Last-mile food delivery challenges in e-logistics in Vietnam

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Abstract:

E-logistics for last mile food delivery in Vietnam is examined in this quantitative thesis. The research population was limited to Vietnamese. A single research question is addressed in the study:

- What are challenges of last-mile food delivery in e-logistics in Vietnam?

This thesis discusses last-mile delivery services and e-logistics in its theoretical section. An overview of the thesis' objectives is provided using secondary data from publications, books, and certified sources on the internet. In comparison, the empirical part of the study was conducted by means of an online survey in order to get a better understanding of the logistics distribution challenges within the e-commerce food delivery industry in Vietnam.

Customers' aspirations are not in step with market immaturity, which is the industry's greatest challenge. After studying E-logistics' drawbacks in Vietnam's e-commerce, the thesis concludes with future research recommendations.

Keywords:

Last-mile, e-logistics, e-commerce

Contents

1 INTRODUCTION

In Vietnam, e-commerce is booming, setting the stage for e-logistics growth. As long as investors can tolerate the heat of cost requirements, e-logistics is a promising industry in Vietnam to invest in (Vietnam Credit, 2021).

As e-commerce and e-commerce delivery grow in general, so does the size and growth of last mile delivery. By 2025, Statista estimates the Southeast Asia (SEA) e-commerce market will reach $90 billion, up from $13 billion today. As a rising tech hub in Asia, Vietnam's e-commerce industry is expected to grow by 23% annually until 2022.

Based on the Agility "Emerging Market Logistics Index 2022" report, Vietnam ranks among the Top 4 fastest growing logistics markets globally. Additionally, Ninja Van Group, an e-commerce postal company, in partnership with DPD Group Postal Network, recently published the "E-commerce Southeast Asia (SEA) Barometer Report 2021.". Vietnamese people dominate Southeast Asia in terms of online shopping, according to a variety of indicators. As e-commerce demand increases, e-logistics volumes will increase.

The food delivery market in Vietnam is quite new, however it is also extremely vibrant. According to "Online Food Delivery – Vietnam" carried out through Statista, revenue is predicted to show an annual boom price (2022-2027) of 6,58%, ensuing in a projected market quantity of us$583.30m with the aid of 2027. Within the Online Food Delivery section, the quantity of customers is anticipated to quantity to 19.5m users by 2027.

As the term implies, "last-mile delivery" refers to delivering goods to the final destination. Since several startups and foreign giants started providing services for e-commerce goods transportation in Vietnam, this segment is booming (Yen H, 2019).

Consumers have become accustomed to having what they need delivered within a few days, if not hours, since Industry 4.0 hit the market. Despite this, last mile delivery continues to be the only step visible to consumers from the moment an order is created until the package is received (Huseyin Guven et al., 2020).

Many organizations are focusing on last-mile delivery in order to meet customer expectations that have changed dramatically. Some businesses can only survive amidst stiff competition by identifying customer journey touchpoints and enhancing them. Optimizing critical touchpoints like online payments and tracking can enhance the customer journey through last-mile delivery (Elogii, 2021). It is necessary to analyze the current model, future requirements, realize challenges, and find reliable solutions in order to implement a last-mile delivery strategy.

1.1 Thesis aim and research questions

It remains essential for the last mile delivery of a product to ensure that it reaches the customer. Customer contact begins with this system. It is crucial that the last mile goes well because if it does not, it will impact customer satisfaction.

This thesis investigates last mile food delivery in Vietnam for e-logistics. Throughout all assessments and analyses, the goal is to illustrate the current situation in the industry and to identify the challenges it faces.

The thesis has a single main research question that needs to be answered:

- What are challenges of last-mile food delivery in e-logistics in Vietnam?

1.2 Demarcation

Its geographical scope is limited to the country of Vietnam since this thesis examines last-mile delivery of e-logistics in Vietnam. Whenever there is any data about another country or region, it is used only for the purpose of researching the Vietnamese market.

In the end, only end-consumers are considered. A partial discussion of employee and government viewpoints is presented on the basis of the available literature. The empirical findings do not include them.

1.3 Definition of E-commerce

According to Chaffey et al. (2007), consumers generally think of electronic commerce (e-commerce) as just buying and selling online; they immediately envision retail purchases through websites such as Amazon. There is much more to e-commerce than electronic

financial transactions between customers and organizations. The term e-commerce is often used to describe all transactions that are conducted electronically between an organization and a third party. A customer's request for further information, for example, would also be considered an e-commerce transaction.

2 THEORY

To follow the objectives of this study and analyze and answer the research questions, the second chapter of the present thesis explains essential concepts and definitions. A review and analysis of secondary data about e-logistics and last-mile delivery are undertaken. An overview of these concepts will be presented by the end of this chapter.

2.1 Logistics three flows

The Council of Supply Chain Management Professionals (CSCMP) defines logistics management as follows:

> Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.

According to Mangan et al. (2020), we can think of logistics as a series of 'rights':

> getting, in the right way, the right product, in the right quantity and right quality, in the right place at the right time, for the right customer at the right cost.

Figure 1 shows three key flows are included in logistics, according to Storhagen (2011).

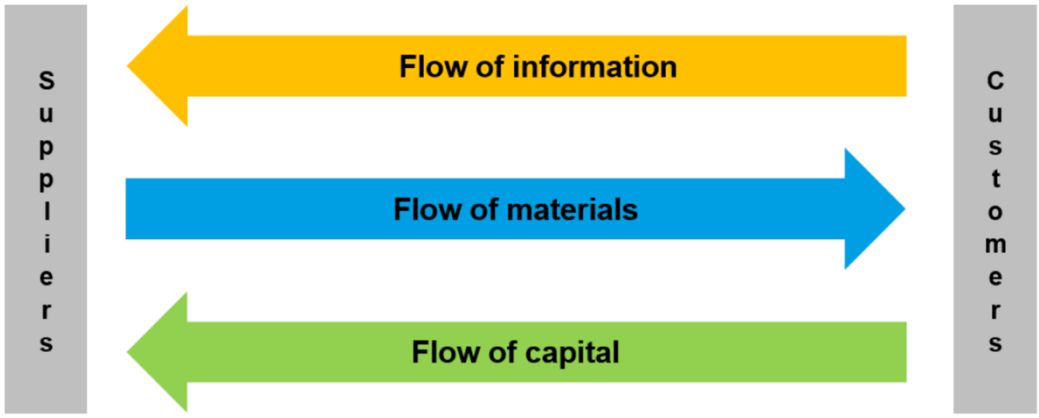

Figure 1 Flow in logistics (Storhagen, 2011)

In a supply chain, information flow occurs verbally, in writing, or digitally between actors. Contracts, requests for bids, bids, customer orders, purchase orders, order confirmations, invoices, packing lists, shipping notes, receipts, instructions, manuals, rules, regulations, etc., are just some examples of information.

Basically, material flow is the transportation of goods through the supply chain, along with returns. Generally, good material flow is reflected in short delivery times and customer satisfaction, among other things. The fact that material is delivered while no information is available is a violation of good logistics principles. It is, however, necessary to attach information to both materials and products. Content, sender, and destination information must be included on packaging. Information and capital flow are the driving forces behind material flow.

In a supply chain, capital flow is the flow of money between the parties involved. Warehousing and intermediate terminals tie up capital. The goods being transported also require considerable capital. A major cost factor is transportation and storage. Furthermore, logistics chains, implementations, and management add to costs. Information and materials drive capital flow.

Logistics aim to deliver raw materials, semifinished products, and finished products on time, in the agreed quantity and quality. To ensure that a company's financial result is the best it can be, delivery should be handled according to the service level chosen by each company. Furthermore, it should be possible to minimize the environmental burden. In order to build a competitive supply chain, logistics should be seen as an overall process (Logistiikan Maailma).

2.2 E-logistics and e-commerce

Academics and practitioners have alternately used the terms e-logistics, e-business logistics (e-commerce) and electronic logistics. According to Joseph et al., (2004), e-logistics serves as a support to fulfill online orders for electronic commerce. Alternatively, some believe that e-logistics involves leveraging information and communication technologies to execute a broad range of logistics tasks (Daly and Cui, 2003; Gunasekaran et al, 2007). This suggests that while the former focuses on the use of ICT in business-to-business (B2B) or business-to-

consumer (B2C) settings, the latter addresses the use of ICT in supply chains and information flows.

An E-Logistics system enables smooth information flow in and between companies as well as within the supply chain as a whole (Wang & Pettit, 2021).

2.2.1 Reverse logistics

Reverse logistics consists of all the processes involved in moving goods, demand information, and money in opposition to a primary logistic flow; and minimizing waste generation by collecting, transporting, disposing, and recycling both hazardous and non-hazardous waste in a manner that maximizes profitability over the long term (De Villiers et al., 2017).

As the name implies, reverse logistics refers to all those logistics activities or flows which take place outside the primary flow of goods or products to customers. This includes the recycling of containers and pallets, handling waste generated as well as the return of goods generated by the business process (De Villiers et al., 2017).

