

Logistics Factors Affecting Entrepreneurs' Decisions to Select Private Parcel Delivery Services through Online Sales Channels

Anuch Nampinyo¹ and Piyamas Klakhaeng²

^{1,2} Instructor College of Logistics and Supply Chain, SuanSunandha Rajabhat University, Thailand

*Corresponding author

E-mail: ¹ anuch.na@ssru.ac.th, ² piyamas.kl@ssru.ac.th

Abstract

Introduction: The growth of e-commerce businesses has increased the importance of logistics and transportation in enhancing the competitiveness of online entrepreneurs. Selecting efficient private logistics service providers can help increase customer satisfaction, reduce costs, and build business credibility. **Objectives:** This study aims to examine the effects of (1) personal factors, (2) organizational factors, (3) psychological factors, and (4) logistics factors on the decision to select private logistics service providers among online entrepreneurs. **Methods:** The study employed a sample of 400 online entrepreneurs who used private parcel delivery services. Data were analyzed using descriptive statistics and inferential statistics, including One-Way Analysis of Variance (One-Way ANOVA), F-tests, and multiple regression analysis. **Results:** The results revealed that the personal factor of gender significantly influenced the decision to select private logistics service providers. In contrast, organizational factors had no significant effect on the decision. Psychological factors, particularly motivation, significantly affected the decision to use private logistics services. Furthermore, logistics factors—namely service technology systems, delivery time, and cargo security—had a statistically significant influence on the decision to select private logistics service providers at the 0.05 level.

Keywords: Logistics factors, Decision to select services, Private freight

1. Introduction

In the context of the digital economy, the logistics system is regarded as a crucial mechanism that directly contributes to enhancing the competitiveness of the business sector, particularly in transportation management. Logistics performance significantly affects service quality, customer satisfaction, as well as the image and credibility of organizations. Therefore, the decision to select an appropriate and efficient logistics model or service provider is a key factor in reducing business costs, increasing delivery speed, and creating competitive advantages. Conversely, selecting an unsuitable service provider may result in higher costs, delivery delays, and long-term negative impacts on customer trust.

According to a report by the Office of the National Economic and Social Development Council (2025), Thailand's logistics system continues to play a significant role in the country's economic structure, especially in terms of logistics costs, which account for a substantial proportion of the Gross Domestic Product (GDP). This reflects the necessity for continuous development and enhancement of logistics system efficiency, particularly in infrastructure, service provider capabilities, and the application of digital technologies to support

transportation and shipment tracking. Such development aligns with the country's current and future economic development directions.

At the same time, the continuous growth of e-commerce businesses in Thailand has led to a marked increase in demand for logistics and delivery services, especially among small and medium-sized enterprises (SMEs), which rely heavily on logistics companies as a primary mechanism for connecting sellers and consumers. The increasing number of logistics service providers, both in the form of private courier companies and application-based platforms, has intensified competition in the logistics market. As a result, entrepreneurs now have a wider range of options when selecting logistics services.

Therefore, the researcher is interested in studying logistics-related factors that influence the decision to choose private logistics service providers among online retailers in Bangkok and the metropolitan area. The objective is to identify the key factors affecting the selection of logistics services and to apply the research findings as supporting information for improving and developing the services of private logistics providers. This will help ensure greater efficiency, alignment with user needs, and the ability to sustainably support the future growth of the e-commerce business sector.

1.1 Research Objective

- To analyze personal factors influencing online entrepreneurs' decisions to select private logistics service providers.
- To examine organizational characteristics that influence online entrepreneurs' decisions to select private logistics service providers.
- To analyze psychological factors affecting online entrepreneurs' decisions to select private logistics service providers.
- To evaluate logistics-related factors influencing online entrepreneurs' decisions to select private logistics service providers.

