

HEC Montréal

**Evaluating the Service Quality of Courier Companies: An Empirical Study From the  
Canadian E-commerce Customers' Perspective**

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## **Abstract**

With the rapid development of e-commerce, service quality has become a significant competitive factor in the courier delivery industry. To enhance their competitive positions, courier companies are paying more attention to service quality performance and improvement. This study aims to determine the overall service quality performance of courier companies in Canada and to identify the most significant factors that affect customers' evaluation of service quality of the courier companies that deliver their online orders.

The content of this research was designed as follows: First, a literature review was conducted to develop a service quality measurement model and identify all the attributes that affect the assessment of courier service quality. Second, interviews with supply chain management experts were conducted to verify the comprehensiveness and rationality of the identified attributes. Based on the attributes defined, we conducted an online survey to collect Canadian online shopping customer perceptions of courier service quality performance. Finally, the obtained data was verified through statistical analysis and a purified courier service quality scale was confirmed.

As a result, a courier service quality scale of 23 attributes in six dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience) was determined. The statistical analysis results revealed that although Canadian online shopping customers were generally satisfied with the courier services received, certain service quality dimension scores were relatively low. The results also suggest that the management of courier companies should mainly focus on developing service quality in the dimensions of “empathy” and “responsiveness” while ensuring decent performance in the “reliability” dimension.

**Keywords:** service quality; courier service; e-commerce; Canada

## Résumé

Avec le développement rapide du commerce électronique, la qualité du service est devenue un facteur concurrentiel important dans le secteur de la livraison par courrier. Pour renforcer leur position concurrentielle, les entreprises de messagerie accordent plus d'attention à la performance et à l'amélioration de la qualité du service. Cette étude vise à déterminer la performance globale en matière de qualité de service des entreprises de messagerie au Canada et à identifier les facteurs les plus importants qui affectent l'évaluation par les clients de la qualité de service des entreprises de messagerie qui livrent leurs commandes en ligne.

Le contenu de cette recherche a été conçu comme suit : Premièrement, une revue de la littérature a été menée pour développer un modèle de mesure de la qualité du service et identifier tous les attributs qui affectent l'évaluation de la qualité du service de messagerie. Deuxièmement, des entretiens avec des experts en gestion de la chaîne d'approvisionnement ont été menés pour vérifier l'exhaustivité et la rationalité des attributs identifiés. Sur la base des attributs définis, nous avons mené un sondage en ligne pour recueillir les perceptions des clients canadiens des achats en ligne sur la performance de la qualité du service de messagerie. Enfin, les données obtenues ont été vérifiées par analyse statistique et une échelle de qualité de service de messagerie purifiée a été confirmée.

En conséquence, une échelle de qualité du service de messagerie de 23 attributs dans six dimensions (fiabilité, assurance, éléments tangibles, empathie, réactivité et commodité) a été déterminée. Les résultats de l'analyse statistique ont révélé que même si les clients canadiens des achats en ligne étaient généralement satisfaits des services de messagerie reçus, certaines cotes de la dimension de la qualité du service étaient relativement faibles. Les résultats suggèrent également que la direction des entreprises de messagerie devrait se concentrer principalement sur le développement de la qualité de service dans les dimensions « empathie » et « réactivité » tout en assurant des performances décentes dans la dimension « fiabilité ».

**Mots-clés :** qualité de service ; messagerie; commerce électronique; Canada

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## **1. Introduction**

### **1.1 Problem Under Discussion**

In recent years, retail e-commerce has been growing quickly in Canada. From 2013 to 2020, the share of total retail sales generated in the e-commerce sector in Canada increased from 4.5 % to 10 % (Statista, 2021 a). Furthermore, the total sales revenue achieved by the e-commerce retail sector in Canada increased from USD 21,975 million in 2017 to USD 32,442 million in 2021 (Statista, 2021 b). It is also expected that by 2025, the overall sales revenue level for the e-commerce sector in Canada could reach USD 40,352 million (Statista, 2021 b). In general, Canada is considered the ninth largest e-commerce market in the world.

The spread of the COVID-19 pandemic has played a significant role in the rising demand for the e-commerce segment of the retail market. The experience of the lockdowns during the COVID-19 pandemic placed customers in a new environment and provided them more opportunities to make online purchases of retail products. A recent survey has revealed that approximately 65–80 % of customers in Canada have highly positive attitudes to online shopping under the conditions of the pandemic (Toneguzzi, 2021). Additionally, according to the statistics, March to May 2020 was characterized by an explosive growth of demand for e-commerce retail (Aston et al., 2020).

With a growing number of companies starting to sell products online, courier delivery services have become a key factor affecting customer satisfaction and future shopping intentions, as well as being one of the key competitive strengths determining the success of e-commerce companies (Jun et al., 2004; Yu et al., 2012). At the same time, the rapid growth of online shopping has extensively promoted the development of the courier delivery industry in recent years (Yu et al., 2012; Liu et al., 2008). For example, Canada Post Corporation (Canada Post), one of the major courier companies in Canada, reported that the number of parcels they delivered in 2020 increased by more than 50 % compared to 2019 (Canada Post, 2021). Therefore, in the context of a booming e-commerce market, there is a coordinated development relationship between e-commerce companies and courier companies. On the one hand, to achieve greater success, e-commerce companies require high-quality courier services provided by courier companies to improve their customer satisfaction and customer loyalty. On the other hand, with the rapid development of e-

commerce, courier companies also need to improve their service quality to attract more e-commerce companies to adopt their delivery services. It can be seen that improving the service quality of courier services is crucial to enhancing the competitiveness of both courier companies and e-commerce companies in Canada.

To form grounded insights and recommendations for the development of competitive advantages in the e-commerce retail sector of Canada, it is important to determine and assess the main variables and characteristics of the service quality of the courier business. Unfortunately, except for some customer satisfaction surveys conducted by a small number of courier companies (Statista, 2016), there are few academic studies on the quality of courier delivery services in the e-commerce sector in Canada.

This research will fill this gap by analyzing the service quality factors related to the performance of the courier business in Canada. Since the main outcome of the work of a courier company is to provide a service to end customers, it is necessary to explore customer perceptions of the current level of courier service quality and the factors that determine that quality. In addition, this research seeks to identify the most significant factors impacting the perceptions of courier service performance among customers in Canada. Determining the specific factors that affect customer assessment of the courier service quality could form a reliable basis for implementing future improvements of courier service quality.

## **1.2 Research Questions**

The overarching aim of this study is to explore the service quality attributes of courier companies in Canada and identify the key factors that affect customers' perceptions of the service quality of courier companies. Based on the identified research problem and purpose of the study, the following research questions have been determined:

- What factors could characterize the current level of service quality of the courier business in Canada?

- What are the key factors (dimensions) that affect Canadian online shopping customer perceptions of courier service quality?
- What conclusions can be made and recommendations offered for the management of courier companies in Canada?

To address the first research question, it is necessary to determine the status quo of the service quality delivered by courier companies in Canada. The development of the e-commerce retail market has led to a rapid increase of demand for courier services, and it is important to understand whether the suppliers of delivery services provide adequate service quality. A critical analysis of the status quo should demonstrate the level of demand for changes in the performance of courier services. Furthermore, it is also necessary to understand which aspects of service quality regarding the performance of courier companies are considered acceptable and satisfactory by customers and which aspects require significant improvement.

The second research question involves identifying the major factors that impact customer perception of service quality of the operations of courier companies in Canada. To effectively allocate the resources needed for the long-term strategy of business development, the management of courier companies should obtain a clear understanding of customer preferences. Consequently, companies will be able to perform an effective resource allocation procedure, reaching a high level of competitiveness in the future.

The answer to the final question of the study will provide practical recommendations for the improvement of service quality of courier companies in Canada. The practical recommendations will include the identification of specific steps to implement in the future that may allow courier companies to beat their competition.

### **1.3 Structure of the Thesis**

The structure of the thesis has been arranged in a format to meet the research objectives. The introduction chapter of the thesis provides information about the problem under discussion and the research purpose. This chapter also outlines the content of the thesis and the potential research results.

The literature review chapter summarizes the findings of an academic literature analysis made in the context of the identified research questions. The primary trends in the sphere of e-commerce retail and courier company development are considered. Specific attention is paid to two main aspects of the previous studies: definition and assessment of service quality and the attributes related to courier service quality performance. The results of the literature review form the basis of the primary data collection and analysis in the following chapters of the study.

The methodology chapter of the study discusses the research logic, survey design, methods of data collection, and analysis. The results analysis chapter presents the raw outcomes of the study after the application of the selected statistical analysis to the obtained data. In the discussion and conclusion chapter of the thesis, we present the main findings of the study, together with recommendations for the courier industry and a discussion of the study's specific limitations.

## 2. Literature Review

This chapter provides a discussion of the main questions related to the research problem based on the findings of previous academic literature. First, this chapter outlines the specific features of the target market, namely, e-commerce and courier companies in Canada. Second, to address the specified research questions, it is important to present theoretical concepts of service quality, explore the relationship between service quality and customer satisfaction, and consider the applicable methods of service quality measurement. Finally, service quality measurement models applicable for the realization of the study objectives are considered, and service quality attributes are defined. The findings of the literature review form the basis of the main variables of the study applied in the process of data collection and analysis.

### 2.1. E-commerce and Courier Services in Canada

The following section of this chapter discusses the main characteristics of the study object: e-commerce and the courier services industry in Canada. It is important to determine the main characteristics of the selected industry in Canada to identify the level of competition, the relevance of service quality improvement, and specific challenges faced by the target business organizations.

#### *2.1.1. Characteristics of E-commerce in Canada*

The e-commerce market discussed in this study is confined to the business-to-consumer (B2C) market; namely, it is the online sale of physical goods from an online retailer to an end user (EcommerceDB, 2020). The definition of e-commerce in this study excludes digitally delivered services or products purchased online, such as movie tickets purchased online, digital gift cards, and digital downloads. Online sales which are business-to-business (B2B) and consumer-to-consumer (C2C) are also excluded from the e-commerce market definition in this study.

The e-commerce market in Canada has experienced rapid development during the last years, especially under the restrictions caused by the COVID-19 pandemic. According to the relevant statistics, the retail e-commerce revenue in Canada was USD 29.9 billion in 2020 (Statista, 2020). It is expected that by 2025, the revenue for the e-commerce retail sector in Canada could total USD

40.3 billion (ITA, 2021). Altogether, the Canadian e-commerce industry demonstrates high perspectives of growth.

In 2018, non-store retailers comprised the main category of companies operating in the e-commerce sector, with 48.9 % of total retail sales generated as a result of e-commerce operations (Statista, 2019). In 2021, approximately 27 million e-commerce users were registered in Canada, equal to 72.5 % of the country's total population (ITA, 2021). It is also expected that by 2025, the share of the population in Canada relying on e-commerce retail purchases will total 77.6 % (ITA, 2021). Currently, approximately 88.5 % of the Canadian population has stable access to the internet, which provides significant opportunities for the long-term expansion of the e-commerce retail sector (ITA, 2021). The success of the e-commerce retail sector will depend on the capability of the sector to generate a high level of customer satisfaction and increase customer loyalty.

In the context of analyzing the e-commerce retail business in Canada, it is useful to consider the key categories of players operating in the market. The Ecommerce Guide (2021) has published the following rating of the leading players in the e-commerce retail sector of Canada: Amazon Canada, Kijiji, Walmart Canada, eBay Canada, Best Buy Canada, Canadian Tire, Costco Canada, Hudson's Bay, Home Depot Canada, and Newegg Canada. As can be seen, a high share of players operating in the Canadian market is represented by global brands that might lack a proper understanding of the specific features of the Canadian customer base. It is therefore advantageous for these companies to identify the perceptions of Canadian customers about e-commerce service quality.

According to Kirkwood (2019), 13 % of e-commerce retail companies in Canada considered that handling and shipping of products to customers were the primary sources of risks and failures for their business. At the same time, 15 % of business owners in Canada stated that the launch of online stores was associated with excessive financial losses (Kirkwood, 2019). From these perspectives, orientating on effective cooperation with courier companies in Canada could become a promising solution for e-commerce companies. Therefore, it is prudent to discuss the current situation in the courier business in Canada and opportunities for its future development.

### ***2.1.2. Courier Industry Characteristics***

There is often interchangeable usage between the terms “courier service”, “express service”, and “postal service” in the literature, where courier service and express service are generally considered the same. According to the General Agreement on Trade in Services (GATS), the World Trade Organization defines express service as “the services provided by courier companies that transport and deliver letters and parcels, in addition to those services provided by the national postal service administrations.” Under this definition, the delivery services provided by national postal service administrations are considered postal services. Nevertheless, whether postal services should be distinguished from courier services needs to be examined in the context of this study.

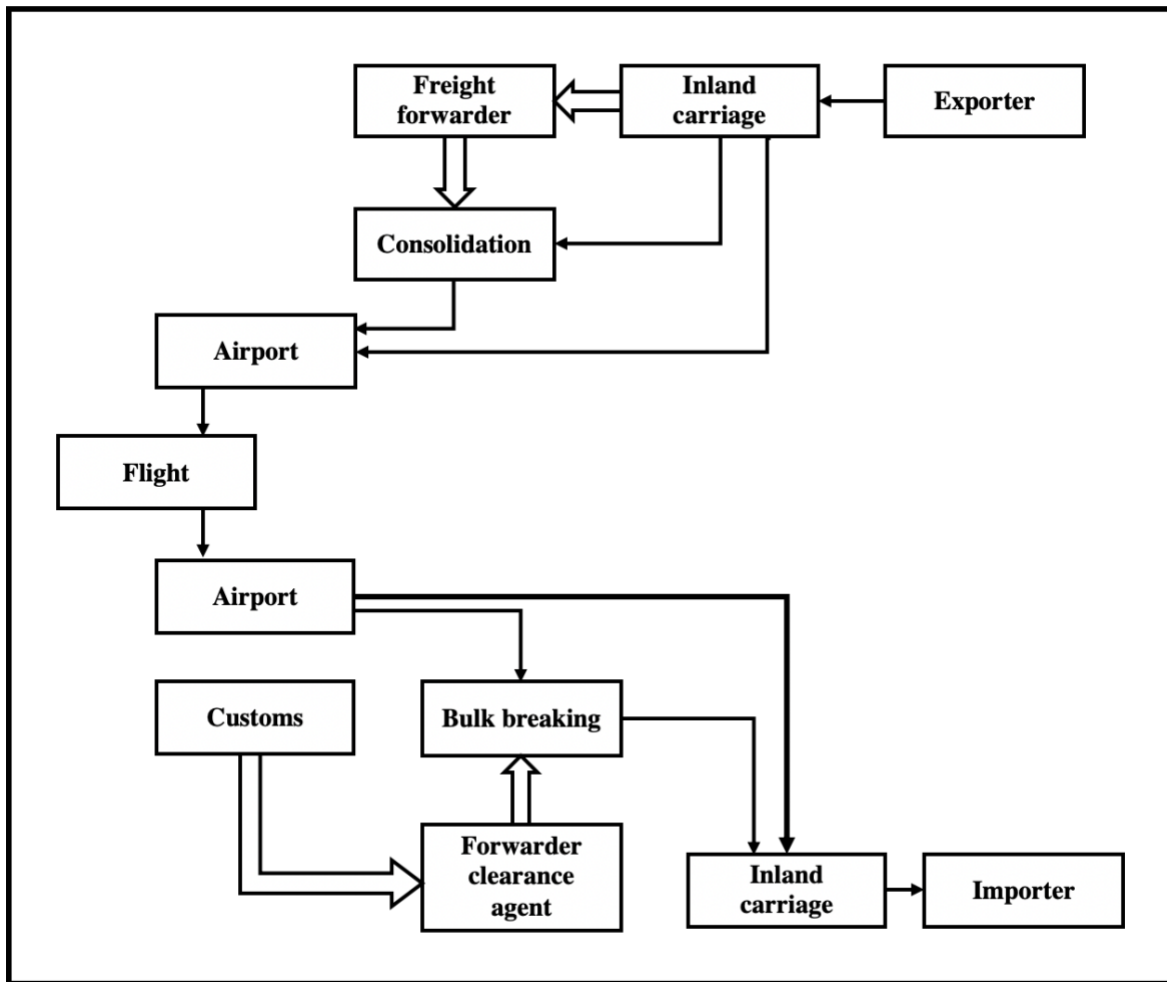
Canada’s national postal service provider and largest parcel delivery company, Canada Post, delivers almost two-thirds of online shopping parcels (Canada Post, 2016). As a result, if postal service (courier service provided by Canada Post) is excluded from the definition of courier service, this study will not be able to accurately assess the Canadian online shoppers’ perception of the courier services they receive. Additionally, the Government of Canada provides that the courier industry “comprises establishments primarily engaged in providing air, surface or combined courier delivery services. Courier establishments of the Post Office are included” (NAICS 49211). Accordingly, the courier service discussed in this study will cover both express service and postal service.

In general, a courier service refers to a type of service that includes fast door-to-door pickup and delivery of specific goods or documents. Similar to the e-commerce industry, a courier service also includes delivery of products or documents between individuals (C2C segment), business units (B2B segment), and delivery of products from a business to its customers (B2C segment) (Hordos, 2019). The main research object of this study is the courier service of the online retail sector in Canada, that is, the delivery of products from an e-tailer to a private end user. Therefore, in this research, we mainly focus on the B2C segment of courier service.

To understand how the courier service process works, it is useful to examine the types of courier services existing in the market. In terms of transportation modes, a courier service is normally provided by air, land, or a combination of both to achieve fast and efficient delivery of goods (Sunrise, 2019). With regard to shipment destination, a courier service may include both domestic and international delivery services (Sunrise, 2019). The company that provides such service is known as a courier company. The employee hired by a courier company to collect and deliver packages is called a courier.

Davies (1985) uses the international air transportation process as an example to illustrate the courier service process (Figure 2.1). A courier picks up the package from the shipper (exporter) and transports it to a hub for sorting and consolidation. Then the shipment is transported to the airport and loaded on a plane. When the shipment arrives at the destination airport, the courier company will conduct the bulk breaking, handle customs clearance, and transport goods to a warehouse for sorting. After that, a courier will deliver the package to the customer.