Both recycling companies and those who have to dispose of run down or waste products should consider reverse logistics (Carter and Ellram, 1998). In a closed-loop supply chain, transportation is usually a forward flow from suppliers to end users as well as a reverse flow of products back to manufactures or distributors. End-of-life products are prevented from being disposed of in landfills and incinerators through reverse logistics (Grant et al., 2017).

2.2.2 Delivery service

It is the core service that the customer takes for granted to have an order delivered at a certain time. In contrast, peripheral services, such as packaging and documentation, can provide direct competitive advantages (Stohargen, 2018).

The traditional elements of a delivery service are as follows:

- Stock availability: A product's availability, i.e., its likelihood of being in stock.
- Delivery time: Period between order and delivery of the product.

- Delivery reliability: Ideally, it should arrive when it is supposed to, not before or after.
- Delivery performance: Delivering the right products in the right quantities. Having incorrect deliveries cause unnecessary disruptions is not acceptable (Stohargen, 2018).

Goods and services can be specified before, during, and after delivery, see Table 1 (Stohargen, 2018).

Table 1 Example of delivery service before, during and after delivery of goods and services (Stohargen, 2018)

Delivery service before delivery	• Documentation delivery service policy • Availability – can we be reached? • Clear delivery notices • Ability to adapt
Delivery service during delivery	• Stock availability • Delivery time • Delivery reliability • Delivery performance
Delivery service after delivery	• Availability of spare parts • Service readiness • Guarantees • Handling complaints and exchanges

2.2.3 Delivery service dilemma

Sales increase when service is good, but costs usually rise as well. That's the big dilemma for delivery services. Delivery services are undoubtedly important. Choosing a supplier is crucial based on the delivery service provided by the supplier, since it is perhaps the most tangible function the provider offers to its customers. However, how do you balance increased service costs and sales revenue to make the delivery service cost-effective? Unsurprisingly, this area has not been explored much. In addition, no answer can be given to this question. More or less refinement is still needed to solve the problem (Stohargen, 2018).

In customer service management, the challenges are identifying the true profitability of customers and then developing strategies to improve their profitability. The provision of customer service involves both costs and benefits, and so the appropriate level of service and mix will vary based on the type of customer (Christopher, 1998).

A steeply rising curve represents the relationship between service level and cost (Figure 2).

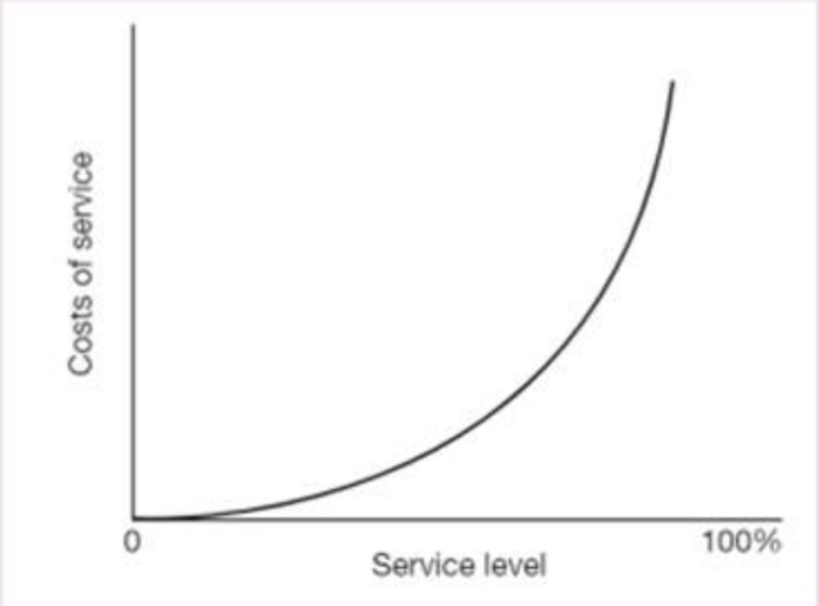

Figure 2 The costs of service (Christopher, 1998)

Due to unexpectedly high demand levels, adding inventory is expensive, which contributes to this phenomenon. The same level of service can be achieved with less inventory if alternative service strategies are found, such as speeding up information flow about customers and using faster modes of transport, so that the curve is pushed to the right – in effect pushing the curve to the right (Figure 3). Information and responsiveness are substituted for inventory in this approach (Christopher, 1998).

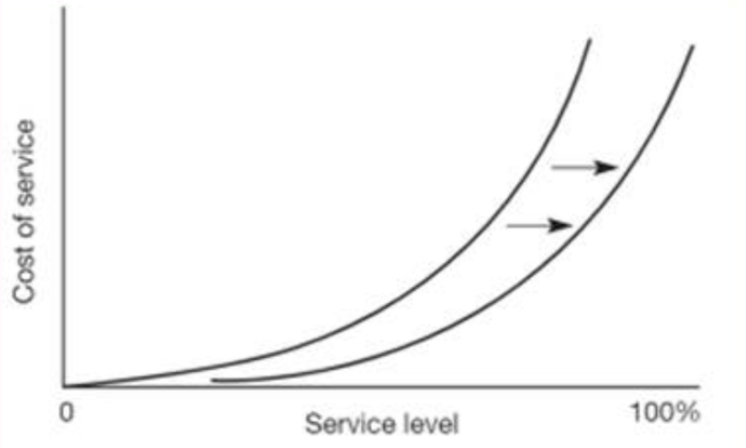

Figure 3 Shifting the costs of service (Christopher, 1998)

Different products and product groups, as well as different customers, must be considered to get a realistic estimate of what the delivery service will cost. The four questions below should be asked of yourself at first and later, and at lower levels as well:

1. What do the competitors offer?
2. What does the customer demand and what does the customer really need?
3. What does increased service provide in additional sales?
4. How much do different delivery service measures cost?

There is a connection between the points in practice. There is likely to be an importance to all four at all times, but their weight may vary with time and depending on the product or customer (Stohargen, 2018).

2.2.4 E-commerce in food and beverage

Despite the fact that e-commerce has begun with information goods (movies, song tracks, economic stuff, news, software and net pages), in the last few years it has been extended to meals and beverage sector (Bodini, 2012).

The dynamics of food-product flow are particularly relevant to the F&B sector since new tools are needed to facilitate trade between business partners. There is ample evidence in the literature indicating that ICT tools will enhance the efficiency of food sector networks (Leroux et al., 2001; Bacarin et al., 2008; Wilson et al., 2008): Besides making business operators more efficient in terms of networks and reducing transaction costs, e-marketplaces help them connect with a wide range of potential customers and suppliers.

Online food delivery applications or e-commerce services are creative ways to order food. Purchasing foods online offers consumers the choice of the best deal based on their individual and social needs (Cho et al., 2019).

2.3 Last-mile logistics

Last mile is defined as

> the final leg in a business-to-consumer delivery service whereby the consignment is delivered to the recipient, either at the recipient's home or at a collection point (Gevaers et al., 2009).

As a product moves from distribution centers to retail backrooms and from backrooms to store shelves, the last mile describes the last, short distance it must travel. In order for a sale to be concluded, the last mile of the supply chain must be completed, which is why it cannot

be underestimated. However, the last mile is the most competitive as well. This is the point at which a manufacturer convinces the shopper to prefer its product over that of a competitor (Quinn, 2015: 32).

The whole sale can fall apart if the last mile is wrong. In the 21st century, as the world's population grows increasingly urbanized, last mile logistics will become increasingly important. Manufactured products need to be moved quickly through busy cities, to retailers' receiving areas, and then to the shelves for customer purchase, from the distribution center. (De Villiers et al., 2017).

Throughout e-commerce, logistics providers must respond to three key drivers - quick, low-cost, high-quality delivery - that are changing how goods are delivered in the last mile (Manners-Bell & Lyon, 2019).

2.3.1 Last mile challenge

A large portion of home deliveries has historically been handled by the mail or postal service. It increases the number of home deliveries when consumers buy products from different internet stores. How products are delivered from suppliers to consumers is known as the "last mile challenge" (Logistiikan Maailma).

