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Customer Satisfaction in Home Delivery Service in Vietnam: The Impact of Service Quality, Perceived Value, and the Mediating Role of Trust

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Abstract

In the rapidly expanding global e-commerce landscape, ensuring customer satisfaction in home delivery services has become a critical priority, particularly in emerging economies like Vietnam. High-quality delivery services, enhanced perceived value, and strengthened customer trust are key drivers shaping satisfaction levels. This study investigates the relationships between service quality, perceived value, and customer satisfaction, with trust playing a mediating role. Using data from an online survey of 385 respondents in Binh Duong province - one of Vietnam's prominent industrial and economic hubs, the study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4 for analysis. The findings reveal that service quality, perceived value, and trust significantly and positively influence customer satisfaction, with trust acting as a powerful mediator. By extending the SERVQUAL model to include perceived value and grounding the analysis in Expectation Disconfirmation Theory (EDT), this study offers meaningful insights for home delivery service providers. The results highlight actionable strategies to optimize service performance, build trust, and elevate customer experiences in the competitive e-commerce market.

Key words: Service quality, Customer satisfaction, E-commerce, and Delivery services

JEL Classification: L81; L87; D12; M31

1. Introduction

Home delivery services have become an essential component of modern commerce, driven by rapid technological advancements and evolving consumer behaviors. These services involve the transportation of goods directly to customers' specified locations, carried out either by in-house delivery personnel or third-party logistics providers. While home delivery has existed for decades, its importance has surged in recent years due to the exponential growth of the e-commerce sector. This growth was particularly accelerated during the COVID-19 pandemic, which fundamentally shifted consumer preferences towards online shopping. Globally, e-commerce platforms have reshaped purchasing behaviors by offering convenience, flexibility, and 24/7 accessibility. In Vietnam, the e-commerce market has experienced substantial growth, reaching an estimated value of \$20.5 billion by the end of 2023 and contributing nearly 8% to the country's total retail sales and consumer services revenue (Ministry of Industry and Trade of Vietnam, 2023).

Binh Duong province, one of Vietnam's prominent industrial and economic hubs, has played a significant role in this transformation, attracting a great attention from researchers and practitioners in the field of business management (Dam & Huynh, 2022; Ho & Huynh, 2022; Nguyen & Huynh, 2022; Nguyen & Huynh, 2023; Phan & Huynh, 2023; Huynh & Vo, 2023; Huynh & Nguyen, 2024). The province boasts a robust digital infrastructure, including 92% smartphone penetration, 86.3% broadband internet coverage, over 3.1 million bank accounts, and an extensive network of public Wi-Fi hotspots (Le, 2024). These advancements have fueled the province's booming e-commerce sector and intensified the demand for efficient home delivery services. However, despite significant growth opportunities, delivery service providers in Binh Duong face mounting operational and strategic challenges in meeting customer expectations for timely, reliable, and high-quality services (Lovelock & Wright, 2002). Addressing these challenges requires a thorough understanding of the factors that drive customer satisfaction, including service quality, perceived value, and trust.

The importance of customer satisfaction in home delivery services cannot be overstated, as it directly impacts customer loyalty, repeat purchases, and brand reputation. Research has consistently highlighted service quality, perceived value, and trust as critical determinants of customer satisfaction in delivery services (Uzir et al., 2021). However, limited studies have specifically examined these factors within the context of Vietnam, particularly in rapidly developing regions like Binh Duong. While previous research has primarily focused on logistics

services, hotel deliveries, and convenience store supply chains, the unique dynamics of home delivery services remain underexplored. This study aims to bridge this gap by analyzing the relationships between service quality, perceived value, and trust in shaping customer satisfaction in home delivery services in Binh Duong.

This research seeks to address three key objectives: (1) to examine how service quality influences customer satisfaction, (2) to evaluate the impact of perceived value on customer satisfaction, and (3) to investigate the mediating role of trust between service quality, perceived value, and customer satisfaction. By addressing these objectives, the study aims to provide actionable insights for home delivery service providers, including major players such as Giao Hang Tiet Kiem, GrabExpress, J&T Express, and Ninja Van, enabling them to optimize their service offerings and better meet customer expectations.

Understanding the interplay between these factors is essential for both theoretical and practical reasons. Theoretically, this study contributes to the existing literature by providing empirical evidence on customer satisfaction drivers in a developing economy context. Practically, the findings offer strategic recommendations for logistics companies operating in Binh Duong, helping them enhance their service quality, foster customer trust, and deliver superior perceived value. As the demand for home delivery services continues to grow, these insights will play a crucial role in shaping sustainable business practices and improving overall service effectiveness in Vietnam's logistics sector.

2. Literature review

2.1. Theoretical background

2.1.1. Home delivery services

Within the e-commerce sector, home delivery service allows customers to receive the product straight from the dealers without visiting any outlet making the shopping interesting (Uzir et al., 2021). Nowadays, third-party delivery companies are often hired by offline retail stores to deliver their goods and services through online platforms with a large number of orders per day (Jiang et al., 2021; Chen et al., 2018). In the context of strong e-commerce development, home delivery service has become a key factor in an efficient supply chain, bringing speed, convenience and satisfaction to customers (Savaliya & Jignesh , 2024). Instead of carrying goods from the store

themselves, customers increasingly prioritize using home delivery as the most convenient method to save time and effort. To illustrate, customers cannot easily carry a washing machine from the store to their home by personal means such as motorbikes or small cars because it needs to be transported properly to avoid damage, so home delivery service in this case will really be of maximum use. Chen et al. (2015) found that home delivery service significantly improved customer experience in the online grocery sector. As consumers are more likely to seek quick and dependable delivery while shopping, firms that are committed to enhancing their delivery system can gain a strategic benefit over their rivals (Pal et al., 2021; Saleem & Ahmad Khan, 2020; Hafez et al. al., 2021). Home delivery service protects consumers' health and solves essential needs for people in situations of force majeure such as natural disasters or epidemics (Figliozzi & Unnikrishnan, 2021). In an increasingly competitive market, home delivery service is not only a convenience but also a decisive factor for the success of businesses like Amazon, Shopee and Grab (Mehta et al., 2020; Tran, 2023).

2.1.2. Expectation disconfirmation theory (EDT)

Expectation Disconfirmation Theory (EDT) is one of the fundamental theories in the field of customer satisfaction research developed by Oliver (1980). Oliver and DeSarbo (1988) refer to customer satisfaction as the result of a comparison between pre-consumption expectations and actual post-consumption experiences, while the difference between the two is called disconfirmation. Susarla et al (2006) refer to expectations as the primary criteria for customers to evaluate the actual performance of products and services after experiencing them. This leads to two extremes including positive and negative for customers. While positive disconfirmation occurs when post-consumption experiences exceed initial expectations, leading to high satisfaction; conversely, when expectations are not met, it leads to negative disconfirmation (Yi et al., 2021).

EDT has recently been widely applied in many research fields such as brand management (Shukla, 2023) or airline services (Nguyen et al., 2024), all of which recognize that this theory is particularly useful for analyzing customer satisfaction when they compare expectations with actual experiences. With home delivery services, customers often expect products to be delivered on time, to ensure the promised quality, and to be served by dedicated employees. If the delivery staff meets these factors, customers will feel satisfied, which is called positive disconfirmation. On the contrary, if the product arrives late or in a damaged condition, this experience will create negative disconfirmation. These are completely suitable to apply in this study because satisfaction depends

not only on actual service quality but also closely related to perceived value and trust in the delivery staff.

2.1.3. Commitment-Trust Theory

The theory of Commitment and Trust in Relationships as presented by Morgan and Hunt (1994) remains an evergreen subject in relationship marketing. For healthy and rewarding business relationships, both commitment and trust are of utmost importance. It is assumed that when there is trust, there will be relationships, and there is probable closeness hence lesser risks in undertaking such relationships (Morgan & Hunt, 1994). Concerning home delivery services, the customer's trust on the service provider is paramount since it affects the customer's propensity to return and his or her loyalty towards the company itself (Yi et al., 2021). Also, in the e-commerce context trust in the delivery person is critical to improving customers' satisfaction since it has a bearing on how customers evaluate the reliability and the trust-worthiness of the service itself (Chen et al., 2018). In the recent study, it has been established that the level of trust which customers exhibit towards the delivery system tends to influence their satisfaction and loyalty levels for the delivery system as well (Kumar & Shah, 2021). Regarding the Binh Duong area, delivery services have significantly grown and Expanded, Commitment-Trust Theory sheds light on the significance of customer satisfaction from the perspective of trust in delivery persons, especially where customers are more selective due to the availability of diverse services.