**Figure 2.1 Flow of Goods in International Courier Service Transport**



**Source:** Davies (1985)

The following types of activities are usually performed by the courier business in the supply chain scheme of the e-commerce retailer: warehousing; picking, packing and shipping; transportation management; and returns (Saïpe, 2013). Successful completion of all these activities in the context of the logistics model of the e-commerce retail business requires effective coordination of activities between the company, the courier business, and customers. It is therefore necessary to consider specific factors of service quality that contribute to the productive integration of the courier business into the supply chain scheme of e-commerce retailers.

The following characteristics are perceived as the key advantages of the modern courier business: fast and efficient delivery of goods to a recipient, fewer size restrictions, real-time tracking of the delivery process, professional packaging, tax benefits for a client, and bespoke services (Crosslight, 2021). From this perspective, the courier service sector is associated with a variety of benefits compared to the traditional mail service, which explains the rising demand for this type of service among different categories of customers.

In general, an e-commerce retailer can determine the terms of cooperation with the courier company that fit the demands of a customer. Accordingly, the courier service sector can be considered a highly flexible segment of the supply chain in an e-commerce retail business, which can adapt to the market's requirements (Yu et al., 2012). As a result, selecting an appropriate courier service provider can generate significant advantages for an e-commerce retail business (Jun et al., 2004; Yu et al., 2012).

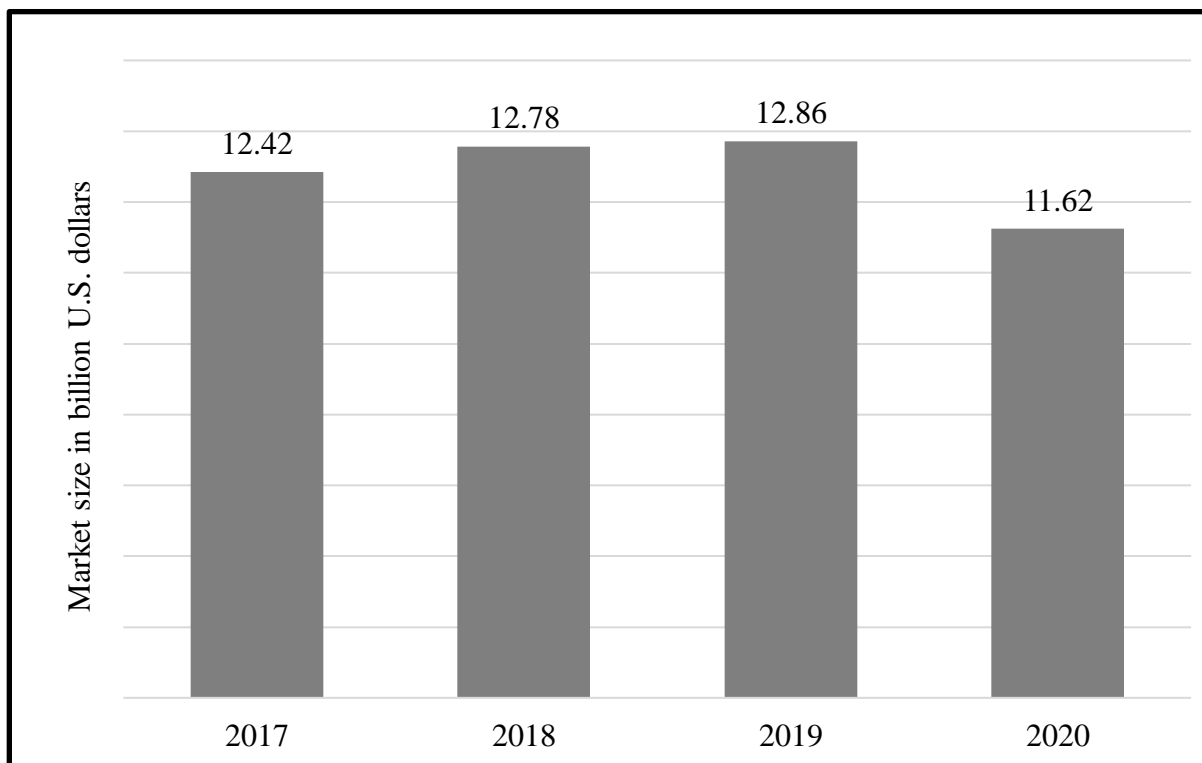
The factors that contribute to the success of courier service companies and the challenges for their future development have to be discussed as well. Research by Gulc (2021) identified the following factors for successful development of the courier service business in different countries: “efficient communication between stakeholders, the positive relationships and the customer experience with courier service, and easy contact with the courier company.” As can be seen, the positive customer experience was highlighted as one of the sources of successful development of the courier service business. Such a finding justifies the relevance of the presented study which aims to determine the factors that impact customer satisfaction with service quality.

### ***2.1.3. Courier Service in Canada***

When it comes to the discussion of the characteristics of the courier service operations in Canada, it is necessary to consider the statistics characterizing the situation in the market and the existing challenges and opportunities. An analysis of the current situation in the target market should demonstrate the relevance of the presented study of service quality for the future development of the courier business in Canada.

According to Statista (2020 b), as a result of disruptions in global supply chains and manufacturing amid the COVID-19 outbreak, the global market of courier and local delivery services dropped to USD 325.2 billion in 2020. The market is expected to recover in 2021, reaching USD 346.7 billion (Statista, 2020 b). Similarly, as we can see from Figure 2.2, the total size of the courier and local delivery services market in Canada in 2020 was USD 11.62 billion, which was a reduction compared to the market size of USD 12.86 billion in 2019 (Statista, 2020). Nevertheless, over the three years from 2017 to 2019, the Canadian market for courier services experienced a steady growth trend (Statista, 2020). However, in comparison to other regions of the world, the growth rate of the courier service business in Canada has been considerably low, especially when compared to the markets of the Asia Pacific and the Middle East (The Business Research Company, 2021). IBISWorld (2020) anticipated an increase in the level of competition of Canada's courier service industry as a result of the COVID-19 pandemic. They also suggest that as the market for industry services (B2B) shrinks, courier companies must compete more fiercely for individual customers (B2C and C2C) (IBISWorld, 2020).

**Figure 2.2 Size of the Courier and Local Delivery Services Market in Canada (2017 to 2020)**



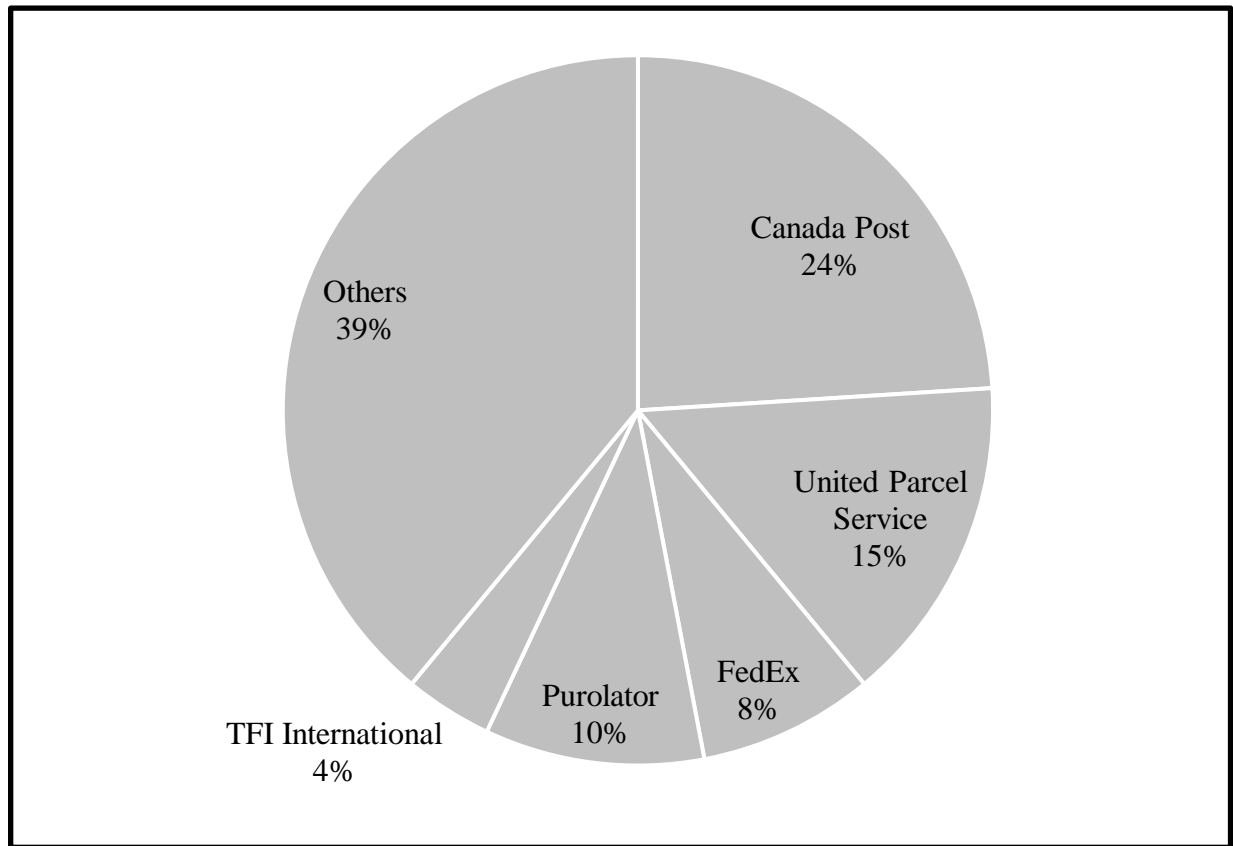
**Source:** Statista (2020)

The COVID-19 pandemic has brought not only unprecedented competition to the courier service industry in Canada but also new opportunities and potential customers. Canada Post (2021) reported that Canada's "small and medium-sized businesses quickly transitioned and grew their online sales in significant numbers." In 2020, the number of parcels received from small and medium-sized businesses in Canada increased by more than 50 % compared to 2019. The number of participants in Canada Post's Solutions for Small Business program also grew by nearly 70 % (Canada Post, 2021). As small and medium-sized businesses in Canada are taking an increasing portion of the e-commerce retail market, the opportunities for courier companies to cooperate with more online retailing businesses have also significantly increased.

The competitive landscape of the courier service market in Canada is populated by domestic and international players (Mordor Intelligence, 2021). Based on reports on Canada's courier delivery market, the following companies should be considered as the key representatives of the courier service providers that fulfil e-commerce retail orders in Canada: Canada Post, United Parcel Service (UPS), FedEx, DHL, and Purolator (Statista, 2021; EcommerceDB, 2020; IBISWorld, 2020).

Figure 2.3 displays Canada's top courier service providers used by online retailers in 2020 (Statista, 2021). Top 250 online retailers in Canada participated in this survey by indicating the delivery service providers they used in 2020. This survey reveals that Canada Post, UPS and Purolator were the top three courier companies selected by Canada's online retailers, at rates of 24 %, 15 % and 10 % respectively.

**Figure 2.3 Market share of the leading parcel shipping providers in Canada in 2020**



**Source:** Statista (2021)

Altogether, the analysis of the retail e-commerce and courier service businesses in Canada has demonstrated that the target industries are currently experiencing a period of maturing. Given the high level of competition in the market, Canada's companies should make informed decisions about a resource allocation strategy for future development (IBISWorld, 2020). In this context, the presented study could provide insights into Canadian customers' perceptions of courier service quality, which would support the online retailers and courier service providers in the process of service quality improvement.

## 2.2 Service Quality

The next question the literature review aims to address is associated with the definition of service quality as a parameter of the company's performance assessment. The relationship between service quality and customer satisfaction will be discussed as well.

### *2.2.1 Definition of Service Quality*

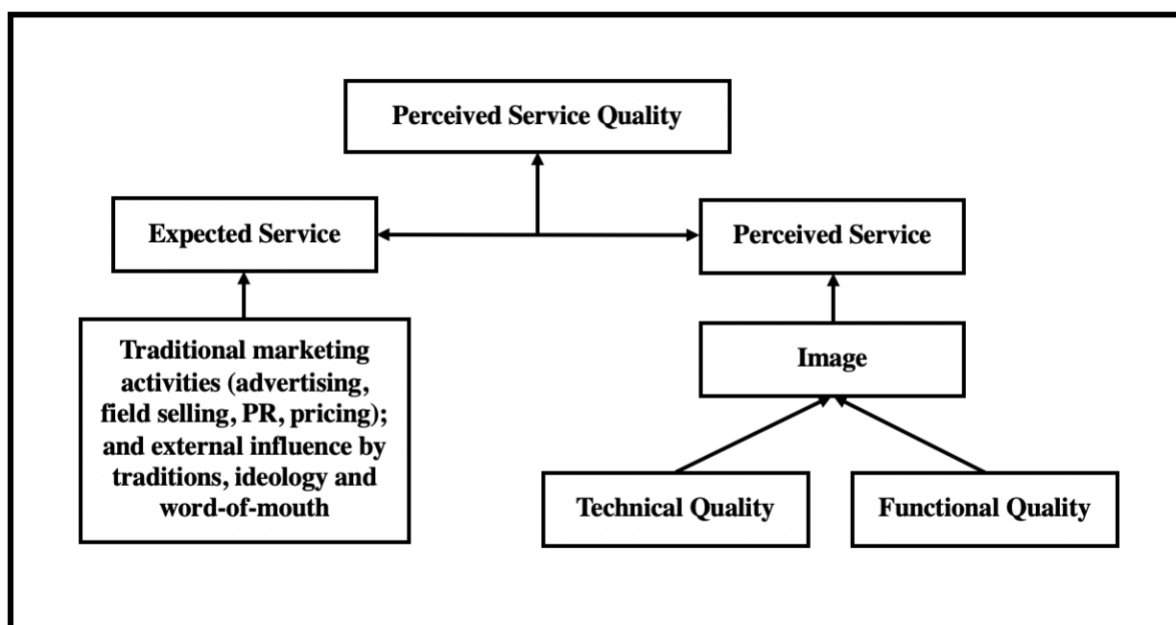
According to Grönross (2007), service can be defined as a series of intangible activities that normally involve interaction between the service provider and customers, undertaken to solve the customer's problems. Roslan et al. (2015) explain that service's intangible and heterogeneous characteristics inevitably make service quality difficult to measure. Even though the quality of certain tangible components of service can be measured, intangible components which account for most of the service activity still cannot be measured properly (Paquette et al., 2009). Therefore, scholars have been working on finding more accurate definitions of service quality for the past few decades.

Lihtinen and Lihtinen (1982) divide service quality into two dimensions: process quality, which is the customer's personal and subjective judgment of the process of service delivery, and output quality, which is the customer's evaluation of the outcome of the service. However, the first formal definition of quality in the service sector was proposed later by Gronroos (1984).

In Grönroos's service quality model (Figure 2.4), the quality of service expected by customers is determined by many factors, such as the service provider's reputation and marketing activities. Moreover, the customer's perceived service is measured by two key factors, the technical quality and the functional quality, which differentiate the quality of the service from the quality of the physical product. The perceived quality of physical products is mainly based on the service outcomes. In other words, people evaluate the quality of the physical products mostly through technical quality. However, customers need to evaluate both the technical quality (service results) and functional quality (service process) to have an integrated perception of service quality. Thus, Grönroos (1984) defines service quality as a result of customers' comparison of expectations of a service with their perceptions of the provided service. Later, Parasuraman, Zeithaml, and Berry

(1985) developed the “gap model” which provides a more cognitive explanation of the perceived quality of service.

**Figure 2.4 Grönroos Service Quality Model**

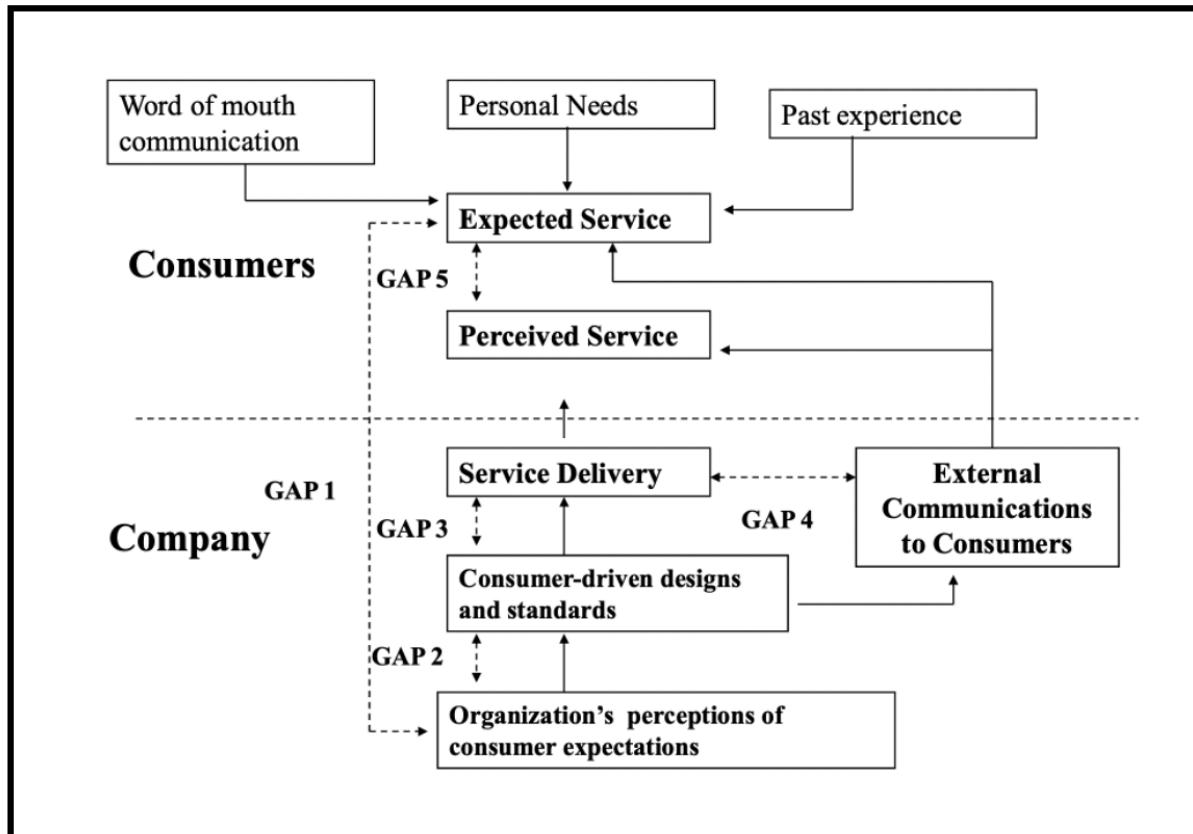


**Source:** Grönroos (1984)

Parasuraman et al. (1985) proved that there is often a gap between the expected and perceived quality of service and constructed a service quality model to demonstrate (Figure 2.5). This model identified five possible gaps. The first gap describes the relationship between customer expectations and the company’s perception of customer expectations. The management of the company can only deliver high-quality service if customers’ expectations are properly determined (Parasuraman et al., 1985). Mistakes in the definition of customer expectations could lead to wrong execution of service and low quality. The second gap considers the gap between the management’s perception of customer expectations and the quality of service specifications. The authors opine that proper understanding of customer needs might not be transformed into proper service specifications, leading to poor quality of results (Parasuraman et al., 1985). The third gap refers to the gap between service quality specifications and the actual service delivered to a customer. The fourth gap is between the delivery of service and external communications. Finally, the fifth gap

exists between customers' expectations of service and perceptions of actual service (Parasuraman et al., 1985). Based on their gap theory, Parasuraman, Zeithaml, and Berry developed a specific model for service quality measurement, SERVQUAL (1988), which will be discussed in section 2.3.