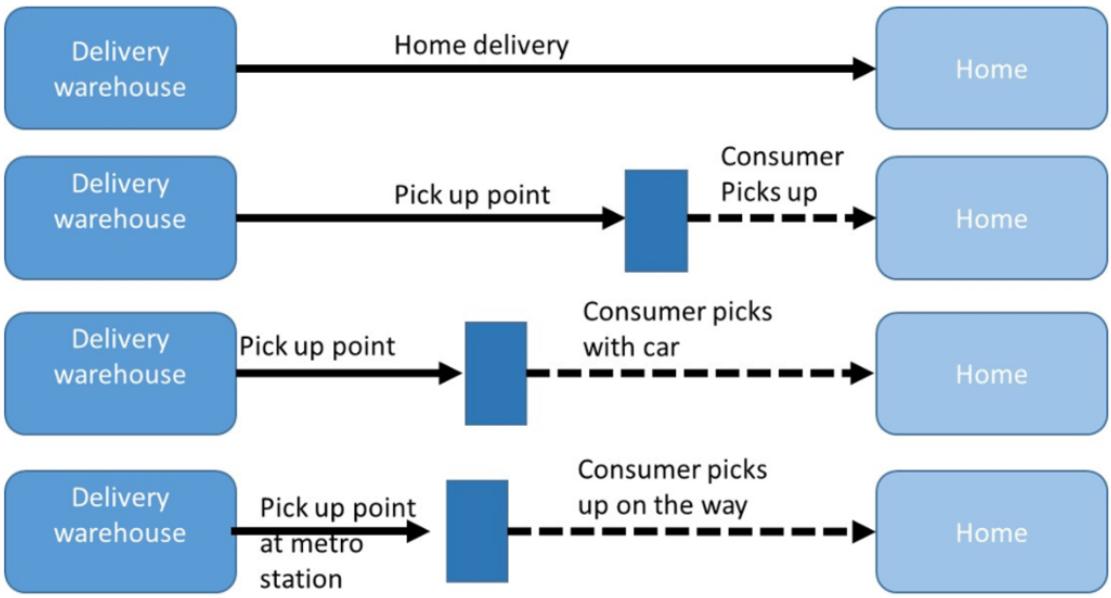

Figure 4 Options for delivery (Logistiikan Maailma)

Figure 4 shows a variety of options for delivers (Logistiikan Maailman).

Traditionally, pick-up point locations have been post offices; however, today they are also often found at gas stations, malls, kiosks, and retail stores that have long opening hours. The consumer wants pick-up points near their homes and near their commute. Pick-up points, therefore, are located at railway stations, metro stations, and other hubs of transportation.

The number and use of automated pick-up points has grown rapidly in recent years, as they provide facilities for picking up, as well as sending packages, 24 hours a day. Additionally, their numbers are driven by low costs.

Consumers can get fast and flexible delivery services from courier companies. Providing delivery boxes placed in garages, for instance, has also been tested. The recipient is not required to be present for the distribution to take place, which makes scheduling easier.

In addition to the implications on costs, last mile concepts have a great deal of impact on customer expectations (Xing et al., 2010). It has been challenging for online retailers to meet the high-performance expectations of their customers for their last mile deliveries (Fernie et al., 2010).

2.3.2 Last mile food delivery services

A variety of alternative distribution channels have been created to enhance the physical distribution process and improve customer service. The traditional wholesale channel is being supplemented with direct distribution and distribution centers, such as those established by grocery product manufacturers under pressure from major chain stores (Magee et al., 1985). The food and beverage industry, such as breweries and dairy companies, typically uses direct-to-store delivery (Bonning et al., 1998).

It is perceived by customers that online shopping saves them more time rather than actual shopping time, since they don't need to travel to and from the store. Consequently, home delivery provides consumers with a higher level of satisfaction (Morganosky and Cude, 2000). There are two reception models offered by the direct concept: attended and unattended.

The customer is required to pick up a delivery within a designated timeframe if an attended home delivery is requested. There are numerous markets in Europe that use this concept, for example, the UK, the Netherlands and Germany. The majority of last mile deliveries are attended home deliveries in most countries. In addition to its complexity, home attendance involves a number of constraints for all participants: The customer must wait until his order is delivered, while the vehicle routing is more complicated due to the time constraints of the customer (Agatz et al., 2011).

Grocers can deliver online orders at home without the customer being there, as unattended home deliveries are possible regardless of the customer's presence. On arrival, the customer can collect the shopping basket from the front porch. In order to fulfill orders, Swiss pioneer Le Shop uses mostly cooled delivery boxes, allowing it to deliver twice the number of orders in one shift as an average online grocer can, but it still has to pay for the boxes upfront and collect them afterwards. For unattended home delivery, up to 40% of the cost can be saved over attended home delivery when a reception box is included (Kämäräinen et al., 2001).

2.3.2.1 E-logistics delivery applications in Vietnam

Ordering home delivery instead of going to a restaurant has become familiar in Vietnam, especially through phone applications. Q&Me conducted a survey in December 2021, the percentage of people using the delivery app increased while the percentage of calls to the store to order directly tended to decrease. Food delivery apps have become the most popular way of ordering in Vietnam. Among delivery apps, Grab (used by 72% of respondents), Now/ShopeeFood (66%) and Baemin (54%) are the 3 most popular apps (Q&Me, 2022).

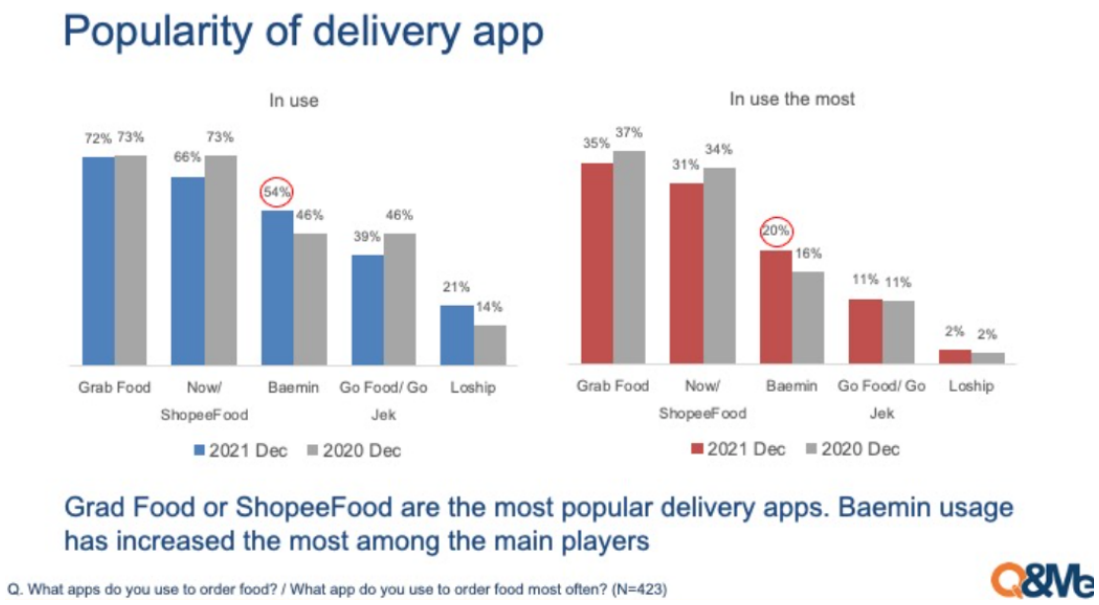

Figure 5 Popularity of delivery app in Vietnam (Q&Me, 2022)

Brands not only constantly offer promotions and discounts, but these applications also continuously pour capital to expand investment, improve service quality. In which, the most obvious change comes from the speed of food delivery, when almost all services focus on improving delivery speed (Reputa, 2021).

2.3.3 Last mile food delivery challenges

McKinnon (1996) also notices that the purchaser direct channel, particularly home purchasing, might also growth sharply within the next 10-15 years, creating logistical challenges. The distribution channel structure is visible as the problem place. The boom of home purchasing would probably require development of a brand-new logistics infrastructure or reallocation of logistical obligations a few of the channel members. Similarly, in home delivery, the reception of the products is visible as the predominant trouble. There's a warfare among the customer's wish for private freedom and the transport enterprise's choice for flexibility within the routing and scheduling of vehicles.

Food e-commerce has grown slowly due to consumers' preference for choosing their own products. Consumption is primarily driven by fruits and vegetables. Logistics and particularly home delivery services would be adversely affected by the growth of e-commerce in groceries. With online grocery shopping come higher costs for picking up and delivering

groceries to the home. The main challenge is that most consumers do not want to pay for the services they receive, such as delivery fees (Logistiikan Maailman).

The supply chain for e-grocery is different from that of traditional grocery shopping. Customers pick up and deliver groceries to their homes in the traditional grocery supply chain. Home delivery transportation, picking and packing are the major cost drivers for an e-grocery (Lewis, 2000). The challenges for an e-grocer are to achieve cost-efficient working models and to provide extra comfort to clients.

As a result of online sellers' delivery options, they have to address the task of working with very small packages to deliver to multiple locations in a highly complicated environment (Morganti & Gonzalez-Feliu, 2015). The problem is exacerbated by the fact that both destinations and origins of food deliveries are decentralized. Shipping operations are also subject to special conditions to ensure product quality (Hübner, Kuhn, & Wollenburg, 2016).

2.3.4 Legislation of operating e-commerce food delivery in Vietnam

The online food delivery market in Vietnam is being evaluated as a strong growth and especially more and more businesses "jump" into this field. In 2020, Vietnam recorded strong growth in online food delivery due to COVID (1,140,397 discussions). This trend is likely to continue to grow and is forecast to grow to a value of more than $38 million and maintain an average growth rate of 11% in the next 5 years (Reputa, 2021).

As for transporting food, according to Article 21 of the Law on Food Safety 2010 by the National Assembly of Vietnam:

> Article 21. Food safety assurance conditions for food transportation
> 1. Organizations and individuals transporting food must meet the following conditions:
> a/ Means for transporting foods are made of materials which do not contaminate food and food packages and are easy to clean.
> b/ Food preservation conditions as required by food producers and traders are maintained throughout the course of transportation.
> c/ Food is not transported together with toxic goods or goods which may cause cross-contamination and affect food quality.
> 2. Competent state management agencies shall provide means for transporting food and routes for transporting fresh and raw food in urban areas.

