



TESTING THE MEDIATING EFFECT OF CUSTOMERS' PERCEIVED VALUE ON THE RELATIONSHIP BETWEEN MOBILE SERVICE QUALITY AND CUSTOMER LOYALTY IN MOBILE FOOD ORDERING APPS

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Abstract

There was a rise in the consumption of fast and convenience foods, as well as an increase in the use of mobile food-ordering apps. With a simple tap on your mobile phone, ordering food has become a comfortable, effortless habit. Consumers frequently use mobile food-ordering platforms to order the food and drinks they want. However, in their online purchases, they always expected high-quality mobile food-ordering applications. MFOA should provide high-quality service to maintain a competitive advantage and meet customer needs, which has a significant impact on how customers perceive a business's value. Perceived value was significantly influenced by perceived service quality: as service quality improved, customers perceived greater value. However, a single indicator scale cannot fully capture the concept of perceived value, as customers' perceived value is a subjective evaluation composed of several dimensions. While online applications have transformed how people shop, even for food, it was necessary to understand how consumers perceived these services. Customers evaluated the value of affection, relationship, financial accessibility, exploratory, and contextual benefits of mobile food-ordering apps. These are the key drivers of perceived value that influence customer purchasing decisions and loyalty to certain products and services. Despite its popularity, the mobile food-ordering application faces several challenges in delivering excellent service quality. The objective of this study was to examine the mediating effect of the dimensions of customer-perceived value on the relationship between mobile service quality and customer loyalty. WarpPLS version 8 was utilized to determine the initial sample size of this study. The structural model predicted seven latent factors that influenced customer loyalty. Inverse square root and gamma-exponential approaches were both used. The sample size estimates for the inverse-square-root method and the gamma-exponential approach were 100 and 140, respectively. The targeted sample size of this study was 190 to increase its efficiency and reliability. This study used and adapted an online survey questionnaire to collect primary data that would be used to assess the research hypothesis and to validate the conceptual framework. This study utilized WarpPLs 8.0 for data analysis, incorporating factor loading, Cronbach's alpha, CR, and AVE. This was evaluated using confirmatory factor analysis to assess the model's validity. Subsequently, structural equation modeling (SEM) was employed to analyze the structural model and hypotheses. Findings of the study revealed that emotional value, social value, and monetary value had no mediating effect on the relationship between mobile service quality and customer loyalty, while epistemic value, convenience value, and conditional value partially mediate the relationship between mobile service quality and customer loyalty. This study recommended that MFOA developers and owners improve ease of navigation, speed, accuracy, transparency, and service recovery mechanisms to increase customer perceived value and influence loyalty. Meanwhile, the state should require fair compensation schemes for service failures. On the other hand, developers should adopt a transparent billing system and integrate functional, social, and monetary features, as well as a clear review of the food quality, delivery services, and efficacy of the digital application. The objective of this proposed recommendation is to capture the interest of both price-sensitive and busy individuals. Although emotional and monetary values indicate weaker effects, these can be improved through gamification, special offers, and cost-saving initiatives. Furthermore, strategies such as real-time delivery



tracking, voice-assisted ordering, seasonal menus, and situational promotions should be implemented to sustain curiosity, continued use of the application, and long-term loyalty.

Keywords: *mobile service quality; customer perceived value; customer loyalty; mobile food ordering applications; mediation analysis; PLS-SEM*



Introduction

The Covid-19 pandemic restrictions (Ayman et al., 2022), changing lifestyles, increased purchasing power, and limited time significantly affect the eating habits of consumers. As a result, there has been a rise in the consumption of fast and convenience food, as well as an increase in the usage of mobile food ordering apps (Dela Rosa & Separa, 2022). With a simple tap on your mobile phone, ordering food has turned into a comfortable and effortless habit (Tayag & Rebollo, 2024). Consumers are frequently using mobile food ordering platforms to purchase the food and drinks they desire (Zariman et al., 2023). However, when making online purchases, they always expect high-quality mobile food-ordering applications (Ni et al., 2021).

It has been stated that several businesses offer the same products and services, but they do not provide the same quality. According to Arli et al. (2024), providing high-quality service is essential for maintaining a competitive advantage in the food and beverage sector and for meeting customer needs, which have a huge impact on how customers perceive the value of a business. Perceived value is significantly influenced by perceived service quality, which means that if service quality improves, customers perceive more value (Abdella & Indradewa, 2024), a single indicator scale cannot fully express the concept of perceived value because customer-perceived value is a subjective evaluation, composed of several dimensions (Zhang et al., 2021).

While online applications have revolutionized how people shop, even for food, it is necessary to understand how consumers perceive these services (Kaur et al., 2020). Customers will evaluate the value of affection, relation, financial, accessibility, exploratory, and contextual benefits of mobile food ordering apps. These are the key drivers of perceived value that influence customer purchasing decisions and loyalty to a certain product and service.

Meanwhile, a customer waiting to be served is a common phenomenon. Restaurant owners often neglect this matter, which sometimes causes the customers to complain and shift to their competitor (Buenaventura et al., 2021). That is why they have created several mechanisms to improve this prolonged waiting line, and one of these mechanisms is a mobile food ordering application, which has been widely considered in the food and beverage sector as an innovative channel to reach customers and provide them with high-quality services (Alalwan, 2020).

Online food delivery has exploded in the global catering market, making it more difficult to establish service quality in catering activities because, in the pre-consumption stage, customers and catering service providers are physically separated by a mobile app (Lin et al., 2024). This application consists of a technology that places order kiosks in mobile phones (Bare et al., 2021). It consists of two categories: the company's own mobile food ordering app and the third-party food delivery service system Asthana (2022). The services that have been provided by the mobile food ordering application are giving orders, monitoring, payment, and tracking facilities. They are not responsible for the actual preparation of foods (Amin et al., 2020). Customers can use the criteria like restaurant, cuisine type, and rating to narrow down their options. While they wait for a staff member to serve their food, they can also follow up on their orders online without speaking to any of the restaurant staff (Lin et al., 2023).

Customers are now more active and involved in a variety of commercial activities, including information gathering, alternative comparison, purchasing, and review writing, and this is because of the development of interactive technologies (Alalwan, 2020). Which leads to the popularity of Mobile food ordering apps, and it has dramatically increased over the past decade in various countries (Dirsehan & Kardioglu, 2023).

There is an increase of 23% for mobile food orders between 2013 and 2017, accounting for roughly 5% of all restaurant orders (Taylor, 2020). Meanwhile, most Filipinos are required to remain indoors during the pandemic, and with this, the demand for Grab's delivery service increased at a record-breaking pace, especially during the lockdown period cited in (Bare et al., 2021). In April 2023, Rakuten Insight conducted a poll in the Philippines and found that 70% of participants used Food Panda and 62% favored Grab Food as their go-to mobile food ordering app (Balita, 2023). A previous study states that, among Apple iOS users, food applications were the



second most downloaded app (Ariel, 2015). Furthermore, according to the recent survey of Boston Consulting Group, roughly 60% of clients of food catering have already used at least one mobile food ordering app (Alalwan, 2020). By 2019, online users had downloaded over 188.1 billion mobile food ordering applications on their mobile devices, with that number expected to rise to 254 billion by 2023. Smartphone online food ordering applications are considered the most popular mobile apps produced recently by service providers in the United States (Bhatt et al., 2022)

Despite its popularity, the mobile food ordering application consists of several uncertainties and issues that have been experienced by consumers. Due to the inherent risks involved in online purchases, people perceive the uncertainty of making purchases online as being higher than that of traditional in-person purchases (Taylor, 2020). There are several issues and challenges in providing excellent service quality via mobile platforms. Device limitations, connectivity issues, security vulnerabilities, process failures, functional inefficiencies, insufficient staff support, user-related errors, inaccurate orders, delivery delays, poor customer service, and technology-related anxiety have a negative effect on customer experience (Desmal & Madan, 2024; Nambiar, 2025; Tayag & Rebollo, 2024; Xu et al., 2024). This is corroborated by the statement of Statista, which concluded that customers want to order from restaurant websites that load quickly. If their first visit is ruined by a page that loads slowly, buttons that don't respond, or a lag in the checkout process, they will not continue ordering, and they will abandon the site. In fact, a business loses roughly 25% of its online visitors if its site takes more than 4 seconds to load, as cited in (Lucia, 2025). Furthermore, examples from the real world demonstrate the negative effects of poor mobile service quality. Yellow Cab Food Corporation suspended its transaction with Food Panda. The ongoing service issues on Food Panda's platform have disrupted the company's standards of reliability, accuracy, and quality cited in Malasig (2024). There is a customer complaint, who recently placed an order for a sandwich, and the delivery time showed 15 minutes, but the order eventually arrived close to 90 minutes later. Many consumers pointed out that the problem lay in the apps promising to deliver within a certain number of minutes but never giving an exact or even tentative time by which it should arrive (Dammala, 2023). These emphasize the need to evaluate the perceived emotional, social, monetary, convenience, epistemic, and conditional values of mobile service quality in mobile food delivery apps.

Previous study stated that, to effectively evaluate the service quality of different types of F&B industries or identify their service deficiencies that need to be improved, the use of an accurate and proper scale should be prioritized (Cheng et al., 2021). Because not all service quality evaluation scales are appropriate to be utilized in the context of mobile commerce (Zariman et al., 2023). Therefore, the limitation of the scale used in measuring service quality of mobile phone food ordering applications is a greater concern (Karunaratna, 2022).

In a fast-paced environment, mobile food delivery apps have become a necessity and not a luxury. That is why it is very important to understand the outcomes of mobile application usage, especially for mobile food-ordering apps (Dirsehan & Cankat, 2021). Consumers share common food preferences and priorities, but they may also have different opinions about the quality of service and the consumer-perceived value of mobile food ordering (Shah et al., 2021). Customers will evaluate these mobile food ordering delivery apps based on several criteria that significantly influence their satisfaction, purchasing decisions, and loyalty to these mobile food ordering applications. On the other hand, a single poor quality of experience in mobile food ordering apps will lead to customer complaints, disappointment, and in the end, they will not hesitate to switch to your competitor's mobile food ordering application. Customer retention is more cost-effective than customer acquisition. To maintain an acceptable customer retention rate, organizations must keep valuable clients and regain profitable customers who have departed (Croitoru et al., 2024). Businesses must focus on improving how customers perceive the value of the mobile service quality of their mobile food ordering apps. By addressing key service quality dimensions, companies can strengthen customer satisfaction and foster long-term loyalty. Even though mobile food ordering apps have generated a lot of attention in different countries, researchers have not yet sufficiently examined and assessed the challenges that these apps present (Bhatt et al., 2022). Particularly in shaping customers' perception, attitude, and behavior towards this mobile ordering application (Alawan, 2020; Kaur et al., 2020). Meanwhile, most of this previous literature about mobile food ordering applications tends to

focus on restaurant performance (Xu et al., 2024), brand satisfaction (Dirsehan & Cankat, 2021), adoption and intention to reuse (Taylor, 2020; Lam et al., 2023).

There is no existing study that tends to investigate how the dimensions of customer -perceived value mediate the relationship between mobile service quality and customer loyalty (Langat & Kibos, 2021; Karunaratna, 2022), specifically in mobile food ordering applications (Xu et al., 2024).

To fill the research gap, this study aims to evaluate the mediating effect of customer perceived value, specifically, emotional value, social value, monetary value, convenience value, epistemic value, and conditional value, towards the relationship between mobile service quality and customer loyalty in mobile food ordering applications.

Significance of the Study

The study can help mobile service providers optimize their service attributes to increase customer satisfaction and loyalty by determining how these dimensions of customers' perceived value affect customer loyalty. Moreover, understanding the mediating role of the significant dimensions of customer perceived value allows the companies to develop potential marketing strategies, recognizing the characteristics of perceived value that resonate most with their customers, thus emphasizing stronger customer relationships. Given the intense competition in mobile service markets, the study's findings can assist service providers in lowering attrition rates by identifying and enhancing the elements that contribute to devoted client behavior. This study contributes to the body of knowledge by examining how perceived values mediate the relationship between mobile service quality and customer loyalty and by suggesting a more thorough model or theory of the variables that have been used in this study.

