Journal of Logistics and Digital Supply Chain

The Mediating Roles of E-Satisfaction and E-Commitment in the Relationship Between E-Service Quality and E-Loyalty in Thailand's Food Delivery Platforms

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Abstract

The food delivery service industry in Thailand has undergone significant growth and has emerged as a vital catalyst for Thailand's economy, playing a pivotal role in the digital economy driven by electronic technologies. It is crucial to comprehend how to cultivate consumer loyalty in an online setting to guarantee the long-term viability of food delivery enterprises. This study aims to examine the effects of e-service quality on e-satisfaction, e-commitment, and e-loyalty, and to investigate the mediating roles of e-satisfaction and e-commitment in the relationship between e-service quality and e-loyalty in Thailand's food delivery platform context. This research employed an online survey methodology using a convenience sampling approach to collect data from 420 consumers who possess prior experience with food delivery services. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

The results indicate that e-service quality significantly influences e-satisfaction, e-commitment, and e-loyalty. Furthermore, e-satisfaction and e-commitment play significant mediating roles in the relationship between e-service quality and e-loyalty. The structural model demonstrates strong explanatory power, explaining 76.3% of the variance in e-loyalty ($R^2 = 0.763$). These findings contribute to the e-service quality and digital platform literature by highlighting the importance of psychological mechanisms in building customer loyalty. The results also provide practical implications for food delivery platform providers seeking to enhance customer satisfaction, strengthen commitment, and develop long-term customer loyalty in Thailand's competitive digital market.

Keywords: E-service quality, E-satisfaction, E-commitment, E-loyalty, Thai Food Delivery Service

Received: February 04, 2026; Revised: March 29, 2026; Accepted: April 23, 2026

1. INTRODUCTION

The food delivery service industry has become a significant component of Thailand's digital economy, driven by the rapid expansion of platform-based business models and increasing consumer reliance on mobile applications. The integration of digital platforms such as Grab, LINE MAN, and Foodpanda has transformed the food service industry by enabling efficient logistics, real-time order processing, and broader

market access. This sector contributes substantially to economic activity through increased consumer spending, digital transactions, and platform-based service ecosystems. As a result, food delivery platforms have become a critical mechanism for facilitating economic value creation within Thailand's digital marketplace. In Thailand, food delivery platform providers play a crucial role in connecting restaurants and consumers through digital infrastructures. These platforms operate within a highly competitive environment characterized by price competition, promotional strategies, and continuous technological innovation. The increasing reliance on mobile-based applications has shifted consumer expectations toward speed, accuracy, and system reliability. As a result, understanding how these platforms can sustain customer loyalty has become a key concern for both researchers and practitioners. This study focuses on this issue to explore how service quality and customer experience influence long-term loyalty in Thailand's digital food delivery ecosystem.

Service quality is a crucial determinant for achieving a competitive edge in the restaurant and food sector (Cheng et al., 2019). Food delivery platforms are online platforms that streamline the process of delivering food to customers. Over the past several years, this sector has shown consistent growth and advancement. Hence, the significance of food delivery platform services' quality has great importance for numerous consumers (Annaraud & Berezina, 2020). In the realm of online platforms, the significance of electronic service quality cannot be understated. This is because high-quality electronic services have the potential to enhance customer satisfaction when utilizing platform services (Suhartanto et al., 2018). Customer satisfaction is a crucial determinant in the success of both online and offline businesses as it fosters stronger customer loyalty towards their business (Li et al., 2015). All of these factors can enhance the likelihood of achieving business success. The recognition of customer satisfaction as a crucial factor in fostering stronger customer loyalty is widespread. However, Cater & Zabkar (2009) proposed that customer commitment is an important component in establishing and sustaining long-term relationships between businesses and their customers. Hence, by successfully incorporating these variables, food delivery platforms can establish sustainability in their company operations and provide enhanced services to consumers. While e-satisfaction is widely recognized as a primary driver of loyalty, this study argues that in the context of high-frequency digital services, satisfaction alone is insufficient to guarantee long-term e-loyalty. In an ecosystem characterized by aggressive price wars and low barriers to switching, consumers may be 'satisfied' with a transaction but remain prone to competitor promotions. E-commitment, therefore, emerges as a necessary psychological mediator. Unlike the transactional nature of satisfaction, e-commitment represents a dedicated desire to maintain a valued relationship with a specific platform. By fostering an affective bond, e-commitment transforms a routine user into a resilient brand advocate, ensuring loyalty that transcends mere promotional incentives.

The aim of this research is to investigate matters pertaining to the digital realm, with a specific emphasis on the operational structure of food delivery platforms. The study examines the variables that impact e-loyalty, specifically e-service quality, e-customer satisfaction, and e-commitment. Furthermore, it investigates how e-customer satisfaction and e-commitment work as mediators in the relationship between e-service quality and e-loyalty. This analysis aims to address the existing research deficiencies and provide practical insights for operators of food delivery platforms. Our objective is to utilize the research results to inform the development of appropriate operational strategies, which will ultimately make a substantial contribution to the sustainable expansion of the digital economy and the sharing economy in the nation. Although previous studies have examined the relationship between e-service quality and customer loyalty in online environments, limited research has simultaneously investigated the mediating roles of e-satisfaction and e-commitment in the food delivery service context, particularly in emerging digital economies such as Thailand. This study addresses this research gap by examining the impact of e-service quality on e-loyalty through the mediating roles of e-satisfaction and e-commitment. The findings provide

both theoretical contributions to e-service quality literature and practical implications for food delivery platform providers aiming to enhance customer loyalty.