If there is a violation of food safety assurance during the transportation of food, the lowest fine is 3,000,000 VND and the highest is 15,000,000 VND for individuals and 6,000,000 VND and the highest is VND 30,000,000 for organizations.

3 METHOD

In this chapter, a methodological approach will be used to examine the research questions. It is important to choose an approach to discover the challenges which last mile food delivery in Vietnam faces. In order to answer the research question, empirical data is collected and analyzed. In this study, the method of choice is a survey, so a quantitative approach is employed for analysis.

Moreover, the methodology chapter discusses the chosen method, sample selection methods, data collection and analysis processes, and validity and reliability concerns.

3.1 Choice of method

For the empirical part of the topic of this thesis the quantitative method was chosen. Quantitative methods have the advantage of allowing generalization and focus on specific groups of people. The quantitative method also has the advantage of achieving more accurate results of the entire population and ensuring the objectivity of empirical research by allowing a large sample size of respondents (Bryman & Bell, 2015).

Because the author is interested in studying a larger group of people and determining the challenges associated with last mile food delivery in Vietnam, an online survey is the best option. Online survey was conducted using Microsoft Forms (forms.office.com).

As opposed to traditional surveys sent by mail, the advantages of an online survey include being cost-effective, reaching a wide audience, having an attractive layout, getting a faster response rate, and receiving a better response for open questions. Surveys allow participants to respond in depth to open-ended questions allowing them to provide more information about their answers. In addition, rating questions made it easy for respondents to answer quickly (Bryman & Bell, 2015).

3.2 Respondents

This survey targeted a broad population, primarily young Vietnamese who consume e-commerce products. This survey has a sampling bias, however; because the survey was only sent out via social media, it was limited to Vietnamese e-commerce consumers with social media accounts. Therefore, those without social media accounts but who actively buy from e-commerce sites were barred from participating. The author would like to point out that, to participate in the survey, respondents did not need to have a social media account. In this study, convenience sampling was used. The convenience sampling method is used when respondents are available and willing to take the survey (Fink, 2009).

3.3 Questionnaire

Author has divided online survey into three parts. Appendix 1 contains the questionnaires.

The questionnaire was conducted in the form of a self-questionnaire. A self-completion questionnaire involves reading each question and answering it independently for each person. Thus, no interviewer is required to ask questions (Bryman & Bell, 2015). Those who willingly participated in the survey received the questionnaire in an online version and a digital delivery. In total, 20 questions are asked in the self-questionnaire. In order to gather empirical data, the researcher conducted a literature review before selecting the questions.

There were six questions in the first part of the questionnaire. These questions asked participants to provide demographic information, such as their gender, age, occupation, and the kinds of food they purchase most often, along with delivery methods most commonly used. For standardized data, multiple-choice questions are used. Another set of questions focused on their behavior towards delivery services in the second part. Respondents are asked to rate their attitude using a five-point Likert scale from 1 - Strongly disagree - 5 - Strongly agree. Participants are asked to identify the most annoying problem and their suggestions for improving the last-mile delivery experience in the third part of the questionnaire. One open question allows consumers to express their unlimited ideas about improving delivery problems, while multiple-choice questions are used for narrowing down the categories for delivery problems.

3.4 Research approach

A survey was conducted online to collect the data, as mentioned above. To reach as many respondents as possible, the questionnaire was distributed via social media, especially Facebook. The sample was drawn from only Vietnamese social media communities. Survey questions include 7 multiple-choice questions, 1 open question (free text) and 12 statements that respondents could rate on a Likert scale (1=strongly disagree, 2=disagree, 3=not agreeing or disagreeing, 4=agree, 5=strongly agree). Online surveys provided complete anonymity to respondents and allowed them to express their opinions and thoughts honestly. So that a large number of respondents would respond, the survey was marketed as easily answered in two minutes.

Survey implementation was carried out using Microsoft Forms. The survey was conducted between 07.11.2022 and 14.11.2022.

3.5 Analysis of data

An MS Excel™ file was created to store the data. Then, IBM SPSS™ software was used for data analysis and statistical testing. A superficial examination of the answers was conducted after the questionnaire closed. To make the actual analysis as efficient as possible, it was necessary to familiarize ourselves with the data collected at first. Then, SPSS was used to conduct a detailed analysis and statistical tests.

The descriptive statistics include n-values, means, medians, standard deviations, and the percentage of respondents who answered positively to specific survey questions. N-value stands for the number of respondents to a survey question, while the mean is the average, dividing the number of cases by the number of variables. The midpoint in a range of scores is called the median. As a measure of distribution, standard deviations (SDs) measure how many scores are wildly different from one another, or how far each data value is from the average (Djurfeldt et al., 2010).

The margin of error and confidence interval of question 19 were calculated as well. Calculating these parameters was done using the formulas.

$$SE = \sqrt{\frac{p(1-p)}{n}} \qquad CI = \text{sample value (\%)} \pm SE \cdot z.$$

Figure 6 Margin of error and confidence interval formulas (Djurfeldt et al., 2010)

In Figure 6, p is the respondent support in % for the option in answer, n is the total respondents and z-value for 95% level of confidence is 1,96.

Research questions are answered by analyzing the structured data, formulating the results, and drawing conclusions from the SPSS results.

3.6 Validity and reliability

The wording of questions plays an important role in preventing respondents from misreading or being biased towards one alternative (Saunders et al. 2019 p. 529). A careful use of clear and unambiguous language is used by the author to ensure the respondent fully understands each question. Furthermore, the thesis supervisor also reviewed each question before it was asked, which prevented issues with vocabulary that could have undermined the validity of the data.

Regarding reliability, a social desirability bias occurs when a participant is answering a question in a way that makes them think about how others would evaluate their response. Therefore, there are no correct answers in the survey, but answers may be distorted to favor "correctness". The questions were formulated with such potential biases in mind, as it has been pointed out a few times that the survey is completely anonymous.

3.7 Ethical issues

During the development of this questionnaire, the author considered ethical aspects. This dissertation outlines guidelines for conducting research responsibly. As a result of the research method chosen, these ethics were particularly considered (Bryman & Bell, 2015):
- The survey is conducted in a safe environment without harming the participants and confidentiality is assured by the author.

- Survey topics and purposes are explained to participants.
- Researcher should never deceive or pressurize any participants. It is written in a clear, understandable manner with no hidden sub-meanings or understatements. Moreover, the data is provided for analysis without any distortion after the survey and is not distorted.

4 RESULTS

A structural presentation of the study's results is given here. Only actual data is provided, analysed using SPSS tool, with no author's opinion. Firstly, a demographic variable must be considered, then main variables must be presented, and their results explained.

One week after the survey was posted, 202 responses had been received.

4.1 Demographics and preferences

Data questions related to socioeconomics were asked of respondents. The results were presented in Table 2. The first question asked was about gender. There were 105 males and 97 females among the 202 respondents. Second, age groups could be defined. In the survey of 202 respondents, 79 respondents are under 22 years old, 106 respondents are aged 22 to 39, 2 respondents are aged 40 to 55, and 15 are over 55. Students make up the majority of respondents (57,4%) and office workers make up the majority of respondents (16,3%). Among respondents, 17,8% said they ordered restaurant prepared food most often, followed by 15,3% who ordered meat. A final question asked about the most common delivery method used by consumers. 63 respondents chose home delivery as their preferred method. The survey found that 56 respondents used delivery boxes as their second most common delivery mode. Pick-up points and physical stores were chosen by 43 and 40 respondents, respectively.

Table 2 Background Information

Characteristic	Category	Frequency	Percentage
Q1: Gender (n=202)	Female	97	48
	Male	105	52
Q2: Age (n=202)	Less than 22	79	39,1
	22-39	106	52,5
	40-55	2	1
	More than 55	15	7,4
Q3: Occupation	Student	116	57,4
	Office worker	33	16,3
	Freelancer	18	8,9
	Unemployed	18	8,9
	Retired	15	7,4
	Other	2	1
Q5: Kind of food that often order (n=202)	Restaurant prepared food	36	17,8
	Meal kit	30	14,9
	Meat	31	15,3
	Grocery	22	10,9
	Veggies	27	13,4
	Dairy	20	9,9
	Drinks	36	17,8
Q6: Delivery modes that mostly use (n=202)	Delivery box	56	27,7
	Home delivery	63	31,2
	Pick up from physical store	40	19,8
	Pick up points	43	21,3

The participants were also asked to rate a statement (question 4) about how often they order food online based on their individual experience. The 5-point Likert scale, where (1) less often and (5) very often, was provided. As for the results can be seen in Table 3 and Figure 7, 48 people order food online less often (total of rate 1 and 2) and 188 participants order food online very often (total of rate 3, 4 and 5). In general, this variable got a mean value of 3,47 and Std. Deviation 1,346.