Review of Related Literature

The review of related literature emphasizes the significance of mobile service quality in developing customer perceived value and fostering customer loyalty across various digital platforms. Several studies have confirmed that mobile service quality is defined by its dimensions such as Efficiency, System availability, Content, Privacy, Fulfillment, responsiveness, compensation, contact, and billing, which significantly influence customer perceived value (Sharma & Padashetty, 2025). Customers evaluate the value of mobile service quality based on its attributes. They use different dimensions of perceived value, which influence their decision to continue purchasing products and services and remain loyal to the mobile food ordering application. In the fast-changing world of mobile apps, the quality of online services plays a significant role in Satisfaction and loyalty, making it crucial for businesses to understand how mobile service quality impacts customer perceived value (Sharma & Padashetty, 2025). Meanwhile, customer perceived value directly influences customer loyalty (Umboh et al., 2025). Multiple research studies about mobile service quality tend to focus on restaurant performance (Xu et al., 2024), brand satisfaction (Dirsehan & Cankat, 2021), adoption and intention to reuse (Taylor, 2020; Lam et al., 2023), Framework for best practices (Desmal & Madan, 2024), and Effect on Calculative Commitment (Kungumapriya & Malarmathi, 2018). However, there are no existing studies that have evaluated the mediating role of customer perceived value on the impact of mobile service quality on customer loyalty using the six dimensions of perceived value that have been utilized and validated by Gamage and Ahsan (2014).

Mobile Service Quality

Prior research on service quality revealed that the structure of service quality was based on a comparison between the actual service performance of the organization and the customers' perception of what the company should be offering (Zariman et al., 2022). According to Suariedewi and Suprapti (2020), mobile service quality refers to the quality of cellular services as a consumer evaluation of the superiority and quality of cellular content delivery in the context of mobile meal ordering apps. A mobile food order application is a straightforward program that allows users to place online orders for restaurant meals that will be delivered to the specified location or when they arrive at the restaurant cited in Shah et al. (2021). It is a tool that provides food



ordering facilities by installing it on smartphones. It provides many useful features to the users, like map location of the nearest available hotel, detailed menus, and the previous look of the order (Rahman et al., 2019).

Online-to-traditional services cater to the needs of time - pressed individuals who purchase food online using a website or app and need prompt delivery (Xu & Huang, 2019).

Mobile applications are the most important need in the present generation and have become more important in our day. It was developed to aid users' movement and make their lives easier so they could easily complete their everyday duties wherever they were (Azzara, T. R. & Kusumawati, 2023). A mobile food ordering app is the first step in the entire service delivery process for the online food delivery industry. It has been acknowledged that the pre-consumption phase significantly influences the views of customers both during and after the consumption phase (Lin et al., 2024). The goal of mobile services is to make customers loyal to the company. On the other side, the company must provide good service to create satisfaction that will be perceived by the customer, so that in the end, the customer will become loyal to purchase the product or service at the company repeatedly (Bursan, 2023).

Meanwhile, Huang et al. (2015) have developed a Mobile Service Quality, a new generation of the ServQual model, which is highly relevant to evaluate the services that are provided by these digital platforms and services, particularly mobile food ordering apps. It is a model containing nine dimensions, and these are efficiency, system availability, content, privacy, fulfillment, responsiveness, compensation, contact, and billing cited in (Lin et al., 2024). These are dimensions that will be used in this study.

Efficiency

The mobile food ordering apps are easy to use and navigate, and they respond promptly (Lin et al., 2024). To maintain profitability, convince them to review the mobile applications and eventually ensure their loyalty, it is important for the service provider to maintain the quality of their mobile ordering apps. They need to emphasize the significance of ease and speed of mobile food ordering apps because this plays a vital role in the effectiveness of the food and beverage industry (Ramesh et al., 2021).

Content

Finding information from both internal and external sources is a crucial step in the customer's decision-making process. This is especially true for online services, where customers are more likely to consider the risk of a purchase and investigate potential outcomes to alleviate any concerns (Rita et al., 2022). For this reason, it is crucial that the restaurant's mobile ordering app include accurate and pertinent meal information (Lin et al., 2024).

Fulfillment

Additionally, customers have a deadline for when they want a service to be completed. Accordingly, satisfying or surpassing the expectations of the client will lead to a positive or improved customer experience, which will ultimately result in customer satisfaction (Mwiya et al., 2022). Therefore, the mobile ordering apps should fulfill what is being guaranteed with regard to order delivery and item availability (Mendoza et al., 2020).

Responsiveness

Customers perceive the app as being effective in tackling ad-hoc problems (Lin et al., 2024). Responsiveness is very important to increase the profitability of the products because being fast, sincere, and making a service effort will lead to making the customers very happy and satisfied (Cemil & Bayad, 2021). Mobile food ordering apps, particularly their online customer service, should have an initiative to solve certain issues and problems of the customers.



Compensation

The site should compensate the customers for problems (Mendoza et al., 2020). They should provide a service recovery plan, such as offering incentives or rewards in exchange for any inconveniences or issues they may have experienced (Lin et al., 2024).

Contact

Assistance can be obtained via online or phone representatives (Mendoza et al., 2020). Consumers believe that the online support's information should be accurate and correct (Lin et al., 2024).

Billing

Any electronic transaction that uses a cell phone and cellular network to move goods, services, or information between two parties' systems, regardless of time or location, is considered a mobile payment (Abdullah et al., 2021). When compared to traditional payment methods, it is more affordable and cost-effective (Lin et al., 2024; Thammarat et al., 2020).

It is very difficult to evaluate and measure mobile service quality in mobile food-ordering contexts due to its unique characteristics, such as intangibility, variability across users and settings, and continuously evolving technologies and features (Desmal & Madan, 2024).

There is a need for careful evaluation, especially when selecting the best e-service quality scales, as research contexts differ from one another (Zariman et al., 2022).

The level of service quality associated with mobile platforms has been recognized as one of the primary forces of customer satisfaction. Therefore, companies are becoming more concerned with the importance of giving emphasis on mobile service quality to improve their competitive position and significantly influence perceived value (Azzahra & Kusumuwati, 2023).

Perceived Value

Perceived value is a strategic driver, which includes continuously bringing about work experiences that will enchant customers by going beyond their expectations when compared to the products and services of competitors (Kaptanoglu & Yukselen, 2020). Consumers will utilize different dimensions of perceived value to evaluate the significance of the products and services before they decide if they will continue to purchase, consume, and be loyal to a particular product or service. Perceived value encompasses several psychological elements that influence consumers' choices to purchase a particular product, and customers prefer to buy the offerings with the highest perceived value (Tanrikulu, 2021). Previous study concluded that customer perceived value is one of the most important prerequisite variables for the retention of customers, which leads to customer loyalty (Pandita & Mehta, 2019). There are six categories of perception of values that influence and motivate consumers' purchasing behavior, including their desire to buy or use. These are emotional, social, monetary, convenience, epistemic, and conditional values (Gamage & Ahsan, 2014). Additionally, the Theory of Consumption Value can be used to examine consumer choice behavior for a variety of products, including both durable and nondurable goods and services. This assertion is supported by research conducted across a variety of settings within the literature on consumer behavior, including the digital realm (Tandon et al., 2021; Tanrikulu, 2021).

Emotional Value

Emotional value has become a prominent topic in recent years, describing the emotional and psychological satisfaction consumers derive from purchasing and using products or services (Li & Tang, 2024). It is a response based on an affective attitude that views a process of changing a person's attitude that arises from simple research or observation based on signals captured by an object (Azkar et al., 2022). Emotions influence every aspect of our life; they shape our memories, influence our perceptions, dreams, thoughts, judgments and

behaviors, including our decisions whether to return to a place of business, how much we are willing to pay for a product or service, and what we tell other people about our experiences (Nurfaedah & Mustikasari, 2018). When customers experience positive emotions during a service encounter, such as joy, excitement, or satisfaction, it enhances their emotional engagement with the service, leading customers to perceive greater value in the service provided (Satisfaction, 2023). When they see their own beliefs reflected in the brand, it deepens their attachment and increases the perceived emotional value (Liu & Chelliah, 2025). A previous study showed a significant positive correlation between customers' perception of emotional value and the likelihood of repeat luxury purchases (Li & Tang, 2024).

Social Value

Consumers are interested in acquiring social worth and are likely to use products and services to achieve a desired social standing. (Tandon, 2021) suggests that consumers may prioritize product features that can boost their self-esteem, social acceptability, and symbolic value to others over a product's real usefulness and performance. (Tanrikulu, 2021) also evaluates social value using a profile of chosen imagery. Products are thought to have both social and functional worth (Maharanti & Purmarini, 2022). The social value is demonstrated by the customer pressure that influences their choice (Rizkalla & Setiadi, 2020). In the study of the mobile instant messages context, Deng et al. (2010) referred to social value as the benefits that users can feel or acquire when they connect to others (Sondoh Jr. et al., 2020).

The perceived value of products and services derives from a social perception that combines distinctiveness and social value, rather than from financial exclusivity, with consumers co-creating and reinforcing the value of luxury through interactions among different social groups, such as brand communities (Reyes-Menendez et al., 2021). Additionally, they found that greater social acceptance or popularity of a product led to a better perception of the product and increased acceptance among prospective customers (Chi et al., 2021).

Monetary Value

The monetary value that needs to be specified in the purchase agreement for a good or service is called the price. Because they want to know how much they can save, consumers look for discounts. A company's revenue is increased by lower prices, while the market value of the product is increased by bigger discounts (Shah, 2021). Meanwhile, Lovelock argues that the perceived monetary value is the price paid by the consumer for obtaining a product or service. It is considered more concrete and easier to measure, while the non-monetary values are intangible, not easy to measure, and easily ignored by the customers; these include the time cost, information retrieval cost, and psychological cost that the consumer pays to complete the transaction. (He, 2024). Consumers can gather and compare price discounts and sales promotions, and firms can target consumers with customized promotions while they are on the go. The widespread availability of location-based mobile services facilitates bargain hunting and discount-seeking behaviors (Ashraf et al., 2021). Previous studies have investigated the influence of price, in terms of value for money, on customer loyalty in the services industry setting. For instance, price (operationalized as monetary value) was shown to have a direct and significant impact on behavioral intention in a location mobile services context and customer loyalty, cited in (Sondoh Jr. et al., 2020; Zhang et al., 2023).

Convenience Value

Pura (2005) described convenience values as the "ease and speed of achieving a task effectively and conveniently (Sondoh Jr. et al., 2020). A survey by Toast found that 70% of consumers prefer to order food through a smartphone app, largely for the sake of speed and convenience (Al Qoud & Isman, 2023). Meanwhile, Bansah and Agyei (2022) defined perceived convenience as a level of convenience towards time, place, and execution that one perceives when utilizing the wireless network to complete a task. It is not only a determinant of perceived usefulness, but it also mediates the relationship between perceived ease of use and perceived usefulness. Beauchamp and Ponder offered shopping convenience dimensions that significantly influence loyalty and retention. These are transaction, access, search, and decision (Crispin & Dhayalan, 2024). However,

Jiang et al. suggested that the dimensions and variables involved in Beauchamp and Ponder did not reflect the unique characteristics of online shopping (Pham et al., 2018). A previous study indicates that convenience during shopping has become one of the most important reasons consumers decide to shop online (Zeqiri et al., 2023).