2. Literature review

2.1 Concepts and Theories of E-commerce Business

Kawa and Maryniak (2021) define electronic commerce (e-commerce) as business activities involving the buying and selling of goods and services, payment processing, advertising, and customer service conducted through electronic media, particularly the Internet. The World Trade Organization (WTO) defines e-commerce as the production, distribution, marketing, sale, or delivery of goods and services by electronic means. The rapid growth of the Internet and digital technologies has significantly increased the importance of e-commerce in contemporary business operations. Kotler and Keller (2016) state that e-commerce businesses enhance efficiency in reaching consumers, reduce time and location constraints, increase competitive opportunities, and facilitate market expansion at both domestic and international levels. Consequently, e-commerce has become a crucial tool for creating competitive advantage for entrepreneurs. E-commerce can be classified into four main types:

- **Business to Business (B2B):** Transactions conducted electronically between business organizations.
- **Business to Consumer (B2C):** Online transactions involving the sale of goods and services from businesses to consumers.

- **Business to Government (B2G):** Electronic transactions or communications between business organizations and government agencies.
- **Consumer to Consumer (C2C):** Transactions conducted directly between consumers through online platforms.

2.2 Concepts and Theories of Transportation

Transportation is a vital component of the logistics system, responsible for moving goods and services from producers to consumers at the right time, place, and quantity. Its primary objectives are to improve operational efficiency, reduce costs, and enhance customer satisfaction. From a logistics perspective, transportation is considered an integral part of the supply chain and requires systematic planning and management to ensure effective integration with business activities. The Bank of Thailand (2023) reports that efficient transportation reduces delivery lead time, minimizes product damage, and enhances organizational competitiveness.

From a theoretical perspective, the Total Cost Concept explains that transportation decisions should consider all related costs, including transportation costs, inventory holding costs, and costs associated with delivery delays. Meanwhile, the Just-in-Time (JIT) concept emphasizes fast and accurate transportation to reduce inventory levels and improve business flexibility. In addition, transportation is closely related to service quality concepts, which include speed, accuracy, reliability, and safety. These factors significantly influence customer satisfaction and users' decisions to select transportation services, particularly in the context of e-commerce businesses (Chen & Li, 2023).

2.3 Concepts of Freight and Logistics Service Providers

Freight or logistics service providers refer to organizations or businesses that offer services for transporting goods, raw materials, or parcels from senders to recipients under agreed conditions. They play a crucial role in logistics systems and supply chains by supporting efficient business operations. Conceptually, logistics service providers act as intermediaries connecting manufacturers, entrepreneurs, and consumers, with a focus on accurate, timely, safe, and cost-effective delivery.

Effective logistics services help reduce logistics costs, improve operational flexibility, and strengthen the competitiveness of service users. From a management perspective, logistics service providers must systematically plan and control transportation processes and adopt information technologies, such as shipment tracking systems and logistics information systems, to enhance accuracy, speed, and service reliability. Service quality concepts suggest that key factors of logistics service providers include timeliness, delivery accuracy, cargo safety, ease of communication, and reliability. These factors significantly influence satisfaction and service selection decisions, especially in the context of e-commerce businesses (Ding et al., 2021).

2.4 Concepts and Theories of Transportation Service Quality

Wilasinee Sitthisophon (2021) explains that transportation service quality refers to the service provider's ability to deliver goods accurately, on time, safely, and in accordance with customer expectations. It is a critical factor affecting customer satisfaction, trust, and decisions to use transportation services.

Theoretically, service quality can be explained using the SERVQUAL model, which suggests that service quality results from the gap between customer expectations and perceptions. In transportation services, relevant dimensions include delivery reliability, service speed, cargo safety, responsiveness to problems, and customer care. Additionally, the Just-in-Time (JIT) concept emphasizes time accuracy in transportation to reduce delays and inventory costs. The Total Cost Concept further indicates that transportation service quality contributes to reducing overall logistics costs, such as costs related to damaged goods and delayed deliveries.

In summary, transportation service quality is a strategic factor that plays a vital role in logistics efficiency, customer satisfaction, and the competitiveness of both service providers and users, particularly within the e-commerce business context (Mangiaracina et al., 2022).