Table 3 Frequency of ordering food

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	29	14,4	14,4	14,4
	2	19	9,4	9,4	23,8
	3	34	16,8	16,8	40,6
	4	69	34,2	34,2	74,8
	5	51	25,2	25,2	100,0
	Total	202	100,0	100,0	

	N	Mean	Std. Deviation
How often do you order food online?	202	3,47	1,346
Valid N (listwise)	202		

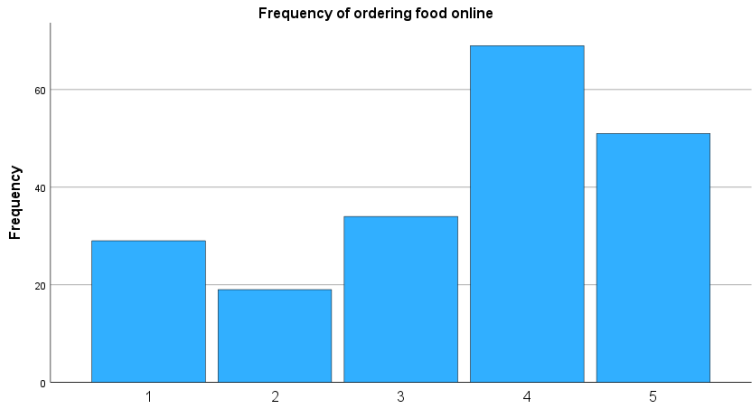

Figure 7 Frequency of ordering food

Table 4 shows, using mean values, how the important of variety of factors affect customers choosing logistics provider. The responses were evaluated using a 5-point Likert scale, where a value of 5 meant strongly agree with the statement and a value of 1 strongly disagree. The analysis (see Figure 8) indicates that these factors are quite important to them. It can be seen that delivery time is the most important element with a mean value of 3,96 (Std. Deviation 1,117) and followed by shipping cost with mean value 3,84 (Std. Deviation 1,141). The mean value of the ease of returning good was 3,79 (Std. Deviation 1,149) and the unchanged of satisfied logistics providers was 3,01 (Std. Deviation 1,418).

Table 4 Behaviors toward different last-mile delivery scenarios

	N	Mean	Std. Deviation
How important for you is the delivery time provided by the logistics provider?	202	3,96	1,117
How important is the shipping cost for you?	202	3,84	1,141
How important is the ease of returning goods to you?	202	3,79	1,149
Once you are satisfied with one logistics provider, you don't want to change to another one	202	3,01	1,418
Valid N (listwise)	202		

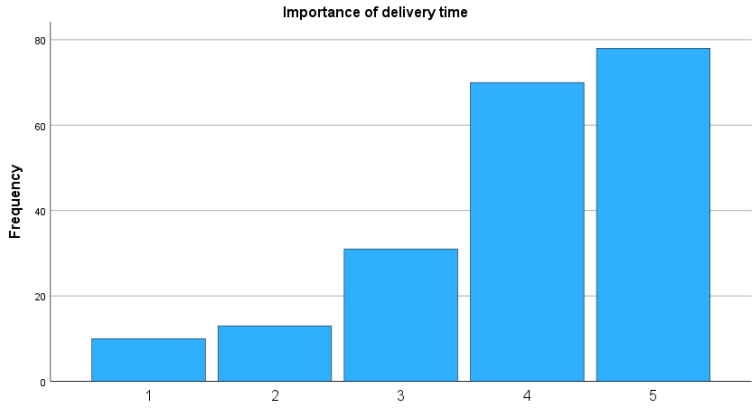

Figure 8 Importance of delivery time by logistics provider

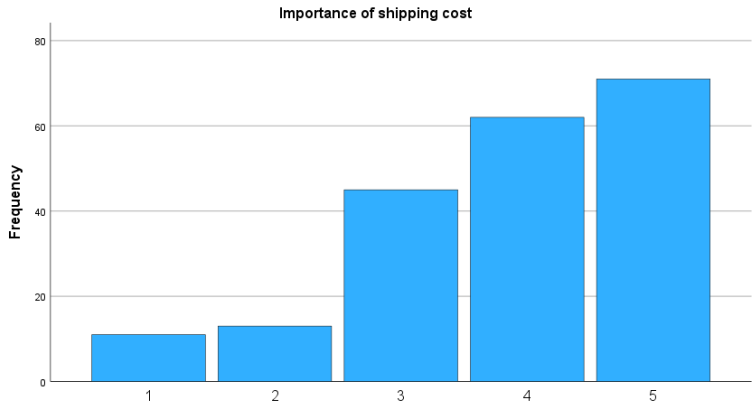

Figure 9 Importance of shipping cost

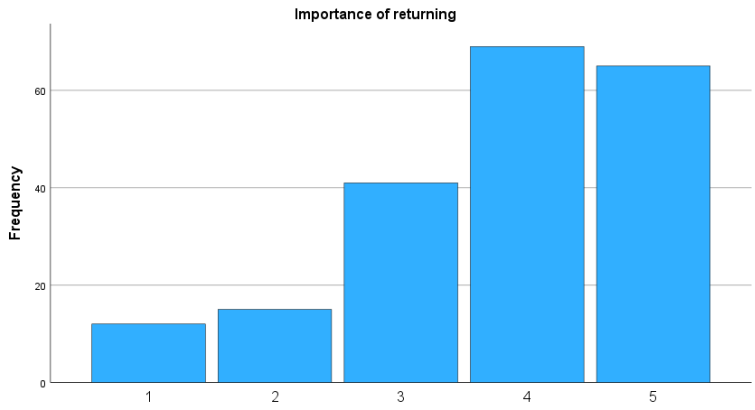

Figure 10 Importance of the ease of returning food

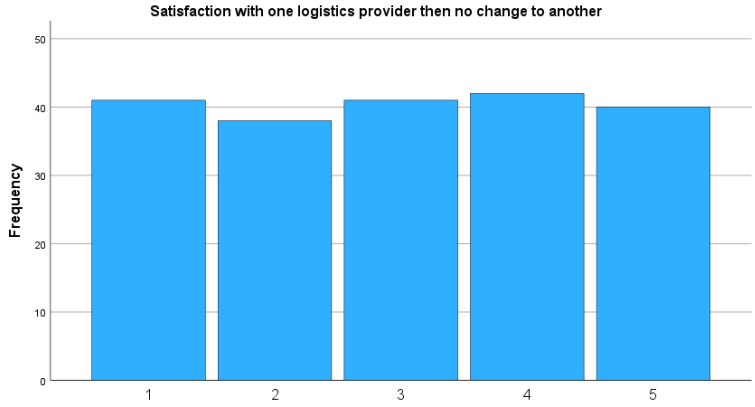

Figure 11 Loyalty to a logistics provider

4.2 Last-mile food delivery challenges

In the last part of the survey, several fields in the survey investigated potential e-commerce challenges that could reveal the level of different e-commerce challenges. Respondents had to evaluate each obstacle listed in the questionnaire according to the severity of the objection (1 = Strongly disagree - 5 = Strongly agree) according to eight different variations. Responses are followed by comments and suggestions to help generate solutions related to the topic after the questions are answered.

It was necessary to create a composite variable in SPSS because the main variable was measured with more than one question. In table 5, a Cronbach's alpha value of more than 0.7 was calculated and checked for the composite variable, confirming its internal consistency.

Table 5 Internal consistency

Reliability Statistics

Cronbach's Alpha	N of Items
,707	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
InformationSatisfaction	21,5000	5,923	,433	,679
AvailabilityOfFood	21,3366	6,423	,479	,655
RightTime	21,1535	7,116	,458	,666
FreshFood	21,1980	6,995	,472	,662
ContactEasily	21,3416	6,326	,502	,647
ExchangeHandles	21,3168	7,232	,336	,697

	N	Mean	Std. Deviation
CompositeforChallenges	202	4,2616	,50200
Valid N (listwise)	202		

A strong disagreement is represented by 1, whereas a strong agreement is represented by 5 in Table 6. There is a range between 1,58 and 3,76 for the means.

Table 6 A percentual values and means provided by replies

	1	2	3	4	5	n	Means
Q11: When ordering food online, you are satisfied with the information you received from logistics provider	37,6	44,1	10,4	3,5	4,5	202	1,93
Q12: The food you order is usually available	42,6	42,6	10,9	3,5	0,5	202	1,77
Q14: You receive your order according to the estimated time by the logistics provider	47,5	48,5	2,0	2,0	0	202	1,58
Q15: You often receive the wrong item for your order	12,9	7,4	6,4	37,6	35,6	202	3,76
Q16: The food is usually fresh when you receive it	45	49	4	2	0	202	1,63
Q17: You find it easy to contact the logistics provider if anything's wrong with your order	42,6	42,6	9,9	5,0	0	202	1,77
Q18: The logistics provider handles claims/exchanges about your order quickly and effectively	36,6	56,4	3,5	3,5	1	202	1,75

Respondents considered the following challenges to be the greatest challenges of last-mile food e-commerce on Vietnamese market:

Receiving the order according to the estimated time by the logistics provider was ranked as the most significantly problematic as 96% of all respondents have chosen 1 or 2. 94% of all the replied companies think that the food they received is not fresh. The effectiveness of the logistics provider handling claims/exchanges was also seen as a problem as 93% (36,6% replied 1 and 56,4% replied 2) of responses disagreed on that.