Epistemic Value

Epistemic value refers to one's quest for novelty and variety, which is suggested to trigger product search (Yap, 2022). It represents benefits that are derived from the fulfillment of intellectual curiosity and the acquisition of knowledge from a certain organization (Seo & Um, 2022). Consumers often perceive epistemic value when it is driven by procedural or product innovations. For instance, digital assistants may provide ways to discover novel things (Schultz & Kaiser, 2025). There is a consensus in the prior literature on mobile commerce that features innovative technology for mobile, such as online reviews, online ratings, and tracking online, that play a big role. Furthermore, there is a need to validate and consider the effect of this construct in shaping the behavior of the customer towards (Al Qoud & Isman, 2023). Product innovation needs to be considered to make the company competitively superior and attract significant attention. Product innovation does not directly affect brand loyalty. However, once customer satisfaction improves, customer loyalty can be increased (Winarti et al., 2021). Moreover, the previous study findings revealed that epistemic value partially mediates between e-Attitude and behavioral intentions (Hasan, 2022).

Conditional Value

The conditional value is created when various circumstances give rise to distinct considerations. The two main variables that impact conditional value are time and location. The situational context informs the decision-making process. Additionally, it is influenced by outside variables such as the environment and events rather than personal convictions or viewpoints (Chi et al, 2021). Businesses can influence customer purchases by employing a variety of conditional elements and a specific set of activities to improve the consumers' perception of their conditional value. For example, these factors could include reduced product delivery lead times, exclusive prices, or unique discounts and promotions (Tandon, 2021).

Tanrikulu (2021) notes that conditional value has been taken into consideration for the adoption of financial products as well as online travel agencies, mobile applications, digital library programs, and social network sites. According to empirical data, service quality and perceived conditional value are positively correlated in both traditional and online business settings (Pham et al., 2023).

Customer Loyalty

Loyal customers are the most important asset of the organization, especially in improving the profitability of the company. Customer loyalty is crucial for business success, and it can be influenced by various factors such as customer satisfaction, quality of service, customer experience, and customer relationship management (Rane et al., 2023).

After purchasing, a customer experiences the goods or services and simultaneously conducts a comprehensive assessment, and they will leave a post-consumption evaluation in their memory. The customer experience value that occurs through purchasing activities and the value based on the customer's real experience leaves a profound memory, characterized by surprise, excitement, and happiness, which greatly affects customer loyalty development (Murakami, 2018). It is important for different researchers to understand the nature of customer loyalty.

Customer loyalty is a comprehensive model based on dedication, trust, obedience, social relations, and mutual dependence. Some authors emphasize the two dimensions of customer loyalty, which are behavioral loyalty and attitudinal loyalty (Kyurova & Koyundzhiyska – Davidkova, 2021). Behavioral loyalty of a customer can be evaluated by knowing the repurchase frequency, rebuying intentions, switching interests, and sensitivity to

situational factors, while attitudinal loyalty emphasizes the customer's deep emotional commitment toward a seller (Saini & Singh, 2020).

Mobile Service Quality – Emotional Value – Customer Loyalty

Dimensions of service quality, such as servicecape, personnel, outcome, and social, significantly affect the emotional value that is perceived by the customer in the banking industry (Arguello et al., 2019). Meanwhile, customer emotions form over time and across multiple touchpoints and interactions that are shaped by the perceived service quality performance. Therefore, customers tend to develop experiential judgments to justify their cognitive impressions and feelings towards the received service performance (Tay Guan Meng & Sidin, 2020). Once an emotional connection is established, consumers tend to exhibit greater brand loyalty and are more inclined to make repeat purchases, thereby enhancing the brand's market share and revenue potential (Li & Tang, 2024). This was supported by a previous study, which concluded that perceived service quality and emotional value were the main drivers of loyalty in the context of gasoline stations cited in (Azkar et al., 2022).

Mobile Service Quality – Social Value – Customer Loyalty

Some of the dimensions of service quality, particularly ease of use and perceived usefulness, are critical for customer self-valuation in digital interactions. These attributes often lead customers to view the service as prestigious, enhancing their self-worth, especially when they interact with high-quality e-services (Vatolkina et al., 2020). This was supported by a previous study, which states that mobile service quality significantly influences the perceived social value of consumers of the Tokopedia online shop in Medan (Surya & Saragih, 2020). Meanwhile, the government websites that stress ease of interaction, which is considered one aspect of mobile service quality, have a good impact on citizens' perception of social value, which in turn increases their level of loyalty (Alkrajji & Ameen, 2022). Perceived social values significantly influence customer satisfaction with regard to green innovation as a vital component of the automobile. Further, customer satisfaction leads to customer loyalty (Hassan, 2017). When customers experience high social value consistently, they are more likely to become loyal to the brand. Loyalty is driven by the belief that the brand constantly meets or exceeds expectations and provides valuable benefits (Kyeongnam & Jongnam, 2024)

Mobile Service Quality – Monetary Value – Customer Loyalty

Price value refers to the products and services purchased by customers, which have a price advantage over other related products and services (Chen & Xuan, 2021). Previous research emphasizes the main drivers of services' perceived value, such as the service quality, good value for money, and customer service, and suggests that price and value for money are other key components, meaning what consumers pay to acquire a specific service. (Kungumapriya & Malarmathi, 20218). Perceived service quality is the result of a comprehensive evaluation of products and services consumed by consumers. The evaluation of the products or services will influence the consumer's perception of value for money (M.comm, 2018). Meanwhile, perceived cost is a significant factor in deciding whether to use a specific technology, product, or service, particularly in terms of how acceptable the cost is relative to the value received (Ajina et al., 2023). In digital environments such as e-commerce or mobile apps, excellent service quality enhances perceived economic and price value, which in turn leads to greater satisfaction and loyalty (Ikramuddin et al., 2017; Ryu et al., 2020).

Mobile Service Quality – Convenience Value – Customer Loyalty

When purchasing related products or services in convenient ways, it saves customers' time, physical energy, and energy constraints, so that customers can gain benefits and generate value-for-money experiences (Chen & Xuan, 2021). Service convenience is frequently a strong predictor of perceived service quality. In other words, consumers are more likely to regard a service as high-quality if they consider it to be convenient. This shows that consumers' perceptions of the value they receive from a service provider might be positively influenced by convenience (Halim & Berlianto, 2024). Previous studies exhibit a significant positive impact of service quality and service convenience in self-service fitness centers on customer loyalty. This finding emphasizes the



significant role of superior and convenient services in the process of forming customer loyalty (Sun & Pan, 2023).

Mobile Service Quality – Epistemic Value – Customer Loyalty

Previous study suggested that guests who perceive high-quality service are also more likely to value the unique experiences offered by the business establishment (Mendana & Apritad, 2024). In the context of blended learning, it is concluded that online and offline quality can work toward generating perceived epistemic value in different ways (Sun & Pan, 2023). Epistemic value is associated with the curiosity and novelty related to a restaurant. Restaurants can enhance customer satisfaction and loyalty by providing new, unique, or innovative experiences. In the context of restaurants, introducing new dishes or offering unique dining experiences are ways of stimulating customers' interest, leading to increased satisfaction and customer loyalty (Croitoru et al., 2024).

Mobile Service Quality – Conditional Value – Customer Loyalty

The quality of e-services has a significant impact on conditional value because consumers usually rely on these online resources in urgent or crucial circumstances. Responding to inquiries and promptly resolving various concerns is one of the aspects of e-service quality that enhances the sense of conditional value (Pham et al., 2021). Furthermore, Chi et al. (2021) stated that conditional value has a strong correlation with customer loyalty when it comes to buying eco-friendly products. A prior study clarified that situational characteristics that forecast consumers' decision-making behavior are the source of conditional value. It also looked at how strongly behavioral intentions, particularly loyalty, and conditional value relate to one another in the restaurant industry (Hasan, 2022). This was supported by the empirical research of Moosa and Hassan (2015), which states that conditional values related to cars have a large and favorable impact on customer satisfaction and loyalty (Hassan, 2017).

Mobile Service Quality – Customer Loyalty

The significance of service quality in promoting customer loyalty is a well-established concept in marketing and business management. It pertains to the degree of customer satisfaction during interactions with a company's services (Rane et al., 2023). Higher customer value leads to higher motivation. Customers will purchase the products and services, and they will become loyal to the company (Bursan, 2023; Pratama et al., 2024).

Statement of the Problem

To further understand the mediating role of functional value, social value, and conditional value towards the relationship of mobile service quality and customer loyalty in mobile ordering food application, these are the following questions need to be answered

1. How may the respondent's level of mobile service quality be assessed in terms of
 - a. Efficiency
 - b. Content
 - c. Fulfillment
 - d. Responsiveness
 - e. Compensation
 - f. Contact
 - g. Billing

2. How may the respondent's level of customer perceived value be assessed in terms of



- a. Emotional Value
 - b. Social Value
 - c. Monetary Value
 - d. Convenience Value
 - e. Epistemic Value
 - f. Conditional Value
3. How may the respondents' level of customer loyalty be assessed?
 4. Does emotional value mediate the relationship between mobile service quality and customer loyalty
 5. Does social value mediate the relationship between mobile service quality and customer loyalty
 6. Does monetary value mediate the relationship between mobile service quality and customer loyalty
 7. Does convenience value mediate the relationship between mobile service quality and customer loyalty
 8. Does epistemic value mediate the relationship between mobile service quality and customer loyalty
 9. Does conditional value mediate the relationship between mobile service quality and customer loyalty
 10. Does mobile service quality significantly affect customer loyalty

This study is based on the Unified Theory of Acceptance and Use of Technology 2. According to UTAUT 2, the three new constructs, cost/perceived value, habit, and hedonic motive, have an impact on how people utilize technology, and these effects are modulated by age, gender, and experience. The inclusion of this construct was supported by previous research in the marketing and information systems domains that found that the perceived hedonic nature of the outcome (e.g., perceived enjoyment) was a significant predictor of consumer technology use. Hedonic motivation is defined as the fun or pleasure derived from using technology, and it has been shown to play an important role in determining technology acceptance and use. Cost was included in the new model since it was deemed to be a more significant consideration when considering consumer product use as opposed to workplace technology use. For instance, when workers in firms use technology, they do not feel accountable for the expenses involved because there are no immediate financial repercussions for them cited in (Marikyan & Papagiannidis, 2023).

The validated conceptual framework illustrates that perceived emotional value, social value, monetary value, convenience value, epistemic value, and conditional value mediate the direct influence of mobile service quality on customer loyalty in mobile food ordering applications. These constructs will serve as the core variables in this study. It was essential for companies to continuously evaluate and improve the features and functionalities of their mobile food ordering apps by applying a relevant service quality model. However, not all existing models were suitable for assessing the unique characteristics of mobile food ordering platforms. The mobile service quality model adopted in this study is particularly appropriate, as it has been widely applied by food and service establishments to assess and optimize their mobile apps. This model enhances efficiency in reaching both existing and potential customers. Customers assess the value of mobile service quality based on its dimensions, and their evaluation significantly influences their continued use of the app and strengthens their loyalty to the brand.

