

**T.C.**

**İSTANBUL KÜLTÜR UNIVERSITY**

**INSTITUTE OF GRADUATE STUDIES**

**THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION  
AND LOYALTY IN CARGO COMPANIES IN ISTANBUL**

**MASTER'S THESIS**

**Nour ZAINELDEEN**

**2200006188**

**Department : Buissness Administration**

**Program : Buissness Administration**

**Supervisor: Assoc. Prof. Dr. Murat Taha Bilişik**

**JUNE 2025**

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## **Preface**

First and foremost, I extend my deepest gratitude to Allah for guiding me toward this field of study and for granting me ease and strength throughout this journey. Without His boundless mercy and support, the completion of this work would not have been possible.

I am profoundly indebted to my advisor, Assoc. Prof. Dr. Murat Taha Bilişik, Head of the IKU Business Management Department, for his generous guidance, patience, and invaluable insights. His encouragement and the wealth of knowledge he shared have been indispensable to the development of this thesis.

I owe deep appreciation to my parents, whose unwavering moral and financial support has sustained me at every stage of this academic path. Their encouragement has been a constant source of strength. I am equally grateful to my brothers and sisters, whose support and motivation have accompanied me throughout this process.

I also dedicate this work to my homeland, Palestine, which continues to be a source of resilience and determination for me. It is the enduring hope of contributing to its people that gives meaning to every challenge and sacrifice along this path.

Finally, I wish to express my sincere appreciation to Turkey for providing a welcoming and supportive environment in which to pursue my studies. The generosity, hospitality, and kindness I experienced here have not only made this endeavor possible, but have also added meaningful depth to this academic journey.

Nour Zaineldeen

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**University** : **İstanbul Kültür University**  
**Institute** : **Institute of Graduate Studies**  
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**Program** : **Business Administration**  
**Supervisor** : **Assoc. Prof. Dr. Murat Taha Bilişik**  
**Degree Awarded and Date** : **MA – June 2025**

## **ABSTRACT**

### **THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION AND LOYALTY IN CARGO COMPANIES IN ISTANBUL**

**Nour Zaineldeen**

This study aims to examine how service quality impacts customer satisfaction and customer loyalty in cargo service industry in Istanbul, Turkey, and the mediating role of customer satisfaction in the relationship between service quality and customer loyalty. Although previous research has examined service quality and satisfaction in the cargo sector, few have evaluated customer loyalty as a dependent variable, and none have thoroughly explored the mediating effect of customer satisfaction from the perspective of individual cargo customers in Istanbul—a major logistics hub with distinct market dynamics. Using a quantitative research design, data were collected from 303 individual cargo service users during April and May 2025 through a structured online questionnaire. The questionnaire was based on established measurement scales: SERVQUAL, Customer Satisfaction, and Customer Loyalty. The findings were analyzed using SPSS, employing descriptive, reliability and validity tests, correlation, regression, and mediation analyses. Results suggest that service quality has a significant effect on not only customer satisfaction but also customer loyalty, and that customer satisfaction acts as a partial mediator. This study makes a contribution to the service marketing literature as it fills an important gap and provides useful insights for cargo firms that seek to improve customer satisfaction and develop customer loyalty in a competitive urban market.

**Keywords:** Cargo, Logistics, Service Quality, Customer Satisfaction, Customer Loyalty.



ÜNİVERSİTE	:	İstanbul Kültür Üniversitesi
Enstitüsü	:	Lisansüstü Eğitim Enstitüsü
Dalı	:	İşletme
Programı	:	İşletme
Tez Danışmanı	:	Doç. Prof. Dr. Murat Taha Bilişik
Tez Türü ve Tarihi	:	Yüksek Lisans- Haziran 2025

## KISA ÖZET

### İSTANBUL'DAKİ KARGO ŞİRKETLERİNDE HİZMET KALİTESİNİN MÜŞTERİ MEMNUNİYETİ VE SADAKATİ ÜZERİNDEKİ ETKİSİ

Nour Zaineldeen

Bu araştırma, İstanbul, Türkiye'deki kargo hizmetleri sektöründe hizmet kalitesinin müşteri memnuniyeti ve müşteri sadakatı üzerindeki etkisini ve hizmet kalitesi ile müşteri sadakatı arasındaki ilişkide müşteri memnuniyetinin aracılık rolünü incelemeyi amaçlamaktadır. Önceki araştırmalar kargo sektöründe hizmet kalitesi ve müşteri memnuniyetini ele almış olsa da, çok azı müşteri sadakatını bağımlı değişken olarak değerlendirmiştir ve hiçbiri İstanbul gibi kendine özgü piyasa dinamiklerine sahip büyük bir lojistik merkezinde bireysel kargo müşterilerinin bakış açısından müşteri memnuniyetinin aracılık etkisini kapsamlı bir şekilde incelememiştir. Nicel araştırma deseni kullanılarak, Nisan ve Mayıs 2025 tarihleri arasında 303 bireysel kargo hizmeti kullanıcısından veri toplanmıştır. Veriler, SERVQUAL, Müşteri Memnuniyeti ve Müşteri Sadakatı ölçeklerine dayalı yapılandırılmış çevrim içi anket yoluyla elde edilmiştir. Bulgular SPSS programı kullanılarak; betimleyici istatistikler, güvenilirlik ve geçerlilik testleri, korelasyon, regresyon ve aracılık analizleri ile değerlendirilmiştir. Sonuçlar, hizmet kalitesinin yalnızca müşteri memnuniyeti üzerinde değil, aynı zamanda müşteri sadakatı üzerinde de anlamlı bir etkisi olduğunu ve müşteri memnuniyetinin bu ilişkide kısmi bir aracı rolü üstlendiğini ortaya koymaktadır. Bu çalışma, hizmet pazarlaması literatüründeki önemli bir boşluğu doldurarak katkı sağlamakta ve rekabetçi bir kentsel pazarda müşteri memnuniyetini artırmak ve müşteri sadakatı geliştirmek isteyen kargo firmaları için değerli içgörüler sunmaktadır.

**Anahtar Sözcükler:** Eleştirel Okuma, Eleştirel Düşünce, Eleştirel Pedagoji, Eleştirel Dil Duyarlılığı, Bilişsel Yaklaşım, Ödev-odaklı Öğretim Yaklaşımı.

## 1. INTRODUCTION

As globalization, technology, and e-commerce continue to develop, cargo services, which exactly deliver the prompt and secure delivery of shipments for both individuals and firms, have become important. By moving shipments around the globe via land, sea, or air, cargo services support industries and national economies (Songur & Büyükkeklik, 2016). Although the cargo industry has a global history, it is a relatively recent development within the Turkish market, having existed for approximately thirty years (Büyükkeklik et al., 2014). Despite having a relatively short history, Turkey's logistics and transportation sector today has a global ranking of 11th best performing country in the logistics and transportation sector with 2.5% of the global logistics market, which is around 100 billion US dollars (Investment Office of the Presidency of the Republic of Türkiye, 2024). This highlights Turkey's competitive state in the global markets. The word "cargo" has been defined in the Turkish Language Association as "an airplane or ship carrying goods; a company's transported load or mail; a company that transports goods or mail from one place to another; items or cargo transported by an airplane, ship, or similar vehicle" ([www.tdk.gov.tr](http://www.tdk.gov.tr)).

The growing demand in the cargo sector has drawn investors' attention, which creates a highly competitive market (Büyükkeklik et al., 2014:3). Fornell et al. (2006) emphasizes that service quality plays a vital role for companies to survive in such a competitive market. Offering high-quality customer experiences allows businesses to maintain a competitive advantage and gain profitability. In this context, Kotler (2000) mentions that businesses are successful at marketing when they focus on two specific parts: the provision of high-quality services to customers and strategic plans to develop customer satisfaction with the goods and services. High-quality service produces customer satisfaction where customers become loyal, which in turn positively affects a company's profitability (Roslan et al., 2015: 459).

Oliver (1997) explains that service quality can be conceptualized as the result of customers' comparisons between their expected service experiences and their actual perceptions of the service provider's performance. Excellent service occurs when

perceptions exceed expectations, good service happens when perceptions and expectations are equal, poor service results when the customer's expectations are not fulfilled. It is important to know how customers evaluate products and services in order to manage service quality effectively. Measuring service quality is a challenge compared to tangible products, due to its intangibility and the fact that it effectively relies on customer perceptions, judgments, and thoughts (Cunningham et al., 2000: 35).

The importance of this research is in its ability to bridge critical gaps in the present literature on service quality, customer satisfaction, and loyalty in the cargo sector. Some research studies have explored service quality and customer satisfaction in the cargo sector, however, none of these studies have explored the notion of customer loyalty as a dependent variable (Songur & Büyükkeklik, 2016; Yıldız, Çiğdem, & Aslan, 2018; Onurlubaş & Gümüş, 2020). Though Yıldız (2017) evaluates customer loyalty, it fails to see the mediating role of customer satisfaction in this relationship. More specifically, Çetindaş (2023), studied the mediating role of customer satisfaction in the relationship between service quality and loyalty in the cargo sector, but it was conducted in a context outside of Istanbul. Since Istanbul is a major logistics hub and has market characteristics and expectations that are typically distinct from other regions, the findings from other regions may not necessarily be fully applicable. Thus, there is a gap of literature regarding the indirect effect of service quality on loyalty through customer satisfaction and more specifically, from the individual customer view in the Istanbul cargo industry. The purpose of this study is to fill a significant gap in the literature by examining the relationship between service quality and customer satisfaction and loyalty using the lens of individual cargo customers in Istanbul, as well as looking at the mediating role of customer satisfaction in connecting service quality with customer loyalty. This study will make theoretical and practical contributions to the literature by adding to the service marketing literature and helping cargo companies to develop more customer-centered marketing strategies based on increasing satisfaction and loyalty in one of Turkey's most important logistics areas.

## **2. LITERATURE REVIEW**

### **2.1. The Concept of Service**

The main objective and driving force behind all organizations today is to deliver services to people (Oğuz, 2010). According to the American Marketing Association (AMA), the concept "service" refers to "activities performed by sellers and others to facilitate the purchase or use of a product, either before or after the sale". Zeithaml (2000) explains that services consist of activities, operations, or accomplishments, covering economic activities that result in non-tangible outputs. According to Gidhagen (1998: 3), service is "a concept that has a more or less abstract structure and comprised of all activities that take place between the customer, the service personnel or the physical resources of the service provider and offered as a solution to customers' problems". Mucuk (2001: 285) defined service as "abstract foods or benefits that are produced and consumed simultaneously, that cannot be stored and transported, and that are characterized by the user's not having the right of ownership". In other words, Kotler (2001: 291) describes service as "a type of product comprised of abstract activities which are offered by one party to the other and do not necessitate ownership".

It is clear that service concept commonly includes abstractions, lack of property rights, provision of benefits, and personal effort or activities. However, a universally agreed definition of a service concept is still not reached due to various reasons. The way the service concept is viewed varies depending on economic and sociological changes. Moreover, the diversity that exists in the services field and its distinct features contribute to the challenge (Kilic & Eleren 2009: 93).