**Figure 2.5 Parasuraman, Zeithaml, and Berry's Service Quality Model**



**Source:** Parasuraman et al. (1985)

### ***2.2.2 Service Quality and Customer Satisfaction***

The term “service quality” is often used interchangeably with “customer satisfaction” in the literature, and it is difficult to distinguish between the two concepts (Caruana et al., 2000). This section seeks to address the interrelationship between service quality and customer satisfaction. In this phase of the study, it is important to highlight that service quality has a positive correlation with customer satisfaction. Such a conclusion demonstrates the relevance of the research into

service quality dimensions of the courier service industry in Canada to guarantee high customer satisfaction and long-term development of business.

First, the concept of customer satisfaction must be defined. Customer satisfaction can be defined as the result of exceeding customer expectations during and following service delivery (Fida et al., 2020). High levels of customer satisfaction due to successful fulfillment of customer expectations are also related to the development of customer loyalty. Customer loyalty can be defined as the behaviour developed by the customer, which is called repurchase behaviour, associated with the repetitive purchases of goods and services (Stan et al., 2013). Building and maintaining customer loyalty is considered one of the main objectives of the operations of a company.

One of the most important theories used to describe the relationship between service quality and customer satisfaction is the expectation disconfirmation theory proposed by Oliver (1980). This theory defines disconfirmation as the difference between the initial expectations of a customer relating to a product or service, and the end customer experience as a result of its consumption. Positive disconfirmation refers to the situation when the experience of service consumption is higher compared to customer expectations. Negative disconfirmation describes the situation when the actual experience is lower compared to customer expectations (Oliver, 1980; Kopalle & Lehmann, 2001). This definition of customer satisfaction is directly correlated with the definition of service quality, considered earlier in the literature review. It can be concluded that a customer should be satisfied with the services provided if the service is of high quality.

**Table 2.1 The Distinction Between Customer Satisfaction and Service Quality**

Customer Satisfaction	Service Quality
Customer satisfaction can result from any dimension, whether or not it is quality related.	The dimensions underlying quality judgements are rather specific.
Customer satisfaction judgements can be formed by a large number of non-quality issues, such as needs, equity, perceptions of fairness.	Expectations for quality are based on ideals or perceptions of excellence.
Customer satisfaction is believed to have more conceptual antecedents.	Service quality has less conceptual antecedents.
Satisfaction judgements do require experience with the service or provider.	Quality perceptions do not require experience with the service or provider.

**Source:** Yap and Kew (2007)

Moreover, the literature suggests that most researchers are unanimous that customer satisfaction and service quality are separate concepts but share a significant positive correlation (Parasuraman et al., 1988; Cronin & Taylor, 1992; Oliver, 1993; Kiran & Diljit, 2017; Anderson & Sullivan, 1993). Based on previous studies, Yap and Kew (2007) summarized several key elements distinguishing customer satisfaction from service quality (Table 2.1). However, when it comes to empirical studies, researchers still have difficulties distinguishing between service quality and customer satisfaction (Paquette et al., 2009). Therefore, to clarify the concepts of service quality and customer satisfaction in the presented empirical study, we consider service quality as a key antecedent that positively relates to customer satisfaction. In other words, a high quality of courier service perceived by customers indicates that customer satisfaction will be relatively high. In contrast, a low quality of courier service perceived by consumers will lead to low customer satisfaction.

## 2.3. Service Quality Measurement

Despite general agreement among researchers that service quality plays a significant role in customer satisfaction of the performance of companies, there is no consensus on one specific model in service quality measurement. In the context of this study, to properly measure e-commerce customers' perceived quality of courier services in Canada we need to focus on the specific models of service quality measurement, which will be discussed in detail. They include the following models: the SERVQUAL model, the SERVPERF model, industry specific models, and models used in measuring courier service quality.

### 2.3.1 The *SERVQUAL* Model

Based on the concept of the Grönroos model, the SERVQUAL model was developed by Parasuraman, Zeithaml, and Berry (1985) as the first step in the operationalization of the service quality measurement process. At the beginning, this model determined 10 dimensions of service quality assessment: “reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customer, and tangibles” (Parasuraman et al., 1988). After data grouping and analysis, only five dimensions were kept in the final SERVQUAL model.

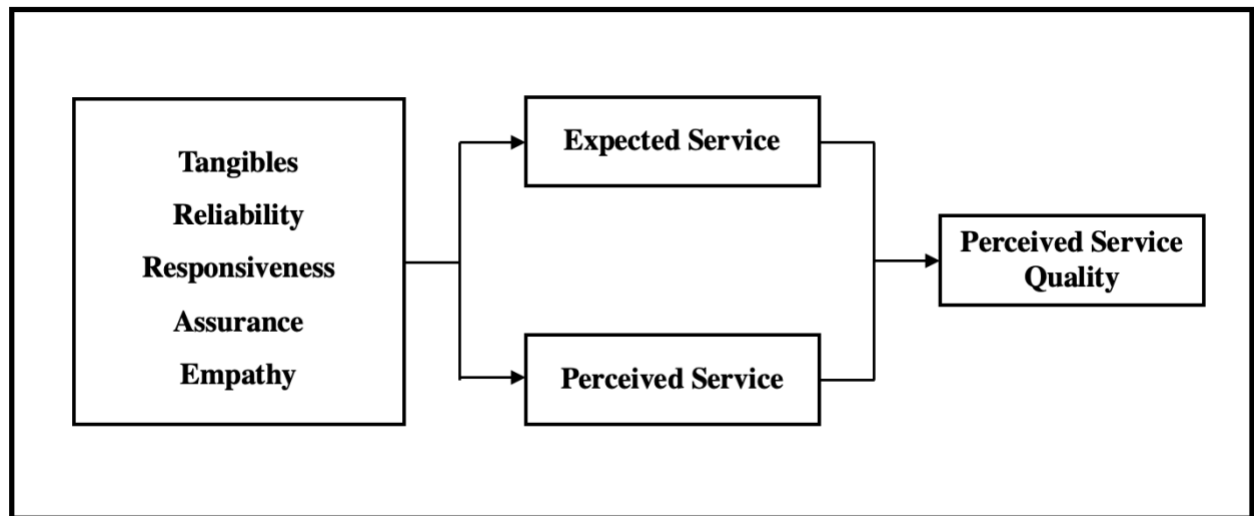
The five SERVQUAL dimensions are as follows (Parasuraman et al., 1988):

- Tangibles: appearance of physical facilities, equipment, personnel, and communication materials
- Reliability: ability to perform the promised service dependably and accurately
- Responsiveness: willingness to help customers and provide prompt service
- Assurance: knowledge and courtesy of employees and their ability to convey trust and confidence
- Empathy: caring, individualized attention the firm provides its customers

A 22 item scale was developed to measure the above five dimensions. Therefore, consumers were required to answer 44 questions to rate both expectations and performance of the service they received (22 questions each). The summary of the SERVQUAL model is presented in Figure 2.7.

The objective of the SERVQUAL model application is to measure the service quality (SQ) which is the difference between the expectation ( $E$ ) and the perception ( $P$ ) values, giving the equation  $SQ = P - E$  (Adil et al., 2013). For each dimension of the model, the sum of the quality gaps is calculated to identify the impact of each dimension on the service quality perception of customers.

**Figure 2.6 The SERVQUAL Model**



**Source:** Parasuraman et al. (1988)

Scholars have questioned and criticized the SERVQUAL model's dimensional stability, scale reliability, and scale validity over the years (Carman, 1990; Cronin & Taylor, 1992; Asubonteng et al., 1996; Buttle, 1996; Lai et al., 2007; Brady & Cronin, 2001 a). Nonetheless, the SERVQUAL model is a widely recognized model designed to understand the general characteristics of service quality across various industries and can be applied within different industries. However, scholars suggest that the SERVQUAL model requires modifications for specific service types (Powpaka, 1996; Finn & Kayande, 2004; Paquette et al., 2009).

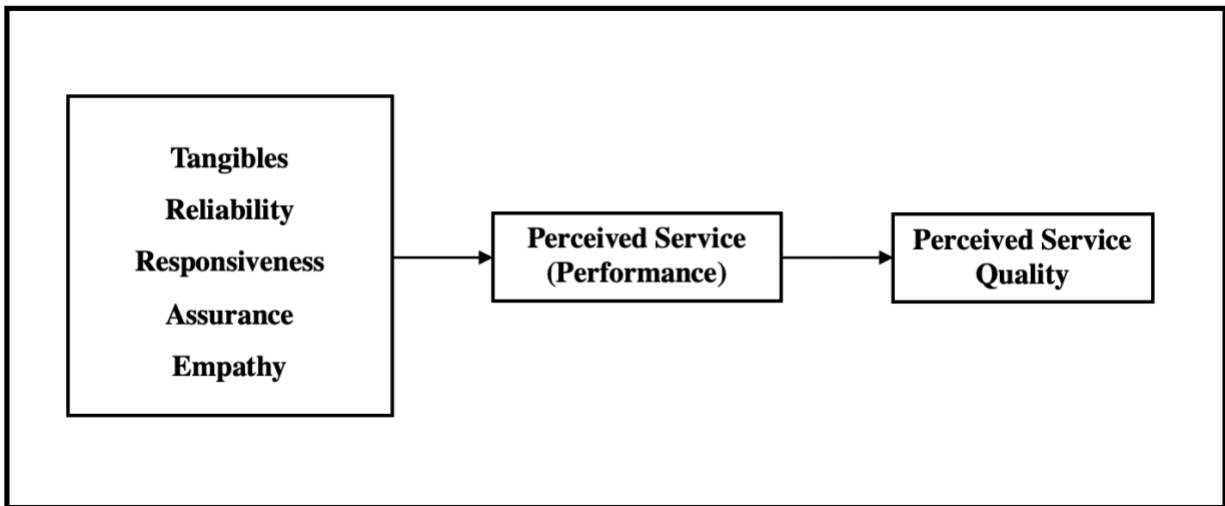
### ***2.3.2 The SERVPERF Model***

The SERVPERF model is considered not only as a variant of the SERVQUAL model, but also a response to the grounded scholarly critique of the SERVQUAL model (Cronin & Taylor, 1992). This model aims to remove the limitations of the SERVQUAL model via the elimination of the expectation of service, concentrating solely on the performance factor (Figure 2.8). According to

Cronin and Taylor (1992), long-term service quality attitudes of customers are better expressed by measuring the perceived service (service performance) only. The efficiency of this model was demonstrated by comparing the results of the SERVQUAL and SERVPERF models in four service industries (Cronin & Taylor, 1992). The authors also compared the original SERVQUAL scale, an importance-weighted SERVQUAL scale, the original SERVPERF scale, and an importance-weighted SERVPERF scale in four service industries. As a result, Cronin and Taylor (1992) found that unweighted SERVPERF explained more variation regarding service quality measurement than its weighted counterparts in all four service industries examined.

Overall, the SERVPERF model explains more of the variance regarding service quality measurement than the SERVQUAL model. Additionally, Adil et al. (2013) argue that the SERVQUAL model is less efficient due to the need for participants of the survey to fill two questionnaires related to expectations and perceived service quality. As the SERVPERF model eliminates the factor of service expectation, it reduces the number of items to be measured from 44 to 22, making the SERVPERF model more manageable to use (Adil et al., 2013).

**Figure 2.7 The SERVPERF Model**



**Source:** Cronin and Taylor (1992)

In addition to Cronin and Taylor (1992), other researchers have compared the performance of the SERVQUAL and SERVPERF models in various service industries. Quester and Romanniuk (1997) conducted an empirical study on the advertising industry and found that the SERVPERF model outperformed one of the modifications of the SERVQUAL model. Based on the meta-analysis, Carrillat et al. (2007) concluded that both the SERVPERF and SERVQUAL models are effective and equally valid for service quality assessment. In the context of the tourism sector, the research by Moisescu and Gica (2013) demonstrated that the SERVPERF model is more applicable for the exploration of the relationship between service quality and customer satisfaction.

As the removal of the service expectation parameter from the SERVPERF model is considered the main difference compared to the SERVQUAL model, whether the presented study on courier service quality should consider customers' expectations needs to be further explored. Mehta et al. (2000) provided important insights on this topic in their study. They used both modified SERVQUAL and SERVPERF models to measure service quality in the supermarket industry and found that the SERVQUAL model is more effective in a retail environment where a greater focus is placed on the product. In comparison, the SERVPERF model is more effective in a retail environment where service is emphasized, for example, a retailer selling electronic goods (Mehta et al., 2000). With the service element becoming increasingly important in online retailing and

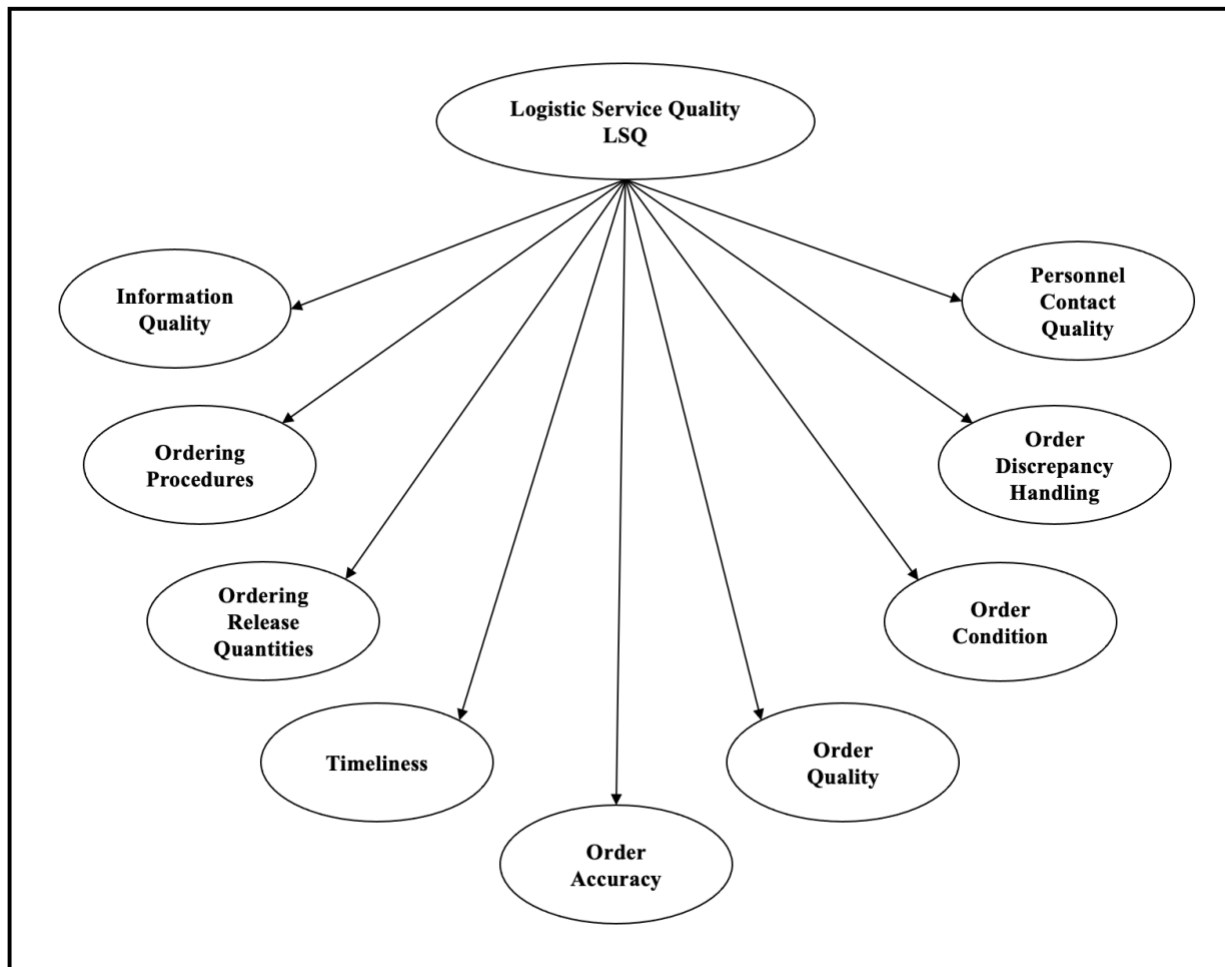
courier delivery industries, we believe the SERVPERF concept of evaluating only the customer's perception of the service is preferable for this empirical study.

### ***2.3.3 Industry Specific Models***

Although the models discussed above were designed to measure service quality in various service industries, researchers believe these models lack generalizability for some specific businesses (Dabholkar et al., 1996; Seth et al., 2005; Ghotbabadi et al., 2015). Dagger et al. (2007) believed that researchers could better understand consumers' perceptions of service quality if they use context specific service quality measurement tools. In this regard, researchers proposed models to measure service quality based on specific service industries. For example, Dabholkar et al. (1996) proposed the hierarchical model, which was designed for service quality measurement in retail businesses. In this model, the service quality of the retail store is defined by the attributes of the dimension and sub-dimension levels (Dabholkar et al., 1996). Tsaor et al. (2002) applied fuzzy set theory to develop a specific model based on the SERVQUAL model with several airline specific attributes for the airline industry. A hierarchical model for health-care services was developed by Dagger et al. (2007) with some specific aspects and sub-dimensions related to health care.