As for specific delivery time, question 13 showed how long customers have to wait to receive their orders. From Table 7, the results are following: 12,4% of survey participants receive their order in the same day. 21,8% get their food in 1-2 days. It appears that 37,6% will have what they ordered in 3-7 days and the rest 28,2% take it more than 7 days.

Table 7 Delivery time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 day (same day delivery)	25	12,4	12,4	12,4
	1-2 days	44	21,8	21,8	34,2
	3-7 days	76	37,6	37,6	71,8
	More than 7 days	57	28,2	28,2	100,0
	Total	202	100,0	100,0	

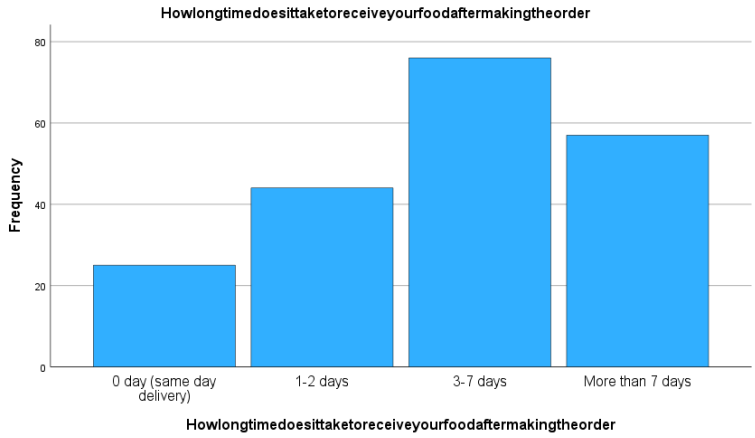

Figure 12 Delivery time

There are many challenges for last-mile food delivery that can be pointed out of the survey results. Question 19 – what you see as the main challenge of last-mile food delivery, help the author find out from the list of obstacles, which is the most challenge the customers having

from the logistics provider. Based on section 3.5 Analysis of Data, question 19's margin of error and confidence interval were also calculated with n=202 and z=1,96.

Table 8 Question 19 results

	P (%)	Margin of error (SE)	Confidence interval (CI)
Bad service from logistics provider	6,9	0,018	0,069±0,035
Can't get same-day delivery	13,4	0,024	0,134±0,047
High costs	19,3	0,028	0,193±0,055
Lack of availability of food	11,4	0,022	0,114±0,043
Lack of shipping/tracking information during delivery	11,9	0,023	0,119±0,045
Late/delayed delivery	13,4	0,024	0,134±0,047
Mishandling of ordered food items	7,4	0,018	0,074±0,035
Quality of food	16,3	0,026	0,163±0,051

Table 8 points out that 19,3% respondents think that high costs are the most important challenge. 16,3% respondents chose quality of food as the second significant challenge in logistics. Lastly, 13,4% placed their choice over can't get same-day delivery and late/delayed delivery.

Finally, the participants are asked to suggest ways to improve the last-mile delivery to verify their biggest concerns. Figure 13 shows the results.

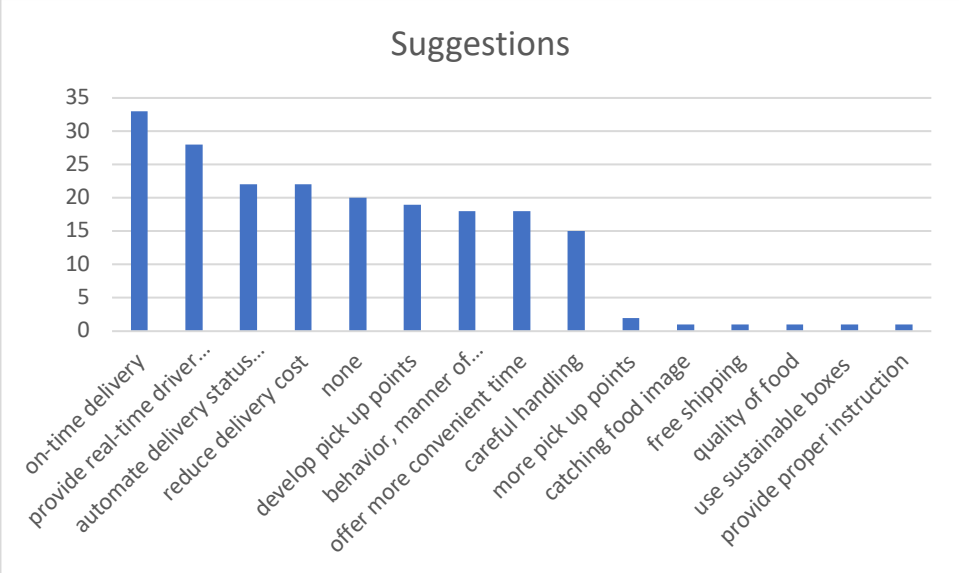

Figure 13 Suggestions to improve last-mile food delivery from customer's perspective

Based on this question, the following major ideas were collected:

- On-time delivery (16,34%)
- Provide real-time driver tracking (13,86%)
- Automate delivery status changes (10,89%)
- Reduce delivery cost (10,89%)
- Develop pick up points (9,41%)
- Behavior, manner of shipper must be enhanced (8,91%)
- Offer more convenient time (8,91%)
- Careful handling (7,43%)

4.3 Correlation

A correlation analysis was conducted using SPSS between gender, age, occupation, and importance of delivery time by logistics providers. As a result of the highest mean (mentioned in section 4.2), the variable of delivery time was chosen.

The correlations resulted at:

Table 9 Pearson's correlation

Correlations

		Gender	Age	Occupation	Howimportantforyouisthedeliverytimeprovidedbythelogisticsprovide
Gender	Pearson Correlation	1	-,007	,078	,015
	Sig. (2-tailed)		,921	,270	,833
	N	202	202	202	202
Age	Pearson Correlation	-,007	1	,576**	,033
	Sig. (2-tailed)	,921		<,001	,644
	N	202	202	202	202
Occupation	Pearson Correlation	,078	,576**	1	,045
	Sig. (2-tailed)	,270	<,001		,529
	N	202	202	202	202
Howimportantforyouisthedeliverytimeprovidedbythelogisticsprovide	Pearson Correlation	,015	,033	,045	1
	Sig. (2-tailed)	,833	,644	,529	
	N	202	202	202	202

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10 Spearman's correlation

Correlations

			Gender	Age	Occupation	Howimportantforyouisthedeliverytimeprovidedbythelogisticsprovide
Spearman's rho	Gender	Correlation Coefficient	1,000	-,069	,044	,008
		Sig. (2-tailed)	.	,333	,535	,915
		N	202	202	202	202
	Age	Correlation Coefficient	-,069	1,000	,427**	,041
		Sig. (2-tailed)	,333	.	<,001	,562
		N	202	202	202	202
	Occupation	Correlation Coefficient	,044	,427**	1,000	,083
		Sig. (2-tailed)	,535	<,001	.	,243
		N	202	202	202	202
	Howimportantforyouisthedeliverytimeprovidedbythelogisticsprovide	Correlation Coefficient	,008	,041	,083	1,000
		Sig. (2-tailed)	,915	,562	,243	.
		N	202	202	202	202

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the interpretation of the correlation coefficient results in Tables 9 and 10 comparing delivery time results to gender, age, and occupation, it is concluded that the correlation is weakly positive and tends to be non-existent. The importance of delivery time to consumers is not influenced at all or weakly by their gender, age, or occupation.

5 DISCUSSION

Results from section 4 Results are summarized and discussed in this section. In response to the research question, the author presents interpretation of the findings. As a foundation for creating interview questions and categorizing the responses, the findings use theory of the Three-Flow Model in Logistics (Storhagen, 2011) and Last-mile challenge (Logistiikan Maailman). Returning to the research goal, the interpretation of results answers the research question. It is then necessary to sum up the topic and to suggest additional research topics.

5.1 Logistics three flows

Logistics three flows include the flows of material, information, and capital. This part will give insight into the differences and similarities between theory and reality by comparing each logistical flow with the previous theoretical research of the author.

5.1.1 Material flow

Last-mile delivery challenges can be encountered with all types of food. Results indicate that many respondents were unhappy with the quality of food they received. In order to avoid

contaminating food, shippers must avoid transporting certain food items in the same box. This coincides with the research of Morganti & Gonzalez-Feliu (2015) and Hübner, Kuhn, & Wollenburg (2016) who believe that delivering food in many packages to multiple locations along with ensuring product quality is a challenge for last-mile food delivery.

5.1.2 Information flow

Challenges associated with information flow is that end customers and logistics providers generally do not cooperate well, based on data collected. Most interviewees agreed that the information during transportation is weak, and they cannot easily contact the logistics provider due to the lack of information. Until now, no study has examined this difficulty in Vietnam's e-commerce food market. The logistics cycle should be coordinated better, communications should be improved, and more resources should be allocated to communication and better understanding. In order to improve efficiency, all parties should be provided with information. Integrating information systems and providing real-time access to the same database to all participants in the logistics cycle will help facilitate efficient information flow.