2.5 Concepts and Theories of Decision Making

Jatuporn LertHirunpunya (2020) defines decision making as the process of selecting the most appropriate alternative from several options under given information, conditions, and constraints to achieve specific objectives. Decision making is a fundamental process in management and business operations.

Theoretically, decision making can be explained through the Rational Decision-Making Model, which consists of key steps including problem recognition, information gathering, identification and evaluation of alternatives, decision selection, and post-decision evaluation. This model emphasizes the use of data and rational analysis to maximize benefits.

In addition, Consumer Behavior Theory proposed by Ajzen (1991) explains that individual decisions are influenced by personal, psychological, and social factors, which shape perceptions, values, and satisfaction with available alternatives. In the context of selecting transportation services, users typically consider factors such as price, service quality, reliability, and convenience. Overall, decision making is a complex process influenced by both rational and behavioral factors and serves as an appropriate conceptual framework for explaining transportation service selection in research studies.

2.6 Psychological Factors Influencing the Decision to Select Freight Transportation Service Providers

Psychological factors are internal factors that significantly influence users' perceptions and decisions to select freight transportation service providers. Users evaluate service providers based on perceived image, reliability, and service quality. Motivations such as the need for speed, safety, and cost reduction affect the selection of logistics companies capable of meeting these needs. Attitudes formed through past service experiences and information exposure influence service selection tendencies. Beliefs and expectations regarding on-time and accurate delivery standards also play a crucial role in determining satisfaction levels and service selection decisions, particularly in the context of e-commerce businesses (Ramanathan et al., 2021).

2.7 Logistics Factors Influencing the Decision to Select Freight Transportation Service Providers

Logistics factors are key determinants influencing the decision to select freight transportation service providers. Users primarily consider delivery performance, including speed, timeliness, delivery accuracy, and cargo safety. Transportation costs and price fairness

also significantly affect decision making alongside service quality. Furthermore, service coverage area, ease of communication, shipment tracking convenience, and effective problem management in cases of delays or damage influence user satisfaction and service selection decisions, especially in the e-commerce business environment (Pimonrattanakan et al., 2023).

2.8 Related Studies

A review of related literature indicates that Kittisak Suksombat and Waraporn Chuwong (2023) found logistics factors to play a significant role in decisions to select freight transportation service providers, particularly in highly competitive e-commerce environments. Most studies emphasize service quality components such as speed, reliability, and provider image, all of which significantly influence user satisfaction and service usage behavior.

Statista (2023) reported that brand image, customer satisfaction, word-of-mouth, and customer loyalty positively influence repeat service usage among users of Thailand Post and Kerry Express. Customer satisfaction was identified as the most influential factor, highlighting the importance of service quality and user experience. Similarly, Nichapat Buakaew (2019) found that service quality in terms of reliability, responsiveness, and logistics process efficiency directly affects repeat usage decisions.

Recent studies consistently confirm that logistics service quality, delivery timeliness, cargo safety, parcel tracking systems, price value, and service provider image are critical factors influencing service selection and repeat usage among entrepreneurs and consumers in the digital era. In conclusion, these logistics-related factors provide a clear and relevant framework for defining independent variables in research, aligning well with current business practices and competitive environments.

3. Methodology

3.1 Scope of the Study

This study aims to examine factors influencing online entrepreneurs' decisions to select private freight transportation service providers. The independent variables include personal factors, organizational characteristics, psychological factors, and logistics factors. The logistics factors comprise transportation cost, customer service, technological systems, transportation time, and cargo safety. The dependent variable is the decision to select private freight transportation service providers.

The population of this study consists of entrepreneurs operating businesses through online channels who have experience in selecting private freight transportation service providers. A sample size of 400 respondents was determined using statistical sampling principles.

This study was conducted in Bangkok and the metropolitan area, as these regions have a high concentration of e-commerce activities and extensive utilization of private freight transportation services. Data were collected over a one-month period in October 2025.

3.2 Population and Sample

The population of this study includes 7,393 online entrepreneurs who utilize private parcel delivery services, according to data from the Department of Business Development (2024).