2. OBJECTIVES

2.1 To examine the effects of e-service quality on e-satisfaction, e-commitment, and e-loyalty among users of food delivery platforms in Thailand.

2.2 To investigate the relationships between e-satisfaction, e-commitment, and e-loyalty in the context of digital food delivery services.

2.3 To analyze the mediating roles of e-satisfaction and e-commitment in the relationship between e-service quality and e-loyalty.

3. Literature Review

3.1 E-Service Quality

E-service quality refers to consumers' overall evaluation of the efficiency and effectiveness of online service delivery (Zeithaml et al., 2002). The concept emphasizes the ability of digital platforms to provide seamless navigation, accurate information, and reliable transaction processes that facilitate online service experiences. Parasuraman et al. (2005) further extended this concept by developing the E-S-QUAL model, which conceptualizes e-service quality as a multidimensional construct consisting of efficiency, system availability, fulfillment, and privacy. This framework focuses on evaluating customers' perceptions of electronic service performance across the entire online service process. Several measurement approaches have been proposed to assess e-service quality in digital environments. The e-SERVQUAL model extends traditional SERVQUAL dimensions to online services, emphasizing reliability, responsiveness, assurance, empathy, and tangibles (Zeithaml et al., 2002). In contrast, the E-S-QUAL model developed by Parasuraman et al. (2005) focuses specifically on electronic service environments and incorporates efficiency, system availability, fulfillment, and privacy. Additionally, WebQual emphasizes website usability, information quality, and service interaction quality as determinants of online service performance. These models differ in their conceptual focus, with E-S-QUAL being specifically designed for online transactional environments. Jeon & Jeong (2017) emphasize the need of upholding the quality of an online platform to keep clients, motivate them to return, and ultimately establish their loyalty. Caruana & Ewing (2010) emphasize that customers have high expectations for the quality of service provided by online platforms during purchases online. Hence, maintaining a superior level of web page functioning is vital for the triumph of online activities (Parasuraman et al., 2005; Pee et al., 2018). Various measures have been developed by researchers to evaluate the excellence of electronic services. One such scale is the E-S-QUAL scales, which were introduced by Parasuraman et al. (2005) and are generally regarded and respected. The E-S-QUAL model consists of four dimensions: efficiency, fulfillment, system availability, and privacy. The quality of e-service is of utmost importance in the domain of Food Delivery Services, as all interactions between businesses and their clients occur only through internet devices. Furthermore, the majority of studies indicate that consumer e-loyalty is influenced by their encounter with e-service quality, as demonstrated by Chang et al. (2014), and Jeon & Jeong (2017). Hence, it is crucial to cultivate and uphold e-service quality in order to promote client happiness and loyalty within the online food delivery industry. Recent studies emphasize that e-service quality in mobile-based platform environments is increasingly shaped by algorithm-driven service delivery, real-time logistics coordination, and mobile-first user interfaces. In digital platform ecosystems such as food delivery applications, service quality is determined by system responsiveness, delivery accuracy, and platform reliability rather than human interaction alone (Kaya et al., 2019; Suhartanto et al., 2018; Ashiq & Hussain, 2023). These technology-enabled service features enhance user experience and influence customer satisfaction and loyalty. Therefore, in automated

digital platforms, e-service quality plays a critical role in shaping customer perceptions and strengthening long-term e-loyalty.

3.2 E-Satisfaction

Customer satisfaction is an essential notion in the field of service quality research. According to Oliver (1980), contentment is the result of a customer's emotions that arise from their experience of using a product or service. E-satisfaction refers to customers' overall evaluation of their online purchasing experience based on prior interactions with digital platforms (Anderson & Srinivasan, 2003). In electronic service environments, satisfaction is influenced by website usability, service efficiency, transaction convenience, and fulfillment performance. Prior studies suggest that higher levels of e-satisfaction enhance customers' positive attitudes toward online service providers and increase the likelihood of repeat usage and long-term relationships. Recent studies emphasize that e-satisfaction plays a crucial role in digital platform environments where customer experiences are shaped by interface quality, service reliability, and delivery performance. In food delivery platforms, satisfaction is influenced by order accuracy, delivery timeliness, and platform responsiveness, which directly affect customer perceptions and behavioral intentions. E-satisfaction is essential to internet businesses' success. Santos (2003) highlights the need of client satisfaction in order to maintain their loyalty in the online setting. In addition, Zhang & Prybutok (2005) discovered that the quality of e-services and customer happiness are important factors that can accurately predict customer loyalty in the setting of e-commerce. E-satisfaction holds significant importance in the food delivery service industry, mostly because of the fundamental characteristics of online interactions. Given that all transactions are conducted via digital platforms, the satisfaction of customers with their online experience has a direct impact on their loyalty and intents to make future purchases. According to Yen & Lu (2008), contentment has a significant impact on consumers' intention to buy a product or utilize a service after making a purchase. This finding is particularly important in the context of meal delivery apps. This study adopts the e-satisfaction scale developed by Yang and Peterson (2004), which has been widely used in online service research. The scale captures customers' overall satisfaction with digital service experiences and has demonstrated strong reliability and validity across electronic commerce contexts. Furthermore, the measurement items align well with food delivery platform services that involve online ordering, payment processing, and delivery fulfillment. Therefore, the Yang and Peterson (2004) scale is considered appropriate for measuring e-satisfaction in this study.