5.1.3 Capital flow

E-commerce food development in Vietnam has been negatively affected by high costs, according to previous studies. E-commerce food market capital flow is directly impacted by the cost of picking, packing, and delivery (Logistiikan Maailman, Lewis, 2000). In the survey, respondents mentioned that one of their chief challenges is having to pay a high delivery cost. This is consistent with what those researchers found.

5.2 Last-mile challenge

The delivery method in Vietnam is at its most basic. The author found that home delivery and delivery boxes are still dominant in delivery processes, and consumers choose those delivery methods fairly. As home delivery is more dominant than other methods, the potential of other methods is not fully explored. Home delivery seems to be the most popular method among them currently, but other methods are welcome as well. There is a good level of recognition for pick-up points and physical stores. However, the lack of infrastructure and obstacles make them the least used delivery methods. This challenge is significant, but it's also an

opportunity for companies who want to be recognized as market leaders and redefine customer expectations.

5.3 Summary

Ultimately, this thesis explores the challenges of last-mile food delivery in Vietnam through e-logistics. The research question in Chapter 1 clearly identifies the purpose. Chapter 2 to Chapter 4 of this thesis utilizes research in related topics to answer the research question: What are challenges of last-mile food delivery in e-logistics in Vietnam?

It is the immaturity of both service providers and customers that represents the greatest challenge to last-mile food delivery in Vietnam. Delivery delays, high costs, and food quality are all outstanding issues. In Vietnam, orders are usually fulfilled within three to seven days. There is still no dominance of same-day or next-day delivery on the market. Due to this, Vietnamese consumers are most concerned with on-time delivery. As well as offering reasonable prices and customized services, they also require careful handling by delivery companies and retailers.

To some degree, consumers show their unconcreted expectations: they demand changes and developments, but few of them know precisely what to do. There are also duplicate answers regarding delivery time, handling, price, and food quality, all of which were addressed in the previous question. Technology can be applied to provide more convenience and customization, such as real-time tracking, with the new ideas. Especially, 0,50% of respondents recommended using sustainable boxes for deliveries instead of plastic bags, so customers could return them. It can be said that consumers have become more concerned with the environment than they are with efficiency. A lack of experience by the service providers and an undeveloped infrastructure are the reasons for all the difficulties discussed here. In addition, the consumer itself does not have clear expectations regarding last-mile food delivery.

Overall, the results show that e-logistics in Vietnam face a major challenge because of the mismatch between the high expectations of customers and the immaturity market. Nevertheless, last-mile food delivery in Vietnam is also motivated by those expectations. Providing on-time delivery, carefree handling, and convenient, customized service is something logistics companies should endeavor to improve upon.

5.4 Discussion of method

This study used surveys as its method. The author obtained valuable information from the respondents through this method. Generally, it worked as expected during the survey. The questions were carefully designed and supervised by supervisor to ensure that the data was accurate for the research purpose. Participants of the chosen target group were easily collected after the survey was created in accordance with the study's research questions. Having the participants answer anonymously and with no time limit has made it very convenient to collect and analyze responses.

6 CONCLUSION

E-commerce last-mile delivery has become popular in Vietnam since the 2010s. E-logistics has proven to play an important role in e-commerce despite being a new concept that was only developed after e-commerce expanded. Last-mile delivery, however, is expanding at its fastest rate ever due to the rise in e-commerce. Young, tech-savvy generations and high Internet and mobile penetration give the market a lot of potential. Vietnamese consumers can partially meet their delivery needs with the current delivery network. The answers to the research question above indicate that online ordering of food has increased significantly in the Vietnamese market. There are obvious differences in their requirements, particularly concerning delivery, such as on-time delivery, tracking, and return policies. Several Vietnamese logistics providers will have different approaches and strategies to develop their business according to their own resources. It is possible to manage inventory and deliver last-mile products in-house, or to outsource these tasks to other businesses. Despite their constantly changing demands, more comprehensive and customer-centric service solutions are needed to meet their needs. The overall efficiency of the logistics cycle could be improved by always striving for more active communication within the logistics process, improved precision of the information, reliability in order planning. If current challenges are optimized and limited, there is certainly plenty of potential for e-logistics in the near future.

6.1 Limitations of the study

Despite the author's diligent efforts to obtain relevant data for this thesis, limitations still exist. Its sample limits the scope of the survey. The response rate in this survey was low, as is typical for quantitative surveys. Convenience sampling methods can only represent a minority of the population. Moreover, the small sample size of 202 respondents increases the

likelihood of sampling errors (Bryman, 2015). Thus, it is recommended that a larger sample size be used in the replication of the study.

6.2 Suggestions for further studies

There are numerous key findings in this study that reveal the current situation of e-logistics as well as the crucial role last-mile delivery play in enhancing e-commerce results. Changing situations can be researched in a variety of markets, regions, and regions at different times based on the same situations. Further, order fulfillment encompasses a wide range of stages, not just last-mile delivery. It might be of interest to examine how e-commerce is related to other stages of order fulfillment. Lastly, it is worth noting that this study contains a number of key findings that can be applied to future research in logistics and supply chain management.

7 REFERENCES

Hübner, A., H. Kuhn, H., Wollenburg, J., (2016). Last mile fulfilment and distribution in omni-channel grocery retailing: A strategic planning framework. International Journal of Retail & Distribution Management, 44 (3).

Agatz, N.A., Campbell, A., Fleischmann, M. and Savelsbergh, M.W.P. (2011), "Time slot management in attended home delivery", Transportation Science, Vol. 45 No. 3, pp. 435-449

Agility (2022). Emerging Markets Logistics Index 2022. https://www.agility.com/wp-content/uploads/2022/02/Agility-Emerging-Markets-Logistics-Index-2022-English.pdf

Bacarin, E., Madeira, E.R.M. and Bauzer Medeiros, C. (2008) Contract e-negotiation in agricultural supply chains. International Journal of Electronic Commerce 12(4), 71–98.

Bodini, A. (2012). Food E-Commerce (1st ed.). LAP LAMBERT Academic Publishing. https://www.perlego.com/book/3366427/food-ecommerce-informationtechnology-and-marketing-perspective-of-its-success-factors-pdf

Bonning, K., Rader, E. and Chavie, R. (1998), The global retail supply chain, In Strategic Supply Chain Alignment Best Practice in supply chain management, Ed. Gattorna J., Gower Publishing Limited, Brookfield.

Bryman, A. & Bell, E., 2015, Business Research Methods. 4th Edition. Oxford University Press

Carter, C R and Ellram, L M (1998) Reverse logistics: a review of the literature and framework for further investigation, Journal of Business Logistics, 19 (1), pp 85–102

Chaffey, D. (2007). E-Business and E-Commerce Management (3rd ed.). Pearson Education Limited.

Cho, M., Bonn, M.A. and Li, J.J. (2019), "Differences in perceptions about food delivery apps between single-person and multi-person households", International Journal of Hospitality Management, Vol. 77, pp. 108-116.

Christopher, M. (1998). Logistics and supply chain management: Strategies for reducing cost and improving service (2nd ed.). Financial Times Prentice Hall.

Cơ Sở Dữ Liệu Quốc Gia Về Văn Bản Pháp Luật. Law On Food Safety. https://vbpl.vn/boyte/Pages/vbpqen-toanvan.aspx?dvid=325&ItemID=10497

Council of Supply Chain Management Professionals. CSCMP Supply Chain Management Definitions and Glossary. https://cscmp.org/CSCMP/Educate/SCM_Definitions_and_Glossary_of_Terms.aspx

Daly, S P and Cui, L X (2003) E-logistics in China: Basic problems, manageable concerns and intractable solutions, Industrial Marketing Management, 32 (3), pp 235–42

De Villiers G, Nieman G, Niemann W. Strategic logistics management 2 (2nd ed.). Van Schaik Publishers. https://www.perlego.com/book/2420806/strategic-logistics-management-2-a-supply-chain-management-approach-pdf

Djurfeldt, G., Larsson, R., Stjärnhagen, O. (2010). Statistisk verktygslåda 1 : samhällsvetenskaplig orsaksanalys med kvantitativa metoder / Göran Djurfeldt, Rolf Larsson, Ola Stjärnhagen ; [fackgranskning: Ulla Johnsson-Smaragdi och Björn Holmquist]. Lund : Studentlitteratur.

Morganti, E., Gonzalez-Feliu, J. (2015). The last food mile concept as a city logistics solution for perishable products. Chapter Enterprise Interoperability, John Wiley & Sons, Ltd (2015), pp. 202-207.

Elogii (2021, March). The Impact of COVID-19 on Last-Mile Delivery. https://elogii.com/blog/last-mile-delivery-covid-19/

Fernie, J., Sparks, L. and McKinnon, A.C. (2010), "Retail logistics in the UK: past, present and future", International Journal of Retail and Distribution Management, Vol. 38 Nos 11/12, pp. 894-914.

Fink, A., 2009. How to conduct surveys A step-by-step guide, 4th edition., Sage, p.56.

