730			
Convenience in contacting the customer service team	3.479	0.989	0.904			
Service provider (e.g., Grab) responds to your inquiries promptly.	3.511	0.993	0.836			

Constructs/Indicators	Mean	SD	Standard factor loadings	Cronbach's alpha	CR	AVE
Application functionality	4.018	0.790		0.810	0.812	0.421
Payment system on the application is secure.	4.109	0.779	0.587			
Application is easy to use.	4.211	0.707	0.695			
Application has a convenient or easy-to-use tracking system.	4.222	0.745	0.740			
Application is visually appealing.	3.750	0.813	0.671			
Food menu on the application is well organized into categories.	3.901	0.831	0.615			
Application provides reliable delivery information (e.g., time and delivery status).	3.915	0.747	0.583			
Value for money	3.862	0.872		0.805	0.804	0.581
Reasonable price	3.592	1.006	0.718			
The convenience of not having to travel to the restaurant is worth the money spent	4.141	0.771	0.713			
The food and service are worth the money spent[1] .	3.854	0.725	0.889			
Customer satisfaction	4.023	0.697		0.862	0.862	0.610
I am satisfied with the service I received.	4.042	0.702	0.780			
I am satisfied with the food I received.	3.982	0.745	0.778			

Constructs/Indicators	Mean	SD	Standard factor loadings	Cronbach's alpha	CR	AVE
I like the application system for online food ordering from this provider.	4.039	0.658	0.785			
Using the online food ordering service from this provider is a good experience.	4.028	0.682	0.783			
Behavioral intentions	4.134	0.761		0.840	0.838	0.633
I will order food online from this provider again.	4.225	0.712	0.844			
I will recommend others to use this provider's online food ordering service.	3.961	0.767	0.800			
This provider will be one of my top choices when ordering food online.	4.215	0.775	0.749			

Fit indices: $\chi^2 = 571.854$, df = 284, $\chi^2/df = 2.014$, Robust CFI = 0.913, Robust TLI = 0.901, Robust RMSEA = 0.063, SRMR = 0.061

Notes: All loadings are significant at $p < 0.001$

[1] Parcelled item combining "The food is worth the money spent" and "The service is worth the money spent"

Source: Authors' own work

Table III. Heterotrait-monotrait ratio

Constructs	Food quality	Customer support	Application functionality	Value for money	Customer satisfaction	Behavioral intentions
Food quality	-					
Customer support	0.405	-				
Application functionality	0.402	0.434				
Value for money	0.686	0.553	0.411	-		
Customer satisfaction	0.621	0.556	0.598	0.790	-	
Behavioral intentions	0.436	0.483	0.589	0.593	0.842	-

Source: Authors' own work

Table IV. Results of structural equation modeling

Hypothesized paths	Effect Type	β	S.E.	z- value	p
Effects on perceived value for money (R^2 = 0.550)					
H1a: FQ → VFM	Direct	0.531	0.133	5.963	0.000***
H1b: CS → VFM	Direct	0.273	0.102	3.974	0.000 ***
H1c: AF → VFM	Direct	0.106	0.105	1.497	0.134
Effects on customer satisfaction (R^2 = 0.740)					
H2a: FQ → SAT	Direct	0.060	0.163	0.722	0.470
H2b: CS → SAT	Direct	0.056	0.126	0.873	0.382
H2c: AF → SAT	Direct	0.274	0.126	4.255	0.000***
H2d: VFM → SAT	Direct	0.629	0.181	4.575	0.000***
H3a: FQ → VFM → SAT	Indirect	0.334	0.167	3.930	0.000***
H3b: CS → VFM → SAT	Indirect	0.172	0.109	3.102	0.002**
H3c: AF → VFM → SAT	Indirect	0.066	0.090	1.446	0.148
Effects on customer behavioral intentions (R^2 = 0.762)					
H4a: FQ → BI	Direct	-0.073	0.187	-0.793	0.428
H4b: CS → BI	Direct	0.050	0.138	0.734	0.463
H4c: AF → BI	Direct	0.101	0.165	1.260	0.208
H4d: VFM → BI	Direct	-0.166	0.268	-0.852	0.394
H4e: SAT → BI	Direct	0.953	0.332	3.000	0.003**
H5a: FQ→ VFM→ BI	Indirect	-0.088	0.213	-0.846	0.397
H5b: CS → VFM → BI	Indirect	-0.045	0.111	-0.837	0.402
H5c: AF → VFM → BI	Indirect	-0.018	0.051	-0.709	0.478
H6a: FQ → SAT→ BI	Indirect	0.057	0.158	0.739	0.460
H6b: CS → SAT → BI	Indirect	0.053	0.139	0.784	0.433
H6c: AF → SAT → BI	Indirect	0.261	0.212	2.530	0.011*
H6d: VFM → SAT → BI	Indirect	0.599	0.310	2.655	0.008**
H7a: FQ → VFM → SAT→ BI	Indirect	0.318	0.270	2.411	0.016*
H7b: CS → VFM → SAT → BI	Indirect	0.164	0.152	2.212	0.027*
H7c: AF → VFM→ SAT → BI	Indirect	0.063	0.101	1.285	0.199

Fit indices: χ^2= 571.854, df = 284, χ^2/df = 2.014, Robust CFI = 0.913, Robust TLI = 0.901, Robust RMSEA = 0.063, SRMR = 0.061

Notes: *p < 0.05, **p < 0.01, ***p < 0.001

FQ = food quality; CS = customer support; AF = application functionality; VFM = value for money; SAT = customer satisfaction; BI = behavioral intentions; β = standardized path coefficient; S.E. = standard error

Source: Authors' own work