For the service quality measurement in the logistics industry, Mentzer et al.'s (1999) logistic service quality (LSQ) scale has become the foundation for later research of logistics service quality. The LSQ scale consists of nine dimensions: information quality, ordering procedures, ordering release quantities, timeliness, order accuracy, order quality, order condition, order discrepancy handling, and personnel contact quality (Figure 2.9). Although the effectiveness of the LSQ model is confirmed in later research, specific limitations of this model have also been revealed (Rafiq & Jaafar, 2007; Hua & Jing, 2015; Wei et al, 2016). For example, although the dimension selection is relatively comprehensive, the scale of the LSQ model still focuses more on the "technical components" of logistic services and is highly restricted by regions and industries, which results in the model's lack of applicability (Rafiq & Jaafar, 2007; Wei et al., 2016). Moreover, the LSQ model's nine-dimension scale was originally designed to measure B2B logistics service quality, and therefore it might not be a suitable scale to measure courier service quality in the B2C context (Hua & Jing, 2015). Nevertheless, the nine dimensions of the LSQ model provide a solid reference for the development of courier service quality measurement.

**Figure 2.8 Nine Dimensions of Logistic Service Quality (LSQ)**



**Source:** Mentzer et al. (1999)

#### ***2.3.4 Measuring Courier Service Quality***

When it comes to the measurement of service quality in the courier industry, there are only a few articles addressing this specific industry around the world, even though the courier service market has been constantly growing over the years (Gulc, 2017). The SERVQUAL model was the model most often used in the research to assess courier service quality (Zhu et al., 2011; Yee & Daud, 2011; Meng & Zhou, 2016; Gulc, 2017). Zhu et al. (2011) adapted the SERVQUAL scale into their courier service quality measurement model and added “security” as an additional dimension based on the characteristics of China’s courier industry. They also employed exploratory factor

analysis (EFA) and confirmatory factor analysis (CFA) to test the reliability and validity of their modified SERVQUAL scale. As a result, seven service quality attributes (indicators) were deleted (17 attributes were left), and the dimensions of “reliability” and “responsiveness” were combined as “timeliness” to interpret the attributes of the two dimensions (Zhu et al., 2001). Yee and Daud (2011) studied the relationship between service quality dimensions and customer satisfaction of the parcel delivery industry in Malaysia based on the SERVQUAL model. A questionnaire survey among 103 parcel delivery users found that customer satisfaction was positively impacted by tangibility, reliability, and assurance. At the same time, there was no significant impact from empathy and responsiveness (Yee & Daud, 2011). To evaluate a local courier company’s service quality and to provide improvement recommendations, Meng and Zhou (2016) modified the SERVQUAL model by adding a “guarantee” dimension to establish a comprehensive evaluation model. The results of their research indicate that the local courier company is required to shorten the customer’s complaint process and offer customized services according to the customer’s individual needs (Meng & Zhou, 2016).

Whereas some researchers modified the original SERVQUAL model, other researchers combined the LSQ and SERVQUAL models to assess courier service quality (Liu & Liu, 2014; Wei et al., 2016). Based on the SERVQUAL and LSQ models, Liu and Liu (2014) examined the quality of express logistics services in Changdao, China. By conducting EFA, they confirmed a 25 item service quality scale with five dimensions: reliability, protection, security (assurance), empathy, and perception (tangibles). The results of their study show a significant difference between the expected and perceived value of services provided to customers in Changdao, indicating that customers are dissatisfied with the quality of service provided by express logistics providers (Liu & Liu, 2014). To assess the service quality of China’s EMS, Wei et al. (2016) designed a 22 item scale with seven dimensions based on the LSQ and SERVQUAL models. The dimensions in this scale include convenience, reliability, responsiveness, assurance, empathy, economy, and security. The research results indicate that improvements of the employees’ professionalism and the company’s brand image are necessary (Wei et al., 2016).

Instead of applying the SERVQUAL model to measure courier service quality, Ho et al. (2012) adopted the LSQ model to examine the most important dimensions that affect customer satisfaction for courier services in Malaysia. The variables in this model include timeliness, condition (or

accuracy) of order, quality of information, and availability (or quality) of personnel. A multiple regression analysis showed that condition (or accuracy) of order has the highest level of influence on customer satisfaction (Ho et al., 2012). Similarly, Pholsuwanachai (2011) applied the LSQ model to examine a courier company's service quality in Thailand. He explored six variables for their relationship to service performance: personnel contact, order release quantities, information quality, ordering procedure, order condition, and order discrepancy handling. Use of a regression analysis indicated that almost all service attributes had an impact on service performance, except for order release quantities (Pholsuwanachai, 2011).

Other than adopting and modifying existing service quality scales, some scholars developed an original scale to measure courier service quality. Valaei et al. (2016) investigated the factors of courier service quality and the influence of perceived service quality on overall service quality by building the "CouQual" scale. This scale consists of five dimensions: promptness, convenience, accuracy, safety, and tangibles. Based on the study results, promptness, safety, and convenience were the most important factors, whereas two dimensions (accuracy and tangibility) were not positively correlated to perceived service quality. The authors also concluded that the existing courier service quality scales should not be applied to different countries without specific modifications, as different cultures will affect the perceptions of courier service quality (Valaei et al., 2016). Based on literature and current trends in the courier market in Poland, Gulc (2017) identified 13 factors that affect the choice of courier service providers. By surveying both individual and business clients of courier service providers in Poland, this study reveals that time of delivery, trust, flexibility, and tele-technologies are the most important criteria for clients, whereas price is less significant (Gulc, 2017).

Based on the previous studies on courier service quality measurement, we draw the following conclusions:

- The results of service quality measurement and the relationship between dimensions and perceived service quality vary in studies conducted in different countries.
- Most research conducted on courier service quality focused either on a specific group of respondents (i.e. customers of a specific courier company) or a specific region of a country.

In other words, there is no research focusing on the main courier companies' service quality as a whole perceived by courier service users in all regions of a country.

- Most studies have adopted the SERVQUAL model to collect respondents' expectations and perceptions of the service, while few studies have adopted the SERVPERF model that only focuses on the service's performance.
- Currently, there are no empirical studies regarding the service quality of courier companies operating in Canada.
- The studies reviewed have not developed a specific courier service quality model in the context of B2C e-commerce retailing.

Therefore, we hope that this research can assist to fill the abovementioned research gaps by developing and testing a dedicated model for evaluating Canada's courier service that fulfills e-tailing orders. However, to identify the applicable service quality attributes that formulate the service quality scale used in this study, a comprehensive literature review is conducted in the following section.

## **2.4 Attributes of Courier Service Quality**

This final section of the literature review explores the dimensions and attributes of service quality that could be applied to assess the quality of services delivered by the courier companies in Canada. Specific attributes (sub-dimensions) that will be considered have been identified based on the academic literature review. A total number of 43 attributes that relate to courier service quality were identified from previous research (Table 2.2). The attributes were divided into seven dimensions: reliability, assurance, tangibles, empathy, responsiveness, convenience, and timeliness. In addition to the five original dimensions of the SERVQUAL model (reliability, assurance, tangibles, empathy, and responsiveness), timeliness and convenience dimensions are added to the scale, based on the reviewed literature and the characteristics of the courier service industry (Zhu et al., 2001; Ho et al., 2012; Mentzer et al., 1999; Valaei et al., 2016; Wei et al., 2016). A detailed table with all the references to each attribute is displayed below (Table 2.2).

In the process of identifying attributes from the literature review, it was found that the descriptions of certain attributes overlap with the descriptions of other attributes, and some attributes refer to

courier companies' information that is difficult for customers to perceive. For example, it is difficult for customers to know whether a courier company can deliver to all areas of the country or whether the company owns an overseas network. Moreover, it was not easy to allocate certain attributes to a single dimension since they could be applied to different dimensions. However, it is worth mentioning that the seven dimensions and 43 attributes here are the initial versions. The modifications to the initial scale will be discussed in Chapter 3 which discusses methodology.

**Table 2.2 Initial Courier Service Quality Attributes**

<b>Dimension</b>	<b>Attribute</b>	<b>Reference</b>
<b>Reliability</b>	1 Deliveries arrive on the time promised	(Park et al., 2009), (Li et al., 2006), (Pholsuwanachai, 2011), (Ding et al., 2016), (Yee & Daud, 2011), (Jun et al., 2004), (Kersten & Koch, 2010), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Ho et al., 2012), (Baoqin & Guangwei, 2013), (Zhu et al., 2011), (Gulc, 2017), (Liu & Liu, 2014)
	2 Accurate delivery to the address of shipment	(Park et al., 2009), (Li et al., 2006), (Pholsuwanachai, 2011), (Ding et al., 2016), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Baoqin & Guangwei, 2013), (Liu & Liu, 2014)
	3 Packages delivered are handled without damages	(Park et al., 2009), (Hong & Jun, 2006), (Li et al., 2006), (Pholsuwanachai, 2011), (Ding et al., 2016), (Yee & Daud, 2011), (Kersten & Koch, 2010), (Banomyong & Supatn, 2011), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Ho et al., 2012), (Baoqin & Guangwei, 2013)
	4 Packages are delivered without loss	(Park et al., 2009), (Li et al., 2006), (Pholsuwanachai, 2011), (Ding et al., 2016), (Yee & Daud, 2011), (Kersten & Koch, 2010), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Ho et al., 2012), (Baoqin & Guangwei, 2013)
	5 Handling by goods characteristics /Ability to handle special goods	(Park et al., 2009) (Hong & Jun, 2006), (Pholsuwanachai, 2011)
	6 Problems with an incoming or received parcel will be resolved appropriately after contact with a courier company representative by phone or internet or in person.	(Li et al., 2006), (Yee & Daud, 2011), (Kersten & Koch, 2010), (Baoqin & Guangwei, 2013)
	7 When customer tries to pick up parcels at a counter in person, the service is provided appropriately.	(Li et al., 2006)
	8 Consistently delivering high quality performance / Regularity	(Kersten & Koch, 2010), (Banomyong & Supatn, 2011), (Davis et al., 2008), (Franceschini & Rafele, 2000)
<b>Assurance</b>	9 Positive image and reputation of the carrier	(Park et al., 2009), (Banomyong & Supatn, 2011), (Baoqin & Guangwei, 2013)
	10 Courier company offers track and trace service	(Banomyong & Supatn, 2011)
	11 Seamless customs clearance (when dealing with international inbound parcels)	(Park et al., 2009)
	12 Delivery to all areas across the country	(Park et al., 2009), (Hong & Jun, 2006)
	13 Advance notice of delays	(Stock and Lambert, 1992)

Table 2.2 (Continued)

Dimension	Attribute	Reference
Tangibles	14 Courier company staff are available when customer need assistance	(Li et al., 2006), (Pholsuwanachai, 2011), (Jun et al., 2004), (Ho et al., 2012), (Zhu et al., 2011), (Liu & Liu, 2014)
	15 The courier company staff are courteous and friendly	(Li et al., 2006), (Pholsuwanachai, 2011), (Yee & Daud, 2011), (Jun et al., 2004), (Stock and Lambert, 1992), (Ho et al., 2012), (Zhu et al., 2011), (Gulc, 2017)
	16 The courier company staff are trustworthy	(Li et al., 2006), (Pholsuwanachai, 2011), (Wong & Karia, 2010), (Yee & Daud, 2011), (Jun et al., 2004), (Ho et al., 2012), (Zhu et al., 2011), (Gulc, 2017)
	17 The courier company staff conduct themselves in a professional manner	(Li et al., 2006), (Pholsuwanachai, 2011), (Wong & Karia, 2010), (Yee & Daud, 2011), (Jun et al., 2004), (Ho et al., 2012)
	18 The courier company staff answer all the questions regarding incoming parcels (Knowledgeable)	(Li et al., 2006), (Pholsuwanachai, 2011), (Wong & Karia, 2010), (Yee & Daud, 2011), (Jun et al., 2004), (Banomyong & Supatn, 2011), (Gulc, 2017), (Liu & Liu, 2014)
	19 The courier company staff wear spruce, clean uniforms	(Baoqin & Guangwei, 2013)
	20 The website and information system of the courier company is well designed and user friendly	(Yee & Daud, 2011), (Ho et al., 2012)
	21 Owned overseas network	(Banomyong & Supatn, 2011)
	22 Modern technology	(Gulc, 2017)
	23 Modern/Advanced equipment and facilities	(Baoqin & Guangwei, 2013), (Zhu et al., 2011), (Liu & Liu, 2014)
	24 Equipment and facilities have clear company logo	(Zhu et al., 2011)
Empathy	25 Ability to meet receivers' special demands	(Hong & Jun, 2006), (Pholsuwanachai, 2011), (Zhu et al., 2011), (Gulc, 2017)
	26 When customer contact the courier company representative by phone, the holding(waiting) time is acceptable	(Li et al., 2006), (Zhu et al., 2011)
	27 When customer visit the service counter in person, the waiting time is acceptable before speaking with the courier company representative.	(Li et al., 2006), (Zhu et al., 2011)
	28 Courier company cares for customers' needs and interests	(Banomyong & Supatn, 2011), (Baoqin & Guangwei, 2013), (Zhu et al., 2011)
	29 Individual privacy protection / feel secure in providing personal information for the delivery service	(Yee & Daud, 2011), (Banomyong & Supatn, 2011), (Baoqin & Guangwei, 2013), (Zhu et al., 2011), (Liu & Liu, 2014)
	30 Reasonable delivery time window for the convinience of customers	(Zhu et al., 2011)

Table 2.2 (Continued)

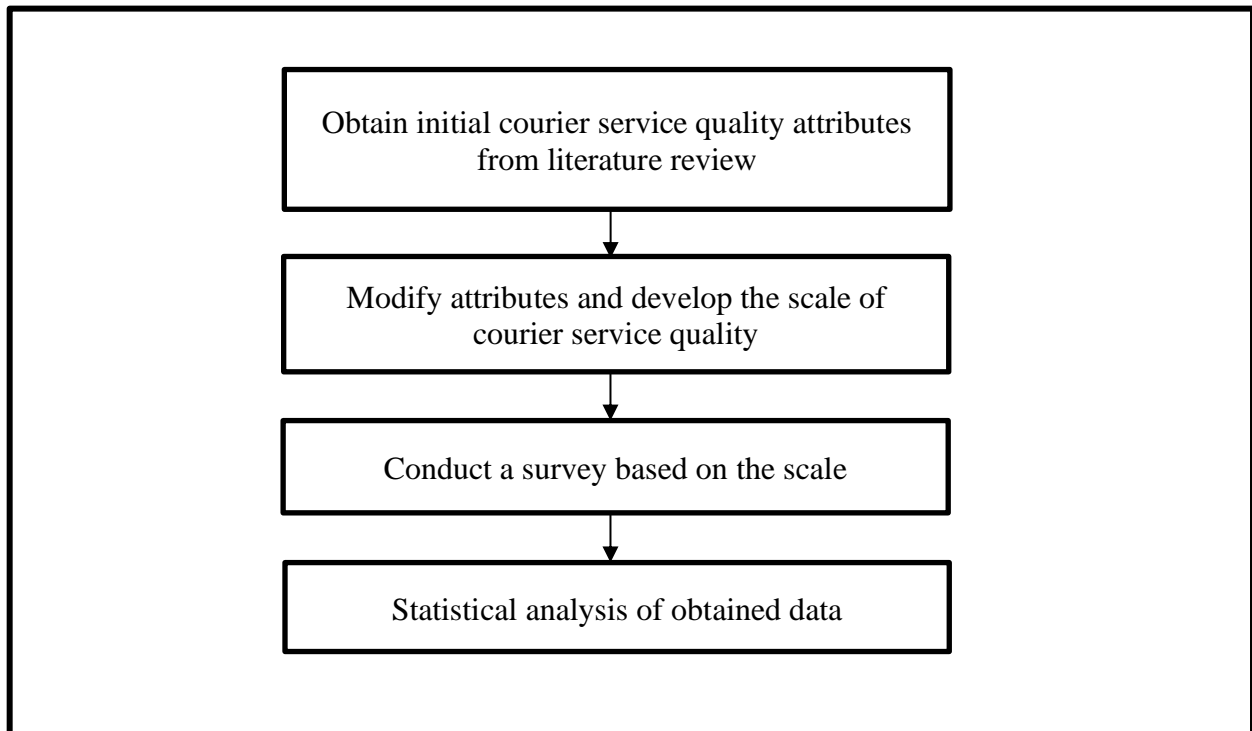
Dimension	Attribute	Reference
<b>Responsiveness</b>	31 Quick processing of complaints/ Ability to handle and process claims	(Hong & Jun, 2006), (Li et al., 2006), (Baoqin & Guangwei, 2013), (Liu & Liu, 2014)
	32 Quick reaction in case of problems/ Ability to manage delivery accidents /order discrepancy handling /Short-term flexibility	(Hong & Jun, 2006), (Li et al., 2006), (Pholsuwanachai, 2011), (Kersten & Koch, 2010), (Banomyong & Supatn, 2011), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Ho et al., 2012), (Gulc, 2017)
	33 Quick response to customer's request	(Park et al., 2009), (Banomyong & Supatn, 2011), (Zhu et al., 2011)
	34 Willingness to help customers and provide services	(Jun et al., 2004), (Banomyong & Supatn, 2011), (Ho et al., 2012), (Baoqin & Guangwei, 2013), (Zhu et al., 2011), (Liu & Liu, 2014)
<b>Convenience</b>	35 Courier company has many outlets (pick up and drop off point)	(Park et al., 2009), (Yee & Daud, 2011)
	36 Outlets locations are near residential area/ close to customers	(Yee & Daud, 2011), (Banomyong & Supatn, 2011), (Zhu et al., 2011)
	37 Easy to track the delivery status by internet or phone	(Park et al., 2009), (Hong & Jun, 2006), (Ho et al., 2012)
	38 Tracking system is accurate and timely updated / reliable information system	(Hong & Jun, 2006), (Pholsuwanachai, 2011), (Wong & Karia, 2010), (Ho et al., 2012), (Zhu et al., 2011), (Gulc, 2017), (Liu & Liu, 2014)
	39 Customer service is available by phone or internet when customer need assistance regarding an incoming parcel / received parcel	(Li et al., 2006), (Wong & Karia, 2010), (Baoqin & Guangwei, 2013), (Zhu et al., 2011)
<b>Timeliness</b>	40 Time between placing an order and receiving delivery is short. (lead time)	(Park et al., 2009), (Hong & Jun, 2006), (Pholsuwanachai, 2011), (Ding et al., 2016), (Kersten & Koch, 2010), (Banomyong & Supatn, 2011), (Stock and Lambert, 1992), (Franceschini & Rafele, 2000), (Hannon, 2003), (Gulc, 2017), (Liu & Liu, 2014)
	41 Quick response to customer's request	(Park et al., 2009), (Pholsuwanachai, 2011), (Zhu et al., 2011)
	42 Problems with an incoming or received parcel will be resolved promptly	(Li et al., 2006), (Pholsuwanachai, 2011), (Zhu et al., 2011)
	43 When customer try to pick up parcels at a counter in person, the service is provided promptly.	(Li et al., 2006)

### 3. Methodology

#### 3.1. Methodology Structure

This research has been conducted in the format of an empirical study. We have taken the following methodological steps: preparation of the courier service quality scale based on the literature review and interviews; design of a survey based on the attributes identified; conducting the survey of online shopping customers using courier services in Canada; and conducting a statistical analysis of the obtained data.