### **2.2. Features of Service**

Parasuraman and Zeithaml identified the features of services: abstraction, non-homogeneousness, inseparability, and perishability. In marketing literature, these features are:

- Abstraction: Linked to intangibility (Özgüven, 2008), and a key feature distinguishing services from tangible goods, as services are performances rather than physical objects, leaving no tangible evidence of what the customer receives (Eroglu, 2004).

- Non-homogeneousness: Linked to variability (Yumuşak, 2006) and heterogeneity (Özgüven, 2008). Service performance varies by provider, customer, and timing (Tütüncü, 2009), making it challenging to achieve a standardized output (Gidhagen, 1998)
- Perishability: Characterized by inability to be stored (Yilmaz, 2007).
- Inseparability: Defined as simultaneous production and consumption (Özgüven, 2008).
- Lack of ownership: Not granting ownership to the recipient (Dibb et al., 1994). It remains challenging to purchase physical ownership of abstract services like experiences (movies), time (consultancy), or processes (dry cleaning) (Shostack, 1977).

## **2.3. Service Quality**

### **2.3.1. The concept of Service Quality**

Quality has multiple definitions, influenced by sector, stakeholder perspective, context in which it is being considered (Pirnar, 2007) as well as users' varying needs and expectations (Tütüncü, 2009). The concept of "quality" can be viewed through multiple perspectives. Lovelock and Wirtz (2007) states that David Garvin proposed five approaches to conceptualizing quality: the transaction view, the product-based approach, user-based definitions, the manufacturing-based approach, and value-based definitions. The transaction approach, linked to fields like visual art, sees quality in terms of innate excellence and superior standards while the product-based approach describes quality as a variable that can be measured based on ingredients or attributes. User-based definitions emphasize customer satisfaction and individual preferences, the manufacturing-based approach is focused on supply, centering on engineering and manufacturing practices, and value-based definition sees quality as “affordable” when there is a good balance between perceived value and price. Each viewpoint provides a different opportunity to comprehend and assess quality in terms of different features of products and offered services.

Edvardsson (1998) defined service quality as the extent of compliance with the customers' expectations. Further, Kim (2021) shows service quality not only refers to the level of quality of the products and services offered on the customer's behalf, but level of satisfaction on their own experience. Service quality is customers' overall thoughts of how superior or excellent a product or service is (Robledo, 2001). Teas (1993) described it as the comparison between actual performance and ideal standards.

Service quality is based on customers' expectations and perceptions: if the service meets or exceeds expectations, quality is seen as high; if it falls short, quality is perceived as low (Akbaba & Kilinc, 2001). Also, the same service can be seen as high or low quality depending on individual perspectives. One customer may view a service as high quality, while another may not (Yilmaz, 2011). Thus, the term "perceived service quality" is frequently used rather than "service quality", assessed by the difference in expectations versus perceived performance. The assessment depends on the size and direction of the difference between what customers expected and what they perceived (Zeithaml & Bitner, 2000).

Service quality is presented by Gronroos (1984) as the result of a customer's assessment, comparing their anticipated service with the service they experience. Parasuraman et al. (1993) view service quality as the process of assessing the differences between what customers anticipate from a service and their actual experiences after utilizing it. Zeithaml (1988) describes service quality as the customer's evaluation of a service's overall excellence or superiority. Chang (2008) adds that service quality should be assessed primarily from the customer's perspective since they may have different values, assessment criteria, and circumstances. It is considered an external assessment done by the customers based on their interactions and experience of the service they received (Parasuraman, Zeithaml and Berry, 1990). Moreover, Kumra (2008) argues that the concept of service satisfaction is broader than the final produced product or delivered service, and consists of an entire production and delivery process, to showcase that employee engagement in process improvements can significantly impact the overall service quality of tourism products or services.

Grönroos (1983, as cited in Kabir & Carlsson, 2010) summarized 10 key determinants that influence service quality. They are:

1. Reliability: a business can provide consistent and dependable service and fulfill commitments to customers.
2. Responsiveness: employees are ready to provide prompt service.
3. Competence: personnel have specialized knowledge, necessary qualifications, and expertise.
4. Access: the service must be approachable, such as having suitable business hours, accessible locations, short wait times, and uncomplicated telephone access
5. Courtesy: employees treat customers in a friendly way
6. Communication: a business has a communication with customers in understandable language and actively listen to them
7. Credibility: a business is trustworthy and has integrity
8. Security: customers are sure of the safety of their personal information, financial transactions, and physical well-being
9. Understanding the customer: companies need to know about their special needs, preferences, and expectations, and provide personalized attention
10. Tangibles: they include physical elements like buildings, furniture, equipment and the appearance of the service staff and of other customers present within the service facility

Grönroos (1983, as cited in Kabir & Carlsson, 2010) concluded that

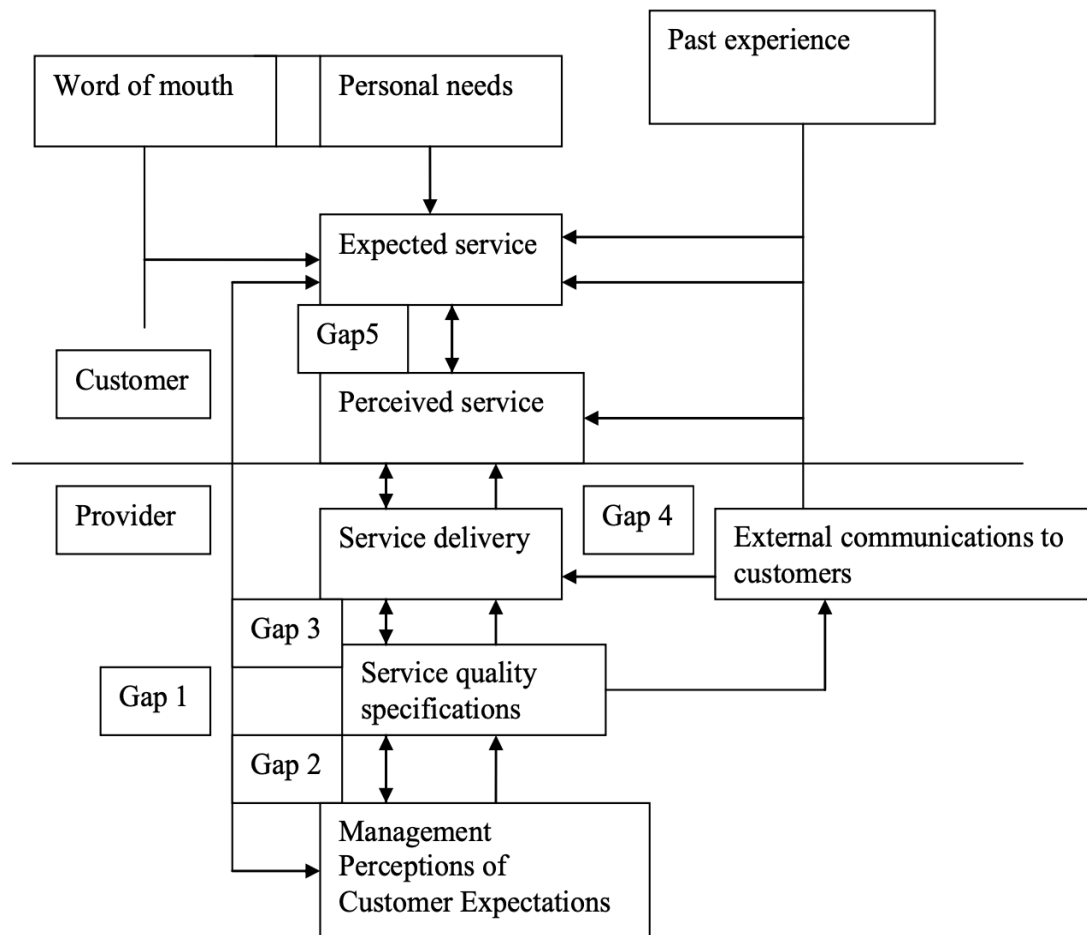
- Service quality is determined by the customer's perceptions which involves a comparison between their expectations and their actual experience.
- If the customer's expectations are met, then the service quality is satisfactory. if the expectations are exceeded, the service quality is considered more than satisfactory.
- The quality assessment is affected by both the service process itself and the final service outcome a customer receives.
- There are two types of service quality: the quality in delivering regular, ongoing service to customers and the quality in addressing customer expectations and resolving any issues that may come up.

### **2.3.2. Dimensions of Service Quality**

The initial step of service quality enhancement is measurement. Because knowing the correct current quality level allows firms to take appropriate actions (Usta & Memis, 2009). Previous researchers have investigated several different dimensions to measure service quality. For instance, Grönroos (2007) discussed a model of "total perceived service quality" that consists of the gap between customer expectation and the actual experience they receive from the service. The "total perceived service quality" model consists of two primary dimensions of quality: technical quality (i.e., the outcome, or that which the customer receives) and functional quality (i.e., how service is delivered). These two dimensions in turn suggest the imagery of the firm and the overall service quality that the customer perceives. The model emphasizes that customer perceptions of service quality are determined by a multifaceted assessment that considers customer's experiences of quality dimensions used in assessing the service, the perceived quality of service provided and the ultimate result of the assessment process.

On the other hand, Parasuraman, Zeithaml, and Berry created a model for service quality named "Gap Analysis Model" which offers an integrated perspective on the relationship between customers and company. This model highlights how service quality is influenced by the size and direction of the five potential gaps in the service delivery process. The first gap is between customer expectations and the management's perception of those expectations. The second gap is between the management's perception of customer expectations and the service quality standards of a company. The third gap is between the service quality standards and the service delivery. The fourth gap is between service delivery and external communication. The fifth gap is the perceived service quality gap which is between expected service and perceived service. The first four gaps are about service delivery from the service provider to the customer, while the fifth gap is related to the customer and affected by the SERVQUAL instrument. Figure 2.1. presents the SERVQUAL model based on a gap model by Parasuraman et al (1985).





**Figure 2.1. The SERVQUAL scale based on a gap model by Parasuraman et al. (1985)**

### 2.3.3. The SERVQUAL Model

The contributions of Parasuraman, Berry, and Zeithaml (1988) are widely regarded in marketing literature. Parasuraman et al. (1985) explored the concept of service quality by making interviews with managers and discussions with customers. Their research concentrated on sectors such as banking, credit card services, brokerage/telecommunications, and repair/maintenance. The study found that service quality, from the consumer's perspective, is the gap between expectations and actual perceptions.

Lovelock and Wirtz (2007, P. 420) states that Valarie Zeithaml and her team created the "SERVQUAL" model which helps customers measure service quality by comparing their service perceptions with expectations.