3.3 E-Commitment

Commitment is a crucial concept in relationship marketing that reflects the strength of a customer's desire to maintain a valued relationship with a service provider. Wu et al. (2012) describe commitment as a cognitive and emotional connection that contributes to customer loyalty. In online environments, this concept has evolved into e-commitment, which emphasizes customers' psychological attachment to digital platforms. Mukherjee and Nath (2007) define e-commitment as the inherent connection and sense of belonging that customers experience during online interactions. E-commitment plays a critical role in building and sustaining long-term relationships between organizations and customers in electronic service environments. E-commitment is particularly important in online contexts due to the risks and uncertainties associated with electronic transactions. Customers often rely on their level of commitment to determine whether they will continue using a digital platform. Elbeltagi and Agag (2016) suggest that e-commitment strengthens customer relationships and enhances loyalty intentions in e-commerce environments. Commitment is commonly conceptualized as consisting of affective commitment and calculative commitment. Affective commitment refers to customers' emotional attachment to a service provider, while calculative commitment reflects rational evaluations such as switching costs and perceived benefits of maintaining the relationship. Both forms of commitment play an important role in strengthening long-term customer relationships and encouraging loyalty behaviors.

In the food delivery service context, e-commitment is essential for fostering repeat usage and long-term customer relationships. Customers who develop strong commitment toward a food delivery platform are more likely to continue using the service despite alternative options. Additionally, committed customers are more inclined to engage in positive word-of-mouth communication and recommend the service to others, which contributes to the sustainability of food delivery platforms. Therefore, e-commitment plays an important role in promoting customer loyalty and supporting long-term success in the digital food delivery market (Mukherjee & Nath, 2007; Wu et al., 2012; Elbeltagi & Agag, 2016).

3.4 E-Loyalty

Loyalty, as described by Oliver (1999), refers to the steadfast dedication to continuously acquire or utilize a particular product or service in the future, despite external pressures or marketing tactics that may entice one to switch. E-loyalty has become a prominent concept in the digital realm. E-loyalty refers to the tendency of consumers to repeatedly make purchases from a specific website or e-retailer, rather than switching to alternative websites (Flavián & Guinalíu, 2006). E-loyalty is crucial in the digital marketplace. Furthermore, customers who are loyal to an internet service provider are more inclined to withstand rivals' marketing endeavors and uphold their relationship with the selected supplier. Customer loyalty is positively correlated with increased spending, willingness to pay higher prices, and likelihood of recommending the firm to others. Additionally, loyal customers contribute to cost reduction. Thus, despite the higher cost of generating online loyalty compared to traditional loyalty, the presence of online loyal customers is likely to expedite profit growth (Kim et al., 2009).

3.5 Hypothesis development

The association between the quality of online services and customer satisfaction has received significant focus in the realm of e-commerce studies. Research has shown that it has a substantial influence on how consumers perceive and achieve results in online situations. Multiple studies have demonstrated a substantial and straightforward correlation between the quality of online services and the degree of satisfaction reported by users. In their study, Rita et al. (2019) provided evidence that the provision of high-quality e-services by online retailers significantly impacts customer satisfaction with online services. This discovery has been verified in other instances, including a recent study carried out in Pakistan (Khan et al., 2019), which emphasizes the critical significance of e-service quality in achieving consumer e-satisfaction. The study conducted by Kaya et al. (2019) shown that e-service quality not only contributes to customers e-satisfaction but also plays a role in influencing the e-loyalty of enterprises. The research was carried out in the e-commerce sector in Turkey. In addition, the research conducted by Susriyanti et al. (2023), it was discovered that the quality of e-services has a favorable and noteworthy effect on the level of customer commitment among Bank Nagari customers in Padang city. After reviewing the information in the literature, the following hypothesis is proposed:

H1: E-service quality had a positive and significant relationship with E-satisfaction

H2: E-service quality had a positive and significant relationship with E-loyalty

H3: E-service quality had a positive and significant relationship with E-commitment

Customer satisfaction is a crucial precursor to customer commitment in a corporation. A study conducted by Bansal, Irving, & Taylor (2004) validated the positive correlation between customer satisfaction and customer commitment to the organization. In a similar vein, a study conducted by Moliner (2009) in the medical service industry revealed that when customers experience a significant level of pleasure with the service provided, their emotional commitment to the hospital is likely to intensify. Moreover, enhancing customer loyalty heavily relies on ensuring customer satisfaction. The association is demonstrated in the comparative analysis carried out by Kim & Kim (2010), which investigated Internet service customers in

South Korea and the United States. Their study showed that e-satisfaction has a major impact on the formation of e-loyalty among service users. This discovery highlights the significance of customer satisfaction in digital service environments and its function in fostering enduring customer connections across many cultural contexts. After reviewing the information in the literature, the following hypothesis is proposed:

H4: E-satisfaction had a positive and significant relationship with E-commitment

H5: E-satisfaction had a positive and significant relationship with E-loyalty

E-loyalty is a result of the convenience of ordering, availability of product information and choices, timely delivery, consumer trust, sufficient privacy policies, online support, and the quality of e-commerce (Wolfinbarger & Gilly, 2003). Many online businesses aspire to establish this part for their business. Customers that have strong affective commitment also tend to exhibit enhanced brand loyalty (Čater et al., 2011). Bilgihan & Bujisic (2015) conducted a study that analyzed the dynamics of consumer relationships in digital environments, specifically focused on online hotel booking platforms in the United States. Their research uncovered a noteworthy and beneficial connection between emotional commitment and loyalty towards hotel booking websites. This study highlights the significance of emotional connection in promoting client loyalty in the realm of online hospitality services. After reviewing the information in the literature, the following hypothesis is proposed:

H6: E-commitment had a positive and significant relationship with E-loyalty

In a study conducted by Lai (2014), it was shown that customer satisfaction plays a mediating role in the connection between service quality and customer loyalty among customers of restaurants in Hong Kong. The results indicated that when Hong Kong restaurants deliver exceptional service, it positively impacts customer satisfaction, which subsequently fosters the establishment of emotional loyalty among customers. Fullerton's (2011) research investigated consumer trust in service provision across three service industries in Canada: banking, hairdressing, and auto repair. The study found that when consumers trust the service they receive, it enhances their emotional commitment, which in turn increases their intention to advocate for the business. Expanding on previous discoveries, the current study seeks to further this inquiry inside the realm of electronic communication. This study aims to investigate the mediating role of e-satisfaction and e-commitment in the relationship between e-service quality and e-loyalty. In digital platform environments, customer loyalty is developed through technology-mediated experiences rather than direct interpersonal interactions. High-quality e-service improves platform usability, system reliability, and delivery accuracy, which enhances customer satisfaction and strengthens psychological attachment to the platform. This attachment evolves into e-commitment, which subsequently leads to long-term e-loyalty. Prior studies in mobile and digital service contexts support the mediating roles of satisfaction and commitment in technology-driven environments (Kaya et al., 2019; Rita et al., 2019; Ashiq & Hussain, 2023). Therefore, in the context of food delivery platforms, e-satisfaction and e-commitment are expected to mediate the relationship between e-service quality and e-loyalty. After reviewing the information in the literature, the following hypothesis is proposed:

H7: E-satisfaction mediates the relationship between E-service quality and E-loyalty

H8: E-commitment mediates the relationship between E-service quality and E-loyalty

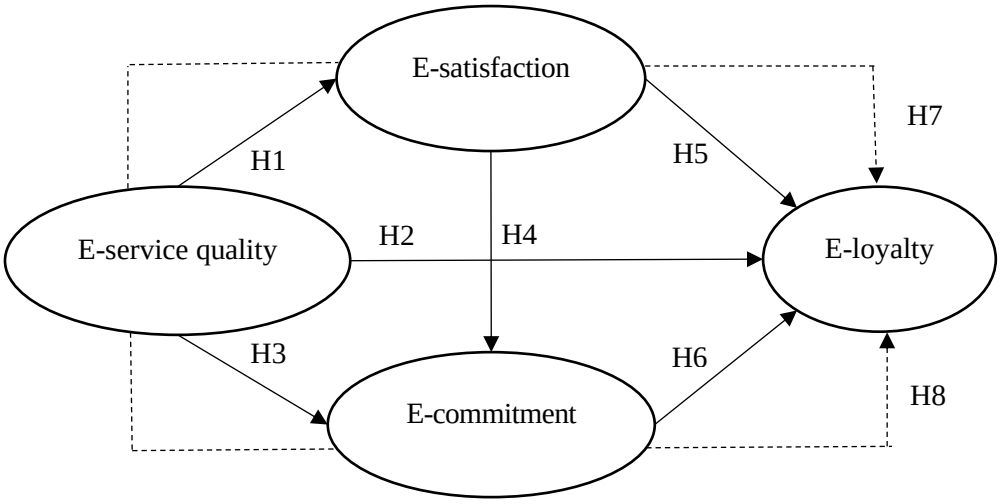


Figure 1 Conceptual Framework

4. METHODOLOGY

4.1 Population, Sampling, and Data collection

The study population consists of individuals who have used the food delivery platform. The sample size was determined based on the guidelines provided by Hair et al. (2014), which suggest that the sample size should be 10 to 20 times the number of observed variables. Considering a total of 31 observed variables in this research, the recommended range for the sample size is between 310 and 620 samples. This study utilized a convenience sampling method, where an online questionnaire was sent through social media groups that are associated with food delivery platforms. The data gathering period extended from July to October 2024, resulting in a comprehensive dataset comprising 420 samples. The data were collected through social media platforms commonly used by food delivery users in Thailand, including Facebook groups related to food delivery services such as GrabFood, LINE MAN, and Foodpanda users. Convenience sampling was employed due to the difficulty of accessing a comprehensive sampling frame of food delivery platform users in Thailand. This approach is commonly used in digital platform studies where respondents are recruited through online environments consistent with the research context. To mitigate selection bias, the questionnaire was distributed across multiple social media channels and groups related to food delivery users, including general consumer communities, university groups, and working professional networks. This strategy helped ensure diversity in respondent demographics and reduced the likelihood of capturing only heavy users from a single platform. Furthermore, screening questions were used to confirm that respondents had prior experience using food delivery applications, ensuring the relevance of the collected data. Therefore, although the sample was not probability-based, it is considered appropriate for representing active food delivery platform users in Thailand who regularly engage with mobile-based digital services. The demographic profile of the respondents indicates that the majority were female (60.6%). Most respondents were aged between 20 and 30 years (45.4%). In terms of monthly income, the largest group reported earning between 15,000 and 30,000 Thai Baht (40.2%). Regarding educational level, most respondents held a bachelor's degree (63.5%). Additionally, the majority reported using food delivery services five times per week (43.6%).