Commitment is equally imperative in the provision of home delivery due to its representation of the providers' self-regulation to uphold quality service delivery. Studies revealed that there is a change in customers' feelings towards the service when the delivery individuals are consistent with their reliability and professionalism, and the customer is assured for repurchase (Yi & Natarajan, 2018). Trust as a mediator in the existing body of knowledge has been mostly focused on providing evidence on the existence and significance of the trust-commitment-customer satisfaction sequence, trust having been recognized as one of the core components of relationships. The relationship where trust serves as a mediating factor in the commitment-satisfaction link has been extensively studied and documented. Most customers will remain loyal to a company so long as they consider it trustworthy (Panigrahi et al., 2018).

2.2. Review of previous research

The relationship between home delivery service quality, perceived value, and customer satisfaction has been explored in multiple studies in the Uzir et al. (2021) conducted a survey with 259 respondents in Bangladesh to assess customer satisfaction with home delivery services. This study employs online questionnaires and SmartPLS software to determine the effects of service quality and perceived value on customer satisfaction, while examining trust as a mediating factor in this relationship. The results show that service quality, perceived value, and trust all have significant positive effects on customer satisfaction, while trust plays a mediating role and service quality is the strongest factor (Uzir et al., 2021). Another previous research name "Exploring the factors that drive consumers to use contactless delivery services in the context of the continued COVID-19 pandemic" by Jiang et al. (2023) with 255 participants. This study published that factors such as privacy, reliability, security, and flexibility have a significant positive impact on the intention to use contactless delivery services through customers' perceived value; thus, the adoption of contactless delivery services in retail, food delivery, and logistics industries will become an inevitable trend in the market (Jiang et al., 2023). In Korea, An et al. (2023) also researched about "Understanding Consumers' Acceptance Intention to Use Mobile Food Delivery Applications" with 310 responses. The author found that trust was found to have a positive impact on perceived usefulness and perceived ease of use of food delivery services (An et al., 2023).

In Vietnam, a study on e-commerce platforms on conducted by Lam and Nguyen (2023) through the SERVQUAL model with 283 participants showed that delivery costs, staff service attitude, application design and on-time response are factors that have a great impact on retailers' satisfaction when using delivery services on e-commerce platforms. Meanwhile, Le et al. (2023) also stated that operational quality, relationship quality and cost performance have a positive impact on customer satisfaction, thereby enhancing long-term customer loyalty. In Binh Duong area, there are many studies on customer satisfaction but mainly on topics such as logistics at general ports (Le, 2021), electricity services (Nguyen and Bui, 2023), accommodation facilities (Pham and Tran, 2022), but there has not been any in-depth research on home delivery services.

2.3. Definition of relevant constructs and hypotheses

2.3.1. Service Quality (SQ)

Service quality is probably the most researched construct in the study of services management and is variously defined by global researchers. According to Grönroos (1988), it is the result of an evaluation process where customers compare their expectations with the service they perceive. Kim (2021) has suggested that the level of quality of products and services provided to customers, as well as their satisfaction with that service, is called service quality. According to the SERVQUAL model of Parasuraman et al. (1988), service quality is measured through five main aspects: tangibles, reliability, responsiveness, assurance, and empathy. The research by Uzir et al. (2021) has shown that service quality not only directly affects customer satisfaction, but also indirectly through trust because customers will feel satisfied when receiving services that exceed their initial expectations and vice versa. In home delivery services, service quality also relates to the professionalism of the delivery personnel, the accuracy of order fulfillment, and the reliability of delivery timing (Collier & Bienstock, 2006). Homburg and Giering (2001) show that service quality plays a more important role in industries with higher frequencies of service encounters because it enhances customers' value and confidence perceptions. Based on these findings, the following hypothesis is proposed:

H1: Service quality has a positive effect on the customer satisfaction in home-delivery service.

2.3.2. Customer Perceived Value (PV)

Customer perceived value (PV) is defined by Zeithaml (1988) as a customer's assessment of the benefits received versus the costs incurred; meanwhile, Woodruff and Gardial (1996) view perceived value as what customers expect to achieve from a product or service. It combines both functional and emotional dimensions that affect customer decision-making and satisfaction. Cronin et al. (2000) presented a positive relationship of perceived value with customer satisfaction that customers will be more likely to be satisfied and continue using the service when they feel that the service they receive is worth the money they spend. This seems to be especially true in the home delivery sector because customers pay for the convenience of having the product they have purchased delivered. Hapsari et al. (2017) found that a positive emotional experience strengthens

the perceived value of a service, especially when delivery personnel provide a reassuring and responsive experience. Based on this evidence, we propose the following hypothesis:

H2: Customer perceived value has a positive effect on the customer satisfaction in home-delivery service.

2.3.3. *Trust (T)*

Trust is simply understood as the customer's belief in the reliability, safety and honesty of the service provider (Morgan & Hunt, 1994). According to Delgado-Ballester et al. (2003), trust is the peace of mind through interactions between customers and service providers, while Sharma (2003) emphasized that trust is a decisive factor in building relationships between buyers and sellers. In home delivery, trust is often built by reliable service, positive interactions with delivery staff, and giving customers peace of mind that their purchase will be handled responsibly. Rimawan et al. (2017) wrote that satisfaction also comes from customers' confidence in the product they purchased, which reduces the perceived risks and uncertainties associated with the delivery process. Still, in the highly competitive market, a building up of trust through reliable and transparent practices can yield benefits since customers would be more likely to choose and stick to their service providers whom they would consider trusted. The following hypothesis is therefore proposed:

H3: Trust has a positive effect on customer satisfaction in home-delivery service.

2.3.4. *Trust as a mediator*

Trust plays a crucial mediating role in the relationship between key service quality and perceived value to customer satisfaction in home delivery services. In essence, trust serves as a bridge that enhances the positive impact of service quality and perceived value on customer satisfaction, creating a stronger connection between these constructs and the customer's overall satisfaction. Trust deepens customer satisfaction, as customers feel secure and valued by the service provider (Agustin & Singh, 2005; Gounaris, 2005). Therefore, trust not only reinforces the direct effect of service quality on satisfaction but also amplifies the customer's positive perception of the service. In the home delivery service, trust acts as a bridge to reduce the risk that customers may perceive when using the service (Sirdeshmukh, Singh, & Sabol, 2002; Lin & Wang, 2006). For example, customers tend to be more satisfied when they feel that the delivery person is

trustworthy, careful, and shows concern for their needs. The following hypothesis is therefore proposed:

H4: Trust mediates the relationship between service quality and satisfaction in home-delivery service.

H5: Trust mediates the relationship between perceived value and satisfaction in home-delivery service.