**Figure 3.1 Methodology Structure**



### **3.2. Service Quality Attributes**

This section of the methodology chapter presents the summary of the procedure applied for the modification of the service quality attributes. As a preliminary step, the interviews with the experts for the study will be discussed. The interviews were expected to contribute to the identification of the main attributes of service quality to apply in the courier service quality scale.

#### ***3.2.1. Interviews***

The initial set of 43 service quality attributes extracted from the academic literature review is presented in Table 3.1. As mentioned in the literature review in Chapter 2, such a set of variables could lead to bias in data collection and analysis since the value of certain attributes may overlap. Additionally, some attributes appear to apply to more than one dimension. To address this problem, a set of anonymous interviews was conducted. This qualitative method involved the collection and analysis of expert opinions about courier service attributes. The interviewees included academic professionals in the field of research: namely, three professors from the educational institution where the researcher studies. The interviews were carried out to critically assess the proposed attributes, determine if specific attributes need to be removed or integrated, and determine whether to add other attributes.

After reading the initial courier service attributes (Table 3.1), the interviewees were asked the following questions:

1. Are the courier service attributes understandable?
2. Are the courier service attributes allocated to the appropriate dimension?
3. Are there any attributes or dimensions that should be taken out or combined?
4. Can you think of any other attributes to add?

**Table 3.1 Initial Courier Service Quality Scale (Based on Literature Review)**

<b>Dimension</b>		<b>Attribute</b>
Reliability	1	Deliveries arrive at the time promised
	2	Accurate delivery to the address of shipment
	3	Packages delivered are handled without damages
	4	Packages are delivered without loss
	5	Goods are handled according to characteristics / ability to handle special goods
	6	Problems with an incoming or received parcel are resolved appropriately after contact with a courier company representative by phone, by internet, or in person
	7	When customer tries to pick up parcels at a counter in person, the service is provided appropriately
	8	Consistently delivering high quality performance / regularity
Assurance	9	Positive image and reputation of the carrier
	10	Courier company offers track and trace service
	11	Seamless customs clearance (when dealing with international inbound parcels)
	12	Delivery to all areas across the country
	13	Advance notice of delays
Tangibles	14	Courier company staff are available when customer needs assistance
	15	Courier company staff are courteous and friendly
	16	Courier company staff are trustworthy
	17	Courier company staff conduct themselves in a professional manner
	18	Courier company staff answer all the questions regarding incoming parcels (knowledgeable)
	19	Courier company staff wear spruce, clean uniforms
	20	Website and information system of the courier company is well designed and user friendly
	21	Owned overseas network
	22	Modern technology
	23	Modern / advanced equipment and facilities
Empathy	24	Equipment and facilities have clear company logo
	25	Ability to meet receivers' special demands
	26	When customer contacts the courier company representative by phone, the holding (waiting) time is acceptable.

	27	When customer visits the service counter in person, the waiting time is acceptable before speaking with the courier company representative
	28	Courier company cares for customers' needs and interests
	29	Individual privacy protection / customers feel secure in providing personal information to the delivery service
	30	Reasonable delivery time window for the convenience of customers
Responsiveness	31	Quick processing of complaints / ability to handle and process claims
	32	Quick reaction in case of problems / ability to manage delivery accidents / order discrepancy handling / short-term flexibility
	33	Quick response to customer's request
	34	Willingness to help customers and provide services
Convenience	35	Courier company has many outlets (pick up and drop off points)
	36	Outlet locations are near residential areas / close to customers
	37	Easy to track the delivery status by internet or phone
	38	Tracking system is accurate and timely updated / reliable information system
	39	Customer service is available by phone or internet when customer needs assistance regarding an incoming parcel or received parcel
Timeliness	40	Time between placing an order online and receiving the delivery is short (lead time)
	41	Quick response to customer's request
	42	Problems with an incoming or received parcel are resolved promptly
	43	When customer tries to pick up parcels at a counter in person, the service is provided promptly

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As a result of the interviews, some statements of attributes were rewritten in a way easier to understand in the new scale (Table 3.2). The total number of attributes applied to assess courier service quality in Canada was reduced from 43 to 26, and the timeliness dimension was removed (Table 3.2). The modification process is discussed in the following section.

**Table 3.2 Modified Courier Service Quality Scale**

<b>Dimension</b>	<b>Attribute</b>	
Reliability	R1	Deliveries arrive at the time promised
	R2	Accurate delivery to the address of shipment
	R3	Packages delivered are handled without loss and damages
	R4	Appropriate service when picking up parcels at a counter
	R5	Consistent high-quality performance
	R6	Accurate and reliable tracking system
Assurance	A1	Positive image and reputation of a courier company
	A2	Courier company staff are courteous and friendly
	A3	Courier company staff are knowledgeable and professional
Tangibles	T1	Courier company staff wear spruce, clean uniforms
	T2	Well designed and user-friendly website and tracking system
	T3	Modern / advanced equipment and facilities
Empathy	E1	Ability to meet customers' special demands
	E2	Courier company cares for customers' needs and interests
	E3	Courier company protects individual privacy
Responsiveness	S1	Quick processing of complaints and requests
	S2	Short delivery time
	S3	Acceptable waiting time for picking up parcels at a counter in person
	S4	Seamless customs clearance
	S5	Courier company staff are available by phone or internet
	S6	Acceptable customer service waiting time by phone or internet
	S7	Timely updates of tracking information
Convenience	C1	Courier company has many outlets (pick-up and drop-off points)
	C2	Outlet locations are near residential areas / close to customers
	C3	Easy to track the delivery status by the internet or phone
	C4	Reasonable delivery time window for the convenience of customers

### ***3.2.2. Modification of Service Quality Attributes***

One major modification made arising from the interviews was to delete the timeliness dimension. To be precise, as attributes in timeliness also suggest that employees are willing to provide prompt service to help clients, which is similar to the definition of responsiveness, we merged the attributes of timeliness into the responsiveness dimension to avoid any ambiguity. As a result, there are now six dimensions in the modified scale.

A comparison of the attributes selected before and after the interviews demonstrates the quality of the applied optimization procedure. To make the statistical analysis result clearer and more straightforward, the revised 26 attributes were numbered according to the dimension to which they belong in Table 3.2 (R for reliability, A for assurance, T for tangible, E for empathy, and S for responsiveness).

The following attributes were removed from the service quality attributes list: 6, 10, 12, 13, 21, 22, and 24. The results of the interviews revealed that these attributes either had been included in other attributes or were difficult to be perceived by customers. For example, customers would find it difficult to know from their personal experience whether a courier company has the ability to deliver packages all over the country. As a result, attribute 12 “Delivery to all areas across the country” was removed from the list of attributes.

Some attributes were reallocated to other dimensions since we considered that these attributes better matched the definition of their new dimensions, so the attributes could be applied more effectively to assess the dimensions they were reallocated to. Except for the attributes of timeliness which were merged into responsiveness, attribute 15 “Courier company staff are courteous and friendly” was moved to the assurance dimension, and attribute 30 “Reasonable delivery time window for the convenience of customers” was reallocated to the convenience dimension. Attribute 42 “Problems with an incoming or received parcel are resolved promptly” is now R6 “Accurate and reliable tracking system” under the reliability dimension.

Another form of modification made was to integrate several attributes into a single attribute. For example, attributes three and four are now combined as R3 “Packages delivered are handled without loss and damages.” As “loss” and “damage” of the package both indicate if the package was handled properly and safely, it is logical to integrate these two attributes. Attribute five “Goods are handled according to characteristics / ability to handle special goods” suggests the courier company has attribute 25 “Ability to meet receivers’ special demands.” Even though these two statements describe a similar aspect of a courier company, the “Ability to meet receivers’ special demands” was preferred as a more comprehensive description. Professionals also suggest this statement should be moved from the reliability dimension to empathy. In addition, attributes 31, 32, 33, 41, and 42 reflect the same thing, namely S1 “Quick processing of complaints and requests.” In addition, it is logical that a courier company’s “Willingness to help customers and provide services” could be shown by its “Quick processing of complaints and requests.” Therefore, attribute 34 “Willingness to help customers and provide services” was also combined in S1.

Similarly, attributes 18 and 43 were combined as S5 “Courier company staff are available by phone or internet.” Attributes 16 and 29 were combined as E3 “Courier company protects individual privacy.” Finally, attributes 17 and 18 were combined as A3 “Courier company staff are knowledgeable and professional.”

### 3.3. Survey Design

After establishing the courier service quality scale, the next methodological step was to design a survey based on the scale. However, it was important to first determine whether the survey would be based on the SERVQUAL or SERVPERF model, as the questionnaires for these two models would be completely different. The SERVQUAL model investigates the difference between the perceived service and the expected service in each service factor to assess service quality. In contrast, the SERVPERF model measures service quality by only focusing on respondents' perception of service performance.

As discussed in the literature review, both the SERVPERF and SERVQUAL models are proven effective and widely recognized in assessing service quality in many industries. However, the content of the questionnaire based on the SERVQUAL model needs to cover both the customer's expectation and the perception of the service. This results in the questionnaire being lengthy, and the respondent may lack patience when filling out the questionnaire, which may not be conducive to the data's accuracy. In contrast, it is easier for the participants to understand the purpose of the questionnaire if it aims to collect only perceptions. Furthermore, the number of questions in a SERVPERF questionnaire is half of those in a corresponding SERVQUAL questionnaire, which should result in a higher completion rate (Adil et al., 2013). More importantly, it was also found that SERVPERF performs better in assessing service quality in an industry where service is emphasized (Mehta et al., 2000). Therefore, it is deemed best to collect only respondents' perceptions of the courier service performance in this study. It is also worth mentioning that based on the literature review, we found almost no academic research on the application of the SERVPERF model in the courier service industry. Therefore, this research applies the SERVPERF model to a new service industry for the first time.

#### 3.3.1. Questionnaire Design

This section discusses the design of the survey questionnaire. The complete questionnaire is presented at Appendix 1.

The questionnaire consists of three parts:

### *1. General Information About the Respondent*

This part introduces the purpose and significance of the research and asks the first question “Have you ever bought physical goods online?” as a screening question. This question was added to ensure the inclusion of qualified respondents into the study. Only respondents who answered “yes” could continue completing the questionnaire. The respondents who answered “no” were not able to continue because they did not meet the requirements of the sample population. The remaining questions in this section asks the respondents about their online shopping frequency and the courier companies they most often use to shop online.

### *2. Respondents’ Perceptions of Courier Service Performance*

The first 26 questions of this section (Q4-Q29) in the questionnaire correspond to the 26 courier service quality attributes settled after the interviews. Based on the SERVPERF model, the 26 questions collect the respondents’ perceptions of the courier service quality without considering their expectations. The respondents answered questions about their experience of the most frequently used courier company last year. Question 30 “In general, the courier company provided excellent service” was asked to assess the respondents’ perception of the overall service quality of the corresponding courier company. This question was added to explore the relationship between each courier service quality dimension and the overall service quality.

Questions 4 to 30 of the questionnaire were in the form of a seven-point Likert scale. The respondents picked the number that represented their subjective perceptions of the statements. They could select “1” meaning strongly disagree, “2” meaning disagree, “3” meaning somewhat disagree, “4” meaning neutral, “5” meaning somewhat agree, “6” meaning agree, and “7” meaning strongly agree.

### *3. Background Information About the Respondent*

This part of the questionnaire was developed to collect basic information about the research participants, including gender, age, annual gross income, and living area (urban, suburban, or rural).

Description of the general characteristics of the sample was important to assess the representative capability of the sample.

### ***3.3.2. Data Collection Tool***

With regard to the data collection procedure, we selected the SurveyMonkey platform to publish the survey and collect the participants' responses. The online format of the survey was selected because it simplifies the data collection procedure for both the researcher and the respondents. Respondents could complete the survey at a time and location convenient to them. In addition, respondents had the option to complete the survey via a computer, tablet, or smartphone. As a result, the respondents were motivated to provide accurate and detailed responses to all survey questions. Another advantage of conducting an online survey is that it allows for the collection of responses remotely and ensures anonymity for the respondents. The collected data were stored securely on the SurveyMonkey server.

The SurveyMonkey platform was chosen to include a diverse population. To assess Canadian online shopping customer perceptions of courier delivery services, we strove for survey samples representing all ages, income structures, and populations from different areas of the country. From this perspective, conducting the survey on SurveyMonkey was a better option compared to educational institution platforms, which could limit the potential sample characteristics as they involve primarily students and staff of educational institutions. Another advantage of the SurveyMonkey platform is that researchers can export the data collected into the format of commonly used statistical and data analysis software such as Excel and SPSS, which leads to less time required for further statistical analysis.

### ***3.3.3. Data Collection Procedure***

With regard to the presented study, the data collection procedure followed these steps on SurveyMonkey.com:

#### ***1. Create a New Survey and Add Questions***

SurveyMonkey suggests that dividing a long survey form into several pages simplifies the completion of the survey for respondents. As there were 34 questions in the survey form, it was divided into five pages (Appendix 2).

## *2. Apply Logic*

After the survey questions and pages are set up, the next step is to apply logic to the survey form. As mentioned above, Question 1 “Have you ever bought physical goods online?” was included in the survey as a screening question. It guaranteed the exclusion of respondents who did not have the required experience of courier services for the study. All respondents who answered “no” were unable to complete the survey.

## *3. Customize the Design and Previewing*

The next step was to customize the design of the survey on the SurveyMonkey platform. The researcher’s university logo was added, and a custom theme color was used for the survey (Appendix 2). The researcher should always preview the survey before sending it to the respondents to avoid any mistakes or logic issues.

## *4. Create a Collector*

Once the researcher is ready to send out the survey, it is time for them to create a “collector” to collect the responses. According to SurveyMonkey, a “collector” refers to the method of collecting survey responses, including posting a link to the survey on social media, using SurveyMonkey’s “Email Invitation Collector”, or even embedding the survey on a website.

In the context of the presented research, survey forms were sent to the respondents via SurveyMonkey’s Email Invitation Collector. The collector sent forms to people who matched the survey criteria from SurveyMonkey’s global panel. A single survey inclusion criterion that was set for the Email Invitation Collector was that the respondents had to live in Canada. People from the SurveyMonkey’s global panel who met the criterion received an invitation email and a web link of the survey. The main reason for the utilization of the Email Invitation Collector was the opportunity to form a representative sample in terms of demographics. In addition, this instrument contributed to the effective collection of anonymous responses. Any personal information about

the respondents was excluded from the result; therefore, the data collected excluded first names, last names, email addresses, and IP addresses.

SurveyMonkey's intelligent analysis estimated that the average completion time for this survey would be six minutes. We estimated that this questionnaire should take no more than five minutes. In fact, the actual completion time was three minutes on average.

#### *5. Export the Collected Data*

The outcomes of the survey data collection underwent data analysis using SPSS and AMOS software. It was important to collect the data from the SurveyMonkey platform and export it to the appropriate software platform used for data analysis.

#### ***3.3.4. Sample Population***

The sample population for the survey included current customers of the courier business in Canada. The main criterion for the inclusion of individuals in the study was experience of using courier services. Therefore, we did not consider the respondents' gender, age, and other personal or professional characteristics as criteria for inclusion into or exclusion from the study. Only previous experience of online shopping and using courier services was considered as a reliable criterion for inclusion or exclusion.

The survey form was published on March 1, 2021 and was available for the respondents to fill in until July 31, 2021. During this period, a total number of 252 responses was collected. As for the main inclusion criterion, 20 responses were excluded where respondents answered "no" to the first question, meaning these respondents did not have experience of online shopping and courier services. At the same time, four respondents did not provide specific answers to all survey questions; they were also excluded from the final sample. Therefore, the final sample size for this study was 228 qualified responses.

### **3.4. Data Analysis Methods**

The data collection stage was followed by data analysis. In the context of this empirical research, the main type of data for analysis comprised the quantitative data collected via the survey questionnaire. IBM SPSS 28 and AMOS software were used to fulfil the data analysis procedure.

Respondent profiles and basic information were first checked to reveal the demographic characteristics of the participants in the survey. After that, we performed EFA to check if the data collected had a common method variance (CMV) issue. The reliability and validity of the scale were analyzed after the CMV test. As a result, the courier service quality scale was adjusted according to the result of the validity analysis. Furthermore, a CFA was applied to verify the adjusted scale. Correlation and regression analysis methods were used to describe the relationship between the service quality measurement dimensions and overall service quality perceived by Canadian online shopping customers. Altogether, the statistical analysis methods contributed to the purification of the courier service quality scale and demonstrated the significance of specific dimensions in the assessment of service quality in the Canadian courier service market.

### **3.5. Ethical Considerations**

In this study, steps were taken to meet ethical obligations. First, the survey questionnaire was developed to avoid the unnecessary collection of personal information about the respondents. As can be seen at Appendix 1, the survey form did not include questions that would oblige the research participants to provide personal information that could lead to identity exposure. Second, the utilization of the SurveyMonkey platform ensured that no personal information of the respondents was collected without their permission.

## **4. Results Analysis**

### **4.1 Respondent Profile**

A total of 252 responses were collected in the survey distributed on the SurveyMonkey platform. Among them, 20 respondents answered “no” to the screening question “Have you ever bought physical goods online?” This indicated they did not have prior experience with courier services used for online shopping. Therefore, they were not eligible to participate in the survey. Four respondents were also excluded from the qualified samples as they did not complete all the survey questions. Therefore, 228 samples were qualified for this survey at a relatively high qualification rate of 90.48 %.