This model includes a set of 22 perception items and expectation items that are based on the five key dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Respondents rate each item on a scale ranging from "Strongly Agree" (7) to "Strongly Disagree" (1), with intermediate scores for less extreme responses. The difference between expected and perceived service quality is then calculated to determine the service quality score (Erdem, 2007). Parasuraman (1988) emphasizes it is important that SERVQUAL is reliably measured to find out the gaps between customer expectations and perceptions of service performance, which in turn improves service quality. In other words, SERVQUAL acts as a diagnostic instrument to uncover the weaknesses and strengths of a company's service quality (Zeithaml et al, 1988).

Initially, Parasuraman et al. (1985) ten criteria of service quality: reliability, responsiveness, competence, accessibility, communication, courtesy, credibility, security, empathy, and physical facilities. However, later studies by Parasuraman et al., (1988) and (1991) grouped them into 5 main categories including tangibles, reliability, responsiveness, assurance, and empathy. According to Zeithaml et al (1990), the Assurance and Empathy dimensions of SERVQUAL represent seven original dimensions: communication, credibility, security, competence, courtesy, understanding customers, and access. The authors clarify that tangible dimension involves the physical aspects of the service, such as facilities, equipment, and personnel and other customers' appearance, which has a vital role in establishing a pleasant atmosphere. This dimension can be evaluated by the service provider prior to the service. Reliability reflects the capability of a service provider to deliver the promised service in a way that ensures dependability, precision, and accuracy. Customers anticipate receiving a service that is not only timely but also performed exactly as assured, allowing them to trust and rely on the service provider to meet their expectations consistently. Responsiveness involves the readiness and eagerness of service providers to assist customers and deliver prompt service. Assurance refers to the knowledge, skills of employees as well as their ability to inspire trust and make

customers feel secure in their interactions with the company. Finally, empathy involves understanding customers' perspectives, offering individualized attention, and showing personal interest.

SERVQUAL is a popular tool for assessing service quality because it has many benefits (Buttle, 1996):

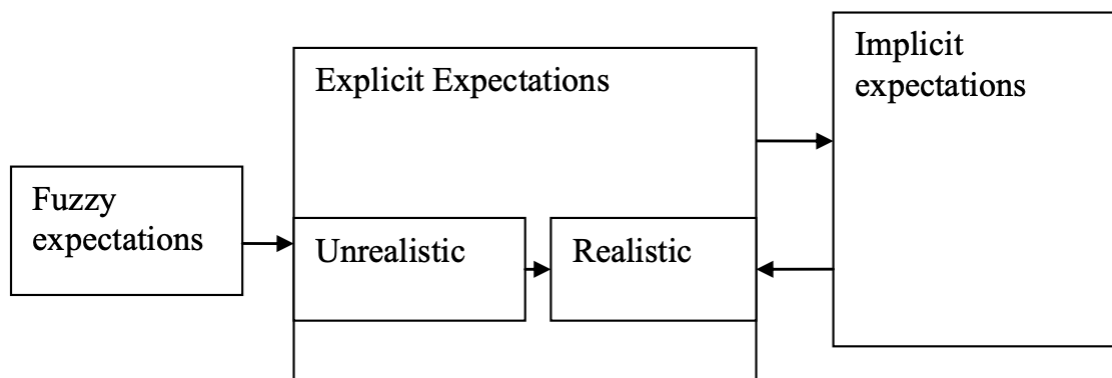
- used around the world as a standard to measure various dimensions of service quality
- works in many different industries and types of services
- Reliable indicating that different people understand the questions in a similar way, which makes the results consistent
- efficient and easy to complete
- Provides a standardized analysis procedure to aid in interpreting results
- has a standard method for analyzing the results.

The SERVQUAL scale is widely used for service quality measurement, but it has been criticized. These criticisms fall into two main categories: (1) the scale's dimensions are not universally applicable across all service industries, varying by industry; and (2) the five dimensions may be insufficient, not fully independent, and lack consistent statistical validity and accuracy (Akbaba& Kilinc, 2001: 166). However, the SERVQUAL scale remains a popular tool for measuring service quality despite facing criticism (Yilmaz, 2007).

#### **2.3.4. Customer Expectations**

In service quality literature, Ekinici (2002) emphasizes that the term “expectations” has different meanings. For example, Tam (2005) shows that being aware of the over- time development of customer expectations is important for companies as it considerably affects customer satisfaction. Also, Lovelock and Wirtz (2007) believe that customer expectations are important in assessing service quality in the way that if expectations are met or exceeded, then the service is of high- quality. They also add that there are different factors that affect customer expectations such as business type, competing services, and past experiences. What customers expect may also change over time social trends, advertising, and new technology.

Grönroos (2007) introduced the idea that customer expectations can improve long-term quality. He proposed a model of expectation which helps to understand how the quality of services evolves over the course of an ongoing customer relationship. This model classifies expectations into three categories: fuzzy, explicit, and implicit. Fuzzy expectations occur when customers have no clear understanding of the actions the service provider needs to take to solve their problems. However, sometimes customers are clearly aware of what they expect from the service provider even before the service is delivered. These expectations are called explicit expectations. If the expectations that customers have are underlying service aspects and are assumed to be there in the service, they are implicit expectations. The model of expectations is shown in Figure 2.2.



**Figure 2.2. A dynamic model of expectations (Grönroos, 2007)**

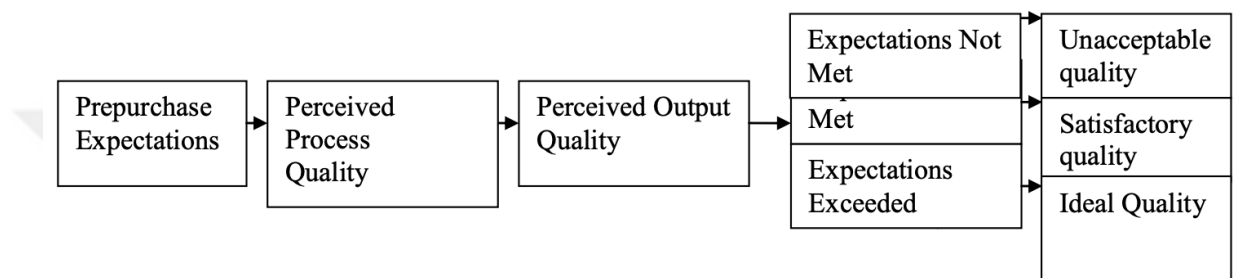
### **2.3.5. Perceived Service Quality**

Perceived service quality, as suggested by various definitions, consists of three components: the emotional bond between the customer and the organization, the customer's individual perceptions, and the experiences during the service encounter (Rahman, Garg & Qureshi, 2013).

Lovelock and Wirtz (2007) define a service encounter as a direct interaction between a customer and a service provider, which may consist of a number of steps. Baker et al (2002) identifies three factors that impact service encounter elements. The first factor includes the physical environment such as music, scent and color and lighting. The second factor involves customer interactions with the tangible and intangible elements within the service environment where customers have contact with the

physical facility as well as the service staff. The third factor relates to how customers are affected by the appearance and behaviors of other customers within the service environment.

The above discussion indicates that this section is associated with the Continuum of Perceived Service Quality. Below in Figure 2.3. is the model for continuum of perceived service quality, developed by Parasuraman, et al. (1990):



**Figure 2.3. Continuum of perceived Service Quality (Parasurman et al, 1990).**

## **2.4. Customer Satisfaction**

Customer satisfaction is considered one of the most important concepts to be addressed in the marketing literature as it creates the relationship between the process of purchase and consumption, and the outcomes after purchase like change in customer opinions, repurchase decisions and loyalty (Siddiqi, 2011). Hunt states that satisfaction is “an evaluation rendered that the experience was at least as good as it was supposed to be.” (Yang and Zhu, 2006, 668). According to Anderson et al., (1993), customer satisfaction is an overall judgement of a product or service based on the customer experience with the buying and consuming it. Satisfaction is a positive experience that results when customers' expectations of a service align with their perceptions after it is delivered (Marinkovic & Kalinic, 2017). Tse and Wilton (1988) clarifies that customer satisfaction is the difference between customers' initial expectations and their perceived performance of the product or service after use. Satisfaction is shaped by consumers' feelings, attitudes, or willingness toward a product or service following its use (Yi et al., 2021). In other words, customer satisfaction reflects a customer’s emotional response and overall attitude toward a service provider, influenced by the

difference between a customer's expectations, needs, and the actual service they receive (Hansemark and Albinson, 2004) state. Yen & Su, (2006) and Bulut (2011) also state that customer satisfaction refers to the psychological state characterized by positive emotions that arise when a product or service meets customer expectations. Overall, in the service sector, customer satisfaction represents an emotional reaction rather than a behavior, shaped by expectations and perceptions (Sandıkçı, 2007).

Customer satisfaction considerably has a considerable influence on the present and future performance of a company. Previous study indicates that customer satisfaction is an important source of competitive advantage, which often leads to repeat purchases, enhances brand loyalty, and generates positive word-of-mouth (Ievin, 2009). In order to encourage returning customers, organizations must focus on satisfying customer needs and preferences, ensuring that all employees contribute to achieving this goal (Kılıç & Pelit, 2004). Gibson (2005) also concludes that satisfied customers are more likely to not only repeat purchases but also recommend the product or service to others. Similarly, Andersson and Furnell (1995) believe that satisfaction reflects future intentions to repurchase from the same supplier. Satisfied customers share their positive experiences with on average five to six individuals (Angelova & Zekiri, 2011).

Customer satisfaction can be gained through meeting and exceeding customer expectations and desires (Tassemedo, 2016). Also, developing long-term relationships with customers allows businesses to gather meaningful insights, paving the way for a loyal and highly satisfied customer base (Kock & Helmund, 1996). To gain a deeper insight into customer expectations and feedback, companies need to carry out market research, focusing on how customers assess the quality of products or services (Ofir & Simonson, 2001). Keeping regular contact with customers and tracking their behavioral changes can be considered as a guide for businesses toward customer satisfaction in highly competitive markets (Kırmacı, 2012).

Attaining customer satisfaction offers various benefits including:

- Strengthening long-term customer relationships (Lee & Heo, 2009).
- Encouraging the sharing of positive experiences, which enhances the company's reputation (Söderlund, 1998).
- Boosting customer loyalty (Selvi & Ercan, 2006).
- Enhancing overall business performance (Webb & Jagun, 1997)

Customer satisfaction is commonly assessed through two primary approaches:

- Asking customers simple, direct questions about their satisfaction levels following their experience with a product or service (Day, 1977).
- Averaging satisfaction scores across different facets of the product or service (Grigoroudis & Siskas, 2003, as cited in Altan & Engin, 2014).

#### **2.4.1. Factors that Affect Customer Satisfaction**

According to Matzler et al., (2002), there are three factors affecting customer satisfaction:

1. Basic factors - minimum features that a customer expects the product, or service must have to avoid dissatisfaction but may not directly lead to satisfaction. If these are present, customers may not notice or feel impressed because they are expected to be there by default. If not, customers become dissatisfied.
2. Performance factors - lead to satisfaction if fulfilled, but can result in dissatisfaction if not fulfilled, such as reliability and friendliness
3. Excitement factors - increase satisfaction and delight customers when present but do not cause dissatisfaction if they are missing, such as project management.