2.4. Research model and hypothesis development

Based on Oliver (1997), Uzir et al. (2021) and prior studies, we propose the research model as follows:

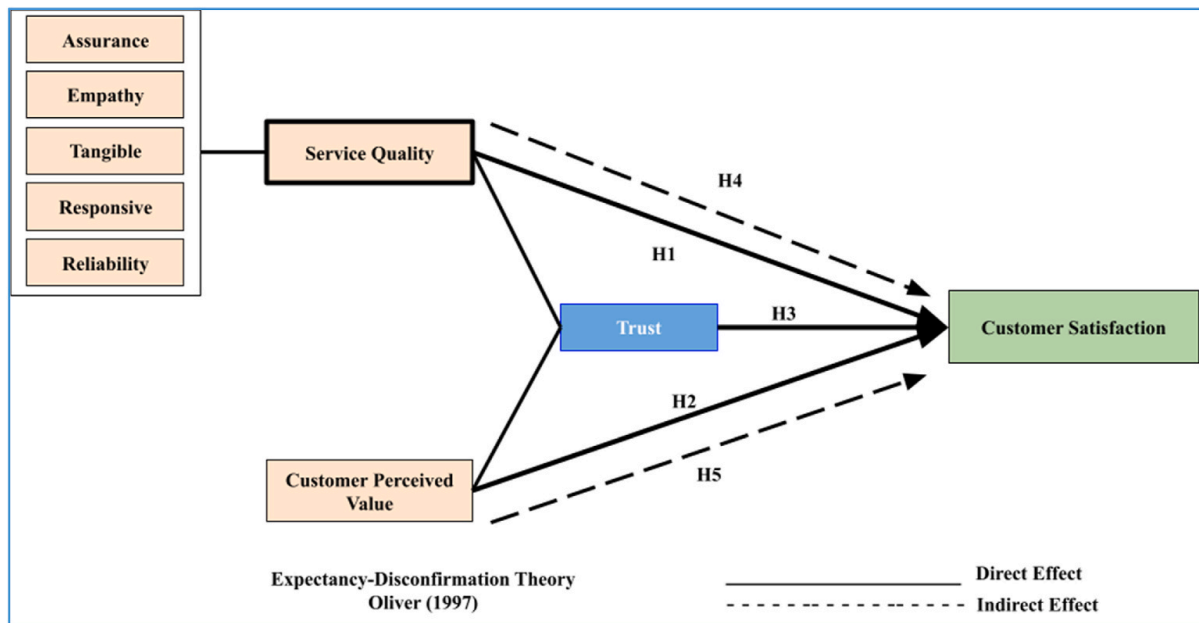


Figure 1. Framework model, adapted from Uzir et al. (2021)

3. Data and research methodology

This study takes a quantitative research approach to examine the network of relationships between Service Quality (SQ), Perceived Value (PV), Trust (T), and Customer Satisfaction (CS) while considering home delivery services within the region of Binh Duong. Several key factors determine the appropriateness of a quantitative design for this study. First, the context of customer satisfaction concerning home delivery services shall be considered more than a single aspect. It is determined by several factors including service quality, perceived value, trust, etc. The

disadvantage of qualitative methods is that these variables, for example, service quality measured by SERVQUAL, trust evaluated by Commitment-Trust Theory, etc., cannot be evaluated accurately which is careless since they are acceptable measurements in the literature (Parasuraman et al., 1988; Morgan & Hunt, 1994). Since the study would collect numeric data about these variables, the study would explore the level and direction of customer satisfaction determinants, which is useful in explaining the factors that affect customer satisfaction in home delivery service. In addition, this research assumes that service quality and perceived value enhance customer satisfaction directly and through trust as well. Therefore, a quantitative approach must be used to achieve the aims of the study and to establish the variables that act as moderators between them. In order to evaluate this mediating effect, this study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4 for analysis. PLS-SEM is an appropriate cerebral technique for small sample size and complex models (Hair et al., 2017), fitting in a niche market like Binh Duong.

This study measures the main variables, including Service Quality (SQ), Perceived Value (PV), Trust (T), and Customer Satisfaction (CS).

- Independent variables: The factors that are expected to influence customer satisfaction in home delivery services include service quality, perceived value, and trust in delivery personnel.
- Intermediate variable: Trust acts as a mediating factor between service quality, perceived value, and customer satisfaction, serving as a link that enhances the relationship between service delivery elements and customer satisfaction by fostering confidence in the delivery process.
- Dependent variable: Customer satisfaction, which reflects the level of contentment and acceptance of customers with the home delivery service, particularly in terms of the perceived quality, value, and trust in the delivery personnel.

To ensure objectivity and reliability, each variable is measured through specific indicators and uses a 5-point Likert scale developed by Likert (1932), ranging from 1 for "Strongly Disagree" to 5 for "Strongly Agree". In this context, service quality is initially measured using the SERVQUAL model of Parasuraman et al. (1988) with five factors including tangibility, reliability, responsiveness, assurance, and empathy.

Tables 1, 2, and 3 exhibit the survey questionnaire sections pertaining to independent variables, dependent variables, and demographic variables, respectively.

Table 1. Independent variables

Code	Items	Source
Service Quality		
Assurance (Akd)		
Akd1	Delivery personnel have experience in their jobs.	(Uzir et al., 2021)
Akd2	Delivery personnel behave politely to customers.	
Akd3	Delivery personnel give complete answers to customers' questions.	
Akd4	I feel they feel personally safe and secure when delivering the goods.	
Empathy (Emp)		
Emp1	Delivery personnel use personal initiative to fulfill customer requests.	(Uzir et al., 2021)
Emp2	Operating hours of goods delivery is convenient for me.	

Emp3	Delivery personnel put a priority on customers' interests.	
Emp4	Delivery personnel puts extra effort into serving our special requests.	
Reliability (Rel)		
Rel1	Delivery personnel deliver parcels at our convenient location.	(Uzir et al., 2021)
Rel2	Delivery personnel maintain delivery records (reservations, bills, etc.) accurately.	
Rel3	Delivery personnel deliver the parcel at the time promised.	
Rel4	Delivery personnel maintain confidentiality and privacy.	
Responsiveness (Res)		
Res1	Delivery personnel are not in a hurry while delivering goods to me.	(Uzir et al., 2021)
Res2	Delivery personnel are always willing to help me.	

Res3	Delivery personnel deliver the goods as quickly as possible.	
Re4	Delivery personnel give proper attention to their customers.	
Tangible (Tan)		
Tan1	Delivery personnel look good and are well-dressed.	(Uzir et al., 2021)
Tan2	Delivery personnel use state-of-the-art tools and devices.	
Tan3	Their decoration has a nice appearance.	
Tan4	Their service arrangement is well-coordinated.	
Trust (T)		
T1	I feel comfortable using the home delivery service.	(Uzir et al., 2021)
T2	I feel this service is safe.	
T3	This service always delivers what is promised.	

T4	I always trust this brand.	
Perceived Value (PV)		
PV1	The service quality of delivery personnel is high.	(Uzir et al., 2021)
PV2	I feel relaxed when receiving an online purchase.	
PV3	I feel delighted in receiving the service of the delivery personnel.	
PV4	I feel trust and confidence in receiving delivery service for online purchase.	

Table 2. Dependent variable

Code	Items	Source
Customer Service (CS)		
CS1	The delivery service meets my expectations.	(Uzir et al., 2021)
CS2	I am satisfied with my decision to use this third-party delivery service.	

CS3	I would avail their delivery service the next time.	
CS4	I am very satisfied with the deliveryman's service.	

Table 3. Demographic variables

Variable	Code	Item	Measurement Scale
Age	AGE	What is your age?	1 = "Under 18" 2 = "18-24 years" 3 = "25-34 years" 4 = "35-44 years" 5 = "45 years and above"
Gender	GEN	What is your gender?	1 = "Male" 2 = "Female"
Location	LOC	Where do you live?	1 = "Urban area" 2 = "Suburban area" 3 = "Rural area"
Education level	EDU	What is your highest level of education completed?	1 = "High School or below" 2 = "College/University Graduate" 3 = "Postgraduate" 4 = "Other (please specify)"
Monthly Income	INC	What is your monthly income?	1 = "Below 5 million VND" 2 = "5-10 million VND" 3 = "10-15 million VND" 4 = "Over 15 million VND"

Employment Status	EMP	What is your current employment status?	1 = "Student" 2 = "Employed (full-time)" 3 = "Employed (part-time)" 4 = "Self-employed" 5 = "Unemployed" 6 = "Retired"
Home Delivery Purpose	HDP	What do you mainly use home delivery services for?	1 = "Food/Groceries" 2 = "Consumer Goods (e.g., clothing, electronics)" 3 = "Household Items (e.g., furniture, appliances)" 4 = "Other (please specify)"
Preferred Delivery Service	PDS	Which delivery service provider do you use most frequently?	1 = "Local grocery or food delivery services" 2 = "E-commerce platforms (e.g., Lazada, Shopee)" 3 = "Other (please specify)"
Monthly Delivery Spending	SPE	On average, how much do you spend on home delivery services per month?	1 = "Below 500,000 VND" 2 = "500,000 - 1 million VND" 3 = "1 - 2 million VND" 4 = "Over 2 million VND"
Delivery Service Usage Frequency	FRE	How often do you use home delivery services?	1 = "Daily" 2 = "Weekly" 3 = "Monthly" 4 = "Less than once a month"

This study employs a judgmental sampling method, a non-probability sampling technique, to select participants with relevant and specific experiences that align with the study's objectives.