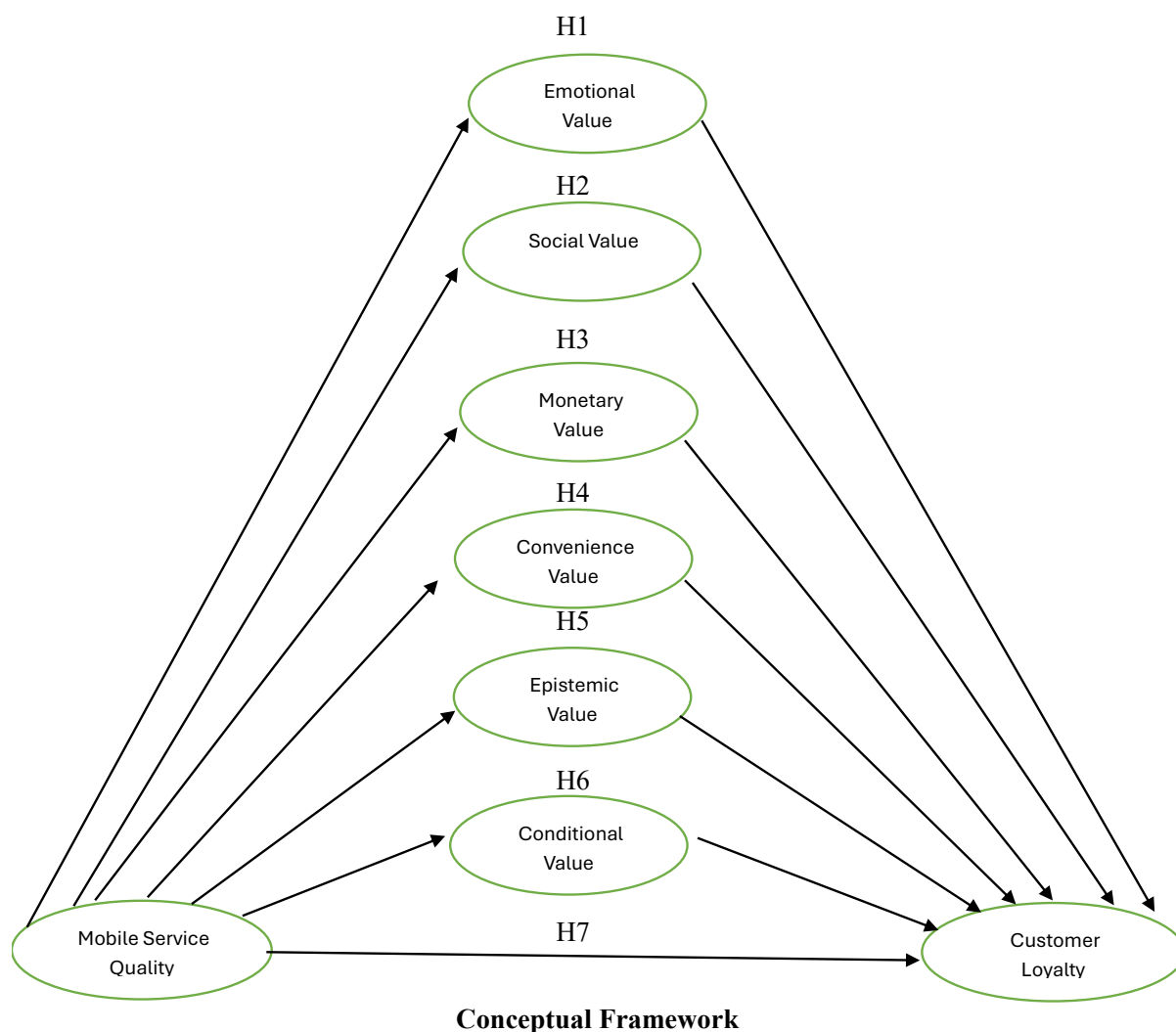


Figure 1

H1 *Emotional value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H2 *Social Value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H3 *Monetary Value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H4 *Convenience Value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H5 *Epistemic Value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H6 *Conditional Value mediates the relationship between Mobile Service Quality and Customer Loyalty*

H7 *Mobile Service Quality significantly affects Customer Loyalty*



METHODS

Research Design

A descriptive and causal predictive research design was used in this study by Frey (2018) to show that a particular independent variable had a significant impact on the dependent variable listed in the problem statement and to determine the effectiveness of mediating variables that would be used to transmit the influence of the independent variable to the dependent variable. The direct influence of mobile service quality on customer loyalty was assessed using a causal analysis technique, along with the mediating roles of perceived emotional value, social value, monetary value, convenience value, epistemic value, and conditional value, as shown in Figure 1.

Sample and Setting

This study utilized WarpPLS version 8 to determine the initial sample size. The structural model predicted that seven latent factors would influence the dependent variable, customer loyalty. (Kock & Hadaya, 2018) recommended that both the Inverse Square Root and the Gamma-Exponential approaches be applied. Based on the minimum significant path coefficient of the model (0.30), the expected R^2 value of 0.50, and a desired statistical power of 0.95, the Inverse Square Root method minimum requirement was 100 respondents, while the Gamma-Exponential approach suggested 140 respondents. In accordance with PLS-SEM best practices, the larger value was adopted. Thus, a minimum of 140 respondents was required to ensure sufficient statistical power for the analysis. This study targeted a sample size of 190 respondents so that it would be able to enhance efficiency and reliability.

The respondents of this study were the customers who frequently used mobile food ordering apps, either from specific food service establishments or third-party food delivery platforms. They were residing in Angeles City, Philippines. The sampling method utilized in this study was a non-probability technique. Respondents should have internet access and know how to read in English. At the time of data collection, all participants were citizens of the Philippines and resided in the country. Respondents who frequently used mobile food ordering apps, either from specific food service establishments or third-party food delivery platforms, and made a transaction in the last quarter of 2024. Foreigners, tourists, within the age range of 17 years old and below or 35 years old and above, were not eligible to participate in the study. Filipinos employed abroad who came to this country for a certain period were not allowed to participate in this study. This research was conducted between June 2025 and September 2025

Filipinos and foreigners have different perceptions, attitudes, and behaviors, especially in the utilization of mobile food ordering applications, which is why foreigners, tourists, within the age range of 17 years old and below or 35 years old and above were excluded from this study to ensure a homogeneous and contextually relevant sample size. This specific age group was selected because it represents the primary user segment of mobile food ordering applications in the Philippines, typically composed of digitally active individuals, including university students, young professionals, and tech-savvy users who frequently engage with mobile food ordering application services.

Additionally, Filipinos employed abroad who were temporarily in the country were excluded to avoid bias resulting from differences in purchasing behaviors, technological exposure, and service expectations that were influenced by foreign environments. Including these individuals could introduce variability unrelated to the local mobile service quality context, which this study aims to evaluate within a Philippine-based urban setting.

Research Instrument

This study utilized and adapted an online survey questionnaire to collect primary data that was used to assess the research hypothesis and validate the conceptual framework. The questionnaire was divided into three parts. The cover letter, which provides justification for the study, was included in the first component. The second section was supposed to contain the customer's demographic profile, which includes how often they utilize mobile food

ordering apps. The third section's variables and scale were drawn from earlier studies and evaluated the concept. The author's scale cannot be used, modified, or altered in this study without their consent.

This study utilized a descriptive analysis method using the SPSS software version 23 to evaluate the perceptions of customers towards mobile service quality, perceived emotional value, social value, monetary value, convenience value, epistemic value, conditional value, and customer loyalty. Table 2 shows the descriptive mean rating scale that was employed in this study.

In this research, the mobile service quality scale cited in (Lin et al., 2024) was employed. The scale includes the following latent variables: Efficiency, System Availability, Content, Privacy, Fulfillment, Responsiveness, Compensation, Contact, and Billing. To ensure reliability, Cronbach's alpha coefficients were used to evaluate the internal consistency of each scale. The results showed that all coefficients exceeded the standard threshold reliability coefficient of 0.70, indicating strong reliability across all variables.

This study also utilized the perceived value scale, specifically the Emotional Value, Social Value, Monetary Value, Convenience Value, Epistemic Value, and Conditional Value, validated by Gamage & Ahsan (2014). Convergent validity and internal reliability were demonstrated by the composite reliability (CR) values, which were likewise greater than 0.70. Convergent validity was also demonstrated because the average variance explained (AVE) was less than the comparable values for CR and greater than 0.50.

The customer loyalty scale cited in (Pandita & Mehta, 2019) was also used in this study. The reliability of data was examined through Cronbach's alpha scores. The internal consistency of data was validated with the help of Cronbach's alpha score. Internal consistency examines the degree to which the test items measure the same construct. The variables of the same construct were grouped together, and scores were evaluated. The value of Cronbach's alpha of this scale was .805, which was greater than the standard threshold of 0.7, and it was considered satisfactory.

Data Collection

This study utilized a non-probability sampling technique, in which the respondents were selected based on their availability and judgment. Online data collection was used in this study. There was an electronic link to an online survey, and it was posted on different social media platforms throughout the data collection period. This would guarantee that the answers were in the same time frame. Google Forms was used to survey regular users of mobile food ordering apps, either from third-party food delivery platforms or from food service establishments.

Informed consent was included in the Google or Online survey form in addition to the survey questionnaire. Providing a safe and secure virtual environment for the researcher and their responses was crucial. To preserve comfort, establish meaningful contact, and acquire new academic knowledge for researchers and respondents, this study highlights the needs of voluntary involvement, communication, confidentiality, safety, and information accessibility. Respondent allotted seven to ten minutes, which was conducted between July 2025 and August 2025. Respondents were residing in the Philippines at the time of data collection.

In terms of conducting data collection in person, this study closely followed the guidelines that have been created by the local government units, such as keeping a suitable physical distance, wearing a face mask, and using alcohol or sanitizer before the interactions. The data collection process included those respondents who gave their informed consent, and they were informed about the safety precautions before they started. Meanwhile, data collection was conducted once the HAU IRB had approved it. The data generated from this study were downloaded in aggregate form using a spreadsheet application.

Data Analysis

This study utilized WarpPLS 8.0 for data analysis, incorporating factor loading, Cronbach's alpha, CR, and AVE. This was evaluated using confirmatory factor analysis to evaluate the model's validity. Subsequently,

structural equation modeling (SEM) was utilized to analyze the structural model and hypotheses. To determine the perception of the online customers towards mobile service quality, perceived emotional value, perceived social value, perceived monetary value, perceived convenience value, perceived epistemic value perceived conditional value, and customer loyalty, as well as to assess the demographic profile of the respondents, this study employed a descriptive analysis method using SPSS version 23 software. Table 1 shows the descriptive rating interpretation scale cited in (Bringula et al., 2012).

Table 1. Descriptive rating scale

Weight Scale	Mean Range	Verbal Interpretation
5	4.51 - 5.00	Strongly Agree
4	3.51 - 4.50	Agree
3	2.51 - 3.50	Moderately Agree
2	1.51 - 2.50	Slightly Agree
1	1.00 - 1.50	Disagree

Ethical Considerations

Respondents in this study were free to decline participation, withdraw at any time, or opt not to answer specific questions. Participation was entirely voluntary. Respondents perceived completing the survey questionnaire as more comfortable because they had access to the researcher's contact information should they have any questions regarding the study. Before data collection, respondents were asked to complete an informed consent form. Additionally, they have read and understand the cover letter, which outlines the study's objectives, potential risks and benefits, and data storage and disposal policies.

Obtaining informed consent was a legal and ethical requirement, especially when human subjects were involved in research. Through this process, participants were informed of all pertinent aspects of the study to enable them to make an informed decision about participation. After carefully reviewing this information, they have voluntarily indicated their willingness to participate. The researcher was also responsible for informing participants of any associated risks and benefits.

Participant identities remain confidential. Respondents have been informed that there would be no compensation for participation. The data collected was used solely for research purposes and treated with the highest degree of confidentiality. The survey includes a descriptive evaluation of measurement items and a demographic profile. This study utilized a Google Forms survey, which takes approximately 7–10 minutes to complete. The survey has been deactivated after the required sample size is reached. Primary data was downloaded in aggregate form and stored on a password-protected computer accessible only to the research team.

This study was funded by the University Research Office of Holy Angel University, which served as the primary sponsor of this research. They have provided administrative support, logical assistance, and academic oversight in line with the research priorities of the University. The sponsor did not influence the data collection results or the interpretation of the results.

Rest assured that the Holy Angel University's research ethics board reviewed and approved the manuscript based on ethical standards prior to data collection. Turnitin was used to assess the manuscript and look for instances of plagiarism.