#### **2.4.2. Customer Satisfaction Theories**

Tjiptono and Chandra (2017, as cited in Timo et al., 2019) have shown how customer satisfaction can be understood through psychological, economic, and sociological perspectives based on some theories. They are:

1. Contrast Theory: If a product or service performs better than expected, the customer is satisfied. If a product or service performs less than expected, the customer is dissatisfied. This highlights that customers can overreact if their expectations are not met, even if the gap between expectations and performance is small.
2. Assimilation-Contrast Theory: This theory combines both contrast and assimilation. it assumes that customers can accept the gap between expectation and reality if it is small. but they tend to react negatively if the gap is large.

3. **Adaptation-Level Theory:** Based on past experience, customers develop a normal level of expectations for a product or service. satisfaction happens when performance exceeds this level.
4. **Opponent-Process Theory:** this theory indicates that an initial high level of expectation may decline with future experience even if the product or service remains the same, so maintaining customer satisfaction needs a renewal of experiences.
5. **Consumer Surplus Theory:** Customers look for the best value for money. satisfaction comes when the value received outweighs the cost.

## **2.5. Customer Loyalty**

Scholars generally agree that loyalty reflects a customer's intention to continue their relationship with an organization. Kotler (2003) gives a definition of customer loyalty as the extent of a customer's willingness and desire to actively engage in the organization's interactive processes. Thorsten et al. (2002) identified customer loyalty as "customer frequent purchase behavior". Bennett and Leonard (2000) also characterized it as a repeated buying process resulting from a strong preference for a particular organization. Likewise, Oliver (1997) describes customer loyalty as the strong commitment of a consumer to repurchase a product or service, even when faced with situational challenges or competing marketing efforts.

Organizations today recognize the critical role customer loyalty plays in their economic success. Those with a strong base of loyal customers typically enjoy higher profits, attributed to more frequent repeat purchases, customers' willingness to pay higher prices, and positive referrals or recommendations (Al-Aali, 2011). Service-oriented firms prioritize delivering high-quality services to maintain their current customer base and attract potential customers. Retaining loyal customers has been recognized as more profitable than acquiring new ones (Sharma & Panga, 2018), underscoring the critical role of customer loyalty.

There are three different ways of defining customer loyalty: the behavioral, attitudinal, and composite approaches (Bowen & Chen, 2001). The behavioral perspective, also called purchase loyalty, defines loyalty as whether the customer repeatedly buys from the same company and focuses on past behavior (purchase history), not the future



intention. This approach neglects emotional considerations such as willingness to recommend, tolerance of price, and complaint act. Using only the behavioral view may result in overvaluing actual loyalty and mislead companies into thinking customers are more loyal than they are. In contrast, the attitudinal approach offers a deeper understanding of loyalty than only considering repeated purchases (Zins, 2001). It views customer loyalty as a mindset or emotional commitment a customer has toward a company. This positive commitment can be seen through behaviors like recommending and prioritizing the brand even if competitors offer similar services (Gremler & Brown, 1996). Thus, when customers feel positively toward a service provider and choose it because they prefer it, they are more likely to develop preference loyalty (De Ruyter et al., 1998). The composite perspective defines loyalty by looking at both emotions (attitudes) and actions (repeated purchases). This enables businesses to predict better and understand loyalty more accurately (Pritchard & Howard, 1997).

#### **2.5.1. Strategies to Increase and Maintain Customer Loyalty**

There are three approaches that help companies move from occasional customers to long-term loyal customers (Berry & Parasuraman, 1991).

1. Offer financial benefits: They include loyalty discounts, club membership with exclusive deals, frequent buyer programs for rewarding purchasing behavior and finding a financial reason for customers to come back.
2. Add social benefits: This means building personal relationships with customers through friendly regular interactions and personalized service to make the customer emotionally connected to the company.
3. Provide structural ties: This involves creating integrated systems such as online account portals for managing orders, long-term service contracts, and volume pricing. These strategies can create commitment and reliance and make it harder for customers to switch.

#### **2.5.2. Loyal Customer Benefits**

There are some practical benefits of having loyal customers such as (Griffin, 2002):

1. **Lower Marketing Costs:** getting new customers is expensive since it needs advertising and promotions. Loyal customers are already aware of the company and trust it, so there is no need to spend a lot on convincing them to purchase again.
2. **Reduced Transaction Costs:** a new customer requires negotiations, contracts, and processing time. These requirements are eliminated with a loyal customer, so administrative expenses are also reduced.
3. **Lower Customer Turnover Costs:** loyal customers are less likely to leave.
4. **Increased Cross-Selling:** Loyal customers are more likely to buy other products or services from the same company, which increases the company's market share.
5. **Positive Word-of-Mouth:** Satisfied, loyal customers are more likely to recommend the company to others.
6. **Reduced Cost of Failure:** Loyal customers are more reliable, which reduces the risk of wasted investment in acquiring new customers.

### **2.5.3. Dimensions for Measuring Customer Loyalty**

The way customers feel and think about a business, or its products/services is often what determines customer loyalty (Kim et al., 2007). Accordingly, there are two key dimensions of customer loyalty:

1. **Behavioral Loyalty:** the act of repurchasing a product or service.
2. **Attitudinal Loyalty:** when customers positively view a business and encourage others to purchase from it. (Çatı & Koçoğlu, 2008).

Zeithaml, Berry, and Parasuraman (1996) also made a significant contribution to defining the four key dimensions of customer loyalty measurement. First, word-of-mouth communication is where customers share positive recommendations about a product or company with others. Second, repurchase intention reflects a commitment to frequent interactions with the company. Third, price insensitivity is shown by customers' willingness to pay higher prices. Fourth, complaint behavior indicates their

ability to tolerate and accept issues that may arise during their interactions with the company.

## **2.6. Conceptual Relationships Among Service Quality, Customer Satisfaction, and Customer Loyalty**

### **2.6.1. The Relationship Between Service Quality and Customer Satisfaction**

The relationship between satisfaction and service quality has been debated because of the lack of clarity about the difference between the two concepts and the direction of their relationship (Brady, Cronin and Brand, 2002). Researchers such as Cronin, Brady, and Hult, (2000); Anderson et al., (1994); and Cronin and Taylor, (1992) argue that service providers must deliver high service quality to achieve high customer satisfaction as service quality usually comes before customer satisfaction. Brady and Cronin (2001) have explained the relationship between service quality and satisfaction and concluded that service quality leads to overall satisfaction and that satisfaction can strongly predict customers' purchase intentions more than service quality can do. While many researchers argue that service quality typically leads to customer satisfaction, other studies have presented a two-way relationship between service quality and customer satisfaction. Rust and Oliver (1994) suggested that service quality influences satisfaction and past satisfaction can also shape future perceptions of service quality.

One source of the confusion comes from how the popular press and people working in business use the terms interchangeably without realizing the difference (Parasuraman, Zeithaml, and Berry, 1994). Satisfaction is a specific transaction while service quality is a more general attitude reflecting the excellence of the service (Brady et al., 2002; Cronin and Taylor, 1992). This highlights that satisfaction is a short- term feeling after one specific experience, and service quality is a long- term attitude based on many experiences. Service quality tends to be more abstract and based on general perceptions while customer satisfaction is more personal and emotional and reflects a customer's feelings about the experience they have with the service provider (Sureshchandar et al., 2002). Sureshchandar et al. (2002) also suggest viewing customer satisfaction as a multi-dimensional concept, similar to service quality. This

implies that satisfaction happens on different levels across an organization, not just in one area.

The distinction between service quality and customer satisfaction in service marketing and management has been discussed over time. For instance, Bitner (1990) suggests that service quality and customer satisfaction are distinct constructs even though they are both measured using the disconfirmation paradigm. The main distinction lies in the fact that service quality is an attitude, a long-term evaluation, while customer satisfaction is related to a specific transaction. Parasuraman, Zeithaml, and Berry (1988) have commented that the distinction between the two concepts (service quality and customer satisfaction) is in the measurement basis. Perceived service quality compares what the customer feels he should receive (normative expectations) with what was delivered. In contrast, customer satisfaction is measured by comparing what the customer expects to receive (predictive expectations) to what was delivered. Customer satisfaction is considered more comprehensive than service quality. It involves cognition (thoughts) and affect (feelings) (Zeithaml and Bitner, 2000). In contrast, service quality is mostly cognitive as it focuses more on assessing performance and less about how a customer feels (Tian-Cole & Crompton, 2003). Despite these differences, several studies show that service quality and customer satisfaction are highly connected - with better service quality often leading to higher customer satisfaction (Spreng & Chiou, 2002). Understanding the distinction between service quality and customer satisfaction well is of importance for both managers and researchers to design service strategies and measure performance more accurately, as confirmed by Cronin and Taylor (1992).

### **2.6.2. The Relationship Between Customer Satisfaction and Customer Loyalty**

Customers who are satisfied with the product or service are more likely to deal with that company again. Happiness and satisfaction are essential in fostering customer loyalty (Schirmer et al., 2018). Satisfied customers are less likely to look for alternative options, which enables the company to sustain its competitive position in the market. Customer satisfaction is thus considered a primary driver of loyal customers (Kumar, 2020). This highlights that businesses should consider customer happiness a priority as the main prerequisite for establishing long-term relationships with their customers.

Customer satisfaction plays a crucial role in keeping the existing customers and attracting new ones as well (Kabu and Soniya, 2017). This loyalty leads to increased profitability and growth of a company because keeping existing customers costs less than acquiring new ones (Hayes, 2008).

### **2.6.3. The Relationship Between Service Quality and Customer Loyalty**

There are mixed findings on the impact of service quality on customer loyalty. Some studies have concluded that service quality positively impacts customer loyalty (Alam & Noor, 2020). However, others suggest that there is no significant direct influence between service quality and customer loyalty (Abror et al., 2020). These different findings make the relationship between service quality and customer loyalty an important topic to investigate again.

Cronin & Taylor, (1992) and Boulding et al., (1993) support the idea that loyalty, in service quality models, is considered as an outcome variable. This implies that high service quality is expected to result in customer loyalty. Nevertheless, the exact link between how customers assess quality service and how loyal they become has not been examined in detail yet (Gremler & Brown, 1996). This is significant because it is agreed that customer loyalty plays an essential role in whether businesses succeed and survive in the market (Reichheld, 1996).

Therefore, it is more beneficial to look at service quality and loyalty at their individual parts instead of the whole concept. By doing so, researchers and managers will gain insights into how each aspect of service quality is connected to a specific type of service loyalty (Zeithaml et al., 1996). Service quality and service loyalty are multifaceted constructs and can be broken into smaller parts. Linking both constructs at their individual level will help identify certain drivers of loyalty and make further improvements.