This method is mentioned by Adeoye (2023) as the process that researchers use to select people from the public to take part in their surveys based on their familiarity and grasp of the pertinent study topic effectively without wasting time and resources. Therefore, it brings the exact result ensuring that the collected data accurately reflects customer perceptions and satisfaction with home delivery services in Binh Duong. The participants need to meet the following criteria: (1) have previously used home delivery services and (2) are currently studying or working in Binh Duong. These criteria are verified through screening questions at the beginning of the questionnaire. Respondents who answer "Yes" to both questions proceed to the main survey, while those who do not meet the criteria are directed to end the surveys. Data collection was conducted through a questionnaire, with most questions using a 5-point Likert scale to measure respondents' agreement levels with indicators related to the study variables, including service quality, perceived value, trust, and customer satisfaction. The questionnaire of 33 questions was distributed via online platforms and local community groups, facilitating access to participants experienced with delivery services and enhancing the sample's representativeness.

The initial sampling size was determined based on the formula for sample size selection in Exploratory Factor Analysis (EFA) based on MacCallum et al (1999), which suggested:

$$N = 5 * M$$

Where, N is the sample size, and M denotes the number of questions.

Given that there are 33 questions, this results in an initial sample size estimate of 165 observations. According to Hair (2010), for a Structural Equation Modeling (SEM) study under non-ideal conditions, a sample size between 100 and 400 is generally recommended, depending on the considerations discussed. Furthermore, Hair (2010) suggested a minimum sample size of 150 for models with seven or fewer constructs, especially when the average method variance is greater than 0.5. Since this research model meets these conditions, a preliminary range for sample size is between 165 and 400. Thus, our sample size of 385 respondents is considered reasonable and sufficient to guarantee the reliability of this research.

4. Results and discussions

4.1. Descriptive data

4.1.1. General Information

The number of valid respondents in the online survey was 385 respondents. This number exceeded the target of 270 participants set at the beginning to ensure the accuracy.

4.1.2. Demographic variables

The statistical description for demographic variables is provided in Tables 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13.

4.1.2.1. Age

Table 1. The age of participants in the survey

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	32	8.3	8.3	8.3
	18-24 years	122	31.7	31.7	40.0
	25-34 years	145	37.7	37.7	77.7
	35-44 years	70	18.2	18.2	95.8
	45 years and above	16	4.2	4.2	100.0
	Total	385	100.0	100.0	

The number of participants aged 25 to 34 years old accounted for the highest percentage of 37.7% (equivalent to 145 per 385 respondents); followed by the number of participants aged 18 to 24 years old accounting for the second highest percentage of 31.7% corresponding to 122

people. The number of people aged 35 to 44 years old in third place with a percentage of 18.2% corresponding to 70 people, followed by the group of participants under 18 years old with a percentage of 8.3% corresponding to 32 people. Finally, the number of people who are over 45 years old keeps the lowest percentage, corresponding to 4.2% with only 16 participants.

4.1.2.2. Gender

Table 2. The gender of participants in the survey

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	164	42.6	42.6	42.6
	Female	221	57.4	57.4	100
	Total	385	100.0	100.0	

The number of women who responded to this survey was higher than the number of men, with the percentage of women responding using 57.4% (221 people) of the total, while the percentage of men responding was 42.6% (164 people).

4.1.2.3. Location

Table 3. The location of participants in the survey

LOCATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban area	227	59.0	59.0	59.0

	Suburban area	126	32.7	32.7	91.7
	Rural area	32	8.3	8.3	100.0
	Total	385	100.0	100.0	

From the online survey, it is no surprise that the majority of respondents were living in urban areas, with 59.0% (227 people). Suburban areas came in second place with 32.7% (126 people) of respondents in the survey. Lastly, rural areas were at the bottom with only 8.3% (32 people) of respondents taking the survey.

4.1.2.4. Education level

Table 4. The education level of participants in the survey

EDUCATION LEVEL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School or below	84	21.9	21.9	21.8
	College/University Graduate	277	71.9	71.9	93.8
	Postgraduate	24	6.2	6.2	100.0
	Total	385	100.0	100.0	

The majority of the respondents had graduated from university/college with 71.9% (277 people), while the group with high school level or lower ranked second with 21.8% of the respondents (people) in the survey. Finally, the group of respondents who were participating in postgraduate training accounted for the least with only 6.2% (24 people) participating in the survey.

4.1.2.5. Monthly income

Table 5. The monthly income of participants in the survey

MONTHLY INCOME					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 million VND	23	6.0	6.0	6.0
	5-10 million VND	125	32.5	32.5	38.4
	10-15 million VND	169	43.9	43.9	82.3
	Over 15 million VND	68	17.7	17.7	100.0
	Total	385	100.0	100.0	

The number of participants earning 10 to 15 million VND per month accounted for the highest percentage of 43.9% (equivalent to 169 per 385 respondents). The number of participants having 5 to 10 million VND per month accounting for the second highest percentage of 32.5% corresponding to 125 people. The number of people earning over 15 million VND per in third place with a percentage of 17.7% corresponding to 68 people. Finally, the number of people who earn below 5 million VND keeps the lowest percentage, corresponding to 6.0% with only 23 participants.

4.1.2.6. Employment status

Table 6. The employment status of participants in the survey

EMPLOYMENT STATUS					
		Frequency	Percent	Valid	Cumulative

				Percent	Percent
Valid	Student	87	22.6	22.6	22.6
	Employed (full-time)	171	44.4	44.4	67.0
	Employed (part-time)	84	21.8	21.8	88.8
	Self-employed	15	3.9	3.9	92.7
	Unemployed	28	7.3	7.3	100.0
	Total	385	100.0	100.0	

The majority of respondents were working full-time at 44.4% (171 people), while students and part-time workers ranked second and third, at 22.8% and 21.8% of respondents respectively. The lowest two positions were held by unemployed respondents at only 7.3% (28 people) and self-employed respondents at 3.9% (15 people).

4.1.2.7. Home Delivery Purpose

Table 7. The home delivery purpose of participants in the survey

HOME DELIVERY PURPOSE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Food/Groceries	178	46.2	46.2	46.2
	Consumer Goods	92	23.9	23.9	70.1
	Household Items	92	23.9	23.9	94.0
	Other	23	6.0	6.0	100.0

HOME DELIVERY PURPOSE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Food/Groceries	178	46.2	46.2	46.2
	Consumer Goods	92	23.9	23.9	70.1
	Household Items	92	23.9	23.9	94.0
	Total	385	100.0	100.0	

The majority of respondents used food home delivery services with 46.2% (178 people). The two groups used to transport consumer goods and household goods in second place with 23.9% (92 people). In addition, 6.0% (23 people) used for other delivery purposes.

4.1.2.8. Preferred Delivery Service

Table 8. The preferred delivery service of participants in the survey

PREFERRED DELIVERY SERVICE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Local grocery or food delivery services	94	24.4	24.4	24.4
	E-commerce platforms	245	63.6	63.6	88.1
	Other (please specify)	446	11.9	11.9	100.0
	Total	385	100.0	100.0	

The number of participants using delivery units from e-commerce platforms has the highest and outstanding rate at 63.6% (corresponding to 245 people). The number of participants using local delivery units has the second highest rate at 24.4% corresponding to 94 people, while there are still 11.9%

4.1.2.9. Monthly Delivery Spending

Table 9. The monthly delivery spending of participants in the survey

MONTHLY DELIVERY SPENDING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 500,000 VND	46	11.9	11.9	11.9
	500,000 - 1 million VND	132	34.3	34.3	46.2
	1 - 2 million VND	154	40.0	40.0	86.2
	Over 2 million VND	53	13.8	13.8	100.0
	Total	385	100.0	100.0	

The majority of respondents spent 1 to 2 million VND for home delivery services at 40.0% (154 people), while the group of people spending 500,000 to 1 million VND ranked second with 34.3% of respondents (132 people) in the survey. Finally, the two groups of people who usually spent over 2 million VND and under 500,000 VND occupied the two lowest positions respectively with only 13.8% (53 people) and 11.9% (46 people) participating in the survey.