The demographic characteristics and basic information of the valid samples in this study are presented in Table 4.1. Among the 228 respondents who participated in this study, the proportions of females and males were relatively close at 54 % and 46 %, respectively. The most frequent age group of the participants was 30–39 years old, accounting for 25.88 % of the sample, followed by the age group of 20–29 years old (18.42 %), 40–49 years old (17.98 %), and 50–59 years old (17.11 %). This shows that the young and middle-aged group were the main respondents, and, as they are also the primary consumers of online goods, their responses are of high value to this research. The majority of participants had an annual gross revenue of CAD 10,000 to 40,000 (35.09 %), followed by those earning CAD 40,000 to 70,000 (27.63 %) and CAD 70,000 to 100,000 (19.74 %). Almost half of the respondents live in urban areas (46.93 %), followed by suburban areas (38.60 %) and rural areas (14.47 %). Based on the above results, we believe that the demographic characteristics covered by this survey are relatively diverse and can represent the Canadian online shopping population to a large extent.

**Table 4.1 Demographic Characteristics and Basic Information**

Basic information		Frequency	Percent
Gender	Male	106	46.49%
	Female	122	53.51%
Age	19 or under	3	1.32%
	20 to 29	42	18.42%
	30 to 39	59	25.88%
	40 to 49	41	17.98%
	50 to 59	39	17.11%
	60 to 69	31	13.60%
	70 or over	13	5.70%
Annual gross revenue	Below \$10,000	14	6.14%
	\$10,000–\$40,000	80	35.09%
	\$40,000–\$70,000	63	27.63%
	\$70,000–\$100,000	45	19.74%
	Above \$100,000	26	11.40%
Residence	Urban area	107	46.93%
	Suburban area	88	38.60%
	Rural area	33	14.47%
Frequency of online shopping for physical goods	Less than once a month	62	27.19%
	Monthly	87	38.16%
	Weekly	56	24.56%
	More than once a week	23	10.09%
Courier company which delivered most online shopping parcels in the last year	Canada Post	137	60.09%
	FedEx	31	13.60%
	UPS	13	5.70%
	DHL	13	5.70%
	Purolator	23	10.09%
	Other (please specify)	11	4.82%

When asked about the frequency of their online shopping behaviour, most respondents reported that they shopped quite often; 38.16 % of respondents shopped online every month, 24.56 % of respondents shopped online weekly, and 10.09 % of respondents shopped online more than once a week. Based on the respondents' online shopping experience of last year, 60.09 % of respondents received most of their parcels from Canada Post, followed by FedEx (13.60 %), Purolator (10.09 %), UPS (5.70 %), DHL (5.70 %), and others (4.82 %). Respondents who selected "other" for this question mostly specified Amazon and Intelcom Express as the courier companies they received most parcels from last year (10 out of 11 respondents), and one respondent did not specify a company. Notably, Amazon Prime uses Intelcom Express for their same-day and next-day deliveries in Canada. Accordingly, it is appropriate to consider Amazon as the primary courier service provider for these respondents.

The above content summarizes the basic profiles of the respondents who participated in this survey. Before assessing the customers' perception of courier service performance, we conducted a series of necessary statistical tests on the scale and collected data of this study to verify whether the scale and data could adequately reflect the purpose of this study. In the following section, we set out our findings of whether CMV is of concern in this study.

## 4.2 Common Method Variance

According to Williams and Brown (1994), an online survey could result in different results depending on whether a respondent is familiar with the survey interface or not. Since this research mainly obtained sample data through the online questionnaire filled by the respondents, it is prone to the potential problem of CMV. For this reason, this study adopted Harman's single factor test to conduct EFA on all the variables of the service quality scale and used the principal component analysis method to observe the factor with the largest eigenvalue without any rotation (Podsakoff et al., 2003). If that factor explains the majority of the variance, then CMV may exist. Although there is no specific standard on the amount of variance explained by this factor to determine whether CMV exists, the customary threshold is 50 % (Eichhorn, 2014). Using SPSS 28 software, this study's 26 variables (attributes) were put together for EFA. Without any rotation of the principal components, the cumulative variance contribution rate of the factor with the largest eigenvalue was 36.268 %, which is less than 50 % (Table 4.2). This indicates that there is no phenomenon most accounted for by a cumulative variance contribution rate of a single factor. Therefore, the data investigated in this article does not have the problem of CMV.

**Table 4.2 Common Method Variance Test**

Factor	Initial Eigenvalues	% of Variance	% of Cum. Variance
1	9.43	36.268	36.268
2	2.848	10.955	47.223
3	1.885	7.25	54.473
4	1.741	6.695	61.168
5	1.479	5.69	66.858
6	1.359	5.227	72.085

### 4.3 Reliability Analysis

The next step was to test the reliability of the conducted survey. Reliability refers to the consistency or stability of the results obtained in the survey. A questionnaire is considered reliable if it consistently produces similar results. If the reliability of the data collected by a survey is high, then the reliability of the survey will also be high. The reliability analysis is only applicable for quantitative data. In this study, Cronbach's  $\alpha$  coefficient was applied to test the reliability of the samples collected. The basic logic of Cronbach's  $\alpha$  coefficient is that a high value of Cronbach's  $\alpha$  will indicate a high reliability of the questionnaire. The following is widely accepted regarding the values of Cronbach's  $\alpha$ : If Cronbach's  $\alpha$  is below 0.6, the data collected should not be accepted, and the scale requires a redesign; if Cronbach's  $\alpha$  is between 0.6 and 0.7, even though the collected data are acceptable, the scale still needs a revision; if Cronbach's  $\alpha$  is between 0.7 and 0.8, the data and scale are acceptable; and if Cronbach's  $\alpha$  is above 0.8, this indicates a high reliability of the scale and data collected (DeVellis, 2021). The reliability test results of this survey are shown in Table 4.3. The table shows that Cronbach's  $\alpha$  of each variable (dimension) is above 0.8, and the overall Cronbach's  $\alpha$  of the scale is 0.928, indicating that the reliability of the survey is excellent.

**Table 4.3 Reliability Analysis**

Variables	N of items	Cronbach's $\alpha$	Total Cronbach's $\alpha$
Reliability	6	0.837	0.928
Assurance	3	0.915	
Tangibles	3	0.889	
Empathy	3	0.867	
Responsiveness	7	0.853	
Convenience	4	0.895	

#### 4.4 Exploratory Factor Analysis

Following the reliability analysis described above indicating that the responses of the survey are reliable, a validity analysis was applied to test the rationality of the scale's structure. As described in this section, we adopted EFA to test the structural validity of the scale. When conducting an EFA in SPSS 28, we first adopted the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity, which are two statistical measures used to examine the data's suitability for factor analysis.

A KMO test can be used to test the corresponding value of the simple correlation coefficient and the partial correlation coefficient between variables (Dziuban & Shirkey, 1974). The KMO value ranges from zero to one. According to the KMO standard given by Kaiser (1970), a KMO value over 0.9 is marvelous, a KMO value between 0.8 and 0.9 is meritorious, a KMO value between 0.7 and 0.8 is middling, a KMO value between 0.6 and 0.7 is mediocre, a KMO value between 0.5 and 0.6 is miserable, and a KMO value below 0.5 is unacceptable. In general, a KMO value between 0.8 and one indicates an adequate sampling, and a KMO value below 0.6 indicates the sampling is insufficient, and that remedial measures need to be taken (Dziuban & Shirkey, 1974). Bartlett's test of sphericity was applied to check the null hypothesis that the correlation matrix (a matrix of Pearson correlations) is an identity matrix. The identity matrix indicates that the variables are not related and therefore are not appropriate for factor analysis. As a result, if the null hypothesis is rejected ( $p$  value less than 0.05), it can be concluded that there is a correlation between the variables. Therefore, it is appropriate to conduct EFA (Snedecor & Cochran, 1989).

By applying EFA in SPSS 28, it was found that the KMO value of the scale was more than 0.8 at 0.901, and the Bartlett's test of sphericity had a  $p$  value (Sig.) of less than 0.05 (Table 4.4). According to the results, the data set of this research is adequately sampled and is appropriate for EFA.

**Table 4.4 Kaiser-Meyer-Olkin Value and Bartlett's Test of Sphericity**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.901
Bartlett's Test of Sphericity	Approx. chi-square	3752.604
	Df	325
	Sig.	0.000

EFA is a tool for discovering the possible connections between items and grouped items that represent unified concepts. The researcher does not make any prior assumptions about the relationship between factors when conducting EFA (Polit & Beck, 2008). In other words, we did not set the number of factors that variables should be grouped by. Therefore, by conducting EFA to extract the common factors using the method of maximum variance rotation with an eigenvalue greater than 1, we got the following result in Table 4.5. It was found that the 26 items were loaded into six factors with 72.085 % cumulative variance explained. The result of six factors corresponds to the number of dimensions preset in the survey scale, which indicates the dimensionality of the scale in this study is rational in representing the courier service quality attributes.

According to Nunnally (1994), the factor loadings of each item should be greater than 0.5 for a single factor and less than 0.3 for other factors; otherwise, the item should be removed. Tracey et al. (1999) adjusted this standard; the absolute value of a single factor loading should be at least greater than 0.4. As a result, it was found that the factor loadings of three items, R4 "Appropriate service when picking up parcels at a counter", S4 "Seamless customs clearance", and S5 "Company staff are available by phone or internet", were greater than 0.4 in more than one factor (Table 4.5). Therefore, these three items should be (and were) deleted. In addition, the factor loadings of R6 and S1 suggested that the dimensions to which they belong needed to be adjusted as well.

**Table 4.5 Factor Analysis (1<sup>st</sup>)**

Items	Factor Loadings					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
R1	0.015	<b>0.799</b>	0.012	0.228	0.151	0.106
R2	0.198	<b>0.765</b>	0.175	0.091	0.130	0.166
R3	0.132	<b>0.761</b>	0.136	0.118	0.102	0.112
R4	<b>0.480</b>	<b>0.437</b>	0.151	0.125	0.029	0.016
R5	0.158	<b>0.769</b>	0.187	0.149	0.192	0.130
R6	0.106	0.291	0.138	<b>0.720</b>	0.198	0.193
A1	0.113	0.201	0.119	0.180	0.161	<b>0.873</b>
A2	0.152	0.184	0.178	0.180	0.141	<b>0.853</b>
A3	0.166	0.103	0.150	0.269	0.138	<b>0.810</b>
T1	0.088	0.064	0.288	<b>0.815</b>	0.103	0.216
T2	0.110	0.215	0.184	<b>0.798</b>	0.176	0.126
T3	0.173	0.099	0.183	<b>0.811</b>	0.228	0.175
E1	0.125	0.164	0.209	0.132	<b>0.809</b>	0.105
E2	0.001	0.118	0.203	0.148	<b>0.822</b>	0.200
E3	0.037	0.133	0.244	0.234	<b>0.760</b>	0.150
S1	0.316	0.163	0.105	0.148	<b>0.703</b>	0.022
S2	<b>0.730</b>	0.071	0.135	0.156	0.057	0.048
S3	<b>0.837</b>	0.026	0.058	0.081	0.083	0.113
S4	<b>0.597</b>	<b>0.402</b>	0.161	-0.043	0.022	0.035
S5	<b>0.616</b>	<b>0.414</b>	0.046	-0.019	0.073	0.075
S6	<b>0.839</b>	0.031	0.013	0.127	0.103	0.057
S7	<b>0.746</b>	0.041	0.095	0.076	0.118	0.168
C1	0.146	0.076	<b>0.810</b>	0.175	0.175	0.029
C2	0.083	0.180	<b>0.813</b>	0.226	0.191	0.114
C3	0.117	0.161	<b>0.772</b>	0.193	0.212	0.197
C4	0.137	0.165	<b>0.794</b>	0.146	0.185	0.165
Eigenvalues	9.430	2.848	1.885	1.741	1.479	1.359
% of Variance	36.268	10.955	7.250	6.695	5.690	5.227
Cumulative %	36.268	47.223	54.473	61.168	66.858	72.085

*Note:* Bold indicates that the absolute value of loading is greater than 0.4

After deleting items R4, S4, and S5, we ran a second EFA in SPSS 28, and the results are shown in the following table (Table 4.6). The total variance explained by the six factors was 75.845 %, which suggests that the research data have an adequate level of structural validity. From Table 4.6, we can see the loadings of each item for one factor are well above 0.5, and the cross-factor loadings are simultaneously all below 0.3. This indicates that each factor has a strong correlation with the internal measurement indicators, and the degree of discrimination between the observed variables is relatively high. It can be concluded that factor one is “convenience”, factor two is “tangibles”, factor three is “reliability”, factor four is “responsiveness”, factor five is “empathy”, and factor six is “assurance.” According to the result of the EFA, item R6 “Accurate and reliable tracking system” should be reallocated to the factor tangibles, and item S1 “Quick processing of complaints and requests” should be reallocated to the factor empathy. It is reasonable for customers to consider a reliable package tracking system as a tangible asset of a courier company, and a courier company’s rapid handling of complaints and requests can also be seen as a sign of empathy. Therefore, attribute R6 was reallocated to the factor tangibles, and attribute S1 was reallocated to the factor empathy.

**Table 4.6 Factor Analysis (2<sup>nd</sup>)**

Items	Factor Loadings					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
C2	<b>0.816</b>	0.225	0.179	0.069	0.189	0.115
C1	<b>0.811</b>	0.180	0.067	0.122	0.179	0.034
C4	<b>0.797</b>	0.144	0.171	0.126	0.183	0.165
C3	<b>0.775</b>	0.191	0.172	0.112	0.206	0.193
T1	0.287	<b>0.815</b>	0.065	0.089	0.102	0.217
T3	0.183	<b>0.814</b>	0.103	0.171	0.226	0.175
T2	0.184	<b>0.804</b>	0.212	0.099	0.177	0.128
R6	0.139	<b>0.726</b>	0.289	0.092	0.198	0.194
R1	0.020	0.207	<b>0.834</b>	0.024	0.135	0.094
R5	0.196	0.132	<b>0.792</b>	0.148	0.184	0.126
R2	0.186	0.096	<b>0.773</b>	0.161	0.124	0.161
R3	0.143	0.112	<b>0.773</b>	0.109	0.098	0.110
S6	0.029	0.103	0.083	<b>0.860</b>	0.096	0.054
S3	0.072	0.057	0.079	<b>0.858</b>	0.077	0.111
S2	0.149	0.130	0.134	<b>0.763</b>	0.042	0.037
S7	0.111	0.061	0.091	<b>0.762</b>	0.107	0.160
E2	0.202	0.154	0.119	-0.006	<b>0.821</b>	0.199
E1	0.208	0.130	0.170	0.119	<b>0.810</b>	0.107
E3	0.246	0.239	0.123	0.019	<b>0.763</b>	0.155
S1	0.109	0.145	0.178	0.311	<b>0.703</b>	0.023
A1	0.121	0.174	0.215	0.114	0.156	<b>0.871</b>
A2	0.179	0.178	0.191	0.144	0.139	<b>0.853</b>
A3	0.148	0.276	0.090	0.142	0.146	<b>0.819</b>
Eigenvalues	8.777	2.303	1.841	1.709	1.460	1.355
% of Variance	38.160	10.015	8.006	7.429	6.346	5.889
Cumulative %	38.160	48.175	56.181	63.610	69.956	75.845

*Note:* Bold indicates that the absolute value of loading is greater than 0.4

Based on the result of the EFA, we purified the courier service quality scale as shown in Table 4.7. The purified scale contains six dimensions and 23 courier service attributes. To evaluate the validity of the purified scale, a CFA was conducted.

**Table 4.7 Purified Courier Service Quality Scale**

<b>Dimension</b>	<b>Attribute</b>
Reliability	R1 Deliveries arrive at the time promised
	R2 Accurate delivery to the address of shipment
	R3 Packages delivered are handled without loss and damages
	R5 Consistent high-quality performance
Assurance	A1 Positive image and reputation of a courier company
	A2 Courier company staff are courteous and friendly
	A3 Courier company staff are knowledgeable and professional
Tangibles	T1 Courier company staff wear spruce, clean uniforms
	T2 Well designed and user-friendly website and tracking system
	T3 Modern / advanced equipment and facilities
	R6 Accurate and reliable tracking system
Empathy	E1 Ability to meet customers' special demands
	E2 Courier company cares for customers' needs and interests
	E3 Courier company protects individual privacy
	S1 Quick processing of complaints and requests
Responsiveness	S2 Short delivery time
	S3 Acceptable waiting time of picking up parcels at a counter in person
	S6 Acceptable customer service waiting time by phone or internet
	S7 Timely updates of tracking information
Convenience	C1 Courier company has many outlets (pick-up and drop-off points)
	C2 Outlet locations are near residential areas / close to customers
	C3 Easy to track the delivery status by the internet or phone
	C4 Reasonable delivery time window for the convenience of customers

#### 4.5 Confirmatory Factor Analysis

EFA aims to identify factors based on collected data and maximize the amount of variance explained. Comparatively, CFA evaluates the factors that are initially set as a hypothesis (Thompson, 2004). In this case, we tested the validity of the purified courier service scale by conducting CFA in AMOS software. A detailed CFA diagram is presented at Appendix 3.

As a preliminary step, CFA employs several statistical tests to examine how well the model fits the data, while the options vary on the tests to be employed. Following the recommendations of Kline (2015), we adopted the following tests to evaluate the model fitness: the chi-square divided by the degrees of freedom ( $\chi^2/df$ ), the goodness of fit index, the root mean square error of approximation, the standardized root mean square residual, the comparative fit index, the normed fit index, and the non-normed fit index. As shown in Table 4.8, the results of the tests indicate a good fit between the model and the data. Next, the convergent validity and discriminant validity of the variables were tested.

**Table 4.8 Assessment of Model Fit**

Indicator	$\chi^2/df$	GFI	RMSEA	SRMR	CFI	NFI	NNFI
Threshold	<3	>0.9	<0.10	<0.1	>0.9	>0.9	>0.9
Value	1.352	0.906	0.039	0.045	0.977	0.917	0.973

#### ***4.5.1 Convergent Validity***

Convergent validity and discriminant validity are considered two fundamental aspects of construct validity. Convergent validity compares two measures that are supposed to be measuring the same construct to demonstrate whether they are correlated (Carlson & Herdman, 2012). Factor loading, average variance extracted (AVE), and composite reliability (CR) are often used in academic research to test the convergent validity of data. It is generally considered that the minimum factor loading should be at least 0.5 (Krabbe, 2016). AVE expresses the degree to which the underlying construct can explain the variation of all observed variables. CR reflects the degree of consistency of the interpretation of the construct's characteristics by all the observed indicators of each construct. It is generally considered that the CR value should be above 0.7, and the AVE value should be above 0.5, which indicates that the variables have ideal convergent validity (Fornell & Larcker, 1981). The convergent validity results are shown in Table 4.9. The results show that the factor loadings are all greater than 0.5, the AVE value for every construct is above 0.5, and the CR value for every construct is above 0.7. The results suggest that the data of this scale have excellent convergent validity. That is, the observed variables can effectively reflect the potential characteristics of their common factor dimensions.