4.2 Research Instrument Development

The constructs were scored using a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). E-service quality was assessed using a 22-item scale, derived from Parasuraman et al.

(2005), which encompassed four dimensions: Efficiency, availability, fulfillment, and privacy. The measurement of e-service quality was adapted from the E-S-QUAL scale developed by Parasuraman et al. (2005), which consists of four dimensions: efficiency, system availability, fulfillment, and privacy. Minor wording adjustments were made to ensure suitability for the food delivery platform context. The questionnaire was translated from English into Thai to ensure respondents' understanding. A back-translation procedure was conducted to maintain content equivalence between the original and translated versions. In addition, a pilot test was conducted with a small group of respondents to ensure clarity and reliability of the measurement items. Furthermore, the measurement of E-satisfaction was conducted using a scale consisting of three items, which were derived from the study conducted by Yang & Peterson (2004). E-commitment was measured using a scale comprising of three items, which were derived from the studies conducted by Mukherjee & Nath (2007). E-loyalty was measured using a scale consisting of three items, which were derived from the studies conducted by Caruana & Ewing (2010) and Srinivasan et al. (2002). The questionnaire was administered in Thai language to ensure respondents' understanding and accuracy of responses.

4.3 Data Analysis

In our study work, we employed a statistical technique known as Structural Equation Modeling (SEM) to examine and validate the relationships among various constructs. A framework is introduced for the identification of hypotheses and the analysis of data using the PLS-SEM technique. The selection of PLS-SEM was based on two crucial factors: PLS-SEM is a valuable tool for elucidating intricate models and highlighting causal linkages with the aim of maximizing the explained variance of dependent variables (Sarstedt et al., 2023; Hair et al., 2011). Furthermore, PLS-SEM modeling is commonly employed in the marketing area to model and examine the relationship between independent and dependent variables (Sarstedt et al., 2023). Anderson & Gerbing (1988) provide a two-step analytical approach in which the measurement model is first evaluated, followed by the assessment of the structural model (Hair et al., 2014). The measurement model was evaluated using internal consistency reliability, convergent validity, and discriminant validity. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability (CR), with values above 0.70 considered acceptable. Convergent validity was assessed using average variance extracted (AVE), with values above 0.50 regarded as satisfactory. Discriminant validity was evaluated using the Fornell–Larcker criterion, whereby the square root of the AVE for each construct should exceed its correlations with other constructs (Fornell & Larcker, 1981; Hair et al., 2014).

Since the data were collected using a single self-reported questionnaire, common method bias (CMB) was assessed. Following Kock (2015), the full collinearity variance inflation factor (VIF) approach was used to examine potential common method bias. The VIF values for all constructs were below the recommended threshold of 3.3, indicating that common method bias was not a serious concern in this study. These results suggest that the relationships observed in the structural model were not inflated due to common method variance. Furthermore, although convenience sampling via social media groups may lead to overrepresentation of younger and more digitally active users, the questionnaire was distributed across diverse online communities, including working professionals and general consumer groups. This approach helped increase sample heterogeneity and reduce demographic bias.

5. RESULTS

The results are presented in a sequence consistent with the study objectives. First, the measurement model was validated to confirm the adequacy of the constructs. Second, the direct relationships among e-service quality, e-satisfaction, e-commitment, and e-loyalty were examined in line with the first and second research objectives. Finally, the mediating roles of e-satisfaction and e-commitment were tested in accordance with the third research objective.