### **2.6.4. Studies on the Mediating Role of Customer Satisfaction**

Customer satisfaction as a mediating variable relationship with service quality and customer loyalty has been studied in the past with differing results depending on the industries and contexts. In a recent study Aini and Siswanto (2024) found that satisfaction completely mediates service quality and customer loyalty meaning service

quality does not have a direct effect on customer loyalty but did significantly affect satisfaction, then that influences customer loyalty at Bank Muamalat Indonesia. Service quality does not have a direct effect on customer loyalty. Service quality does influence customer satisfaction and customer satisfaction is the variable that drives customer loyalty at Bank Muamalat Indonesia. Another recent study Surahman, Yasa, & Wahyuni (2020) found complete mediation as well with the added effect of a significant negative effect of service quality on satisfaction and loyalty but stated satisfaction is an important motivation in driving repeat visits.

Setyadi et al. (2023) and Rahim's (2016) research identified a partial mediation such that service quality creates a level of customer satisfaction and leads to long-term customer loyalty. For example, Rahim's study found that perceived service quality has a positive influence on passenger satisfaction and loyalty in the Nigerian airline industry. Passenger satisfaction is a significant factor resulting in the formation of loyalty and acts as a partial mediator in the relationship between service quality and customer loyalty. Nyan, Rockson, and Addo (2020) conducted a telecommunications study in Ghana and found partial mediation and stressed customer satisfaction as an element of strengthening customer loyalty in combination with service quality.

However, Sulaiman et al., (2021) discovered that customer satisfaction had no significant mediating effect for Jaiz Bank, suggesting that while service quality does positively affect customer satisfaction and loyalty, it does not mediate the connection.

In conclusion, the contradictory nature of these results suggests that the mediating role of customer satisfaction between service quality and loyalty, likely depends on the practical context of the industry, among many other factors, providing a rationale for future research to further explicate such matters.

Below is a table summarizing the types of mediation found in studies on the relationship between service quality, customer satisfaction, and customer loyalty:

**Table 2.1. Summary of Mediation Types in Studies on Service Quality, Customer Satisfaction, and Customer Loyalty**

<b>Mediation Type</b>	<b>Context/Industry</b>	<b>Key Findings</b>	<b>Reference</b>
<b>Full Mediation</b>	General (Meta-analysis)	Customer satisfaction fully mediates the influence of service quality and perceived value on loyalty, meaning that service quality only influences loyalty through satisfaction.	(So, Yang, & Li, 2025)
<b>Partial Mediation</b>	Telecommunication Industry	Customer satisfaction partially mediates the relationship, meaning that service quality has both direct and indirect (through satisfaction) effects on loyalty.	(Maniam & Annamalai, 2019)
<b>Partial Mediation</b>	Banking Sector	Customer satisfaction has a mediating role, but service quality also has a direct influence on loyalty.	(Shah, Bilal, & Sanober, 2024)
<b>No Mediation</b>	Bank Muamalat	Service quality has no direct effect on loyalty, customer satisfaction fully mediates.	(Aini & Siswanto, 2024)

#### **2.6.5. Studies on Service Quality, Customer Satisfaction, and Loyalty**

Service quality, customer satisfaction, and customer loyalty are three constructs that have been researched extensively in services marketing. They are all conceptually

distinct, yet related, and have been described as the foundation to understand customer behavior in service industries.

Halika and Kharisma (2024) assessed how service quality factors impacted customer satisfaction and loyalty. Their results showed that service quality factors—tangibility, reliability, responsiveness, assurance, and empathy—impact customer satisfaction and loyalty using Structural Equation Modeling (SEM). In practice, restaurants can increase their service quality, which can lead to an increase in customer satisfaction, further leading to an increase in loyalty and repeat customers. This is vital to gain competitive advantage.

Ayinaddis, Taye, and Yirsaw (2023) studied four service quality dimensions within the banking context, including responsiveness, reliability, security, and speed. Their conclusion was that e-banking service quality dimensions also positively affect customer satisfaction and customer loyalty.

Rabbani, Qadri, and Ishfaq (2016) placed reliability and responsiveness as important components for banks. It is suggested as part of an overall strategy for improvement to adopt loyalty programs as well as a process to capture customer feedback to improve service delivery and retention. In the field of e-commerce, Hidayat, Rasyid and Pasolo (2024) found that an effective way for companies to increase customer satisfaction and improve customer loyalty, is to keep improving service quality.

Keshavarz and Najafi (2012) and Temory (2024) assessed service quality, in the context of hotels and found that service quality is the most important factor in determining domestic tourist loyalty. For example, if hotels meet their customers' expectations based on reliability, responsiveness and tangibility, it is almost guaranteed that customers will be positive about the hotel stay experience which will, in turn, foster positive customer word-of-mouth and repeat behaviors. Below is a table 2.2. summarizing the key findings from other studies related to these variables.



**Table 2.2. Summary of Key Findings from Previous Studies on Relevant Variables**

<b>Study</b>	<b>Key Findings</b>	<b>Industry</b>
(Kurniawan et al., 2025)	Service quality positively relates to customer satisfaction, with the effects of service quality determining customer satisfaction and loyalty	Motorbike Services
(Halika & Kharisma, 2024)	Service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) have a significant effect on customer satisfaction and loyalty, with direct service quality aspects having greater influence on customer loyalty.	Restaurants
(Rafi & Nugroho, 2022)	Service quality has a positive influence on customer satisfaction and loyalty, with customer satisfaction as a mediator in the effect of service quality on loyalty.	E-commerce (ShopeeFood)
(Phi & Huong, 2023)	Service quality has an indirect effect on customer loyalty through satisfaction and corporate reputation, with responsiveness and empathy being important components of service quality.	Banking
(Askari et al., 2015)	Service quality has a significant positive influence on customer satisfaction and loyalty, with satisfaction mediating the effect of service quality on loyalty.	Automotive Services

### 3. METHODOLOGY

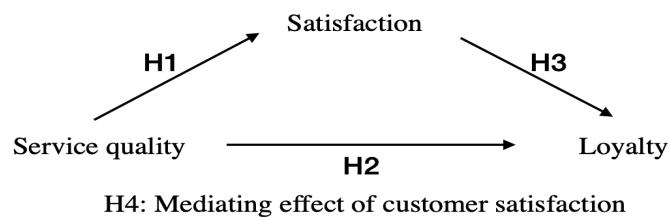
#### 3.1. Research Design

This research uses a quantitative research design, which is appropriate for examining the relationships between service quality, customer satisfaction, and customer loyalty in cargo firms operating in Istanbul. This approach aims to quantify customer perceptions using numerical data and to analyze the strength and direction of relationships between variables. It ensures objectivity and generalizability and tests the hypotheses statistically.

#### 3.2. Research Objectives

The main objective of this study is to examine the impact of service quality on both customer satisfaction and customer loyalty in cargo firms as well as to determine the mediating role of customer satisfaction in this relationship within the cargo industry. By investigating the mediating role of customer satisfaction, the effect of customer satisfaction on loyalty is explored as well.

The model of this research is structured in accordance with the objective of the study and shown in Figure 1.



**Figure 3.1. Research model**

### 3.3. Research Hypotheses

Based on the objectives of this study and a review of relevant literature, a set of hypotheses were created to examine the relationships between service quality, customer satisfaction, and customer loyalty in the context of cargo service firms in Istanbul. The hypotheses developed for the research are as follows:

- H1: Service quality has a positive impact on customer satisfaction.
- H2: Service quality has a positive impact on customer loyalty.
- H3: Customer satisfaction has a positive impact on loyalty.
- H4: Customer satisfaction plays a mediator role in the relationship between service quality and customer loyalty.

### 3.4. Population and Sampling

The target population of this study consists of individuals using cargo services in Istanbul, Turkey. A non-probability convenience sampling method was employed where participants voluntarily responded to the survey without being randomly selected because it is difficult to access a complete list of cargo customers. Since the total population of cargo service users in Istanbul is unknown and considered large, the sample size was determined using Cochran's formula to calculate an ideal sample size assuming a 95% confidence level, 5% margin of error, and  $p=0.5$ :

$$n_0 = \frac{Z^2 \cdot p \cdot (1 - p)}{e^2}$$

$$n_0 = \frac{(1.96)^2 \cdot 0.5 \cdot (1 - 0.5)}{(0.05)^2} = \frac{3.8416 \cdot 0.25}{0.0025} = 384.16$$

Where:

$n_0$  = required sample size

$Z$  = Z-value (e.g., 1.96 for 95% confidence level)

$p$  = estimated proportion of the population (0.5 is used when unknown, as it gives the maximum sample size)

$e$  = margin of error (typically 0.05 for 5%)

Thus, the ideal sample size is approximately 384 respondents. However, due to time and accessibility constraints, a total of 303 valid responses were collected and analysis was conducted using this sample size. Even though this is below the ideal number calculated using Cochran's formula, it still provides a sufficient basis for exploratory analysis and identifying meaningful relationships.

### **3.5. Data Collection Method**

Data was collected through a survey, using a structured online questionnaire created with Google Forms to test the research model and hypotheses of the study. The survey was conducted over a two-month period, during April and May 2025. The questionnaire link was shared with customers who had recently used cargo services in Istanbul, through various digital communication channels such as email, messaging apps, and social media. The questionnaire used in the study consists of four sections. The first section includes questions about the demographic characteristics of the participants. In the second section, the SERVQUAL Scale developed by Parasuraman et al. (1988) was used to measure the service quality in cargo firms. The dimensions were explained as tangibles, reliability, responsiveness, assurance, and empathy, which represent the core elements of perceived service quality. The scale consists of a total of 20 statements, with four items for each dimension. The third and fourth section contain the customer satisfaction scale of 4 items, adapted from the study by Hsu et al. (2010) and customer loyalty scale of 4 items, adapted from the study by Kazançoğlu (2011). All scales used a five-point Likert scale as (1=Strongly Disagree, 5=Strongly Agree).

### **3.6. Data Analysis Procedures**

The data collected through online questionnaires is exported and analyzed using SPSS (Statistical Package for the Social Sciences). Categorical variables such as gender are numerically coded (e.g., 1 = Male, 2 = Female) to facilitate analysis. Descriptive statistics are used to summarize demographic characteristics and overall response

patterns. Then Cronbach's Alpha coefficient is used for reliability and Exploratory Factor Analysis (EFA) is for the validity of the scales. To explore relationships between variables, correlation analysis is conducted. Regression analysis is applied to determine the effects between the variables. Mediation analysis is performed to determine whether customer satisfaction serves as a mediator between service quality and customer loyalty.

## 4. RESEARCH FINDINGS

### 4.1. Descriptive Analysis

#### 4.1.1. Descriptive statistics of Main Variables

Descriptive statistics were employed to summarize participants' responses for the three principal variables (service quality, customer satisfaction, and customer loyalty). Descriptive statistics provide an overall review of how participants responded in relation to each of the three variables, before undertaking more statistical analyses. The descriptive statistics are shown in Table 1.