4.1.2.10. Delivery Service Usage Frequency

Table 10. The delivery service usage frequency of participants in the survey

DELIVERY SERVICE USAGE FREQUENCY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	52	13.5	13.5	13.5
	Weekly	223	57.9	57.9	71.4
	Monthly	86	22.3	22.3	93.8
	Less than once a month	24	6.2	6.2	100.0
	Total	385	100.0	100.0	

The number of participants who receive orders weekly has the highest rate of 57.9% (corresponding to 223 people). The number of participants who make monthly purchases has the second highest rate of 22.3% corresponding to 86 people, while still 11.9%, of the number of people who do this daily, accounts for 13.5% (52 people). Finally, the number of participants who make online purchases less than once a month accounts for the lowest rate of 6.2% (24 people).

4.1.3. Dependent and independent variables

The dependent and independent variables in the survey are measured by the Likert scale in a range from 1 to 5 with: 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 - Agree, 5 - Strongly Agree. Table 14 shows the descriptive statistics for all dependent and independent variables.

Table 11. Descriptive statistics

Symbol	N	Minimum	Maximum	Mean	Std. Deviation
Akd1	385	2	5	3.51	.804
Akd2	385	2	5	3.51	.955

Akd3	385	2	5	3.45	.844
Akd4	385	1	5	3.66	1.126
Emp1	385	1	5	3.06	1.495
Emp2	385	1	5	3.21	1.448
Emp3	385	1	5	3.07	1.327
Emp4	385	1	5	2.98	1.569
Rel1	385	1	5	2.88	1.483
Rel2	385	1	5	3.29	1.337
Rel3	385	1	5	3.37	1.183
Rel4	385	1	5	3.32	1.214
Res1	385	1	5	3.53	1.015
Res2	385	2	5	3.69	.863
Res3	385	1	5	3.37	1.030
Res4	385	1	5	3.78	1.095
Tan1	385	1	5	3.28	1.189
Tan2	385	1	5	3.33	1.211
Tan3	385	1	5	3.16	1.114
Tan4	385	1	5	3.11	1.216
T1	385	1	5	3.32	1.275
T2	385	1	5	3.54	1.214

T3	385	1	5	3.15	.934
T4	385	1	5	3.45	1.089
PV1	385	1	5	3.17	1.509
PV2	385	1	5	3.26	1.310
PV3	385	1	5	3.14	1.135
PV4	385	1	5	3.39	1.051
CS1	385	1	5	3.40	1.208
CS2	385	1	5	3.25	1.150
CS3	385	1	5	3.20	1.145
CS4	385	1	5	3.28	1.172
Valid N (listwise)	385				

The table 14 shows that the lowest rating is 1 and the highest is 5, while the mean value is mostly in the range of 3 to 4. The standard deviation of the data fluctuates slightly, revolving around the value 1. The highest point of the mean is 3.78 (Res4) while the lowest one is 2.88 (Rel1), showing that most participants can have preferences on home delivery services. In particular, the constructs "Res" and "Akd" showed relatively high mean scores that ranged from 3.37 to 3.78, with lower standard deviations, which indicates positive and consistent evaluations. On the other hand, "Emp" and "Rel" had the lowest mean scores, ranging from 2.88 to 3.21, with the highest standard deviations of up to 1.569, indicating lower satisfaction and more variability among the responses. The remaining constructs, "Tan" for Tangibles, "T" for Trust, "PV" for Perceived Value, and "CS" for Customer Satisfaction, all scored means in the middle range (3.11–3.54), with their standard deviations generally between 1.0 and 1.3, suggesting mixed but stable perceptions.

4.1. Statistical result analysis

The model that the author is studying is hierarchical component model (HCMs) or higher order model to test the complexity of concepts as well as evaluate the operation of these concepts. According to Becker et al. (2012), Ringle et al. (2012), and Wetzels et al. (2009), there are two methods to address the measurement of higher-order constructs (HCMs) in PLS-SEM based on the technical characteristics of these models in structural equation modeling including the repeated indicator approach and the two-stage approach.

The two-stage approach is applied in this study because it is particularly suitable for higher-order constructs (HOCs) that represent outcomes such as cause-effect relationships (Becker et al., 2012). In the first stage, indicators of LOCs are evaluated using traditional methods such as Cronbach's Alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and the Heterotrait-Monotrait Ratio (HTMT). These metrics assess reliability and validity solely at the LOC level. Researchers aggregate observed indicators into LOC scores and save them as independent variables. In the second stage, this method uses the LOC scores from the first stage, a new diagram is created to model relationships. This transformation allows for evaluating the HOC model as a basic first-order structure, ensuring reliability and validity (Ringle et al., 2012; Wetzels et al., 2009).

4.2.1. Lower order construct (LOC)

In this section, the study only focuses on 5 observed variables of Service Quality without considering any observed variables of the second-order variables.

4.2.1.1. Cronbach's Alpha Test

The higher the Cronbach's Alpha coefficient, the more reliable the scale is. This study is based on the accepted rule table 15 for extended Cronbach's alpha written by George & Mallery (2003) and Jiang, Klein, & Discenza (2001).

Table 12. Cronbach's Alpha Coefficient of reliability values

Values	Interpretations
Higher than 0.9	Excellent

Higher than 0.8	Good
Higher than 0.7	Acceptable
Higher than 0.6	Questionable
Higher than 0.5	Poor
Lower than 0.5	Unacceptable

Table 13. Measurement model testing results for LOCs from Smart-PLS 4 system

Constructs	Indicators	Outer Loading	α	CR (rho_c)	AVE
Assurance (Akd)	Akd1	0.907	0.870	0.912	0.721
	Akd2	0.862			
	Akd3	0.818			
	Akd4	0.805			
Empathy (Emp)	Emp1	0.856	0.893	0.926	0.757
	Emp2	0.923			
	Emp3	0.877			
	Emp4	0.820			
Reliability (Rel)	Rel1	0.895	0.910	0.937	0.787
	Rel2	0.895			
	Rel3	0.868			

	Rel4	0.890			
Responsiveness (Res)	Res1	0.776	0.881	0.918	0.738
	Res2	0.819			
	Res3	0.955			
	Res4	0.877			
Tangible (Tan)	Tan1	0.855	0.797	0.867	0.621
	Tan2	0.846			
	Tan3	0.706			
	Tan4	0.734			

According to Hair et al. (2019), the outer loading values are used to determine the reliability of each measure in the reflective model, which is required to be greater than 0.7 to be accepted. Outer loading in the table 16 ranges from 0.706 (Tan3) to 0.955 (Res3), so no observed variable has a value less than 0.7, proving that all variables are significant in this model.

Hair et al. (2019) also demonstrated that when testing the empirical validity of a research model, it is necessary to consider the reliability of Cronbach's alpha and composite reliability to determine the reliability of the factor, requiring CR and α to both exceed the value of 0.7 to be eligible. The table 16 shows that the values of CR range from 0.867 (Tan) to 0.937 (Rel) and the values of α range from 0.797 (Tan) to 0.910 (Rel), all exceeding the minimum of 0.7. Therefore, it can be concluded that all five observed variables meet the requirements of internal consistency and reliability of the indicator and can be used for the next step.

Finally, Fornell and Larcker (1981) proposed to test the convergent validity by AVE, which should exceed the required value of 0.5 to indicate that the latent variable can account for more than 50% of the variance of the indicators that compose it. Since the AVE of the observed variables ranges from 0.621 (Tan) to 0.787 (Rel), the validity of this model can be accepted.