**Table 4.9 Convergent Validity**

Construct	Items	Confirmatory factor analysis loading	Composite reliability	Average variance extracted
Reliability	R1	0.794	0.868	0.622
	R2	0.788		
	R3	0.711		
	R5	0.855		
Assurance	A1	0.912	0.916	0.784
	A2	0.906		
	A3	0.837		
Tangibles	T1	0.846	0.900	0.694
	T2	0.834		
	T3	0.874		
	R6	0.774		
Empathy	E1	0.833	0.869	0.626
	E2	0.837		
	E3	0.812		
	S1	0.671		
Responsiveness	S2	0.711	0.860	0.608
	S3	0.837		
	S6	0.834		
	S7	0.728		
Convenience	C1	0.771	0.896	0.683
	C2	0.859		
	C3	0.846		
	C4	0.826		

#### 4.5.2 Discriminant Validity

Discriminant validity suggests that concepts or measurements that should not be related are in fact unrelated (Peter & Churchill, 1986). To test for discriminant validity, we adopted the Fornell-Larcker criterion analysis. Therefore, the square root of the AVE and the correlation coefficient are used for the test. When the square root of the AVE of a variable is greater than the correlation coefficient between that variable and other variables, it means that the internal correlation of the variable is greater than the external correlation, indicating that the variables have good discrimination validity (Fornell & Larcker, 1981). Table 4.10 shows that the square root of the AVE of each variable is greater than the correlation coefficient between that variable and other variables, indicating that the discrimination validity between the variables in this study meets the requirements.

**Table 4.10 Fornell-Larcker Criterion Analysis**

	Reliability	Assurance	Tangibles	Empathy	Responsiveness	Convenience
Reliability	(0.789)					
Assurance	0.407**	(0.885)				
Tangibles	0.440**	0.505**	(0.833)			
Empathy	0.483**	0.474**	0.688**	(0.791)		
Responsiveness	0.300**	0.313**	0.366**	0.285**	(0.780)	
Convenience	0.410**	0.411**	0.552**	0.532**	0.293**	(0.826)

*Note:* The value in ( ) is the square root of the average variance extracted

In summary, we conducted CFA to verify whether the collected data could support the model structure of the purified courier service quality scale. According to the results of the convergent validity and discriminant validity assessments, it can be concluded that the purified scale is adequately supported by the data. Therefore, we analyzed the collected data based on the purified scale, as shown in the following sections.

#### **4.6 Descriptive Analysis**

We adjusted collected data based on the purified courier service scale and obtained the average perception score of both courier service attributes and dimensions, as shown in Table 4.11. The respondents' scores for Question 30, "In general, the courier company provided excellent service," was considered to be the respondents' perceptions of the overall service quality of the received courier services. The average overall service quality score was 5.65, which is between point five (somewhat agree) and point six (agree). This result suggests that Canadian online shopping customers are generally satisfied with the courier services they receive. Moreover, the results show that reliability obtained the highest score of 5.49 as a service quality dimension, followed by assurance (5.24), convenience (5.15), tangibles (5.06), empathy (4.84), and responsiveness (4.41).

**Table 4.11 Customer's Perceptions of Courier Service Performance**

Dimension	Attribute	Question No.	Mean (Attribute)	Mean (Dimension)
Reliability	R1	4	5.21	5.49
	R2	5	5.73	
	R3	6	5.55	
	R5	8	5.43	
Assurance	A1	10	5.21	5.24
	A2	11	5.31	
	A3	12	5.21	
Tangibles	T1	13	5.22	5.06
	T2	14	5.13	
	T3	15	5.04	
	R6	9	4.84	
Empathy	E1	16	4.97	4.84
	E2	17	4.98	
	E3	18	5.12	
	S1	19	4.30	
Responsiveness	S2	20	4.41	4.41
	S3	21	4.40	
	S6	24	4.35	
	S7	25	4.49	
Convenience	C1	26	4.84	5.15
	C2	27	5.11	
	C3	28	5.36	
	C4	29	5.30	
Overall Service Quality		30	5.65	5.65

As the results show, the reliability dimension of courier services is considered of higher quality among Canadian online shoppers when compared to other dimensions. According to the rationale behind each service quality dimension, reliability represents the capability of a service provider to deliver the guaranteed service dependably and accurately. For courier companies, reliability refers to the capability of delivering packages to the correct address at the time promised. From this perspective, the reliability dimension's high score (5.49) indicates that Canada's courier companies have done a great job of delivering packages to customers accurately and reliably. Moreover, it is worth mentioning that the reliability dimension's attribute R2 "Accurate delivery to the address of shipment" received the highest score (5.73) among all 23 attributes.

Similarly, the assurance dimension obtained a decent score of 5.24, which suggests that Canada's courier companies successfully convey trust and confidence to customers through positive brand reputations and well-trained employees. Online shopping customers also recognized the performance of the service quality indicators in the tangibles dimension with an average score of 5.06. However, the score of R6 "Accurate and reliable tracking system" is less than five (4.84), which indicates that courier companies may need to invest additional resources to build a more efficient and reliable tracking system. Furthermore, the convenience dimension, as a specific service quality dimension added for courier services, refers to whether the courier company can provide appropriate services while considering customers' convenience. According to the average score of the convenience dimension (5.15), it can be concluded that Canadian online shoppers generally agree that courier companies offer services with regard to customer convenience. Nevertheless, certain courier companies may wish to consider establishing more outlets for the convenience of customers, as the attribute C1 "Courier company has many outlets (pick-up and drop-off points)" scored below five (4.84).

In contrast to the dimensions discussed above, the quality of service as measured by the empathy (4.84) and responsiveness (4.41) dimensions was relatively low at between point four (neutral) and point five (somewhat agree). Among the attributes of these two dimensions, only E3 "Courier company protects individual privacy" scored more than five at 5.12. These results could be due to the lack of individualized care from courier companies to their customers and the failure of companies to provide customer services promptly.

**Table 4.12 Customer's Perceptions of Courier Company's Service Quality**

Courier Company	Canada Post	FedEx	UPS	DHL	Purolator	Amazon
Overall Service						
Quality	5.68	5.61	5.23	5.46	5.52	6.30
Reliability	5.50	5.38	5.27	5.44	5.39	5.93
Assurance	5.16	5.24	5.08	4.99	5.74	6.00
Tangibles	5.08	4.95	4.98	5.05	5.26	5.75
Empathy	4.81	5.22	4.58	4.77	4.79	4.75
Responsiveness	4.44	4.32	4.08	4.79	4.11	5.10
Convenience	5.25	5.27	5.00	4.14	5.19	4.73
N of Samples	137	31	13	13	23	10

*Note:* The total number of samples is 227, as one respondent did not specify a courier company.

As the survey respondents answered questions based on their experience of their most frequently used courier company last year, it was possible to compare the service quality of the main courier companies that fulfil Canada's online shopping orders. The average score of each service quality dimension and overall service quality for each company are shown in Table 4.12. The results show that online shoppers are generally satisfied with the six courier companies' performance, as every company received more than five points. Among the six major courier companies involved in this survey, Amazon received the highest overall service quality score at 6.30. In addition to ranking the top in overall service quality, Amazon also leads in four service quality dimensions: reliability (5.93), assurance (6.00), tangibles (5.75), and responsiveness (5.10). The other companies' overall service quality scores in descending order are Canada Post (5.68), FedEx (5.61), Purolator (5.52), DHL (5.46), and UPS (5.23).

From Table 4.12, we can see that all six companies' reliability scores are above five, which indicates that all companies managed to deliver packages reliably and accurately. Moreover,

customers also acknowledge the performance of all six courier companies in the assurance and tangibles dimensions, in which the companies' scores are around five. However, only FedEx scored more than five points (5.22) for the empathy dimension. These low scores resulted mainly from customers perceiving a lack of individual attention from courier companies during service delivery. In contrast, FedEx outperformed its competitors in this dimension by providing more individualized attention to customers. Similarly, except for Amazon (5.10), most courier companies received relatively low scores (less than five) in the responsiveness dimension. Amazon outperformed other companies in this dimension, possibly because Amazon has a same-day and next-day delivery service and offers more responsive customer service through Amazon Prime. With regard to the convenience dimension, most companies scored more than five, except for DHL (4.14) and Amazon (4.73). The lack of pick-up and drop-off points and a flexible delivery time window may be responsible for the relatively low convenience scores.

However, it must be mentioned that the number of samples for each courier company varies greatly (Table 4.12). For example, 137 participants answered the questionnaires based on their experience with Canada Post, which accounts for 60.35 % of the total samples. In contrast, the number of participants who completed the survey with respect to other courier companies is much smaller: 31 samples represent FedEx (13.66 %), 23 samples represent Purolator (10.13 %), 13 samples represent UPS (5.73 %), 13 samples represent DHL (5.73 %), and 10 samples represent Amazon (4.41 %). Such a small sample size may not accurately represent Canadian online shoppers' perception of a specific courier company's performance. Nevertheless, since the main purpose of this research is to evaluate the service quality of Canada's courier companies as a whole, the results obtained in this survey are sufficient for this research purpose.

## 4.7 Correlation Analysis

Correlation analysis and linear regression analysis are two of the most common techniques for analyzing relationships between two quantitative variables (Bewick et al., 2003). Correlation analysis aims to identify both the significance and direction of the linear relationship between two variables. In this study, to explore the correlation between online shopping customers' perceptions of overall courier service quality and each dimension of courier service quality, we employed the Pearson correlation ( $r$ ) method (Table 4.13). A positive  $r$  value refers to a positive correlation, and a negative  $r$  value refers to a negative correlation. Generally, a linear relationship is weaker the closer  $r$  is to zero. Moreover,  $p$  values are used to indicate statistical significance. The test results from SPSS 28 indicate a significant positive correlation between reliability ( $r = 0.638$ ,  $p < 0.01$ ), assurance ( $r = 0.553$ ,  $p < 0.01$ ), tangibles ( $r = 0.581$ ,  $p < 0.01$ ), empathy ( $r = 0.597$ ,  $p < 0.01$ ), responsiveness ( $r = 0.542$ ,  $p < 0.01$ ), convenience ( $r = 0.586$ ,  $p < 0.01$ ), and the overall service quality.

**Table 4.13 Pearson Correlation**

	Reliability	Assurance	Tangibles	Empathy	Responsiveness	Convenience
Overall Service Quality	0.638**	0.553**	0.581**	0.597**	0.542**	0.586**

\*  $p < 0.05$  \*\*  $p < 0.01$

Through correlation analysis, we have confirmed that every courier service quality dimension has a significant positive correlation with overall perceived service quality. The following section discusses how the impact of changes in each dimension on overall service quality can be predicted through regression analysis.

#### 4.8 Regression Analysis

A regression analysis was applied to further examine the influence of each service quality dimension on customers' perception of overall service quality. In other words, regression analysis helped identify how overall service quality could be predicted from several courier service quality dimensions. We set the courier service quality dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience) as the independent variables and set overall service quality as the dependent variable. A multiple linear regression test was conducted in SPSS 28, and the regression analysis results are shown in Table 4.14 and Table 4.15.

**Table 4.14 Model Summary and ANOVA**

Model		Sum of Squares	Df	Mean Square	F	Sig.	R	R <sup>2</sup>	Adj. R <sup>2</sup>
1	Regression	315.466	6	52.578	84.103	0	0.834	0.695	0.687
	Residual	138.161	221	0.625					
	Total	453.627	227						

The analysis results in Table 4.14 show that the  $F$  value of the model is 84.103 ( $P < 0.001$ ); therefore, the regression model has a good fit with the data. With regard to the explanatory power of the model, the coefficient of  $R$  square of the regression model is 0.695, which means that the factors of reliability, assurance, tangibles, empathy, responsiveness, and convenience account for 69.5 % of the variation in overall service quality.

**Table 4.15 Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	Variance Inflation Factor
(Constant)	-1.235	0.313			-3.946	0.000		
Reliability	0.336	0.049	0.303		6.835	0.000	0.703	1.422
Assurance	0.142	0.047	0.139		3.034	0.003	0.661	1.514
1 Tangibles	0.130	0.056	0.113		2.303	0.022	0.572	1.748
Empathy	0.236	0.057	0.196		4.178	0.000	0.629	1.591
Responsiveness	0.363	0.055	0.268		6.619	0.000	0.838	1.193
Convenience	0.175	0.050	0.167		3.524	0.001	0.613	1.633

*Note:* Dependent Variable is Overall Service Quality

We also verified whether a multicollinearity problem might be present in the model by measuring the tolerance and the variance inflation factor (VIF) value. Normally, a multicollinearity problem is indicated by a tolerance less than 0.20 or 0.10, or a VIF value of five or 10 and above (O'Brien, 2007). As shown in the collinearity statistics in Table 4.15, the VIF values of the six independent variables are all less than five, and their corresponding tolerances are close to one. This result indicates that no obvious multicollinearity problem between the six independent variables is present. This means that, given a slight change in the model or the data, the coefficient results of a multiple regression model should not fluctuate erratically.

From the beta coefficients (standardized regression coefficients) and *p* value (Sig.) results in Table 4.15, it can be concluded that all dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience) have a significant positive correlation to overall service quality. With regard to the influence of each service quality dimension on overall service quality, the reliability dimension has the most significant influence on overall service quality with a

standardized regression coefficient of 0.303, followed by responsiveness (0.268), empathy (0.196), convenience (0.167), assurance (0.139), and tangibles (0.113).

As reliability represents the key value offered by a courier company, it is logical that the performance of the reliability dimension has the most significant impact on the overall service quality. Responsiveness ranks as the second most significant dimension, and this indicates that customers place great emphasis on prompt service being provided by courier companies. The empathy dimension also has a significant influence on the overall service quality. It can be concluded that providing individual attention is essential to demonstrate to the customer that the courier company does its best to meet their needs. Convenience ranks fourth, which suggests that customers value courier companies providing convenient services. Next is the assurance dimension; customers still expect a courier company's employees to be friendly and professional, but they do not consider it a priority. Tangibles has a relatively minimal impact on the overall service quality, which shows that customers pay less attention to the appearance of the courier company's facilities, personnel, and communication system.

## **5. Discussion**

Due to the high level of competition in the market, courier companies fulfilling online retailing orders ought to make informed decisions concerning the allocation of resources for future service quality development. By providing insights into Canadian online shopper perceptions of courier service performance, this study should support Canada's courier service providers in the process of service quality improvement. In this chapter, we discuss the main findings of this study and answer the three main research questions.

### **5.1 Courier Service Quality Factors in Canada**

As mentioned in the literature review, the existing courier service quality scales should not be applied to different countries without specific modifications (Valaei et al., 2016; Gulc, 2017). Therefore, it is necessary to conduct an empirical study on a specific country's courier service customers to develop a scale that accurately represents the quality of courier services in that country. From this perspective, one of the key contributions of this study is that it is the first empirical study conducted on Canada's courier service quality. Accordingly, a dedicated service quality scale for courier service providers operating in Canada was also developed for the first time. Moreover, based on the literature review, we found that most research on courier service quality focuses either on a specific group of respondents (i.e. customers of a specific courier company) or a specific region of a country. In contrast, the presented study regards the service quality of Canada's main courier companies as indicative of the overall service quality of the entire courier industry, a position which is supported by this study surveying courier service users in all regions of the country. Therefore, the result of this study is beneficial not only to a specific company but to all courier service practitioners in Canada.

The concrete manifestation of the abovementioned contributions is the purified courier service quality scale determined in the results analysis chapter (Table 4.7). By analyzing the 228 qualified responses collected across Canada, 23 factors (attributes) allocated to six service quality dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience) were identified. These identified factors answered the first research question of this thesis: "What factors could characterize the current level of service quality of the courier business in Canada?" Due to

the diverse demographic characteristics of the samples collected in the survey, the scale derived from this empirical study is capable of comprehensively reflecting Canadian online shopper perceptions of courier service performance. Therefore, we believe that the courier service attributes confirmed in this study can be used as a reference for future research on the quality of Canada's courier services.

With regard to the overall performance of Canada's courier service providers, the results of the study reveal that the overall service quality score is 5.65 on average. It can be concluded that Canada's online shopping customers are generally satisfied with the current service quality level of courier companies. As mentioned above, the results obtained in previous studies are based on specific companies or specific regions; this study is the first time that customers' perceptions based on all companies and all regions of a country have been obtained. With regard to customers' perception of each service quality dimension, the results show that reliability had the highest score (5.49), followed by assurance (5.24), convenience (5.15), tangibles (5.06), empathy (4.84), and responsiveness (4.41). Canada's courier companies received relatively low service quality scores regarding the empathy and responsiveness dimensions; both were below five points.

In this context, empathy means to provide individualized attention to show customers that the company is doing its best to meet their needs. As customers' demands are continuously increasing in today's highly competitive world, it is the responsibility of companies to meet customer requirements. Otherwise, customers who are not given individual attention will seek alternatives. Responsiveness refers to the promptness of providing services to customers, and it is the company's responsibility to ensure that the service is delivered fast without delay. In short, improving the service quality of empathy and responsiveness means the courier company management must provide customers with more individualized attention and more responsive customer service. Based on the survey results and findings in the literature review, it is worth noting that poor performance in the empathy and responsiveness dimensions seems to be a common problem of courier companies across the world. For example, Meng and Zhou (2016) indicated that it was necessary for China's local courier companies to shorten the customer's complaint process (responsiveness) and offer customized services according to the customer's individual needs (empathy). Therefore, we believe that the service quality attributes of the empathy

and responsiveness dimensions should attract more attention from courier service practitioners. The relationship between these two dimensions and overall service quality will be further discussed in this chapter.

Notably, the previous research did not develop a specific courier service quality scale for B2C e-commerce retail. By targeting the courier service quality of online shopping in Canada, the specific service quality scale established in this research can be considered the first developed in the context of B2C e-commerce retail. Nevertheless, it also means that this courier service quality scale has its limitations of applicability. For different courier service scenarios other than B2C e-commerce retailing, scholars and courier service practitioners should not adopt this scale without corresponding modifications to assess courier service quality.