**Table 4.1. Descriptive Statistics for Key Study Variables (N = 303)**

Variable	M	SD	Min	Max	Skewness	Kurtosis
Service Quality	3.45	0.70	1.00	5.00	−0.20	0.26
Customer Satisfaction	3.58	0.79	1.00	5.00	−0.54	0.51
Customer Loyalty	3.47	0.92	1.00	5.00	−0.48	0.02

*Note.* M = Mean; SD = Standard deviation.

The mean (i.e., average score) of service quality was 3.45. This suggests that customers have moderately positive perceptions of the quality of service provided by cargo firms. Customer satisfaction had a mean of 3.58, suggesting that customers have positive satisfaction levels, while customer loyalty had a mean of 3.47 demonstrating some level of customer loyalty.

The standard deviation (SD) indicates the amount of variability of responses from average score. The lower the SD, the more consistent the respondents' answers are. The standard deviation for service quality was 0.70, customer satisfaction was 0.79,

and customer loyalty was 0.92, with the responses for customer loyalty being the most variable.

All three variables recorded a score of 1 to 5, indicating that the participants utilized the entire 5-point Likert scale completely – meaning the spread of respondents' opinions were wide. Also, the skewness and kurtosis values ranged between -1 to +1, indicating that the distribution of participant responses were approximately normal and the dataset is appropriate to conduct further statistical techniques.

#### 4.1.2. Demographic Characteristics of Participants

Information regarding the ages of the participants is presented in Table 2.

**Table 4.2. Age Group Distribution of Respondents**

Age Group	n	%
18–24	187	61.7%
25–34	55	18.2%
35–44	31	10.2%
45–54	16	5.3%
55+	14	4.6%

*Note.* n = number of respondents; % = percentage of total sample.

The study sample consists of 303 participants. A large majority of the respondents (61.7%) are between 18 and 24 years old, indicating that the data primarily represent a younger population. The next largest age group is 25–34 years (18.2%), followed by 35–44 years (10.2%). There are fewer older respondents in the study; 5.3% are 45-54 years of age, and 4.6% are 55 or above.

Information on the gender of the participants is given in Table 3.

**Table 4.3. Gender Group Distribution of Respondents**

<b>Gender</b>	<b>n</b>	<b>%</b>
<b>Male</b>	161	53.1%
<b>Female</b>	142	46.9%

*Note.* n = number of respondents; % = percentage of total sample.

In terms of gender, 53.1% of the sample are male respondents and 46.9% are female respondents.

Information regarding participants' frequency of cargo usage is presented in table 4.

**Table 4.4. Frequency of Cargo Use**

<b>Frequency</b>	<b>n</b>	<b>%</b>
<b>Once/month or less</b>	156	51.5%
<b>2–3 times/month</b>	114	37.6%
<b>Weekly</b>	18	5.9%
<b>More than weekly</b>	15	5.0%

*Note.* n = number of respondents; % = percentage of total sample.

Regarding how frequently the participants used cargo services, more than half of the respondents (51.5%) used them once per month or less, while 37.6% of the sample reported using them 2-3 times per month, and (5.9%) and (5.0%) reported using cargo services on a weekly and more than weekly basis respectively.

Findings regarding the most frequently used cargo company by participants are presented in table 5.

**Table 4.5. Cargo Companies Most Frequently Used by Respondents**

<b>Cargo Company</b>	<b>n</b>	<b>%</b>
<b>Aras</b>	77	25.4%
<b>Yurtiçi</b>	77	25.4%
<b>MNG</b>	39	12.9%
<b>Sürat</b>	21	6.9%
<b>PTT</b>	85	28.1%
<b>UPS</b>	4	1.3%

*Note.* n = number of respondents; % = percentage of total sample.

When assessing the counts of participants according to their cargo company usage, the most frequently used provider was PTT, reported by (28.1%) of the sample. Following behind, Aras and Yurtiçi are mentioned by each (25.4%). Less frequently mentioned options of cargo firms included MNG (12.9%), Sürat (6.9%), and UPS (1.3%).

**Table 4.6. Role of Respondents in Transactions**

<b>Role</b>	<b>n</b>	<b>%</b>
<b>Sender</b>	12	4.0%
<b>Receiver</b>	227	74.9%
<b>Both sender and receiver</b>	64	21.1%

When considering the respondents' role in the cargo transaction, it is evident that the majority (74.9%) labelled themselves as receivers, while 21.1% labeled themselves as both senders and receivers. Only (4.0%) noted themselves as primarily senders of cargo.



## 4.2. Validity and Reliability Analysis

Exploratory factor analysis (EFA) was used to determine the validity of the scales used in the study. For reliability, Cronbach's Alpha coefficients were calculated.

### 4.2.1. Validity Analysis

To assess the appropriateness of the dataset for exploratory factor analysis, two statistics were executed:

1. KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy was 0.957, which is a value indicating excellent sampling adequacy and that there is sufficiently common variance among the variables to warrant factor extraction.
2. Bartlett's Test of Sphericity was found to be  $\chi^2(378) = 6071.264$ ,  $p < .001$ . These results showed that the dataset is suitable for exploratory factor analysis as shown in table 4.7.

**Table 4.7. Kaiser-Meyer-Olkin Measure and Bartlett's Test of Sphericity for Sampling Adequacy**

Test	Statistic	df	p-value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.957	—	—
Bartlett's Test of Sphericity	6071.264	378	< .001

**Table 4.8. Communalities for Items after Extraction in Exploratory Factor Analysis**

<b>Item</b>	<b>Initial</b>	<b>Extraction</b>
SQ1	1.000	0.548
SQ2	1.000	0.582
SQ3	1.000	0.682
SQ4	1.000	0.656
SQ5	1.000	0.711
SQ6	1.000	0.776
SQ7	1.000	0.642
SQ8	1.000	0.666
SQ9	1.000	0.678
SQ10	1.000	0.760
SQ11	1.000	0.745
SQ12	1.000	0.675
SQ13	1.000	0.611
SQ14	1.000	0.586
SQ15	1.000	0.614

SQ16	1.000	0.664
SQ17	1.000	0.547
SQ18	1.000	0.751
SQ19	1.000	0.750
SQ20	1.000	0.735
CS1	1.000	0.676
CS2	1.000	0.673
CS3	1.000	0.672
CS4	1.000	0.712
CL1	1.000	0.775
CL2	1.000	0.786
CL3	1.000	0.748
CL4	1.000	0.622

*Extraction Method: Principal Component Analysis.*

Communalities show how much of each item's information is explained by the factors found in the analysis. To start, all items had communalities of 1.000, signifying that all their information was accounted for. After employing factor analysis, communalities ranged from 0.547 (for "Delivers as promised") to 0.786 (for "Recommend to others"). This means that the factors accounted for a fair amount of each item. The results reported here suggested that the factor analysis had a good fit for representing the items in the study.

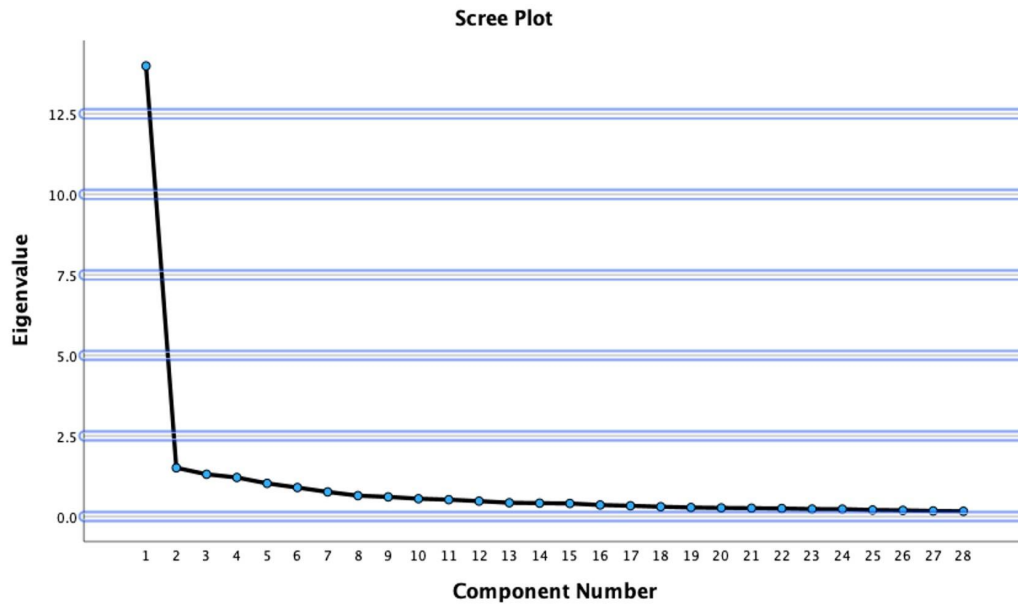
**Table 4.9. Total Variance Explained by Extracted Components**

Component	Initial Eigenvalue	% of Variance	Cumulative %	Variance After Rotation (Sum of Squared Loadings)	% of Variance After Rotation	Cumulative % After Rotation
1	13.982	49.94%	49.94%	5.600	19.99%	19.99%
2	1.512	5.40%	55.34%	5.163	18.44%	38.44%
3	1.311	4.68%	60.02%	3.213	11.48%	49.92%
4	1.211	4.33%	64.35%	2.603	9.30%	59.21%
5	1.029	3.67%	68.02%	2.466	8.81%	68.02%

*Note. Extraction method: Principal Component Analysis.*

The exploratory factor analysis produced five components with eigenvalues greater than 1, accounting for a cumulative total of 68.02% of the variance in the data. The first component explained the most variance (49.94%), followed by the second (5.40%), the third (4.68%), the fourth (4.33%), and lastly, the fifth (3.67%). After rotation using the varimax method, the variance explained was dispersed with the first factor explained (19.99%) and the total cumulative variance explained was 68.02%. These results suggested that the current five-factor solution fit the underlying structure of the variables.

Although 28 components were first extracted, the first five components explained a greater than one eigenvalue and they were retained for interpretation. These five components explained 68.02% of the variance, indicating a meaningful factor structure



**Figure 4.1. Scree Plot showing eigenvalues of components**

The first component matrix was analyzed to see the loadings of the items on the extracted factors prior to rotation. This process merely provided some insight into how the variables grouped together; it was not the definitive criteria for interpretation. In practice the rotation of factors improves the clear understanding.

The rotated component matrix obtained as a result of the exploratory factor analysis is given in Table 4.14.