4.2.1.2. Discriminant validity

Table 14. Heterotrait-monotrait ratio (HTMT) - Matrix for LOCs

	Akd	Emp	Rel	Res	Tan
Akd					
Emp	0.701				
Rel	0.893	0.851			
Res	0.726	0.568	0.633		
Tan	0.704	0.645	0.698	0.55556	

Henseler et al. (2015) proposed two thresholds for assessing the discriminant validity between a set of indicator variables of two latent variables. If the HTMT ratio > 0.9 , it is difficult to achieve discriminant validity between the two latent variables, meaning that their data are quite similar to each other. If the HTMT ratio ≤ 0.85 , it is possible to achieve discriminant validity between the two latent variables. After observing the table 17, there are two pairs of LOC variables with values above 0.85, which are Rel with Akd (8.93) and Rel with Emp (0.851), however, they still do not exceed 0.9, so they are acceptable in this study.

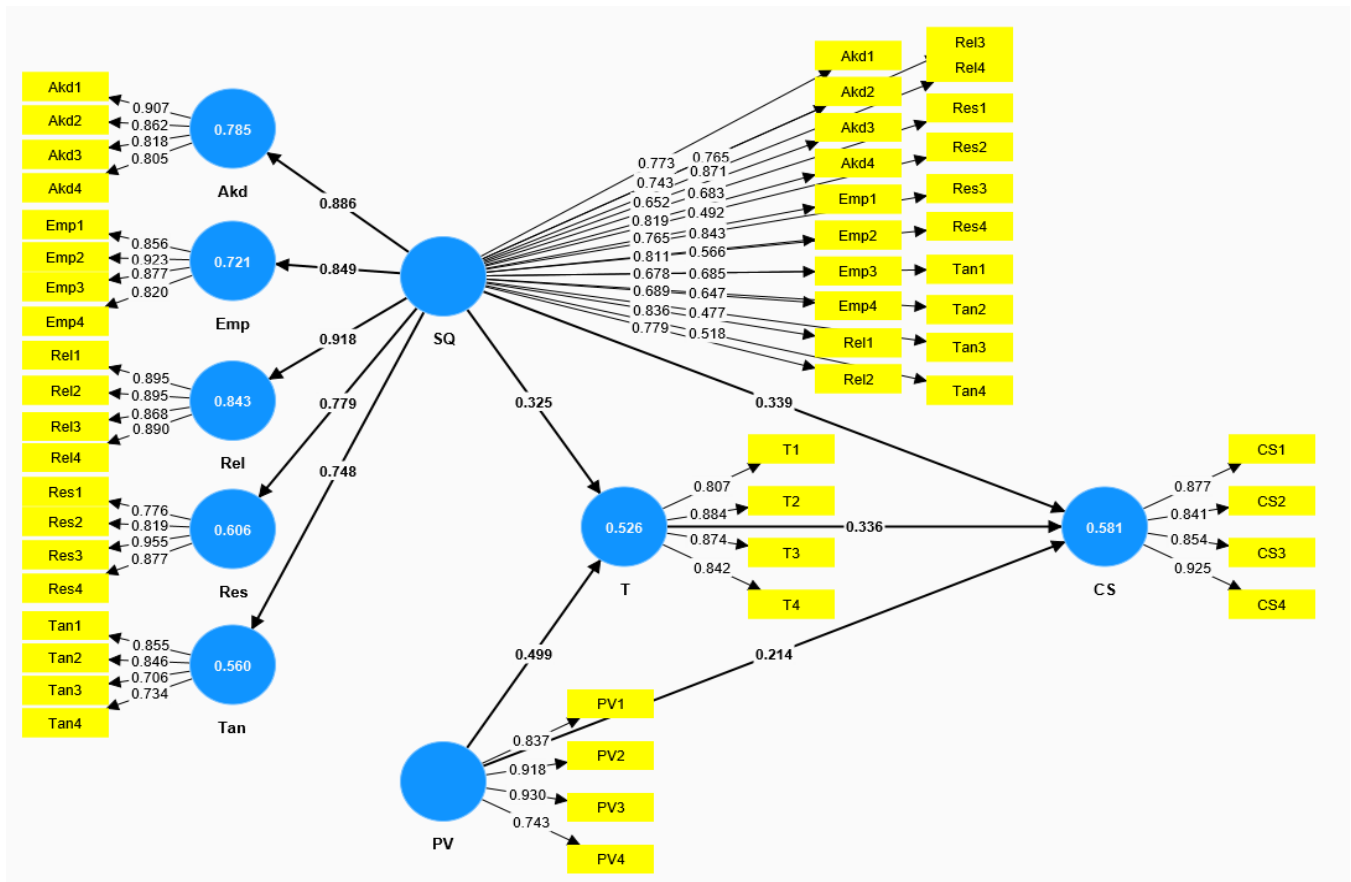


Figure 2. Empirical results for LOCs

4.2.2. Higher order construct (HOC)

After taking the weight results of the LOC factors and creating a new diagram representing the LOCs in the model, the second-order model has now become a basic first-order model when the latent variable SQ from the second order is converted into a first-order variable, the LOCs including Akd, Emp, Rel, Res, Tan become observed variables.

4.2.2.1. Cronbach's Alpha Test

Continuing based on the table 18 for extended Cronbach's alpha in the LOC part.

Table 15. Measurement model testing results for HOCs from Smart-PLS 4 system

Constructs	Indicators	Outer Loading	α	CR (rho_c)	AVE

Service Quality (SQ)	Akd	0.871	0.893	0.921	0.701
	Emp	0.869			
	Rel	0.919			
	Res	0.765			
	Tan	0.751			
Perceived Value (PV)	PV1	0.837	0.880	0.919	0.740
	PV2	0.918			
	PV3	0.930			
	PV4	0.743			
Trust (T)	T1	0.806	0.874	0.914	0.726
	T2	0.883			
	T3	0.874			
	T4	0.843			
Customer Satisfaction (CS)	CS1	0.877	0.897	0.929	0.765
	CS2	0.841			
	CS3	0.854			
	CS4	0.924			

Based on the limitation of the outer loading values of Hair et al. (2019), outer loading in the table 18 ranges from 0.751 (Tan) to 0.930 (PV3), demonstrating no observed variable has a value less than 0.7, so all variables are significant in this model. The author can be confident that

the observed variables selected are good representatives of the latent factors to be measured, reinforcing confidence that the model can accurately reflect the theoretical concepts the author is studying.

According to Hair et al. (2019) about the reliability of Cronbach's alpha and composite reliability, the table 18 shows that the values of CR range from 0.914 (T) to 0.929 (CS) and the values of α range from 0.874 (T) to 0.897 (CS), all exceeding the minimum of 0.7. Furthermore, the value of CR for all variables above 0.9 is a positive signal proving that the measurement model of the study has very high reliability, the observed variables play a good role in measuring the latent factors. Consequently, it may be said that all the observed variables satisfy the indicator's internal consistency and reliability requirements and are suitable for use in the following phase.

Based on Fornell & Larcker (1981), the AVE of the observed variables ranges from 0.701 (SQ) to 0.765 (CS) shows that these latent factors explain most of the variation in observed variables, with the level of explanation being in the quite high range (70-76%). This proves that the measurement model of the study is completely reliable and highly valid, contributing significantly to the following research steps.

4.2.2.2. Discriminant validity

Table 16. Heterotrait-monotrait ratio (HTMT) - Matrix for HOCs

	SQ	PV	T	CS
SQ				
PV	0.589			
T	0.652	0.765		
CS	0.712	0.969	0.765	

According to Henseler et al. (2015) about two thresholds for assessing the discriminant validity between a set of indicator variables of two latent variables, the HTMT ratio needs to be ≤ 0.85 to achieve discriminant validity between the two latent variables. Between pairs of variables

of HOC all have values less than 0.85, so the discrimination of HOCs is guaranteed, meaning they measure different concepts effectively.

4.2.3. Hypothesis testing results

4.2.3.1. Collinearity statistics (VIF)

After completing the step of determining the reality of the research model, the next step is to ensure that there is no collinearity in the research model using the VIF (Variance Inflation Factor) index. Collinearity refers to strong correlations between independent variables, which can reduce the accuracy of the estimates and cause instability of the model (Hair et al., 2019). Also, according to Hair et al. (2019), the value of VIF (collinearity statistic) must not exceed 3 for the model to be collinear. The highest VIF determined in this research model reached 2.131, still much lower than the maximum value of 3, so the current weighted model did not detect any multicollinearity problem.