Gevaers, R., Van de Voorde, E. & Vanelslander, T. (2009). Technical and process innovations in green logistics: opportunities, barriers and best practices by using case studies. In C. Macharis (Ed.), Proceedings of the BIVEC-GIBET Transport Research Day (pp. 227-243), Brussels: VUBPress.

Grant, D., Wong, C. Y., & Trautrims, A. (2017). Sustainable Logistics and Supply Chain Management (2nd ed.). Kogan Page. https://www.perlego.com/book/1589378/sustainable-logistics-and-supply-chain-management-principles-and-practices-for-sustainable-operations-and-management-pdf

Gunasekaran, A, Ngai, E W T and Cheng, T C E (2007) Developing an e-logistics system: A case study, International Journal of Logistics Research and Applications, 10 (4), pp 333–49

Guven, H. (2020). "Industry 4.0 and Marketing 4.0: In Perspective of Digitalization and E-Commerce", Akkaya, B. (Ed.) Agile Business Leadership Methods for Industry 4.0, Emerald Publishing Limited, Bingley, pp. 25-46. https://www.emerald.com/insight/content/doi/10.1108/978-1-80043-380-920201003/full/html

Joseph, S, Laura, M M and Srinivas, T (2004) E-logistics and the natural environment, Supply Chain Management: An international journal, 9 (4), pp 303–12

Kämäräinen, V., Saranen, J. and Holmström, J. (2001), “The reception box impact on homedelivery efficiency in the e-grocery business”, International Journal of Physical Distribution and Logistics Management, Vol. 31 No. 6, pp. 414-426

Leroux, N., Wortman, M.S. Jr and Mathias, E.D. (2001) Dominant factors impacting the development of business-to-business (B2B) e-commerce in agriculture. International Food and Agribusiness Management Review 4(2), 205–218.

Lewis, A. (2000), "@ Your Service Future Models of Retail Logistics", Report to Retail Logistics Task Force of Foresight program, UK, p.36.

Logistiikan Maailma. Electronic Commerce and Logistics. https://www.logistiikanmaailma.fi/en/logistics/digitalization/electronic-commerce-and-logistics/

Logistiikan Maailma. Logistics. https://www.logistiikanmaailma.fi/en/logistics/

Magee, J.F., Copacino, W.C. and Rosenfield, D.B. (1985), Modern Logistics Management-Integrating Marketing, Manufacturing, and Physical Distribution, John Wiley & Sons, New York, p. 430.

Mangan, J., Lalwani, C., & Calatayud, A. (2020). Global Logistics and Supply Chain Management (4th ed.). Wiley. https://www.perlego.com/book/2089855/global-logistics-and-supply-chain-management-pdf

Manners-Bell, J., & Lyon, K. (2019). The Logistics and Supply Chain Innovation Handbook (1st ed.). Kogan Page. https://www.perlego.com/book/1589755/the-logistics-and-supply-chain-innovation-handbook-disruptive-technologies-and-new-business-models-pdf

McKinnon, A. (1996), "The Development of Retail Logistics in the UK" Report to UK Technology Foresight Programme Retail and Distribution Panel, School of Management Heriot-Watt University, November 1996, p.47.

Morganosky, M.A. and Cude, B.J. (2000), “Consumer response to online grocery shopping”,International Journal of Retail & Distribution Management, Vol. 28 No. 1,pp. 17-26

Ninja Van Group x DPDGroup (2021). E-commerce Barometer 2021: Uncovering Southeast Asia (SEA) online shoppers & delivery preferences. https://media.ninjavan.co/sg/wp-content/uploads/sites/9/2022/04/REPORT-Ninja-Van-Group-x-DPDGroup_-E-commerce-Barometer-Report-1.pdf

Qandme (2022). Food delivery trend in Vietnam 2022. https://qandme.net/en/report/food-delivery-trend-in-vietnam-2022.html

Quinn, M. 2015. “Make that ‘last mile’ count”. Logistics News Warehouse Annual.

Reputa (2021). Báo cáo thị trường Dịch vụ Giao thức ăn trực tuyến Việt Nam 2020. https://www.reputa.vn/blog-detail/download-bao-cao-thi-truong-dich-vu-giao-thuc-an-truc-tuyen-viet-nam-2020

Ganbold, S. (2021, Mar 29). Statista. Forecasted size of e-commerce market in the ASEAN region from 2015 to 2025. https://www.statista.com/statistics/763075/forecasted-size-ecommerce-market-asean-region/

Saunders, M., Lewis, P. and Thornhill, A. (2019). Research Methods for Business Students. 8th ed. New York: Pearson.

Statista. Online Food Delivery – Vietnam. https://www.statista.com/outlook/dmo/eservices/online-food-delivery/vietnam

Stohargen, N. G. (2018). Logistik: Grunder och möjligheter (Upplaga 5:1.). Liber AB.

Storhagen, NG (2011). Logistik: Grunder ock possibilities. Liber.

Vietnam Credit (2021). Chances And Challenges Of E-logistics In Vietnam. https://vietnamcredit.com.vn/news/chances-and-challenges-of-e-logistics-in-vietnam_14550

Wilson, H., Daniel, E. and Davies, I.A. (2008) The diffusion of e-commerce in UK SMEs. Journal of Marketing Management 24(5–6), 489–516.

Xing, Y., Grant, D.B., McKinnon, A.C. and Fernie, J. (2010), "Physical distribution service quality in online retailing", International Journal of Physical Distribution & Logistics Management, Vol. 40 No. 5, pp. 415-432.

Yen, H. (2019, Jan 9). Demand for e-logistics in Vietnam projected to boom. *Hanoi Times.* https://hanoitimes.vn/demand-for-e-logistics-in-vietnam-projected-to-boom-2145.html

Appendices 1: Survey Questions

Last mile food delivery challenges in e-logistics in Vietnam

Hi, I'm Dat Nguyen - a third year student at Arcada University of Applied Science. This survey is about Last mile food delivery service in e-logistics in Vietnam.

Last mile is defined as the final leg in a business-to-consumer delivery service whereby the consignment is delivered to the recipient, either at the recipient's home or at a collection point. Meanwhile, e-logistics serves as a support to fulfill online orders for electronic commerce.

This survey takes only 2 mins to finish. The purpose of this survey is to collect your experience on online food purchasing in Vietnam. All responses are highly confidential and used only internally for my thesis. Thank you so much for sharing your time to fill this survey.

Section 1

Part 1: Consumers' background and general information

1. What is your gender? *

- ◯ Female
- ◯ Male

2. How old are you? *

- ◯ Less than 22
- ◯ 22 - 39
- ◯ 40 - 55
- ◯ More than 55

3. What is your occupation? *

- ◯ Student
- ◯ Office worker
- ◯ Freelancer
- ◯ Unemployed
- ◯ Retired
- ◯ Other

4. How often do you order food online? *

Less often ☆ ☆ ☆ ☆ ☆ Very often

5. What kind of food do you often order? *

- ◯ Restaurant-prepared food
- ◯ Meal kit
- ◯ Meat
- ◯ Grocery
- ◯ Veggie
- ◯ Dairy
- ◯ Drinks

6. Which one of the delivery modes do you mostly use? *

- ◯ Pick up from physical stores
- ◯ Home delivery
- ◯ Pick-up points (gas stations, malls, post offices)
- ◯ Delivery box (by courier companies, outside the consumer's home)

Part 2: Consumer's behaviour towards last mile food delivery service

Logistics providers for example, Baemin, Grab, Shopee food, etc.

7. How important for you is the delivery time provided by the logistics provider? *

Less important ☆ ☆ ☆ ☆ ☆ Very important

8. How important is the shipping cost for you? *

Less important ☆ ☆ ☆ ☆ ☆ Very important

9. How important is the ease of returning goods to you? *

Less important ☆ ☆ ☆ ☆ ☆ Very important

10. Once you are satisfied with one logistics provider, you don't want to change to another one *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

Part 3: Last mile food delivery challenges and suggestions

11. When ordering food online, you are satisfied with the information you received from the logistics provider (the one you mostly use) (e.g., shipping notes, order confirmation, invoices, etc.) *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

12. The food you order is usually available *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

13. How long time does it take to receive your food after making the order? *

- ◯ 0 day (same day delivery)
- ◯ 1-2 days
- ◯ 3-7 days
- ◯ More than 7 days

14. You receive your order according to the estimated time by the logistics provider *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

15. You often receive the wrong items for your food order *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

16. The food is usually fresh when you receive it *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

17. You find it easy to contact the logistics provider if anything's wrong with your order *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

18. The logistics provider handles claims/exchanges about your order quickly and effectively *

Strongly disagree ☆ ☆ ☆ ☆ ☆ Strongly agree

19. What do you see as the most challenge in food delivery service generally? *

- ◯ High costs
- ◯ Quality of food
- ◯ Can't get same-day delivery
- ◯ Mishandling of ordered food items
- ◯ Late/delayed delivery
- ◯ Bad service from the logistics provider
- ◯ Lack of shipping/tracking information during delivery
- ◯ Lack of availability of food

20. What do you suggest to improve in food delivery service? (for example, develop pick-up points, on time delivery, shipper's behaviour, etc.) *

Enter your answer