**Table 4.10. Rotated Component Matrix Showing Factor Loadings for Extracted Components**

Item	Component 1	Component 2	Component 3	Component 4	Component 5
Uses modern equipment	.125	.313	.380	.176	.509
Clean office	.130	.191	.312	.395	.525
Uniforms	.224	.109	.050	.117	.777
Appealing materials	.250	.244	.054	.056	.727
On-time delivery	.213	.206	.736	.261	.116
Safe handling	.197	.172	.819	.190	.015
Provides tracking	.403	.295	.566	-.160	.216
Provides updates	.343	.321	.582	.138	.295

Friendly staff	.690	.142	.248	.312	.154
Professional staff	.791	.208	.149	.172	.198
Accurate delivery	.790	.259	.106	.156	.134
Quick problem-solving	.710	.207	.150	.228	.229
Responds to complaints	.573	.260	.331	.240	.220
Provides guarantees	.609	.297	.281	.163	.147
Honest communication	.524	.377	.339	.208	.201
Transparency	.595	.333	.331	.271	.125
Delivers as promised	.415	.344	.270	.354	.242
Reliable service	.348	.205	.148	.740	.136
Consistent performance	.299	.248	.191	.732	.163
Trustworthy company	.446	.377	.119	.591	.177
Overall satisfaction	.459	.584	.327	.060	.118
Met expectations	.355	.670	.232	.186	.098
Satisfied with service	.402	.608	.363	.057	.076
Intend to reuse	.519	.554	.123	.270	.221
Prefer this company	.316	.786	.138	.087	.175
Recommend to others	.237	.794	.177	.204	.163
Loyalty to brand	.124	.774	.215	.226	.190
Likely to stay	.118	.661	.112	.271	.292

*Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization.*

The rotated component matrix provided five separate factors representing different dimensions of service quality, customer satisfaction and loyalty within the context of cargo firms.

Component 1 was made up of items related to staff competence and responsiveness such as professional and friendly staff, delivering on time and providing a solution.

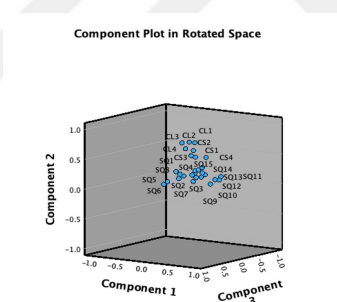
Component 2 was related to customer satisfaction and loyalty with items relating to overall satisfaction, preferring the company and recommending it.

Component 3 was very related to delivery reliability and communications, incorporating loads related to on time delivery, safe handling, tracking and updates.

Component 4 was related to service reliability and consistency including reliable service, consistent performance, and trustworthiness.

Component 5 consisted of tangible elements of service quality (i.e. uniforms, appealing materials, clean office, and use of modern equipment).

The development of the structure of factors serves to confirm multidimensionality of service quality and related perceptions of customers in the cargo sector context and a sound basis for more analysis of relationships among these constructs.



**Figure 4.2. Component Plot in Rotated Space**

#### 4.2.2. Reliability Analysis

The results of the reliability analysis for the cargo service quality scale are presented in Table 4.11.

**Table 4.11. Reliability Analysis for the Cargo Service Quality Scale (N = 303)**

Item Code	Corrected Item–Total Correlation	Cronbach’s Alpha if Item Deleted
SQ1	.577	.944
SQ2	.585	.944
SQ3	.481	.945
SQ4	.516	.945
SQ5	.626	.943
SQ6	.571	.944
SQ7	.587	.944
SQ8	.711	.942
SQ9	.730	.941
SQ10	.737	.941
SQ11	.710	.942
SQ12	.723	.942
SQ13	.733	.941



SQ14	.697	.942
SQ15	.741	.941
SQ16	.763	.941
SQ17	.700	.942
SQ18	.650	.943
SQ19	.667	.942
SQ20	.733	.941

*Note.* Cronbach's  $\alpha = .945$ . All items contributed positively to the overall reliability of the scale and were retained.

A reliability analysis was conducted to evaluate the internal consistency of the 20-item scale that measures service quality. The analysis produced a Cronbach's alpha coefficient of 0.945 which indicates excellent internal reliability. Therefore, the items are consistently measuring the overall construct of service quality.

The corrected item–total correlations for each of the items were between .481 and .763, meaning that every item was significantly above the commonly accepted threshold of .30. This indicates that each item made a meaningful contribution to the overall scale. Moreover, the "Cronbach's Alpha if Item Deleted" values were each lower than the total alpha, indicating that no item could be deleted to improve the reliability of the 20 items together and therefore all 20 items remained in the scale.

**Table 4.12. Reliability Analysis for the Customer Satisfaction Scale (N = 303)**

<b>Item Code</b>	<b>Corrected Item–Total Correlation</b>	<b>Cronbach’s Alpha if Item Deleted</b>
CS1	.762	.846
CS2	.741	.854
CS3	.751	.850
CS4	.736	.856

*Note.* Cronbach’s  $\alpha = .884$ . All items demonstrated strong internal consistency and were retained.

A reliability analysis of the four-item Customer Satisfaction scale revealed a Cronbach's alpha value of 0.884, indicating high internal reliability. This suggests that the items to measure customer satisfaction are reliable and consistent.

The corrected item–total correlation values ranged from .736 to .762, and all items in the scale were well above the recommended threshold of .30. This shows a positive correlation between the items in a scale with the total score. Also, the "Cronbach's Alpha if Item Deleted" values were all lower than the total alpha and ranged from .846 to .856 so it is concluded that all items contributed positively to the reliability of total scale, as removing any one of them would reduce the reliability of the scale. These results support the internal consistency of the customer satisfaction scale, and the further use of these items as a set of items for correlation and regression analysis.

**Table 4.13. Reliability Analysis for the Customer Loyalty Scale (N = 303)**

<b>Item Code</b>	<b>Corrected Item–Total Correlation</b>	<b>Cronbach’s Alpha if Item Deleted</b>
CL1	.769	.861
CL2	.810	.844
CL3	.799	.848
CL4	.686	.892

*Note.* Cronbach’s  $\alpha = .893$ . All items were retained based on their contributions to overall scale reliability.

A reliability analysis was done on the customer loyalty scale of four items to assess if the items had internal reliability. The reliability analysis produced a Cronbach's alpha coefficient of 0.893, providing strong internal reliability of the items. In other words, it was confirmed that the items were collectively consistent in their measurement of customer loyalty toward cargo firms.

The corrected item–total correlations range from .686 to .810, with all items higher than the generally accepted threshold of .30, suggesting that each item was positively and strongly related to the total scale. The item that contributed the most to correlation was "I would recommend this cargo company to my friends and family," which had the highest corrected correlation of .810. The "Cronbach's Alpha if Item Deleted" values were all lower than total alpha, with a range of .844 to .892, further validating the decision to keep all four items. Overall, there is considerable evidence that the customer loyalty scale has reliability and provides valid data for further analysis.

**Table 4.14. Summary of Scale Reliability**

<b>Scale</b>	<b>Cronbach's Alpha</b>	<b># of Items</b>
<b>Service Quality</b>	.945	20 items
<b>Customer Satisfaction</b>	.884	4 items
<b>Customer Loyalty</b>	.893	4 items

Reliability analyses of the three key constructs for the research (service quality, customer satisfaction, and customer loyalty) demonstrated that all measurement scales were internally consistent and ultimately statistically reliable. The service quality construct's 20-item scale had a Cronbach's alpha of .945 (excellent reliability). The customer satisfaction 4-item scale produced a Cronbach's alpha of .884. The customer loyalty 4-item scale produced a Cronbach's alpha of .893. Each item in each scale also had high corrected item-total correlations, and not one item was recommended for deletion.

These findings indicate that the survey instruments used in this study (and the three constructs used) are valid and reliable measures, providing an excellent foundation for subsequent analyses including correlation, regression, and mediation analysis.

#### **4.3. Correlation Analysis**

The results of the correlation analysis conducted to observe the relationships among the variables are presented in Table 4.15.

**Table 4.15. Correlations among Service Quality, Customer Satisfaction, and Customer Loyalty**

Variables	Service Quality	Customer Satisfaction	Customer Loyalty
Service Quality	1	0.809 ( $p < .001$ )	0.715 ( $p < .001$ )
Customer Satisfaction	0.809 ( $p < .001$ )	1	0.776 ( $p < .001$ )
Customer Loyalty	0.715 ( $p < .001$ )	0.776 ( $p < .001$ )	1

*Note.*  $N = 303$ .  $p < .01$  (two-tailed).

According to the results of the Pearson correlation analysis, there is a positive and significant relationship between cargo service quality and customer satisfaction ( $r = .809$ ,  $p < .001$ ) as well as between cargo service quality and customer loyalty ( $r = .715$ ,  $p < .001$ ). Additionally, there is also a positive and significant relationship between customer satisfaction and customer loyalty ( $r = .776$ ,  $p < .001$ ). All correlations are statistically significant at the 0.01 level, supporting the hypothesized positive relationships among these constructs. These findings provide foundational evidence for further analysis of the mediating role of customer satisfaction in the relationship between service quality and customer loyalty.

#### 4.4. Regression Analysis

##### 4.4.1. Regression of Customer Satisfaction on Service Quality

**Table 4.16. Regression Results for the Effect of Service Quality on Customer Satisfaction**

Predictor	B	SE	$\beta$	t	p	R	R <sup>2</sup>	Adj. R <sup>2</sup>	F	df	p (Model)
(Constant)	0.447	0.134	—	3.341	<.001	0.809	0.654	0.653	570.14	1, 301	<.001
Service Quality	0.908	0.038	0.809	23.878	<.001						

**Note. Dependent variable: Customer Satisfaction. SE = Standard Error;  $\beta$  = Standardized Coefficient.**

The Enter method for linear regression analysis was conducted to examine how service quality impacts customer satisfaction. The regression analysis results showed service quality was a significant predictor of customer satisfaction in a positive manner ( $B = 0.908$ ,  $t = 23.878$ ,  $p < .001$ ). The magnitude of the effect was large, represented by the standardized beta coefficient ( $\beta = 0.809$ ) which showed as customers perceive greater service quality, they also have greater customer satisfaction. The amount of variance accounted for by service quality for customer satisfaction was 65.4% ( $R^2 = .654$ , Adjusted  $R^2 = .653$ ). The standard error of the estimate (.4656) indicated a low average difference between observed satisfaction scores and predicted satisfaction scores, which indicates a good fit. Also, results provided within the ANOVA indicated that the model fit was statistically significant,  $F(1, 301) = 570.144$ ,  $p < .001$ . Therefore, H1, which states that there is a positive relationship between service quality and customer satisfaction in cargo service providers, is supported.

#### 4.4.2. Regression of Customer Loyalty on Service Quality

A linear regression analysis was conducted using the Enter method, with service quality entered as the predictor variable for customer loyalty.

**Table 4.17. Regression Analysis Predicting Customer Loyalty from Service Quality**

Predictor	B	SE	$\beta$	t	p	R	$R^2$	Adj. $R^2$	SE Estimate	F	df	p
(Constant)	0.256	0.185	—	1.383	.168	.715	.512	.510	0.6425	315.388	1, 301	< .001
Service Quality	0.932	0.052	.715	17.759	< .001							

**Note.** Dependent variable: Customer Loyalty. Predictor: Service Quality. SE = Standard Error; Adj.  $R^2$  = Adjusted R-squared; SE Estimate = Standard Error of the Estimate.