Table 17. Collinearity statistics (VIF) - Inner model

	VIF
PV → CS	1.921
PV → T	1.410
SQ → CS	1.650
SQ → T	1.410
T → CS	2.131

This study continues to analyze path coefficients, R-squared, and f-square to confirm the relationships between hypotheses.

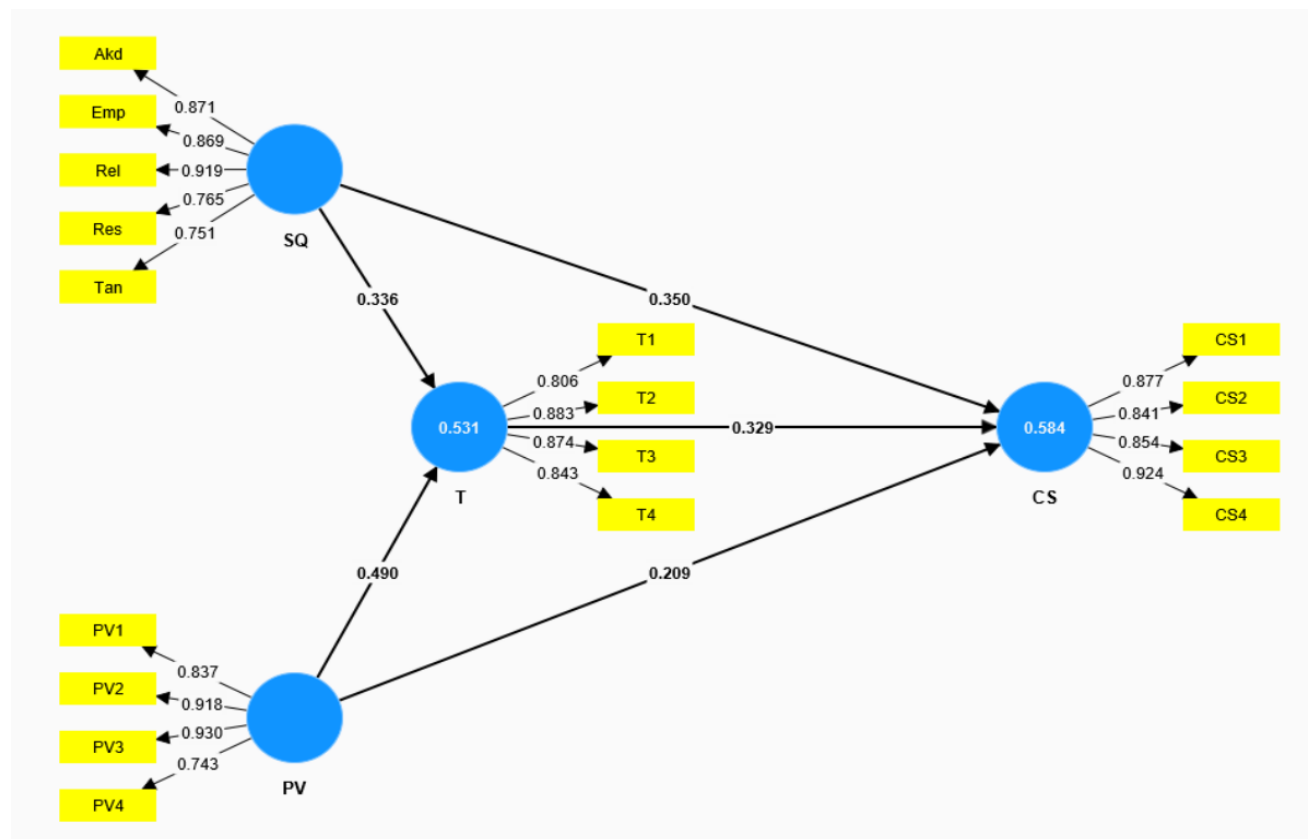


Figure 3. Empirical results for HOCs

The study conducted a bootstrapping method of 5000 samples to test whether the hypothesized relationships were significant. The t-values must be greater than 1.96 at the 95% confidence level and the p-values must be less than 0.05 to determine statistical significance so that the hypothesized relationships can be concluded to exist. The observed t-values illustrated in the table are 6.196, 4.901 and 5.137 respectively for H1, H2 and H3 which are all greater than 1.96; meanwhile, the p-values of all three hypotheses are less than 0.05. Therefore, the author can conclude that all the proposed hypothesized relationships exist and are significant.

According to Hair et al. (2011), the path systems (β) explain the strength and direction of the relationships between constructs, ranging from -1 to +1, representing a strong negative relationship and a strong positive relationship, respectively, which is used to assess the strong or weak impact of independent variables when multiple independent variables impact a dependent variable. Based on the authors' findings, all three independent variables have a positive impact on

CS because they have positive values, so the impact relationships in the model are positive. The order of impact from strong to weak of SQ, PV and T on CS is $(0.350) > T (0.329) > PV (0.209)$.

Table 18. Bootstrapping of 5000 samples' results

Relationships	Path Coefficients	Observed T-values	P values	Results
H1: SQ → CS	0.350	6.196	0.000	Supported
H2: PV → CS	0.209	4.901	0.000	Supported
H3: T → CS	0.329	5.137	0.000	Supported

In addition, the indirect effect of SQ and PV on CS by the mediating variable of T was also analyzed and observed in the table 22.

Table 19. Indirect effect analysis

Relationships	Path Coefficients	Observed T-values	P values	Results
H4: SQ → T → CS	0.111	3.573	0.000	Supported
H5: PV → T → CS	0.161	4.447	0.000	Supported

Since the p-values of all variables are greater than 0.05, the data have confirmed and demonstrated the mediating role of T in the relationship between SQ to CS and PV to CS. In other words, T is recognized as a mediating factor in this research model. The indirect effect of PV on CS through T is the largest (0.116), while the indirect effect of SQ on CS through T is (0.111).

4.3. Model strength assessment

4.3.1. The R-square

R-square has a value that represents the degree of resolution of the independent variables increasing a dependent variable of the research model (Hair et al., 2011). Hair et al. (2017) stated that there is no specific limit for the R-square value but it depends entirely on the complexity of the model. R-square ranges from 0 to 1, approaching 1 means the level of explanation for the dependent variable is high and approaching 0 means the opposite (Hair et al., 2017).

Table 20. R-square versus R-square adjusted values

	R-square	R-square adjusted
CS	0.584	0.581
T	0.531	0.528

R-square has a value that indicates the degree of resolution of the independent variables increasing a dependent variable of the research model (Hair et al., 2011). Hair et al. (2017) stated that there is no specific limit for the R-square value but it depends entirely on the complexity of the model. R-square fluctuates in the range from 0 to 1, approaching 1 means the level of explanation for the dependent variable is high and approaching 0 means the opposite (Hair et al., 2017). The results provided in the table show that the adjusted R-square CS (0.581) and T (0.528) are both smaller than the adjusted R-square, CS: 0.584 and T (0.531), indicating that the number of independent variables available can resolve the structural dependencies well. Besides, the independent variables SQ, PV, T explained 58.1% of the variation of variable CS, while the independent variables SQ and PV explained 52.8% of the variation of variable T. The empirical results demonstrate the relatively strong explanatory power of this research model.

4.3.2. The f-square

According to Chin (1988) f-square is used to examine the importance of an independent variable on the dependent variable. Cohen (1988) stated that f-square values greater than 0.02,

0.15 and 0.35 represent small, medium and strong effect sizes in the research model respectively, while they will be considered weak or no impact when they are less than 0.02. The table 24 shows that PV and T have a small impact on CS, while SQ has a medium impact on CS. In addition, PV has a very strong impact on T, while that from SQ is medium.