RESULTS

This study used exploratory factor analysis to reduce the level of multicollinearity issues and improve the reliability of the SEM results. By examining the rotated component matrices, the study eliminated certain indicators of the dimensions of each construct that had factor loadings below the .70 threshold. (Goretzko et al. , 2021) emphasize the significance of exploratory factor analysis methodology, specifically, factors in determining item reduction. The primary purpose of EFA is to take a relatively large set of variables and reduce them to a smaller and more manageable number while preserving the original variance as much as possible (Surucu et al., 2022). Furthermore, the recommended threshold for factor loading to measure reliability is 0.70 (Kissi et al., 2019). This item reduction process significantly affects several dimensions and constructs of this study, resulting in three dimensions and two constructs in this study that are represented by a single or double indicator. However, these dimensions (content, fulfillment, billing, social value, and monetary value) were retained to avoid compromising the research objective of this study. A previous study has revealed that single-item measures and double-item measures can be as effective as multiple-item scales, especially when applied with structural equation modeling. Theoretical tests and empirical findings would be the same if single-item measures were used instead of multiple-item measures (Petrescu, 2013; Subiyakto et al., 2021).

Appendix C presents the demographic profile in this study. The majority of the respondents are female, and they actively participated in answering digital survey questionnaires compared to their counterparts. Furthermore, 71.4% of them were in the age group of 18 – 23 years old. These cohorts predominantly belong to Generation Z. Most of them are currently studying in college, and they frequently use mobile ordering at least once a week.

Table 2 shows the reliability and validity of the scales that have been utilized in this study. A previous study concluded that a reliability index is considered consistent if it is greater than .70 (Yap, 2022). Furthermore, the AVE values must be less than the composite Reliability (CR), and each AVE value should be greater than 0.5 to confirm the quality and validity of the indices cited in Surucu & Maslakci (2020). To evaluate the convergent validity of the constructs, this study used Cronbach's Alpha, Average Variance Extracted (AVE), and Composite Reliability (CR). These parameters play a significant role in determining whether the indicators of each construct are reliable and properly acquire the intended concept. The Cronbach Alpha of the construct in this study has a value ranging from 0.581 to 0.956. and these indicate good internal consistency because they exceed the acceptable threshold, which is .70. except for monetary value, which obtained 0.581. Meanwhile, the AVE of these constructs ranges from 0.705 to 0.904. It indicates that it explains between 70.5% to 90.4% of the variance in its indicators. Lastly, the composite reliability of these constructs ranges from 0.827 to 0.968 and confirms that the construct of this study demonstrates a high reliability and good convergent validity.

Table 2. Reliability and Validity Test

Construct	Indicator	Loading	CA	CR	AVE
Mobile Service Quality (MSQ)	EF1	0.748	0.975	0.977	0.696
	EF2	0.764			
	EF3	0.804			
	EF4	0.804			
	CON4	0.807			
	FUL2	0.615			
	RES2	0.884			
	RES3	0.901			



	RES4	0.875			
	RES5	0.892			
	RES6	0.853			
	RES7	0.9			
	COM1	0.824			
	COM2	0.888			
	CONT1	0.863			
	CONT2	0.877			
	CONT3	0.852			
	CONT4	0.835			
	BIL2	0.814			
Epistemic Value (EV)	EV2	0.936	0.925	0.952	0.869
	EV3	0.943			
	EV4	0.917			
Social Value (SV)	SV3	0.919	0.816	0.916	0.845
	SV4	0.919			
Monetary Value (MV)	MV3	0.84	0.581	0.827	0.705
	MV4	0.84			
Conditional Value (CV)	CV1	0.931	0.95	0.964	0.87
	CV2	0.943			
	CV3	0.914			
	CV4	0.944			
Epistemic Perception (EP)	EPV1	0.951	0.893	0.949	0.904
	EPV2	0.951			
Conditional Value (CDV)	CDV1	0.942	0.872	0.94	0.887
	CDV2	0.942			
Customer Loyalty (CL)	CL1	0.934	0.956	0.968	0.885
	CL2	0.95			
	CL3	0.953			
	CL5	0.925			

Table 3 presents the discriminant validity results of the construct in this study, and it was evaluated using the Fornell–Larcker criterion. The correlation between Mobile Service Quality and Customer Loyalty slightly exceeded the square root of MSQ’s AVE ($0.849 > 0.834$), which constitutes a minor Fornell–Larcker deviation. This deviation is very minimal and does not indicate a significant issue. Recent studies argue that small discrepancies in the Fornell–Larcker assessment are not uncommon and do not necessarily compromise discriminant validity (Rönkkö & Cho, 2022; Henseler et al., 2015). It may still be acceptable if supported by theoretical justification (Voorhees et al., 2016). Moreover, mobile service quality and customer loyalty are conceptually related constructs, and prior studies have consistently shown that higher service quality strongly influences customer loyalty (Rane et al., 2023). The minor overlap observed between Mobile service quality and customer loyalty is theoretically justifiable, and overall, the Fornell–Larcker results support the discriminant validity of the measurement model

Table 3. Discriminant Validity (Fornell – Larcker Criterion)

Construct	MSQ	EV	SV	MV	CV	EPV	CDV	CL
MSQ	0.834							
EV	0.812	0.932						
SV	0.784	0.749	0.919					
MV	0.693	0.728	0.678	0.84				
CV	0.815	0.712	0.774	0.659	0.933			
EPV	0.788	0.731	0.793	0.674	0.859	0.951		
CDV	0.82	0.731	0.81	0.703	0.876	0.835	0.942	
CL	0.849	0.73	0.777	0.658	0.881	0.831	0.862	0.941

Table 4 presents the heterotrait–monotrait ratio of correlation results. Overall, most constructs are distinct, but the correlation between MSQ and EV, as well as MSQ and CL, is above .85. A previous study proposed a comprehensive framework for evaluating discriminant validity in structural equation modeling (SEM), which tends to focus on multiple criteria and accounting for sampling errors. According to this framework, the correlation of MSQ and EV, as well as MSQ and CL, indicates a minor concern regarding discriminant validity. However, it is very important to consider this in combination with other criteria, such as confidence intervals and AVE comparison, to make a comprehensive evaluation (Rönkkö & Cho, 2022).

Table 4. Heterotrait – Monotrait Ratio (HTMT) of Correlation

Construct	MSQ	EV	SV	MV	CV	EPV	CDV
MSQ	1						
EV	0.87	1					
SV	0.836	0.807	1				
MV	0.821	0.791	0.764	1			
CV	0.859	0.777	0.835	0.762	1		

EPV	0.834	0.788	0.849	0.781	0.9	1	
CDV	0.85	0.783	0.86	0.794	0.917	0.875	1
CL	0.873	0.789	0.821	0.771	0.925	0.868	0.896

As presented in Table 5, the Average R-squared (ARS) values were 0.443 ($p < 0.001$) and 0.659 ($p < 0.001$). It indicates that the model explains 44.3% to 65.9% of the variance in the endogenous constructs on average, which reflects adequate explanatory power. Average full collinearity VIF (AFVIF) is 4.961, which is ≤ 5 , ideally ≤ 3.3 , suggesting that multicollinearity is at an acceptable level. These results support the structural model's robustness and absence of collinearity bias.

Table 5. Model Fit and Quality Indices

Parameter	Value	Criterion
Average R-squared (ARS)	0.443, $P < 0.001$	–
Average R-squared (ARS)	0.659, $P < 0.001$	–
Average block VIF (AVIF)	5.216	acceptable if ≤ 5 , ideally ≤ 3.3
Average full collinearity VIF (AFVIF)	4.961	acceptable if ≤ 5 , ideally ≤ 3.3
Tenenhaus GoF (GoF)	0.74	small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36
R-squared contribution ratio (RSCR)	0.996	acceptable if ≥ 0.9 , ideally = 1
Simpson's paradox ratio	0.846	acceptable if ≥ 0.7 , ideally = 1
Statistical suppression ratio	1.000	acceptable if ≥ 0.7
Nonlinear bivariate causality direction ratio	1.000	acceptable if ≥ 0.7

Table 6 shows the descriptive mean rating of efficiency, which is one of the latent constructs of mobile service quality. "It concludes that the statement 'It is easy to navigate through the app' and 'I can complete my tasks efficiently on the app' got the same mean rating of 4.30, which is considered the highest among the other indicators, while the statement 'The app responds promptly to my actions' got the lowest mean rating of 4.18. This dimension provides the customers with time management and effort reduction, which is very important for them; that is why they strongly recognize the operational efficiency of mobile food ordering applications. Efficiency can also be viewed as a consumer's perception of a product, specifically, whether the product is easy to learn and use and reduces the burden of memory and degree of satisfaction (Li et al., 2020).

Table 6. Efficiency

EFFICIENCY	Mean	SD	Int
The app operates quickly when I use it.	4.23	.95	SA
It is easy to navigate through the app	4.30	.95	SA
The app responds promptly to my actions	4.18	.96	A

I can complete my tasks efficiently on the app.	4.30	.98	SA
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Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

The item “The app provides useful details about available services” got a mean score of 4.15. This indicates that respondents agreed with the statement. The standard deviation (SD = 0.94) reflects a moderate level of variability; it suggests that while most participants shared a positive perception, there was still a minimal discrepancy on how strongly they evaluated the usefulness of the app’s content. The accuracy, clarity, and completeness of information on mobile food ordering apps, such as menus, prices, food descriptions, and promotions, improved consumers’ literacy and reduced uncertainty and risk, such as unavailable items, hidden charges, and wrong orders. Digital content is a technique of creating and distributing relevant and valuable information to attract, acquire, and relate to a well-defined and understood target audience (Lopes & Casais, 2022).

Table 7. Content

CON	Mean	SD	Int
The app provides useful details about available services	4.15	.94	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

The indicator “The items I order are always available” received a mean score of 3.55 (SD = 1.07). This suggests that respondents were agreeable regarding the consistent availability of ordered items. The relatively higher standard deviation indicates greater variability in responses, indicating that even though some customers are satisfied with item availability, others have experienced inconsistency in the fulfillment process. Customers rely on mobile food ordering apps. They expected to receive the food quickly and accurately; that is why it is very important for the MFOA to deliver on its promises so that customers can effectively manage their time. Mobile applications can predict loyalty when users perceive that the app sufficiently meets the needs and expectations of the customers. Additionally, the app should provide a positive value proposition for the money spent on food ordering (Tayag & Rebollo, 2024).

Table 8. Fulfillment

FULFILLMENT	Mean	SD	Int
The items I order are always available.	3.55	1.07	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 9 shows the descriptive mean rating of the responsiveness dimension. The statement “The app provides useful solutions to problems” got the highest score, while the statement “The app handles ad hoc problems effectively” got the lowest score. It shows that respondents recognize the ability of the mobile food ordering apps to provide an urgent solution to different customers’ problems. Standard deviations reflect a moderate level of variation in experiences, implying that while several MFOA users were satisfied with responsiveness, others experienced delays or inconsistencies in service quality. The time customers spend in this mobile food ordering app is considered highly valuable, and they prefer to utilize and maximize it effectively. That is why they value the significance of responsiveness. The ability to handle customer questions, concerns, and frustrations is a critical factor in mobile service quality (Ighomereho et al., 2022)

Table 9. Responsiveness

RESPONSIVENESS	Mean	SD	Int
Customer service responds to my inquiries promptly.	3.92	1.04	A
The app provides useful solutions to problems	3.93	1.02	A
The app's support team is helpful when needed	3.91	1.00	A
Issues are resolved in a timely manner	3.92	1.04	A
I receive updates when I report an issue.	3.92	1.04	A
The app handles ad-hoc problems effectively	3.86	1.03	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

This compensation dimension got mean scores of 3.82 and 3.91, with standard deviations of 1.06 and 1.07, respectively. The results suggest that respondents had a moderately positive perception of the app's compensation practices. The scores indicate that users generally believe the app provides fair and adequate interventions, especially when problems arise. However, the standard deviations are slightly above 1.0; this shows a notable difference in user experiences. It suggests that while some respondents were satisfied with the app's approach to compensation, others may have found it inadequate or inconsistent. It is very important for the application to compensate the customers fairly, efficiently, and effectively, especially when the fault lies with the Mobile Food Ordering Application. These actions will minimize frustration, particularly if the mobile food ordering application demonstrates a genuine sense of responsibility, accountability, and concern. A delayed intervention is not an intervention at all. One of the key success factors to win back customers and restore their satisfaction is to act immediately by providing an appropriate solution and fair compensation (Alam, 2021).