5.1 Measurement model

Subsequently, three primary studies were conducted: an inspection of discriminant validity, an evaluation of convergent validity, and an assessment of internal consistency. Firstly, the study performed an internal consistency analysis to assess the reliability of the measurements. This investigation focused on the analysis of two significant indicators: Cronbach's alpha and composite reliability (CR). Cronbach's alpha is a statistical measure used to evaluate the internal consistency or reliability of a scale or survey. A Cronbach's alpha value equal to or greater than 0.60 is generally considered to be a reliable measure of scale consistency. Composite dependability is an alternative approach for evaluating the internal consistency of an idea. Generally, we consider a composite's reliability strong when its CR value surpasses 0.70. After carefully examining the data shown in Table 1, it is evident that both the Cronbach's alpha coefficient and the Composite Reliability (CR) coefficients are above the respective threshold levels. In addition, the evaluation of convergent validity included the utilization of average variance extracted (AVE) values and outer loading. Generally, a loading size greater than 0.60 is deemed appropriate. According to Hair et al. (2014), a value exceeding 0.50 for AVE is considered acceptable. Table 1 presents the results of the AVE and outer loading in this study. Discriminant validity analysis seeks to assess the ability of a scale or measurement to distinguish between separate concepts or notions. The statement suggests that a scale should demonstrate minimal associations with other scales or measurements, suggesting its ability to effectively differentiate between the intended concepts (Hair et al., 2014). The Fornell-Larcker criterion is a commonly employed technique for evaluating the extent to which different constructs in structural equation modeling are distinct from one another. As per the requirement, the square root of the Average Variance Extracted (AVE) for each variable should exceed the correlation values of the other variables in the model (Fornell & Larcker, 1981). Discriminant validity was further assessed using the heterotrait-monotrait (HTMT) ratio, which has been recommended as a more reliable method for evaluating discriminant validity in PLS-SEM studies (Henseler et al., 2015; Hair et al., 2016). All HTMT values were below the recommended threshold of 0.90, indicating that discriminant validity was established. These results confirm that the constructs in this study are empirically distinct. The results of the discriminant validity analysis are presented in Table 2.

Table 1 Internal consistency and convergent validity

Construct/Items	Outer loading	Alpha	AVE	CR
E-Service Quality		**0.960**	**0.548**	**0.964**
I can easily find what I need on this food delivery app	0.690			
The app's features are easily accessible	0.665			
Ordering food on this app is quick	0.724			
The app manages information well	0.765			
The app loads data quickly	0.720			
This food delivery app is user-friendly	0.732			
The app quickly provides what I want	0.741			
The app has a well-designed internal structure	0.749			
The app's system is always ready for use	0.792			

Table 1 *(Continued)*

Construct/Items	Outer loading	Alpha	AVE	CR
The app is immediately usable when opened	0.791			
I've never encountered system errors in this app	0.719			
The interface operates continuously after ordering	0.739			
The app delivers food within the specified time	0.751			
The app is prepared to deliver on schedule	0.794			
I receive my food orders quickly from this app	0.818			
I receive all items I ordered completely	0.764			
The app is prepared for food delivery	0.753			
The app delivers food accurately	0.694			
The app's food delivery is appropriate	0.720			
My order information is well-protected by this app	0.675			
My personal data is well-protected by this app	0.757			
My business information is well-protected by this app	0.708			
E-Satisfaction		0.875	0.801	0.923
In general, I am really pleased with this food delivery platform.	0.914			
Generally, I am really delighted with online transactions.	0.917			
In general, I am really impressed with the products and services provided by this food delivery company.	0.853			
E-Commitment		0.873	0.798	0.922
This food delivery app has become an integral part of my everyday routine.	0.897			
I experience a profound affinity for this food delivery application.	0.916			
This food delivery app makes me feel happy every time.	0.866			
E-Loyalty		0.839	0.757	0.903
I will continue using this app even if costs increase in the future	0.820			
This app is always my first choice for food delivery	0.909			
I will keep using this food delivery app.	0.879			

Table 2 Discriminant validity criteria results

	Fornell-Larcker criterion				Heterotrait-monotrait (HTMT) ratio		
Construct	**(1)**	**(2)**	**(3)**	**(4)**	**(1)**	**(2)**	**(3)**
E-Service Quality (1)	**0.740**	-	-	-	-	-	-
E-Satisfaction (2)	0.721	**0.895**	-	-	0.71	-	-
E-Commitment (3)	0.732	0.791	**0.870**	-	0.74	0.79	-
E-Loyalty (4)	0.689	0.804	0.826	**0.893**	0.68	0.82	0.84

5.2 Structural Model

The structural model underwent evaluation utilizing a two-stage Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. The assessment metrics comprised of the coefficient of determination (R-square), effect magnitude (f-square), and predictive significance (Q-square). Before assessing the structural model, multicollinearity among constructs was examined using variance inflation factor (VIF) values. All VIF values were below the recommended threshold of 3.3 (Kock, 2015), indicating that multicollinearity was not a concern. These results confirm that the constructs are distinct and that the high R^2 value for e-loyalty (0.763) is not caused by redundancy among predictor variables. The coefficient of determination

(R^2) was used to evaluate the explanatory power of the structural model. The R^2 value for e-satisfaction was 0.686, indicating moderate explanatory power. Similarly, the R^2 value for e-commitment was 0.656, which also represents moderate explanatory power. The R^2 value for e-loyalty was 0.763, indicating substantial explanatory power. According to Hair et al. (2011), R^2 values of 0.75, 0.50, and 0.25 are described as substantial, moderate, and weak, respectively. Therefore, the results suggest that the model has moderate explanatory power for e-satisfaction and e-commitment, and substantial explanatory power for e-loyalty. The effect sizes (f2) varied from 0.061 to 2.182 (refer to Table 3), with values more than 0.02 being deemed significant (Hair et al., 2016). The Q-square values, which measure the predictive relevance, were 0.562, 0.534, and 0.613 for the corresponding constructs, suggesting a high level of predictive importance. The model fit was further evaluated using the standardized root mean square residual (SRMR) and normed fit index (NFI). The SRMR value was 0.065, which is below the recommended threshold of 0.08, indicating acceptable model fit (Hair et al., 2016). In addition, the normed fit index (NFI) value was 0.923, exceeding the recommended threshold of 0.90, further confirming the adequacy of the model fit. These results suggest that the proposed model demonstrates good overall fit.