The sample consists of online entrepreneurs who select private parcel delivery services. The sample size was determined using Yamane's (1967) formula at a 95% confidence level with a

margin of error of 5%, resulting in a sample of 400 respondents. Convenience sampling was employed to collect data through questionnaires until the required sample size was achieved.

3.3 Research Instrument

The research instrument used in this study was a questionnaire developed based on a review of relevant literature, concepts, theories, and previous studies related to logistics factors and online entrepreneurs' decisions to select private freight transportation service providers.

The questionnaire was divided into four sections:

Section 1: General information of respondents, including gender, age, education level, experience in online business operations, and type of business.

Section 2: Organizational characteristics, including business size, product type, duration of business operation, and shipment volume.

Section 3: Logistics factors influencing the decision to select private freight transportation service providers, such as delivery speed, delivery accuracy, cargo safety, service convenience, and transportation cost. A five-point Likert scale was used.

Section 4: Decision to select private freight transportation service providers by online entrepreneurs, measured using a five-point Likert scale.

The questionnaire was reviewed for content validity by three experts. Reliability testing indicated that the Cronbach's alpha coefficients ranged from 0.782 to 0.983, exceeding the acceptable threshold of 0.70, demonstrating that the instrument was reliable and appropriate for data collection (Hair, Black, Babin, & Anderson, 2023).

3.4 Data Collection

Data were collected using self-administered questionnaires (Andres, 2021) distributed through Google Forms. The questionnaires were disseminated via four major social media platforms: Facebook, Twitter, Instagram, and Line. Data collection was conducted over a one-month period.

This study employed primary data collected directly from the sample through questionnaires. The collected data were analyzed using descriptive and inferential statistical methods to achieve the research objectives.

3.5 Data Analysis

Data analysis was conducted using statistical software. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe general information and study variables. Inferential statistics, including t-tests, one-way analysis of variance (ANOVA), and multiple regression analysis, were employed to test hypotheses regarding factors influencing online entrepreneurs' decisions to select private freight transportation service providers. The level of statistical significance was set at 0.05.

4. Results

- Online entrepreneurs place a high level of importance on overall logistics factors, particularly delivery speed, delivery accuracy, and cargo safety.
- Differences in personal factors and organizational characteristics significantly affect online entrepreneurs' decisions to select private freight transportation service providers at the **0.05** level of statistical significance.
- Logistics factors have a statistically significant influence on online entrepreneurs' decisions to select private freight transportation service providers.

Table 1: General Characteristics of Respondents (Personal Variables)

Variable	Most Frequent Group	Summary
Gender	Female	The majority of respondents were female.
Age	31–40 years	Most respondents were in the working-age group.
Education Level	Bachelor's degree	Respondents had attained a higher education level.
Average Monthly Income	20,001–30,000 THB	Respondents were in the middle-income group.
Marital Status	Single	Respondents demonstrated greater flexibility in business operations.

Based on Table 1, the majority of respondents, who were online entrepreneurs, were female, aged between 31 and 40 years, held a bachelor's degree, had a moderate level of average monthly income, and were single. These findings indicate that the sample primarily consisted of working-age individuals who possess adequate educational background and readiness to utilize technology in conducting online business operations.

Table2: Organizational Characteristics of Online Entrepreneurs

Variable	Most Frequent Group	Summary
Type of Business	Online retail/wholesale	The business relies heavily on transportation services.
Business Age	1–3 years	The business is in the early to intermediate stage.
Average Business Income	Not exceeding 500,000 THB/month	The business operates at a small-scale revenue level.
Business Size	Small-sized enterprise	There is a need to control logistics costs.
Business Location	Bangkok and metropolitan area	The area serves as a hub for online commerce.

Based on Table 2, shows that most respondents operated online retail or wholesale businesses, had been in operation for 1–3 years, earned no more than 500,000 THB per month, and were small-sized enterprises, primarily located in Bangkok and the metropolitan area. These results indicate that online businesses using private logistics services are predominantly small enterprises reliant on efficient logistics systems.