Table 10. Compensation

COMPENSATION	Mean	SD	Int
The app provides fair compensation for errors.	3.82	1.07	A
The app addresses issues by offering adequate solutions	3.91	1.06	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 11 presents the mean rating of the contact dimension. The statement “The app provides reliable customer support” got the highest score, and the statement “Assistance is accessible through multiple channels” got the lowest mean score. It indicates that online users of mobile food ordering apps recognize the importance of customer support. Standard deviation values ranged from 1.03 to 1.07, indicating moderate variability in participant responses around the mean. Some of them were satisfied with the customer assistance, while others had negative experiences with the customer service assistance of the mobile food ordering apps. Mobile food ordering apps should provide contact information for customer service so that they can reach them efficiently and effectively, especially if they have queries and concerns about the products and services that have been offered or some digital errors that they have experienced in this application. Several mobile apps offer customer support options that allow users to communicate with the developer for assistance or to solve any problems they may be having (Rajvanshi, 2023).

Table 11. Contact

CONTACT	Mean	SD	Int
I can easily contact customer service when needed	3.80	1.03	A
The app provides reliable customer support	3.91	1.03	A
Contacting customer service is straightforward	3.82	1.05	A
Assistance is accessible through multiple channels	3.71	1.07	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 12 showed the descriptive mean rating of the Billing dimension, and even though it has only one indicator, online users strongly agree that the billing details in the mobile food ordering apps are transparent and easy to understand. The standard deviation shows moderate variability in responses. Users have a different perspective; some of them agreed, while others have a negative perception about this dimension. Billing is a critical factor in mobile food ordering apps because it significantly affects trust, efficiency, and effectiveness of the transaction. Meanwhile, customers can settle their orders online with mobile apps' secure payment options. Mobile food ordering applications allow users to securely store their payment details for future purchases, reducing the need to repeatedly enter information. This feature makes billing transactions more accessible and ensures a seamless, hassle-free experience (Rajvanshi, 2023).

Table 12. Billing

BILLING	Mean	SD	Int
Billing information is clear and transparent.	4.19	.95	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 13 presents the construct of emotional value. The statement “Mobile food ordering apps lessen customer's anxiety and mobile food ordering apps are less risky” got the highest mean score, while the statement “Mobile food ordering apps provide enough privacy” got the lowest mean score. It indicates that respondents strongly emphasize the enjoyment and positive feelings that they have experienced during the usage of mobile food ordering apps. Standard deviation ranges from .95 to .99, which concludes that respondents have a different perception of the emotional value that has been provided by the mobile food ordering apps. Customers strongly recognize the importance of emotional value in mobile food ordering apps. This application reduces the customer's stress of waiting in long queues or preparing food for themselves. When the apps deliver on their promise, they feel secure and cared for. Several customers perceive the use of mobile food ordering applications as a form of self-reward, particularly after completing personal or professional tasks throughout the day. Customers experience excitement, interest, joy, satisfaction, and activeness when using this mobile food ordering application (Handayani et al., 2022).

Table 13. Emotional Value

Emotional Value	Mean	SD	Int
Mobile food ordering apps lessen customers' anxiety	4.30	.95	SA
Mobile food ordering apps provide enough privacy	4.18	.98	A

Mobile food ordering apps are less risky	4.30	.99	SA
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Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 14 shows the social value construct. The indicator “Mobile food ordering apps facilitate the delivery of personalized products and services” got the highest mean score of 4.02 (SD = 0.92). While the statement “Mobile food ordering apps help users gain social approval” got the lowest mean score of 3.34. This suggests that respondents normally agree that mobile food ordering apps provide personalization, reflecting a positive perception of the app’s social value. However, the standard deviation indicates moderate variability, indicating that while most participants had positive views, some expressed differing or negative perceptions about this dimension. Customers strongly recognize the significance of social value in mobile food ordering apps. They love to share their food experience online, particularly with their relatives and friends, and this fosters inclusiveness. However, some families and friends are losing the opportunity to dine together because of their busy schedules, which significantly contributes to the growing dependence on mobile food ordering applications as a convenient alternative. Members of the family may now place separate orders, eat at different times, or dine alone rather than cooking and sharing meals together (Prasad et al., 2025). Meanwhile, some customers who use mobile food ordering apps frequently can enhance their social image, such as being up-to-date or tech competent. Consumers were attracted to mobile food ordering apps that can help them improve their social image and social status (Tandon et al., 2021).

Table 14. Social Value

Social Value	Mean	SD	Int
Mobile food ordering apps help users gain social approval	3.34	1.04	A
Mobile food ordering apps facilitate the delivery of personalized products and services	4.02	.92	SA

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 15 presents the mean rating of the construct monetary value; the statement “Mobile food ordering apps provide discounts / special offers” got the highest mean score, while the other statement, “Mobile food ordering apps don’t have additional service charges,” got the lowest mean score. This indicates a moderate perception among respondents regarding the discounts and special offers that are being provided by MFOA. The relatively high standard deviation suggests considerable variability in responses; while some participants agreed that apps provide frequent discounts and special offers, others held negative perceptions, possibly due to experiences with hidden fees or premium pricing. Online users recognize the importance of the money that they spend on food ordering. Most of them are price sensitive; they will evaluate whether the price of the product that has been paid matches the food that they received. They emphasize the importance of convenience without the feeling of wasting their financial resources. A previous study suggested that the money-saving aspect of MFOA significantly influences reusage intentions. They have identified price as important for intentions toward ordering food online (Kaur et al., 2021).

Table 15. Monetary Value

Monetary Value	Mean	SD	Int
Mobile food ordering apps don’t have an additional service charge	3.33	1.22	A
Mobile food ordering apps provide discounts / special offers	4.07	1.06	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 16 presents the convenience value. The statement “Mobile food ordering apps make life easier” got the highest mean score, while the statement “Mobile food ordering apps provide faster services than using other channels” got the lowest mean score. It indicates that respondents strongly recognize the usefulness and convenience of mobile food ordering apps.

The standard deviation of this construct ranges from .93 1.00, which indicates that responses have moderate variability. The results indicate that while most respondents perceived mobile food ordering apps as convenient to use, some of them expressed dissatisfaction with this dimension. Respondents strongly recognize the dimension of convenience. This dimension reduces cognitive and physical effort, enabling them to allocate more time to their academic and professional activities. MFOA enables consumers to search for and order food using a mobile food ordering app to consume later in an offline location, such as an office, school, or other places. It was convenient for the online consumers to perceive and evaluate a list of restaurants, menus, and ratings, finalize and confirm orders via digital payment, and track order statuses with no physical interaction or through telephone communication with the food service establishment (Kaur et al., 2021).

Table 16. Convenience Value

Convenience Value	Mean	SD	Int
Mobile food ordering apps make life easier	4.26	1.00	SA
Mobile food ordering apps save time	4.22	.99	SA
Mobile food ordering apps provide faster services than using other channels	4.04	.99	A
Mobile food ordering apps provide an efficient way to manage time	4.20	.93	SA

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

The epistemic value dimension got consistently high mean scores ranging from 4.07 to 4.15, indicating that respondents generally agreed that mobile food ordering apps provide uniqueness and stimulate curiosity. The standard deviation values, which ranged from 0.90 to 1.00, suggest moderate variability, meaning that while most participants positively perceived the apps’ innovative features, some respondents expressed less favorable views. Online users can easily discover new restaurants, cuisines, or menu items they have not tried before. They will evaluate these new restaurants, products, and services based on detailed descriptions, reviews, ratings, and images, which would help them to decide on what to purchase. This dimension satisfied their curiosity and provided them with a sense of novelty as well as an exploratory experience. Customers were influenced by several individuals who intended to purchase from mobile food ordering apps. Since the participants perceived that others were availing themselves of the benefits of FDAs, they will become curious and apparently search for more information about MFOA content. These attributes were related to the classical conceptualization of epistemic value, which is associated with intention to use (Kaur et al., 2021).

Table 17. Epistemic Value

Epistemic Value	Mean	SD	Int
Mobile food ordering apps experiment with new ways of doing things	4.07	1.0	A
Mobile food ordering apps stimulate users' curiosity	4.15	.90	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 18 showed the construct conditional value. The statement “Mobile food ordering apps provide time and place independence” got the highest mean score of 4.10, while the statement “Mobile food ordering apps provide real-time information and interaction” got the lowest mean score of 4.01. It indicates that respondents generally agreed that mobile food ordering apps provide flexibility, real-time interaction, and ease of access to the products and services that are being offered. The standard deviation values ranging from 0.93 to 1.00 reflect moderate variability. Most participants positively evaluated this dimension; a portion reported less favorable experiences. MFOA online users recognize the importance of conditional value because of the benefits of MFOA that they get depending on specific situations and conditions. Creating time-sensitive promotions, discounts, or new products and services has improved the value of mobile food ordering apps, which significantly influence the curiosity of users, leading to customer engagement and purchasing behavior. A previous study mentioned that retailers often emphasize advertising within a specific time frame to improve the visibility of price-related conditional elements, product content, and promotional attributes. These strategies have been implemented to increase perceived conditional value (Tandon et al., 2021).

Table 18. Conditional Value

Conditional Value	Mean	SD	Int
Mobile food ordering apps provide time and place independence	4.10	.99	A
Mobile food ordering apps provide real-time information and interaction	4.01	.93	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral* (N) 2.60 – 1.81 *Disagree* (D); 1.80 – 1.00 *Strongly Disagree* (SD)

Table 19 presents the construct of customer loyalty. The statement “I can highly recommend this mobile food ordering app” got the highest mean score, while the statements “If I could decide again, I would choose this mobile food ordering app again” and “I will prefer this app to other mobile food ordering apps at any time” got the lowest mean scores. This indicates that users strongly emphasize the significance of loyalty to their chosen mobile food ordering applications. The standard deviation ranged from .94 to .98. This indicates that respondents have a different perspective; some of them valued the importance of loyalty, while others intend to transfer from one mobile food ordering application to another. The majority of the respondents recognize the importance of customer loyalty in mobile food ordering applications. If the customer perceives the MFOA as a functional mechanism that helps reduce the time that they allocate for meal consumption, then they will become loyal to this application. Loyalty is not just a repeat usage, but it also builds trust, satisfaction, and long-term commitment towards MFOA. It has been demonstrated that customer loyalty towards online food delivery services rises with improvements in mobile service quality and customer trust (Tayag & Rebollo, 2024).

Table 19. Customer Loyalty

Customer Loyalty	Mean	SD	Int
I can highly recommend this mobile food ordering app	4.16	.94	A
If I could decide again, I would choose this mobile food ordering app again	4.17	.94	A
I like to be a customer of this mobile food ordering app	4.13	.96	A
I will prefer this app to other mobile food ordering apps at any time”	4.17	.98	A

Legend: 5.00 – 4.21 *Strongly Agree* (SA); 4.20 – 3.41 *Agree* (A).