5.3 Hypothesis testing

The significance of the structural relationships was assessed using the bootstrapping procedure with 5,000 resamples, as recommended for PLS-SEM analysis. The path coefficients, t-values, p-values, and 95% confidence intervals were examined to determine the significance of the hypothesized relationships. The analysis of path coefficients is the last step in evaluating the structural model and corresponds to the process of hypothesis testing. The results of the hypothesis testing, as displayed in Table 3, validate the plausibility of 8 important hypotheses. All routes showed statistical significance at the 0.001 level. The results of the research analysis indicate that e-service quality has a favorable effect on e-satisfaction (ß = 0.828, $p < 0.001$), e-loyalty (ß = 0.262, $p < 0.001$), and e-commitment (ß = 0.309, $p < 0.001$). In addition, e-satisfaction has a favorable effect on both e-commitment (ß = 0.535, $p < 0.001$) and e-loyalty (ß = 0.240, $p < 0.001$). The presence of e-commitment has a favorable effect on e-loyalty, with a coefficient of 0.439 and a p-value of less than 0.001. Thus, hypotheses H1–H6 were confirmed (refer to Table 3).

This study investigated two hypotheses concerning mediation. The mediation effects were evaluated using indirect effects and variance accounted for (VAF). VAF values between 20% and 80% indicate partial mediation, while values above 80% indicate full mediation. The results show that e-satisfaction and e-commitment partially mediate the relationship between e-service quality and e-loyalty, as the VAF values fall within the acceptable range for partial mediation. The findings indicate that e-satisfaction acts as a mediator in the relationship between e-service quality and e-loyalty, with a coefficient of 0.199 and a significance level of $p < 0.001$. Furthermore, it was shown that the e-commitment serves as a mediator in the link between the e-service quality and e-loyalty, with a coefficient of 0.136 and a p-value of less than 0.001. The findings demonstrated a notable correlation between the quality of e-services and e-loyalty. The mediating effects of e-satisfaction and e-commitment were assessed using the bootstrapping procedure in PLS-SEM. A bootstrapping procedure with 5,000 resamples was applied to estimate the significance of the indirect effects. Indirect effects were evaluated by examining the significance of the path coefficients generated through resampling procedures. Mediation was supported when the indirect effects were statistically significant, consistent with recommendations for mediation testing in PLS-SEM (Hair et al., 2019). This link was partially influenced by e-satisfaction and e-commitment, as illustrated in Table 3.

Table 3 Path coefficients of the structural equation model

Hypothesis	Relationship	Beta	f^2	95% CI (Lower)	95% CI (Upper)
1	E-service quality - > E-satisfaction	0.828*	2.182	0.782	0.872
2	E-service quality - > E-loyalty	0.262*	0.084	0.181	0.341
3	E-service quality - > E-commitment	0.309*	0.087	0.229	0.386
4	E-satisfaction - > E-commitment	0.535*	0.261	0.456	0.611
5	E-satisfaction - > E-loyalty	0.240*	0.061	0.158	0.319
6	E-commitment - > E-loyalty	0.439*	0.280	0.361	0.512
7	E-service quality - > E-satisfaction -> E-loyalty	0.199*		0.142	0.261
8	E-service quality - > E-commitment -> E-loyalty	0.136*		0.089	0.192

6. DISCUSSION

The results of this study show that e-satisfaction, e-commitment, and e-loyalty are positively and significantly correlated with e-service quality. These findings emphasize the crucial significance of e-service quality in impacting these three fundamental marketing factors. Therefore, it is crucial for food delivery platform providers to focus the ongoing improvement of their electronic service quality. The findings indicate that e-service quality significantly influences e-satisfaction and e-loyalty in Thailand's food delivery context. This relationship may be explained by the highly competitive nature of Thailand's digital food delivery market in 2024, where platforms such as Grab, LINE MAN, and Foodpanda compete primarily through application performance, delivery accuracy, and system responsiveness. In such environments, consumers evaluate service quality based on technological efficiency rather than interpersonal service. This strengthens the role of e-service quality in shaping satisfaction and loyalty. These findings extend prior research by Ashiq & Hussain (2023) and Giovanis (2016) by demonstrating that the relationship also holds in emerging digital platform economies where algorithm-driven services dominate customer experiences. This finding extends e-service quality theory by demonstrating that in mobile-based platform ecosystems such as Thailand's food delivery market, service quality is primarily determined by system performance, delivery accuracy, and application responsiveness rather than interpersonal service interactions. In highly competitive digital environments with low switching costs, consumers rely on technological service attributes when evaluating platform reliability. Therefore, e-service quality plays a more dominant role in shaping satisfaction, commitment, and loyalty in digital platform economies. An interesting finding of this study is that the direct effect of e-service quality on e-loyalty is weaker compared to the indirect effects through e-satisfaction and e-commitment. This suggests that e-service quality alone may not directly lead to customer loyalty. Instead, customers first evaluate their satisfaction and develop commitment before forming loyalty intentions. This finding supports the mediating role of psychological mechanisms in digital platform environments and highlights the importance of relationship-building processes in food delivery services. Another important finding is that e-commitment has a stronger influence on e-loyalty than e-satisfaction. This may be explained by the nature of food delivery platforms, where customers often develop habitual usage and switching barriers. While satisfaction reflects short-term evaluations, commitment represents a long-term relational bond that encourages continued usage. Therefore, commitment becomes a stronger predictor of loyalty in digital platform contexts where customers are exposed to multiple competing alternatives.