Table 3: Level of Opinions on Psychological Factors

Psychological Factors	Level of Opinion	Interpretation
Overall	High	Influences decision making
Motivation	High	Stimulates service selection
Perception	High	Reflects perceived service quality
Learning	High	Based on prior experience
Attitude	High	Indicates a positive attitude
Personality	High	Affects decision-making patterns

Based on Table 3, online entrepreneurs reported a high overall level of opinions toward psychological factors. All dimensions—motivation, perception, learning, attitude, and personality—were rated at a high level, indicating that psychological factors play a significant role in the decision to select private freight transportation service providers.

Table 4: Level of Opinions on Logistics Factors

Logistics Factors	Level of Opinion	Interpretation
Overall	High	A primary factor in decision making
Cost	High	Considered in terms of value for money
Customer Service	High	Emphasis on convenience and problem resolution
Technological Systems	High	Support shipment tracking
Transportation Time	High	Speed is a critical concern
Cargo Safety	High	Reduces transportation risk

As shown in Table 4, online entrepreneurs reported a high overall level of opinions toward logistics factors. All dimensions—cost, customer service, technological systems, transportation time, and cargo safety—were rated at a high level, indicating that logistics factors are key determinants in selecting private freight transportation services.

Table 5: Results of Hypothesis Testing

Hypothesis	Independent Variable	Test Results	Conclusion
H1	Personal factors	Gender differences were statistically significant	Partially supported
H2	Organizational characteristics	No statistically significant differences	Not supported
H3	Psychological factors	Significantly related to decision making	Supported
H4	Logistics factors	Significant influence on decision making	Supported

As shown in Table 5, gender as a personal factor significantly affected the decision to select private freight transportation service providers; therefore, H1 was partially supported. Organizational characteristics did not have a statistically significant effect on the decision, leading to the rejection of H2. In contrast, psychological factors and logistics factors were

significantly related to and had a significant influence on the decision to select private freight transportation service providers; thus, H3 and H4 were supported.

Table 6: Factors Influencing the Decision to Select Private Freight Transportation Services (Multiple Regression Analysis)

Factor Group	Sub-factors	Statistical Significance (p-value)
Psychological factors	Motivation	0.05
Logistics factors	Technological systems	0.05
	Transportation time	0.05
	Cargo safety	0.05

As shown in Table 6, the multiple regression analysis revealed that psychological and selected logistics factors significantly influenced online entrepreneurs' decisions to select private freight transportation service providers at the 0.05 significance level. Motivation exerted a positive influence on the decision. In terms of logistics factors, technological systems, transportation time, and cargo safety were found to have statistically significant effects, indicating that online entrepreneurs prioritize system modernity, delivery speed, and cargo safety when selecting private logistics services.

5. Conclusion

The results show that gender significantly influenced online entrepreneurs' decisions to select private freight transportation service providers, while age, education level, income, and marital status had no significant effects. This suggests that gender-related behavioral differences may affect decision-making processes, whereas other personal characteristics are relatively uniform due to comparable access to digital technologies.

No significant differences were found for organizational characteristics, indicating that online entrepreneurs share similar logistics needs and prioritize service efficiency over firm-specific attributes.

Regarding psychological factors, motivation significantly influenced service selection, reflecting the importance of customer satisfaction, service confidence, and delivery reliability. Additionally, logistics factors, including technological systems, transportation time, and cargo safety, had significant effects on decision making, highlighting the critical role of advanced tracking systems, fast delivery, and secure transportation in enhancing competitiveness in the e-commerce market.

- Private parcel delivery companies should enhance their service technologies, particularly parcel tracking systems, to increase convenience and build greater trust among entrepreneurs operating through online sales channels.
- The efficiency of delivery speed and punctuality should be improved in order to better respond to the demands of the e-commerce market.
- Greater emphasis should be placed on the security of goods during transportation to minimize damage and strengthen customer confidence in the service.

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