## **5.2 Key Dimensions of Courier Service Quality**

To answer the second research question, “What are the key factors (dimensions) that affect Canadian online shopping customer perceptions of courier service quality?”, we conducted a regression analysis of the obtained data. The result indicates that all service quality dimensions have a significant positive relationship to perceived service quality. That is, any deviation of any dimension ultimately affects the overall service quality perceived by customers.

According to the literature review, some courier service quality dimensions established in previous studies do not significantly impact perceived courier service quality. For example, the pilot study conducted in Malaysia by Yee and Daud (2011) indicates that customer satisfaction is positively impacted by tangibility, reliability, and assurance dimensions but not significantly impacted by empathy and responsiveness. Similarly, Valaei et al. (2016) found that only promptness, safety, and convenience dimensions significantly affects perceived service quality, whereas the dimensions of accuracy and tangibility are not positively correlated to perceived service quality. In contrast, all six dimensions defined in this study show a significant positive relationship with perceived service quality, which shows that the courier service scale developed in this study comprehensively and accurately identifies the factors that affect Canada’s courier service quality.

The regression analysis results also reveal that, although every dimension has a significant influence on online shopping customers' perception of overall service quality, the level of influence of each dimension is notably different. By comparing the standardized regression coefficients of each dimension, we found that reliability has the most significant influence on overall service quality with a standardized regression coefficient of 0.303, followed by responsiveness (0.268), empathy (0.196), convenience (0.167), assurance (0.139), and tangibles (0.113).

The reliability of a courier company refers to a courier company's capability to deliver packages accurately and reliably, which has been confirmed in several studies as one of the most significant factors for perceived courier service quality (Ho et al., 2012; Liu & Liu, 2014; Wei et al., 2016). The results of this study are no exception; reliability is regarded as the most significant dimension for the overall courier service quality. Therefore, it is sensible for the management of courier companies to prioritize the performance of reliability in service quality development.

According to the regression analysis results, empathy and responsiveness are the two most significant dimensions for overall service quality following reliability. At the same time, as we mentioned in the previous section, Canada's courier companies received the lowest service quality scores for these two dimensions. In other words, although Canada's online shopping customers strongly value the empathy and responsiveness dimensions, they are not satisfied with the current performance of these two dimensions. We believe this finding has particular relevance for the improvement of courier service quality as it reveals the need for courier companies to improve service quality in the empathy and responsiveness dimensions. More importantly, it also implies that investing in these two dimensions will most effectively improve the overall perceived service quality.

As a dimension added specifically for courier service quality measurement in this research, the convenience dimension's performance has also been confirmed to notably impact the overall service quality. That is, Canada's online shopping customers value the convenience of the services provided by courier companies. In contrast, the dimensions of assurance and tangibles have relatively less impact on the overall service quality. This result does not mean that customers do not care about the quality of courier service in these two dimensions; these two dimensions still

significantly impact the overall service quality after all. Nevertheless, we can conclude that, when compared to the service quality attributes of the other four dimensions, Canada's online shoppers are relatively less concerned about assurance and tangibles attributes such as the company brand image, employee professionalism, and company tangible assets.

### **5.3 Conclusions and Recommendations**

Based on the findings about Canada's current courier service quality level and key factors that affect courier service quality, the third research question "What conclusions can be made and recommendations offered for the management of courier companies in Canada?" can be answered.

According to Asubonteng et al. (1996) and from a qualitative perspective, having a clear understanding of what factors significantly affect service quality will guide management to improve service quality. As discussed in the previous chapter, we confirmed that all six dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience) have a significant positive correlation to the overall service quality of Canada's online retailing delivery. Therefore, it is suggested that the management of courier companies should regard the six service quality dimensions as integral to the whole and pay attention to the performance of all dimensions. Neglecting any dimension could lead to a decline in perceived service quality.

Moreover, as each dimension's contribution (influence) on the overall courier service quality is different, the allocation of resources to each dimension will result in different marginal outputs. Therefore, it is recommended that courier company management focus more on the dimensions with the most significant influence on overall service quality. Specifically, since the reliability dimension has the most significant impact of all six dimensions, courier company management should prioritize the reliability dimension in resource allocation. At the same time, the results of the survey show that Canada's courier companies have performed successfully in reliability, which secured the highest perception score of all dimensions. In other words, Canada's courier companies have been unanimously recognized by online shopping customers for delivering their packages accurately and reliably. Therefore, to effectively improve courier service quality, courier company management should pay more attention to the development of other dimensions while maintaining

the high-quality performance of the reliability dimension. In particular, this means paying more attention to empathy and responsiveness.

Having regard to the empathy and responsiveness dimensions' significance and their current performance, it can be concluded that, theoretically, courier companies investing in improving these two dimensions will receive a notable marginal benefit in overall service quality improvement. Therefore, courier company management in Canada is recommended to consider reallocating their resources to the empathy and responsiveness dimensions for an efficient overall service quality improvement.

Improving a courier company's service quality in the empathy and responsiveness dimensions generally refers to providing customers with more individualized attention and more responsive service. Specific to the relevant attributes covered in this study, it is recommended that courier company management implement the following concrete measures:

- Upgrade transportation methods and optimize delivery routes to shorten the delivery time.
- Upgrade tracking systems to provide more accurate and timelier updated delivery information.
- Hire more customer service representatives and couriers to provide customers with more personalized and faster service.
- Conduct appropriate employee training to cultivate a strong cooperative culture that values customers.
- Collect customer feedback on a regular basis to consistently improve customer experience.

With regard to the convenience, assurance, and tangibles dimensions, the results show that these three dimensions generally receive decent service quality scores from online shoppers. Moreover, considering that these three dimensions have a relatively low influence on the overall service quality, it is not recommended that courier companies allocate excessive resources to improve the service quality level of these dimensions.

To secure a competitive advantage in Canada's e-commerce courier service market, courier company management should mainly focus on the development of service quality in the dimensions of empathy and responsiveness while ensuring high-quality performance in the reliability dimension.

This research is valuable for Canada's courier service practitioners as it provides grounded insights and recommendations for the development of service quality. Simultaneously, courier company management should be aware that the above recommendations are based on the performance of Canada's courier service industry; the recommendations are not supposed to be regarded as service quality improvement solutions for a specific company. In other words, courier companies should formulate specific service quality improvement measures according to each company's actual service quality status.

In addition to managerial implications, this research is also valuable for future academic research on courier service quality. As discussed in the literature review, most studies on courier service quality adopted the SERVQUAL model to collect respondents' expectations and perceptions of service performance. In contrast, this study applied the SERVPERF model that only considers the perception of the courier service's performance. This research confirms, for the first time, the adaptability and effectiveness of the SERVPERF model in the courier service industry and provides a new method for future research on courier service quality measurement.

## 6. Conclusion

With an increasing number of retailers starting to sell products online, courier delivery services have become a significant factor affecting customer satisfaction and future shopping intentions. At the same time, with the rapid growth of the e-commerce B2C market, courier companies also need to improve their service quality to attract more e-commerce companies to cooperate with. Improving the service quality of courier services is therefore crucial to enhancing the competitiveness of both courier companies and e-commerce companies in Canada.

This thesis aimed to evaluate the current service quality of courier companies that fulfill online shopping orders in Canada and identify the key factors that affect customers' perceptions of courier service quality. We first conducted a comprehensive literature review to explore various service quality measurement models and identify attributes to consider in characterizing Canada's courier service performance. Based on the literature review results, an initial courier service quality scale with seven dimensions and 43 attributes was developed. To refine the scale, we conducted a set of anonymous interviews with supply chain experts. As a result, a courier service quality scale with six dimensions and 26 attributes was developed. Following the rationale of the SERVPERF model, an online survey using the initial courier service quality scale was conducted of Canadian online shopping customers to collect their perception of courier companies' service quality. A total number of 228 qualified responses was collected.

By testing the reliability and validity of the obtained data, we produced a purified courier service quality scale, which contained 23 service quality factors (attributes) in six dimensions (reliability, assurance, tangibles, empathy, responsiveness, and convenience). The overall service quality score (5.56) indicates that Canadian online shopping customers are generally satisfied with courier companies' performance. Regarding the performance of each service quality dimension, the results show that reliability has the highest score, whereas the scores of empathy and responsiveness are relatively low. Moreover, the regression analysis results confirm that all service quality dimensions significantly correlate to overall perceived service quality. By comparing the standardized regression coefficients of each dimension, we found that the reliability dimension has the most significant influence on overall service quality, followed by responsiveness, empathy, convenience, assurance, and tangibles.

According to the study results, courier companies that fulfill Canada's online retailing orders should prioritize maintaining their exceptional performance of the reliability dimension. At the same time, it is recommended that courier company management allocate more resources in the service quality development of the empathy and responsiveness dimensions.

### **6.1 Limitations and Future Research**

Although this study designed a dedicated service quality model for Canada's courier service industry in the context of e-commerce retailing, there are nonetheless some limitations. Regarding the comprehensiveness of the courier service quality scale, we mainly focused on the service quality of the inbound parcel deliveries without considering the service of returning online orders provided by courier companies. As the return experience also significantly influences e-commerce retailers' customer satisfaction, it would be advisable for future research to add specific attributes targeting the returns of online shopping orders.

In addition, we did not consider how shipping cost affects customers' perception of courier service. It is reasonable for customers to have different service quality expectations of free shipping and paid shipping. Therefore, future research adopting the SERVQUAL concept to compare the service quality of free and paid shipping is expected.

Moreover, although the 228 samples collected in the survey provided a basic understanding of the overall service quality of Canada's courier companies, these samples are far from sufficient to serve as a reference for the service quality performance of the specific courier companies mentioned in the survey. To specifically explore a company's service quality status, each courier company should conduct a larger sample size survey independently.

Finally, this study lacks sufficient demonstration and analysis of a courier company's customer satisfaction, which is closely related to courier service quality. Future research is expected to further explore the relationship between courier service quality and customer satisfaction.

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## Appendix

### Appendix 1. Survey Questionnaire Form

#### Part 1. General information about the respondent

**Thank you for participating in this research. The purpose of this research is to evaluate the quality of the courier services in Canada in order to offer customers a better online shopping experience. Please, complete this questionnaire according to your experience of using the courier service while shopping online. The questionnaire should take approximately 5 minutes to fill in.**

**In this questionnaire, courier companies refer to businesses that deliver goods purchased online. For example, Canada Post, Federal Express (FedEx), United Parcel Service (UPS), DHL Express (DHL) and Purolator are the main courier companies in Canada.**

1. Have you ever bought physical goods online?

☐ Yes

☐ No

2. How often do you buy physical goods online?

☐ Less than once a month

☐ Monthly

☐ Weekly

☐ More than once a week

3. Which courier company delivered most of your online purchases last year?

☐ Canada Post

☐ FedEx

☐ UPS

☐ DHL

☐ Purolator

☐ Other (please specify)

#### Part 2. Questions related to your perceptions of the courier services quality

**The following parts contain statements related to your feelings about the courier company from which you received the most of your online shopping parcels last year. For example, if you received parcels mostly through Canada Post, please answer the following questions with respect to Canada Post.**

**For each statement, please, specify the extent to which you believe that the courier company has the feature described by the statement. There are no right or wrong answers. What matters is a number that best shows your perceptions as relating to the courier company.**

Strongly Disagree		Somewhat Disagree		Somewhat Agree		Strongly Agree
1	2	3	4	5	6	7

4. The courier company delivered my parcels at the promised time.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

5. The courier company delivered my parcels to the correct address.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

6. The courier company delivered my parcels without loss or damage.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

7. When I tried to pick up parcels at a counter in person, the service was provided appropriately.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

8. The courier company is characterized by the consistent high-quality performance.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

9. The courier company's delivery tracking system is accurate and reliable.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

10. The courier company has a positive reputation.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

11. The courier company staff were courteous and friendly.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

12. The courier company staff were knowledgeable and behaved in a professional manner.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

13. The courier company staff wore spruce, clean uniforms.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

14. The website and tracking system of the courier company are well designed and user-friendly.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

15. The courier company has modern/advanced equipment and vehicles.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

16. The courier company can meet my special demands (special handling for specific goods).

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

17. The courier company cares for my needs and interests.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

18. I feel secure when providing personal information for the delivery to the courier company.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

19. The courier company processed my requests and complaints quickly.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

20. The time between the courier company receiving my parcel from the online retailer and the delivery of the parcel to my address was short.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

21. When I tried to pick up parcels at a counter in person, the waiting time was acceptable.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

22. The courier company offered seamless customs clearance (when dealing with international inbound parcels).

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

23. The courier company representatives were available by phone or the internet when I needed assistance.

1   2   3   4   5   6   7

☐ ☐ ☐ ☐ ☐ ☐ ☐

24. When I contacted the courier company representative by phone or the internet, the waiting time was acceptable.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

25. The tracking information provided by the courier company was timely updated.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

26. The courier company has many counters (pick-up locations).

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

27. The courier company's counters are located near a residential area/close to my home.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

28. It was easy to track the delivery status via the internet or phone.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

29. The courier company offered reasonable delivery time window for my convenience.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

30. In general, the courier company provided excellent service.

1      2      3      4      5      6      7

○ ○ ○ ○ ○ ○ ○

Background information about the respondent
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**Please, answer the following questions as honestly as possible so that a more detailed analysis of the courier service quality can be carried out.**

31. What is your gender?

☐ Male

☐ Female

32. What is your age?

☐ 19 or under

☐ 20 to 29

☐ 30 to 39

☐ 40 to 49

☐ 50 to 59

☐ 60 to 69

☐ 70 or over

33. What is your annual gross income?

☐ Below 10,000\$

☐ 10,000\$ - 40,000\$

☐ 40,000\$ - 70,000\$

☐ 70,000\$ - 100,000\$

☐ Above 100,000\$

34. Where do you live?

☐ Urban area

☐ Suburban area

☐ Rural area

## Appendix 2. Survey on SurveyMonkey.com

# HEC MONTRÉAL

### Courier Services Quality of Online Shopping in Canada

#### Part 1. General information of respondent

Thank you for participating in this research. The purpose of this research is to evaluate the quality of courier services in Canada in order to bring customers a better online shopping experience. Please complete this questionnaire according to your experience of courier service in your previous online shopping. The questionnaire should take approximately 5 minutes to answer.

In this questionnaire, courier companies refer to companies that transport online shopping shipments (parcels). For example, Canada Post, Federal Express(FedEx), United Parcel Service(UPS), DHL Express(DHL) and Purolator are some leading courier companies in Canada.

1. Have you ever shopped physical goods online?

- ☒ Yes
- ☐ No

1 / 5 20%

Next

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 SurveyMonkey  
[See how easy it is to create a survey.](#)

[Privacy & Cookie Notice](#)

# HEC MONTRÉAL

## Courier Services Quality of Online Shopping in Canada

2. How often do you shop online physical goods?

- ☐ Less than once a month
- ☐ Monthly
- ☐ Weekly
- ☐ More than once a week

3. From which courier company did you receive the most of your online shopping parcels last year?

- ☐ Canada Post
- ☐ FedEx
- ☐ UPS
- ☐ DHL
- ☐ Purolator
- ☐ Other (please specify)

2 / 5  40%

Prev

Next

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## Courier Services Quality of Online Shopping in Canada

### Part 2. Questions on your perceptions of the quality of the courier services

The following parts contain statements relate to your feelings about the courier company from which you received the most of your online shopping parcels last year. For example, if you receive parcels mostly through Canada Post, please answer the following questions with respect to Canada Post.

For each statement, please show the extent to which you believe that courier company has the feature described by the statement. There are no right or wrong answers, all we are interested in is a number that best shows your perceptions about that courier company.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral (Neither agree nor disagree)	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

4. The courier company delivered my parcels at the promised time.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. The courier company delivered my parcels to the correct address.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. The courier company delivered my parcels without loss or damage.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. When I tried to pick up parcels at a counter in person, the service was provided appropriately.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. The courier company consistently delivered high-quality performance.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. The courier company's delivery tracking system was accurate and reliable.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. The courier company has a positive reputation.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. The courier company staff were courteous and friendly.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. The courier company staff wore spruce, clean uniforms.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. The courier company staff were knowledgeable and conducted themselves in a professional manner.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. The website and tracking system of the courier company is well designed and user-friendly.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. The courier company has modern/advanced equipment and vehicles.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3 / 5  60%

Prev Next

# HEC MONTRÉAL

## Courier Services Quality of Online Shopping in Canada

16. The courier company can meet my special demands (special handling for specific goods).

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

17. The courier company cares for my needs and interests.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

18. I feel secure in providing personal information for the delivery to the courier company.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

19. The courier company processed my requests and complaints quickly.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

20. The time between the courier company receiving my parcel from the online retailer and the delivery of the parcel to my address was short.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

21. When I tried to pick up parcels at a counter in person, the waiting time was acceptable.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

22. The courier company offered seamless customs clearance (when dealing with international inbound parcels).

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

23. The courier company representatives were available by phone or the internet when I needed assistance.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

24. When I contacted the courier company representative by phone or the internet, the waiting time was acceptable.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

25. The tracking information provided by the courier company was timely updated.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

26. The courier company has many counters (pick-up locations).

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

27. The courier company's counters locations are near a residential area/ close to my home.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

28. It was easy to track the delivery status of my parcel via the internet or phone.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

29. The courier company offered reasonable delivery time window for my convenience.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

30. In general, this courier company provided an excellent service.

1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐

4 / 5 80%

Prev Next

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# HEC MONTRÉAL

## Courier Services Quality of Online Shopping in Canada

### Background information of respondent

Please answer the following questions as honestly as possible so that we can make a more detailed analysis of the courier service quality.

31. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

32. What is your age?

- ☐ 19 or under
- ☐ 20 to 29
- ☐ 30 to 39
- ☐ 40 to 49
- ☐ 50 to 59
- ☐ 60 to 69
- ☐ 70 or over

33. What is your annual gross revenue?

- ☐ Below 10,000\$
- ☐ 10,000\$ - 40,000\$
- ☐ 40,000\$ - 70,000\$
- ☐ 70,000\$ - 100,000\$
- ☐ Above 100,000\$

34. Where do you live?

- ☐ Urban area
- ☐ Suburban area
- ☐ Rural area

Thank you for taking the time to complete this survey!

5 / 5 100%

Prev

Done

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### Appendix 3. CFA Diagram