Moreover, this study uncovers that e-satisfaction exhibits a favorable and substantial correlation with both e-commitment and e-loyalty. These findings indicate that the ability of food delivery platforms to effectively generate consumer pleasure is likely to result in higher levels of customer commitment and loyalty towards the platform. This can be a pivotal element in improving the overall efficiency of food

delivery services. These findings align with prior research in this area. Faraoni et al. (2019) discovered that there is a positive correlation between e-relationship satisfaction and e-loyalty. In a study on e-banking services, Garepasha et al. (2020) found that e-satisfaction has a beneficial effect on loyalty.

This study also shows that e-commitment has a strong and meaningful correlation with e-loyalty. This discovery implies that if food delivery platforms can effectively cultivate dedication among their clients, it is probable to augment customer allegiance and elevate the likelihood of future repeated service utilization. This finding is consistent with the research conducted by Bhat et al. (2021), which specifically examined online shoppers and concluded that commitment has a favorable impact on loyalty in the setting of online buying.

This study also examined the function of e-satisfaction and e-commitment in mediating the relationship between e-service quality and e-loyalty. The findings suggest that both variables are essential in facilitating this connection. When food delivery platforms enhance the quality of their online services, it leads to increased levels of satisfaction and commitment among clients, which in turn fosters loyalty to the platform. These findings align with previous research conducted in the same domain. Similarly, Bhat et al. (2021) shown that commitment serves as a significant mediator in the relationship between trust and loyalty. The mediating roles of e-satisfaction and e-commitment indicate that e-service quality alone does not directly create loyalty but instead influences customers through psychological and relational mechanisms. In digital food delivery platforms, users may experience satisfaction from efficient services; however, satisfaction alone may not guarantee continued usage due to frequent promotions from competing platforms. E-commitment therefore acts as a stabilizing factor that transforms transactional satisfaction into long-term loyalty. This finding highlights the importance of emotional and psychological attachment in sustaining customer relationships in highly competitive digital platform environments.

7. CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The objective of this study was to investigate the impact of e-service quality, e-satisfaction, and e-commitment on e-loyalty within the food delivery sector in Thailand. In addition, it aimed to examine the role of e-satisfaction and e-commitment in mediating the relationship between e-service quality and e-loyalty. This study demonstrates that e-service quality plays a crucial role in shaping e-loyalty in Thailand's food delivery platform environment. The findings confirm that both e-satisfaction and e-commitment act as significant mediators, highlighting the importance of psychological bonding beyond transactional satisfaction. The results extend e-service quality theory by showing that in mobile-based platform ecosystems, technological service attributes such as system reliability and delivery accuracy are primary drivers of loyalty. These findings contribute to digital platform literature and provide insights for food delivery providers aiming to strengthen long-term customer relationships.

7.2 Managerial Recommendation

The results of this study provide helpful advice for food delivery platform providers when making judgments about their operational strategy. Providers should give priority to improving the quality of their electronic services in various crucial areas. This encompasses enhancing platform efficiency through the creation of user-friendly interfaces that support seamless navigation, enabling effortless searches for restaurants and food items, constructing a responsive platform that guarantees rapid operations, and generating an intuitive user experience. In addition, suppliers must assure continuous platform availability, ensuring preparedness for customer utilization at all times and applying strong system management to prevent interruptions during service. Another essential part is the optimization of food delivery, which involves ensuring quick and correct deliveries, minimizing errors in client orders, and sticking to stated

delivery periods. Equally crucial is the improvement of security measures, which entails creating strong systems to safeguard customers' personal information and protect order details and transaction data. By focusing on these specific elements of electronic service quality, food delivery platforms have the potential to greatly improve customer satisfaction, commitment, and loyalty.

E-satisfaction and e-commitment play a vital role in creating e-loyalty among clients who utilize food delivery services. Hence, it is essential for platform providers to prioritize the provision of outstanding user experiences that result in elevated levels of customer satisfaction, encompassing both the platform's functionality and service delivery. Furthermore, it is crucial to foster e-commitment, which may be accomplished by effortlessly incorporating the platform into customers' daily routines, building robust connections between the platform and its users, and assuring favorable experiences with every encounter. These combined endeavors contribute to the establishment of electronic loyalty among customers. By effectively cultivating electronic loyalty through these methods, food delivery platforms can greatly enhance their economic sustainability.

8. LIMITATION AND FUTURE RESEARCH

This study has several limitations that should be acknowledged. First, the use of convenience sampling through social media platforms may introduce sampling bias, as respondents may represent more active digital users. Second, the cross-sectional research design limits the ability to establish causal relationships among the constructs. Future studies may employ longitudinal designs to better examine causal effects. Third, the study focuses on consumers in Thailand, which may limit the generalizability of the findings to other cultural or market contexts. Finally, the data were collected using self-reported measures, which may introduce common method bias. Despite these limitations, the study provides valuable insights into customer loyalty formation in food delivery platforms.

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