Table 21. f-square results - effect size of the model

	f-squared	Effect size
Effect size for T		
SQ	0.171	Medium
PV	0.363	Strong
Effect size for CS		
SQ	0.179	Medium
PV	0.054	Small
T	0.122	Small

4.4. Key findings

There were 385 respondents for an online survey of this study, who have experienced home delivery services and live or work in Binh Duong. The primary objective was to evaluate the impact of service quality (SQ), perceived value (PV) and trust (T) on customer satisfaction (CS) and the mediating role of trust in this relationship. After analyzing the data using the Smart-PLS 4 system to analyze the input data including lower order construct and higher order construct, the authors summarized important results in Table 25.

Table 22. Hypothesis relationship testing result summary

	β	P values	Hypothesis result	Impact ranking
SQ \rightarrow CS	0.350	0.00 (<0.05)	Accepted	1st
PV \rightarrow CS	0.209	0.00 (<0.05)	Accepted	3rd
T \rightarrow CS	0.329	0.00 (<0.05)	Accepted	2nd
Indirect effects				
SQ \rightarrow T \rightarrow CS	0.111	0.00 (<0.05)	Accepted	2nd
PV \rightarrow T \rightarrow CS	0.161	0.00 (<0.05)	Accepted	1st

4.5. Discussion

This study focuses on analyzing the relationship between service quality (SQ), perceived value (PV), trust (T) and customer satisfaction (CS) in the research field. After analyzing the data set of a sample of 385 participants, the results from the research model of Uzir et al. (2021) provided solid empirical evidence of these relationships.

First, service quality (SQ) was identified as the most important factor directly affecting customer satisfaction (CS), with a coefficient of $\beta = 0.350$ and a p value < 0.05 , demonstrating that good service quality is a fundamental factor to increase customer satisfaction, thereby strengthening loyalty and trust in the organization. In the service quality area, reliability is the most influential factor in the SERVQUAL model, proving that customers expect the commitments of the business to be fulfilled on time, as required and with the right quality. This is repeatedly affirmed in the study of Uzir et al. (2021), thus consistent with the author's research findings. Next, trust (T) is ranked second in the level of influence on customer satisfaction (CS), with a coefficient of $\beta = 0.329$ and a p value < 0.05 . This result is similar to the study of Rimawan et al. (2017) and Morgan and Hunt (1994), affirming that trust is an important factor in maintaining sustainable relationships with customers. When customers trust a service, they feel more secure in the process of using it because they know that the business will fulfill its commitments, provide the product

or service as promised, and if there is a problem, the business will handle the problem fairly and effectively. Perceived value (PV) ranked third with a coefficient of $\beta = 0.209$ and a p value < 0.05 , also contributing significantly to improving customer satisfaction. This result, together with the EDT theory, showed that customers will feel more satisfied if they perceive the value received from the product or service to exceed their expectations, which is also mentioned a lot in the study of Uzir et al. (2021).

In addition to the direct impact, these factors also have an indirect impact through trust (T) on customer satisfaction. For example, the indirect effect of service quality (SQ) on satisfaction (CS) through trust (T) reached a coefficient of $\beta = 0.111$ and a p value < 0.05 . Similarly, the indirect effect of perceived value (PV) through trust (T) reached a coefficient of $\beta = 0.161$ and a p value < 0.05 , ranking highest among the indirect effects. This is similar to the study of Kim et al. (2021) and Kim and Park (2021) on this mediating role of trust. Indeed, customers will feel that the service they experience is worth the money they spend if the company can ensure that their home delivery service is good and the performance of the delivery staff meets their requirements.

5. Conclusion and implication

Customer satisfaction in home delivery services is a critical determinant of success for logistics and shipping companies. This study examined customer satisfaction in the home delivery service sector in Binh Duong, focusing on the impact of service quality, perceived value, and the mediating role of trust. Using a survey consisting of 33 items adapted from previous studies, 385 valid responses were collected via Google Forms and analyzed using SmartPLS 4.0. The results revealed that all five dimensions of the SERVQUAL model - reliability, assurance, tangibles, empathy, and responsiveness - positively influence service quality. Furthermore, service quality, perceived value, and trust significantly contribute to customer satisfaction. These findings provide valuable insights into the dynamics of customer satisfaction within the home delivery sector in Binh Duong, offering theoretical and practical contributions to both academia and practitioners. The study's findings fill an important research gap, as there have been limited studies specifically targeting customer satisfaction in Vietnam's home delivery sector, particularly in Binh Duong province. The empirical results offer managers and operators of delivery services, such as GHTK, GNH, and Viettel Post, actionable insights into customer needs and expectations. By focusing on service quality, perceived value, and trust, delivery companies can develop more effective

strategies to enhance customer satisfaction. This, in turn, fosters mutual benefits, enabling companies to improve performance while providing customers with a superior delivery experience.

This study contributes to the theoretical understanding of customer satisfaction in home delivery services by validating the SERVQUAL model proposed by Parasuraman et al. (1988). The analysis confirmed that reliability, assurance, tangibles, empathy, and responsiveness all positively influence service quality. Additionally, the study extended the SERVQUAL model by incorporating customer perceived value and trust, providing a more comprehensive framework for evaluating customer satisfaction. The mediating role of trust highlights its importance in bridging the relationship between service quality, perceived value, and satisfaction, emphasizing its critical role in building long-term customer loyalty. Moreover, the study reinforces the Expectation Disconfirmation Theory (EDT), demonstrating that customer satisfaction arises from the interaction between expectations, perceived value, service performance, and trust. The analysis of a second-order structural model with a robust sample size further validates the reliability of the SEM-PLS methodology, underscoring its effectiveness in examining complex relationships in service quality research. These theoretical contributions offer a foundation for future research exploring similar dynamics in other regions or service sectors.

The study highlights several practical implications for improving customer satisfaction in home delivery services. Service quality, encompassing reliability, assurance, tangibles, empathy, and responsiveness, directly impacts customer satisfaction. Delivery companies can enhance service quality by optimizing delivery routes, utilizing advanced technology for real-time tracking, and ensuring staff professionalism in communication and presentation. Furthermore, minimizing delays, providing clear and timely updates, and maintaining polite interactions with customers are essential strategies for improving service quality. Customer perceived value extends beyond pricing to include convenience, reliability, and overall service experience. Delivery companies should consider offering competitive pricing strategies, loyalty rewards, and streamlined return policies to enhance perceived value. Promotional campaigns, customer-centric policies, and 24/7 customer support are additional measures that can strengthen customer relationships. Trust emerged as a crucial mediating factor in the customer satisfaction model. Delivery companies must prioritize transparency in order tracking, clear communication regarding delivery progress, and proactive resolution of any service issues. Encouraging customer feedback and demonstrating a

commitment to addressing complaints can further build trust. These measures not only improve service experiences but also foster long-term customer loyalty.

The study recommends that delivery companies prioritize assurance in order status, particularly for perishable goods and high-value items. Issues such as late deliveries, damaged goods, or unmet expectations can significantly undermine customer confidence. Companies must implement transparent refund and compensation policies and ensure these are easily accessible through their digital platforms and customer communication channels. Moreover, proper inspection and packaging procedures must be enforced to meet hygiene and safety standards. Building and maintaining trust requires continuous effort. Delivery companies should adopt proactive communication systems that provide real-time updates on order status and potential delays. Immediate notifications regarding disruptions, along with clear explanations, can reduce customer anxiety and build trust. Furthermore, sharing key delivery personnel details, including contact information and tracking links, empowers customers and enhances their overall experience.

This study has certain limitations that should be acknowledged. First, the sample size of 385 respondents, while adequate for statistical analysis, may not fully represent the broader population of home delivery service users in Binh Duong. Second, the cross-sectional nature of the study restricts its ability to capture long-term trends and evolving customer preferences. Lastly, while the SERVQUAL dimensions were analyzed collectively, their individual contributions to customer satisfaction require deeper investigation. Future research should aim to address these limitations by expanding the sample size and conducting longitudinal studies to track changes in customer satisfaction over time. Additionally, comparative studies across different regions in Vietnam, particularly within the Southern Key Economic Zone, could offer valuable insights into regional variations in customer expectations and satisfaction drivers. These efforts would enhance the generalizability and robustness of future findings, contributing to a deeper understanding of customer satisfaction dynamics in home delivery services.

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