3.4 – 2.61 *Neutral (N)* 2.60 – 1.81 *Disagree (D)*; 1.80 – 1.00 *Strongly Disagree (SD)*

Table 20 presents the indirect effect of emotional value on the influence of mobile food ordering applications ($\beta = 0.07$, $P\text{-value} = 0.462$) (Cohen's $f^2 = 0.005$). The effect size of this dimension is considered negligible. It indicates that perceived emotional value does not mediate the influence of mobile service quality on customer loyalty. The importance of this dimension was recognized by the respondents; however, it may not be sufficient to connect mobile service quality to customer loyalty compared to other dimensions of perceived value, such as convenience, epistemic, and conditional value. Mobile food ordering applications were primarily designed to provide efficiency, convenience, and reliability rather than foster strong emotional attachment. (Arguello et al., 2019) stated that service quality could not stimulate certain emotions and moods during the delivery of the service, while perceived emotional value does not significantly affect loyalty (Yum & Kim, 2024).

Table 20. Mobile Service Quality – Emotional Value – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → EV → CL	0.007		0.071		0.462	0.005	No mediation

Table 21 presented the indirect effect of social value towards the influence of mobile service quality and customer loyalty ($\beta = -0.018$, $P\text{-value} = 0.402$) (Cohen's $f^2 = 0.014$). This dimension does not mediate the relationship of mobile service quality to customer loyalty. The effect size of this dimension is considered negligible. The significance of social values was strongly recognized by the respondents, but it is not enough to influence the connection of mobile service quality to customer loyalty; therefore, this dimension is considered less significant in influencing the relationship of mobile service quality and customer loyalty in the MFOA context, because MFOA users give too much emphasis on efficiency, discernibility, and curiosity over social recognition. This result is consistent with a prior study that found that visibility, conditional, and functional value outweigh social value in driving user intentions and loyalty in the context of food delivery services (Kussudyarsana & Indraswari, 2022; Kaur et al., 2021). Meanwhile, in the context of energy-saving products, enhancing social value does not affect quality and consumer choice behavior (Luo et al., 2022).

Table 21. Mobile Service Quality – Social Value – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → SV → CL	-0.018		0.071		0.402	0.014	No mediation

Table 22 presented the indirect effect of monetary value ($\beta = -0.004$, $P\text{-value} = 0.475$). This dimension does not mediate the relationship of mobile service quality to customer loyalty. (Cohen's $f^2 = 0.003$) The effect size of this dimension is considered insignificant. This indicates that MFOA users recognize the importance of monetary value and its connection to intention to use, but it is not strong enough to influence the relationship between mobile service quality and customer loyalty. Customers tend to prioritize timesaving, efficiency, and ease of ordering over cost, even if it offers competitive pricing or discounts in mobile food ordering applications. (Tandon et al., 2021) used the Theory of Consumption Values in the food-delivery app context and found that convenience and visibility were considered stronger predictors of purchase intentions than monetary value. Monetary value was relatively weak or non-significant in some model attributes; it indicates that it is not the primary mediator between mobile food ordering applications' service quality and customer loyalty.

Table 22. Mobile Service Quality – Monetary Value – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → MV → CL	0.004		0.071		0.475	0.003	No mediation

Table 23 presents the indirect effect of convenience value on the influence of mobile service quality and customer loyalty. Convenience value ($\beta = 0.308$, P-value = <0.001) (Cohen's $f^2 = 0.273$) with a medium effect size. It indicates that this dimension partially mediates the relationship of mobile service quality to customer loyalty. MFOA users strongly recognize the importance of convenience value as well as its mediating effect towards the connection of mobile service quality and customer loyalty because this dimension represents the functional benefits of mobile food ordering apps, which provide ample time for the customers to do their other activities. Convenience is a key dimension of mobile service quality that directly influences customer loyalty (Yum & Yoo, 2022).

Table 23. Mobile Service Quality – Convenience Value – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → CV → CL	0.308		0.067		<0.001	0.273	Partial mediation

Table 24 presents the indirect effect of epistemic value ($\beta = 0.128$, P-value = 0.033) (Cohen's $f^2 = 0.108$) with a small effect size. This dimension partially mediates the relationship of mobile service quality to customer loyalty. This indicates that MFOA users recognize the importance of epistemic value as well as its partial mediating effect towards the impact of mobile service quality and customer loyalty because these dimensions represent the curiosity-driven behavior of customers towards mobile food ordering apps. When digital applications introduce something new, customers tend to become curious and are motivated to explore these new offerings. This mobile food ordering application has created a sense of novelty and stimulates its epistemic value. Service quality is more effective in generating perceived epistemic value (Seo & Um, 2022). Meanwhile, perceived epistemic value significantly influences customer loyalty (Hassan, 2017).

Table 24. Mobile Service Quality – Epistemic Value – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → EPV → CL	0.128		0.069		0.033	0.108	Partial mediation

Table 25 presented the conditional value towards the influence of mobile service quality and customer loyalty ($\beta = 0.260$, P-value = <0.001) (Cohen's $f^2 = 0.228$) with a medium effect size. This dimension partially mediates the relationship of mobile service quality to customer loyalty. It indicates that MFOA users recognize the importance of conditional value as well as its significant impact on the relationship between mobile service quality and customer loyalty because this dimension continuously introduces limited-time offerings such as new products, features, or promotional activities, which capture the interest of customers to engage with the mobile food ordering app. A previous study stated that conditional value influences the relationship between mobile service quality and customer loyalty (Simiyu & Bonuke, 2023).

**Table 25. Mobile Service Quality – Conditional Value – Customer Loyalty**

Path		β		SE	P – Value	f^2	Decision
MSQ → CDV → CL	0.260		0.068		<0.001	0.228	Partial mediation

Table 26 showed the direct influence of mobile service quality on customer loyalty ($\beta = 0.288$, P-value = <0.001) (Cohen's $f^2 = 0.248$) with a medium effect size. This indicates that if respondents positively perceived efficiency, content, fulfillment, responsiveness, compensation, contact, and billing in mobile food ordering applications, they became loyal to the digital platform, with or without the influence of an intervening construct. The power of mobile service quality is considered sufficient to influence customer loyalty (Simiyu & Bonuke, 2024).

Table 26. Mobile Service Quality – Customer Loyalty

Path		β		SE	P – Value	f^2	Decision
MSQ → CL	0.288		0.067		<0.001	0.248	Statistically significant



DISCUSSION

The majority of the respondents in this study are students, most of them are female, and their ages range from 18 to 22 years old. This aligns with the previous study, which concluded that female participants used mobile food delivery apps more frequently than their male counterparts (Jamaludin et al., 2019). Food delivery apps have become an integral part of the daily lives of students (Barcelona et al., 2024); most of them use mobile food ordering apps at least once a week (Ray et al., 2019).

Mobile food ordering applications are continuously growing, providing users convenience, speed, and reliability, which improves the overall experience and influences frequent usage. Especially nowadays, when people are very busy with their lives. They frequently use mobile food ordering services at least once a week. It is very important to identify the characteristics of quality that are provided by the mobile food ordering apps using the right multi-scale dimensions of service quality to maintain and improve the quality of services and perception of value of these mobile food ordering applications.

This study showed that respondents strongly recognized the importance of the dimension efficiency because most of them want to obtain fast and accurate services. Customers are living in a fast-paced environment; they do not have enough time to cook and prepare their own meals. Students and young professionals have a very tight schedule, which is why they prioritize the importance of ease of use and speed, especially when it comes to food ordering. Most of them allocate a minimal amount of time for their meals due to academic and work-related activities; therefore, they recognize the significance of this dimension, as efficiency provides them sufficient time and effort to accomplish their other responsibilities.

This dimension improves the quality of life of the customers by providing them with a hassle-free transaction. Mobile food ordering applications have shown clear advantages by offering customers easy access to prepared meals and enabling food providers to maintain their operations in a challenging environment (Langi et al., 2024).

On the other hand, the results of this study also showed that the respondents recognized the importance of mobile food ordering application content. Content is a significant predictor of customer positive perception because it provides a clear product detail that makes it easy for the customer to understand and navigate the food they want to order, especially for those individuals with low digital self-efficacy. Some respondents do not have the ability to effectively read and understand different forms of digital content, which limits their capacity to fully engage with different mobile food ordering applications. The level of digital literacy directly impacts the customer's ability to effectively search for and understand (Jin & Ibrahim, 2023). The content of this application enables them to decide easily, try new products, and have confidence in their choices during the online food ordering transaction because of the detailed information, such as menu descriptions, promotional offers, appealing visuals, and timely notifications, that have been provided by this platform, which will eventually enhance trust and loyalty in the digital platform. These online applications are also helpful for market development, particularly in food supply and consumption. Online users are allowed to see the entire food menu, along with item descriptions, features, promos, prices, and photos, and this is an opportunity for the owner and developer of the platform to attract several online customers (Ramesh et al., 2021).

Respondents also recognize the significance of fulfillment because this dimension provides them with timely delivery, accurate orders, and reliable service. Fulfillment significantly influences customers' trust, especially when the apps deliver what is being guaranteed. Customers will evaluate and compare the actual service and consumption experience against their prior expectations. If the actual services and consumption experience exceed their previous expectations, then customers would be highly satisfied. Apparently, if prior expectations exceed the quality of the service and the consumption experience received, customers would be dissatisfied and eventually raise a complaint about the services that have been provided by mobile food ordering apps. This dimension has created positive emotional experiences, efficiency, reliability, and satisfaction. These attributes significantly affect the business by reducing uncertainty and disappointment, which will result in customer loyalty and positive word of mouth. Fulfillment is an achievement that motivates the online users to



continuously engage in mobile food ordering applications. It also involves the accurate display and description of a product so that the customers will receive what they have ordered, and the product must be delivered within the time frame promised (Ighomereho et al., 2022).

The importance of the responsiveness dimension was acknowledged by the respondents, especially if the mobile food ordering application has a service recovery mechanism that immediately acknowledges the customers' complaints, queries, and concerns. Customers expect their concerns, such as incorrect orders, delivery delays, or payment issues, to be addressed and resolved properly and immediately. When mobile applications provide quick and effective interactions, they can enhance customer loyalty and satisfaction.

Customers have a different perception regarding the products and services that they want to offer to them. That is why complaints, concerns, and queries are inevitable, but they can be minimized and turned into satisfaction, especially if the application continuously responds as quickly as possible. This dimension focuses on the attitude and promptness in dealing with customer issues. It also focuses on the reliability, dedication, and professionalism of the employees or staff (Ramya et al., 2019).

The significance of the compensation dimension was also recognized by the respondents because it reflects how fairly and promptly issues are resolved, particularly in cases such as system errors, late deliveries, and poor food quality. Customers expect not only smooth transactions but also the assurance that problems will be addressed effectively and efficiently. When something goes wrong, they anticipate receiving compensation in the form of refunds, discounts, or replacement orders. This dimension enhances trust and satisfaction. Instructions are not enough; companies must resolve issues immediately and provide appropriate compensation to transform negative perceptions into satisfaction, encouraging loyalty and sustained engagement with mobile food ordering applications. Providing a reimbursement, token, or other compensation remains a powerful method for compensation, especially when the objective is to make angry customers happy (Alam, 2021).

The respondents of this study also acknowledge the importance of the contact dimension, noting that the availability of customer service information displayed in the mobile food ordering application plays a significant role in resolving issues and concerns. Since several customers have a tight schedule, it would be unfair for them to consume a greater amount of time to make inquiries or raise concerns if they do not know where to address them. Contact information significantly influences customer satisfaction and loyalty in mobile food ordering applications (Lin et al., 2024).

The billing dimension was also positively perceived by the respondents. Mobile food ordering applications should provide a detailed billing statement to their customers, as this reflects integrity and honesty. Transparent and economical billing creates a positive impression, strengthening customer trust and enhancing the company's image, which in turn can attract more customers in the future. This implementation of the digital billing system plays an important role in achieving greater efficiency, accuracy, expandability, and dependability (Geethamani & Karuppusamy, 2025).

Aside from the attributes or dimensions of mobile service quality, customers need to evaluate the benefits they could get from it. This evaluation tends to focus on the service features that shape customer perceived value and enhance their experience.

The respondents acknowledge the importance of **emotional value**, but it is insufficient to connect this dimension to the relationship between mobile service quality and customer loyalty. In a fast-paced context, customers are constantly engaged in their daily activities and need to accomplish their academic and professional responsibilities. Mobile food ordering applications are primarily driven by a utilitarian mechanism that helps customers to complete their tasks faster, reduce effort in purchasing the food they want, make optimal choices, and ensure predictable outcomes, rather than an emotional experience. People tend not to develop an emotional attachment to mobile food ordering apps. Emotional attachment and personal connection are more evident and strongly experienced in social media and entertainment applications. Mobile food ordering

applications should prioritize improving their utilitarian features rather than depending solely on the emotional advantages of digital platforms, particularly if they aim to attract a larger customer base.

They could still enhance the emotional benefits of these applications; however, this should be included at the bottom of the list. Previous studies stated that emotional value had no significant influence on continued usage intentions of mobile food ordering apps. Instead, MFOA emphasizes the positive contribution of convenience and travel time saving, rather than being entertained while using the application for shopping, watching movies, or listening to music (Rungruangit & Charoenpornpanichkul, 2023). The result of this study concludes that hypothesis 1 was not supported.

The respondents strongly recognized the importance of **social value**; however, its influence on establishing a meaningful connection between mobile service quality and customer loyalty was not sufficient. Consumers emphasize the practical use of mobile food delivery applications. While they recognize the importance of social interaction, peer evaluation, and approval, these attributes have no influence on perceived service quality and do not guarantee customer loyalty. Instead, their motivation to use and remain loyal to these applications is primarily driven by convenience, efficiency, and reliability. The time and effort that consumers have spent using mobile food ordering applications is considered more valuable than social perception and interpersonal experience. This observation is consistent with previous findings, which indicated that social value is not a significant predictor of satisfaction and loyalty (Luo et al., 2022). The result of this study concludes that the connection between mobile service quality and customer loyalty is partially driven by functional and utilitarian benefits and not social approval or peer recognition. With this, they could set aside the significance of social value in mobile food ordering applications. The developer of this mobile food ordering application should consider this as a secondary priority and intend to focus on the improvement of the utilitarian mechanism that would attract more customers in the future. This concludes that hypothesis 2 is not supported.

Furthermore, the importance of **monetary value** was positively perceived by the respondents, but the power of this dimension was not sufficient to influence the relationship between mobile service quality and customer loyalty. Although respondents emphasized the benefits of cost-saving promotions, discounts, and economical value, these elements were not strong enough to act as a connector between mobile service quality and customer loyalty. This indicates that even though customers recognize the importance of financial resources, it will not necessarily improve mobile service quality and cannot guarantee their loyalty to mobile food ordering apps. Monetary values play a secondary role. The ability to order and receive food immediately is considered more valuable than potential cost savings. Meanwhile, individuals who are considered price-sensitive emphasize the significance of monetary value in terms of decision-making, and most of them are not current users of mobile food ordering apps. Many consumers are willing to pay a premium as long as the application provides accurate orders, dependable service, and timely delivery. They emphasize the importance of convenience; as such, they disregarded the higher price associated with mobile food ordering apps in favor of the benefits that online food delivery platforms provide (CoE-EDP VisionRI, 2024). Customers are not affected by monetary value in deciding to purchase a product, regardless of whether there is a discount, promotional items, or price accessibility (Sektianingshi & Febriarhamadini; R., 2024). The mobile food ordering application's developer and owner should not only concentrate on the monetary value of this application, which has been perceived by online users. If they want to attract more customers, they need to give more attention to creating a strategy combining both functional and monetary mechanisms. The findings of this study conclude that hypothesis 3 was not supported.

The respondents strongly recognize the importance of **convenience value** as well as its partial mediation of the influence of mobile service quality on customer loyalty. This indicates that convenience value is one of the contributing factors that significantly influence the relationship between mobile service quality and customer loyalty. High mobile service quality improves perceived convenience value, which ultimately influences customers to stay loyal in mobile food ordering applications. Customers perceive mobile food ordering applications as a functional mechanism that allows them to easily navigate, search for, and order their desired food items. This dimension significantly affects the decision-making process of consumers, particularly in terms

of Mobile food ordering application usage, because these applications are created to lessen the time, physical, and cognitive effort in the process of food ordering. Most online users, particularly students and young professionals, live in fast-paced environments where accessibility and efficiency are considered very important. By minimizing effort consumption and offering fast and accurate transactions, mobile food ordering apps significantly satisfy consumers' demand for ease of use, reliability, and immediate access to services. This approach would satisfy their customers, and they are more likely to become loyal to this application. Previous studies concluded that user interface design, convenient and helpful smart applications, minimize the process of food ordering (Ramirez et al., 2025), which eventually leads to customer loyalty; hypothesis 4 was supported.

This study also highlights the importance of **epistemic value** and its partial indirect effect on the relationship between mobile food ordering applications and customer loyalty. It indicates that epistemic value showed its partial contribution towards the relationship between mobile service quality and customer loyalty. The customer's journey with regard to epistemic value can be compared to a domino effect. High mobile service quality significantly enhances this dimension by providing an environment where customers can discover and explore new offerings. Customers are also strongly influenced by others, particularly when they observe a huge number of people patronizing a specific application, they read the positive reviews and comments on social media, they will be influenced to purchase the product, and are more likely to become loyal to these applications. Social value stimulates curiosity and motivates them to discover what new features or offerings the application provides. This sense of curiosity and eagerness to discover creates an opportunity for mobile food ordering applications to capture customer interest and encourage continued utilization. Previous studies showed that epistemic value is a primary indicator of purchase intention toward mobile food ordering applications (Kaur et al., 2021; Mason et al., 2023); therefore, hypothesis 5 was supported.

This study also emphasizes the importance of conditional value as well as its partial indirect effect on the influence of mobile service quality on customer loyalty. Mobile service quality improves the usefulness of the mobile food ordering apps, particularly in specific situations such as time pressure, seasonal needs, or special promotions. They could easily use and rely on this application in terms of their food-related needs, and during urgent or unique situations. Conditional value partially mediates the relationship between mobile service quality and customer loyalty because customers might still be loyal to these mobile food ordering apps due to trust, convenience, or enjoyment, and not only because of situational benefits. Conditions such as promotional offers, fast and free delivery significantly influence users' intentions to order from mobile food ordering apps. These existing attributes are considered an opportunity for mobile food ordering applications to influence positive perception and intentions toward mobile food ordering applications (Kaur et al., 2021). This statement indicates that hypothesis 6 was supported.

The influence of mobile service quality on customer loyalty is statistically significant, with or without the indirect effects of perceived convenience, epistemic value, and conditional value. The strength of mobile service quality alone is sufficient to encourage users of mobile food ordering applications to become and remain loyal to the digital platform. When these applications continuously improve their attributes and overall performance, they contribute to making the lives of online users more comfortable, convenient, and satisfying. The positive experiences that customers derive from using mobile food ordering applications further reinforce their loyalty, which is particularly critical in today's increasingly competitive digital marketplace; therefore, hypothesis 7 was supported.

Conclusion

The continuous development of technology changes the lives of people, especially those individuals who have a demanding schedule. They always depend on these mobile food ordering applications to satisfy their food-related needs. Several mobile food ordering applications provide and offer the same products and services, but what makes them different from one another is quality. The emphasis on quality requires an evaluation of the services that have been offered and delivered, using an appropriate multi-dimensional service quality scale aligned to this mobile food ordering application. The dimensions of mobile service quality will shape the



positive perception of value of the customer, which in turn will make them loyal to utilizing this application. Respondents strongly recognize the importance of efficiency as part of the attribute of mobile service quality because most of them want to make a quick and seamless online transaction to minimize the waiting time and effort that they will consume in navigating this application. With this, they can use and allocate their time to accomplish other important tasks.

Convenience value, conditional value, and epistemic value significantly influence the connection of mobile service quality to customer loyalty. If the mobile food ordering applications continuously provide seamless transactions, limited-time offers, and promotional content of new food choices, then customers will continuously use this application, and they will reinforce loyalty. Therefore, the developers of these mobile food ordering applications should continuously update their software to minimize the time and effort consumed by MFOA users. Additionally, they need to innovate their product choices and create something new in applications such as promotional materials, discounts, or posting ethical and sustainable information. These innovations will capture the interest of their existing and potential customers.

Emotional value has no significant contribution to the relationship between mobile service and customer loyalty, because this dimension of perceived value is intended for amusement and hedonic purposes. Mobile food ordering application is a functional and utilitarian mechanism, and this is the main reason why customers continuously engage and patronize this application. Meanwhile, monetary value has no significant connection to the relationship between mobile service quality and customer loyalty, because most of the MFOA users emphasize the functionality and ease of use of mobile food ordering apps rather than the higher cost associated with the services that are provided by this application. On the other hand, social value doesn't mediate the relationship of mobile service quality to customer loyalty. People who use mobile service food ordering applications tend to neglect the concept of peer recognition or appraisal, just because they engage and are loyal to these mobile food ordering applications. What is important to them is the utilitarian features that they get from this application. However, there is a need to improve the perception of the customers regarding the mediating effect of emotional, monetary, and social value towards the relationship between mobile service quality and customer loyalty in mobile food ordering applications. The company that owns these mobile food ordering apps should create a new digital feature or innovate their content to evoke feelings, recognize the price value, and appreciate the social perspective of the consumers, to dominate the competition as a whole and increase the number of their loyal customers.

Recommendations

Although emotional, monetary, and social values showed no significant influence on customer loyalty, these dimensions should still be considered as complementary features to enhance user experience. Developers and owners of mobile food ordering applications (MFOAs) must continue improving ease of use, speed, accuracy, and transparency in their platforms. Simplified navigation, clear product descriptions, quality visuals, and honest pricing can strengthen user trust, attract new customers, and encourage loyalty.

MFOA providers should also ensure order accuracy and timely delivery to maintain reliability and customer confidence. Strengthening service recovery mechanisms through prompt handling of payment issues, delivery delays, or incorrect orders is considered significant. The government should require all MFOAs to implement fair and immediate compensation schemes such as refunds, discounts, or replacement items for service failures.

Furthermore, accessible customer support and transparent billing systems must be prioritized to build long-term trust. Although emotional value was insignificant, developers can enhance it through gamification, personalized messages, and celebratory offers to enrich user engagement without compromising functional efficiency.

Mobile food ordering application developers should not only depend on social recognition attributes. They can create a strategy by combining both social and utilitarian functions, such as sharing of food and service delivery reviews, as well as referral incentives. Online users can upload and disseminate some information about the food and service delivery that they have experienced. This will not only improve the social image of MFOA but



also its utilitarian functions, such as ease of use, reliability, and convenience, that are provided by the application.

Monetary value is considered a secondary priority in shaping the influence of mobile service quality and customer loyalty; however, the MFOA developer can still improve this dimension by integrating its features, such as discounts, promotions, and cost-saving initiatives, with dependable, convenient, and timely services. This attribute will improve both the functional and monetary value of the mobile food ordering app. This approach is seen as a powerful strategy because you can easily capture the interest of both price-sensitive and busy individuals, and there is an opportunity that they will become loyal to this application.

Convenience value needs to be continuously improved and innovated so that they would be able to minimize time and effort consumption in ordering, tracking, and payment. Digital features such as voice-assisted ordering, one-tap orders, and real-time delivery tracking can enhance ease of navigation and efficiency, as well as drive satisfaction and loyalty.

Developers should conceptualize a strategy that maintains curiosity and engagement, such as introducing new food items, seasonal menus, and innovative features. The integration of social reviews and discovery mechanisms with regard to products and services has been experienced by consumers, which will influence them to continuously explore and utilize the mobile food ordering applications.

Business developers and owners should create a strategy that features the situational offer scheme of the mobile food ordering applications, such as free delivery or price discounts during rainy days, critical days, exams, peak hours, or holidays, to increase customer engagement and app utilization.



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