The Enter method for linear regression analysis was conducted to examine how service quality impacts customer loyalty. The regression analysis results showed service quality was a significant predictor of customer loyalty in a positive manner ( $B = 0.932$ ,  $t = 17.759$ ,  $p < .001$ ). The magnitude of the effect was large, represented by the

standardized beta coefficient ( $\beta = 0.715$ ) indicating that as customers perceive greater service quality, they also have greater customer loyalty. The amount of variance accounted for by service quality for customer loyalty was 51.2% ( $R^2 = .512$ , Adjusted  $R^2 = .510$ ). The standard error of the estimate (.6425) indicated a low average difference between observed loyalty scores and predicted loyalty scores, which indicates a good fit. Additionally, the ANOVA results reflect that the model fit was statistically significant,  $F(1, 301) = 315.388$ ,  $p < .001$ . Therefore, H2, which states that there is a positive relationship between cargo service quality and customer loyalty, is supported.

#### 4.4.3. Regression of Customer Loyalty on Customer Satisfaction

A linear regression analysis was conducted using the Enter method, with customer satisfaction entered as the predictor variable for customer loyalty.

**Table 4.18. Regression Analysis Predicting Customer Loyalty from Customer Satisfaction**

Predictor	B	SE	$\beta$	t	p	R	$R^2$	Adj. $R^2$	SE	F	df	p
(Constant)	0.245	0.155	—	1.587	.113	.776	.602	.601	0.5798	456.063	1, 301	< .001
Customer Satisfaction	0.901	0.042	.776	21.356	< .001							

**Note.** Dependent variable: Customer Loyalty. SE = Standard Error; Adj.  $R^2$  = Adjusted R-squared; SE Estimate = Standard Error of the Estimate.

According to the regression analysis results ( $B=0.901$ ,  $t= 21.356$ ,  $p<.001$ ), customer satisfaction was a significant predictor of customer loyalty in a positive direction. The effect size was large ( $\beta = 0.776$ ); thus, the implication is that as customer satisfaction goes up, customer loyalty increases. Customer satisfaction explained 60.2% of the variance in customer loyalty ( $R^2 = .602$ , Adjusted  $R^2 = .601$ ). The standard error of the estimate (.5798) indicated a low average difference between observed loyalty scores and predicted loyalty scores, which indicates a good fit. Additionally, the ANOVA results reflect that the model fit was statistically significant,  $F(1, 301) = 456.063$ ,  $p < .001$ . Therefore, H3, which indicates that there is a positive relationship between customer satisfaction and customer loyalty in cargo services, is supported.

#### 4.5. Mediation Analysis

A mediation analysis using the Process Macro analysis developed by Hayes (2018) was carried out to investigate the mediating role of customer satisfaction in the relationship between service quality and customer loyalty. A regression analysis based on the bootstrap method was applied. The analysis results are shown in Table 4.19.

**Table 4.19. Mediation Analysis Results for the Effect of Service Quality on Customer Loyalty Through Customer Satisfaction**

Effect Type	Effect	SE	t	p	95% CI Lower	95% CI Upper
Direct Effect	0.3297	0.0784	4.2032	<.001	0.1753	0.4840
Indirect Effect	0.6025	0.0818	—	—	0.4486	0.7663
Total Effect	0.9322	—	—	—	—	—

*Note.* Bootstrap sample size = 5000. The indirect effect's confidence interval does not include zero, indicating significant mediation.

The indirect effect of service quality on customer loyalty through customer satisfaction was significant (effect = 0.60), which is evidence of mediation. The direct effect of service quality on customer loyalty was also significant (effect= 0.33,  $p < .001$ ), indicating partial mediation. These results indicate that customer satisfaction partially mediates the relationship between service quality and customer loyalty, supporting Hypothesis 4 (H4).



## 5. CONCLUSION

The findings of this research are consistent with those of Çetindaş (2020), who similarly demonstrated that service quality significantly enhances both customer satisfaction and customer loyalty in the cargo sector. The present study also confirms that customer satisfaction plays a partial mediating role, reinforcing the conclusion that loyalty is shaped both directly and indirectly by the quality of service provided. Results reveal that most of the cargo customers taking part in the current study (79.9%) are between 18 and 34 years old, which shows a majorly young customer base. The Turkish Statistical Institute (2024) states that Turkey has one of the youngest populations in Europe, with a median age of 34.0 years in 2023 compared to about 44.4 years for the EU. Young people are shown to have higher levels of usage of e-commerce and logistics services because they are more literate in the digital space and generally seek convenience of these electronic services, and are distributed throughout Turkey's urban spaces such as Istanbul, where access to online and delivery service infrastructure are best developed. Regarding the gender of the sample, the response rate is 53.1% male and 46.9% female, showing a fairly balanced distribution, which is enough to increase the credibility and fairness of the finding and support the generalizability of the results for people from different customer groups.

Beyond age and gender, frequency of cargo service use also provides insight into consumer behavior. Approximately half of the respondents (48.5%) report using cargo services more than once a month, and (10.9%) use cargo services weekly or more. This

indicates that cargo services are an important part of many consumers' everyday lives in Turkey, especially with the growing popularity of e-commerce and online shopping.

Additionally, the research findings indicate that no one cargo company dominates consumer usage. PTT was reported to have been used by 28.1% of respondents, while Aras and Yurtiçi each reported usage by 25.4% of the respondents. Respondents also reported using other companies such as MNG, Sütrat, and UPS. This shows that cargo services in Turkey are highly competitive and diverse among service providers.

Not only are there a variety of cargo service use providers, but the findings also show there are also diverse roles consumers take on with the cargo service use. While many consumers may primarily be cargo recipients, some only send shipments, and others do both. Furthermore, even if they only receive shipments, consumers may have the opportunity to send shipments in the context of return processes that require a visit to a branch, and conversations with personnel from the cargo companies. This suggests that consumers are using cargo services in a variety of dynamic ways

Using the gathered data, various statistical analyses are conducted including exploratory factor analyses, reliability analyses, correlational analyses and regression and mediation analyses.

The reliability analyses which use Cronbach's alpha values reveal very good consistency and reliability for the scales measuring service quality, customer satisfaction and customer loyalty with all items performing quite well for scale consistency and reliability so that there are no items to remove. As a result, the survey instrument is proved to be sound and reliable.

Along with reliability, construct validity was assessed through exploratory factor analysis (EFA). The EFA results suggested construct validity overall, with high communalities and clearly defined factor structures. Minor deviations from the original three-construct structure were found, but the main objective of this study was to test hypothesized relationships between service quality, customer satisfaction, and customer loyalty. Further research should be conducted on this topic using confirmatory factor analysis (CFA) and larger, more diverse samples in order to validate the factor structure.

Following the confirmation of reliability and construct validity, correlational analysis also provides very good insight into relationships for the main constructs after the validity and factor analyses have confirmed the validity of the constructs. The correlational analysis confirmed some strong positive relationships between the variables: service quality, customer satisfaction and customer loyalty. These strong positive associations support the commonly widespread view that when a customer perceives good service quality, the associated customer satisfaction levels and customer loyalty will improve accordingly. This is not surprising as the conclusions can be consistent with the widespread marketing and logistics literature which suggests that as customers perceive a service-related interaction as reliable, responsive and professional, they are generally satisfied and will be more likely to form long term relationships with that service provider.

This study aims to examine the influence of service quality on customer satisfaction and customer loyalty in the cargo sector. The regression outputs provide a proof for these relationships. The regression results demonstrate a strong effect of service quality on customer satisfaction and customer loyalty in the cargo sector. Service quality is a strong predictor of customer satisfaction ( $\beta = 0.809$ ;  $t = 23.878$ ;  $p < .001$ ;  $R^2 = 0.654$ ). This result shows that service quality accounts for 65.4% of the variance in customer satisfaction and that increases in service quality will lead to significantly higher levels of satisfaction. Service quality is also a strong predictor of customer loyalty ( $\beta = 0.715$ ;  $t = 17.759$ ;  $p < .001$ ;  $R^2 = 0.512$ ), accounting for 51.2% of the variance, meaning that the employees' ability to deliver service leads customers' loyalty to the cargo firm. Moreover, the effect of customer satisfaction on loyalty in the cargo sector was similarly strong ( $\beta = 0.776$ ;  $t = 21.356$ ;  $p < .001$ ;  $R^2 = 0.602$ ), indicating satisfied customers will be substantially more loyal. All these findings underscore the value of service quality improvements and investment for cargo firms to create customer satisfaction and customer loyalty.

The findings from the mediation analysis confirmed that customer satisfaction partially mediates the relationship between service quality and loyalty. There is a direct main effect from service quality to loyalty of an effect of 0.33, ( $p < .001$ ) as well as a strong indirect effect to loyalty from service quality through satisfaction (effect = 0.60) with a total effect of 0.93. This indicates that service quality affects loyalty both directly

and indirectly through satisfaction. The current study underscores the emphasis for businesses in the cargo sector to invest in service to improve satisfaction and ultimately loyalty.

Although this study does provide important information related to the relationship between service quality, customer satisfaction, and loyalty in the cargo sector, there are some limitations. The primary limitation of the study is the non-random, convenience sample which consequently limits the generalizability of this study to the larger population of cargo service users in Istanbul. Other limitations are the short data collection period of two months (April-May) and data collection from only one region (Istanbul). It is also not clear whether, and how much, cargo service is different, or if there are differences in quality across regions. In terms of future research, researchers should consider a broader sample, longer data collection periods, and random sampling techniques. More broad coverage across different sectors, and a larger area, would likely increase the potential for generalizable and comprehensive findings.

Considering the results of this study, it is recommended that cargo companies should devote time and resources to enhancing service quality to increase satisfaction and customer loyalty. For future research, the author recommends using competitor service quality scales such as Cronin and Taylor's (1992) or Mentzer et al.'s (1999), as it would likely generate comparable results and promote further studies. Future studies could also investigate other mediating variables in the service quality-satisfaction-loyalty framework, as it could be an important theoretical contribution to the research literature and an important understanding of customer behavior in the cargo sector.

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## Appendix A: Screenshot of Google Form Questionnaire

← Preview mode

✓ Published [Copy responder link](#)

### Survey: Measuring the Effect of Service Quality on Customer Satisfaction and Loyalty

Thank you for taking the time to participate in our survey.

This study aims to examine the relationship between service quality, customer satisfaction, and customer loyalty in the context of cargo companies operating in Istanbul.

Based on your recent experiences with the cargo company you mostly use, please indicate the extent to which you agree with the following statements. Your feedback is valuable and will help improve cargo services. The survey will take approximately 5-10 minutes to complete.

By participating in this survey, you confirm that you have read the information provided and voluntarily agree to participate. Your responses will remain confidential and used only for academic purposes.

**Instructions: For each statement, indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree).**

\* Indicates required question

Age \*

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55 and above

Gender \*

- ☐ Male
- ☐ Female

How frequently do you use cargo services? \*

- ☐ Once a month or less
- ☐ 2-3 times a month
- ☐ Weekly
- ☐ More than once a week

Which cargo company do you mostly use? \*

- ☐ Aras Cargo
- ☐ Yurtiçi Cargo
- ☐ MNG Cargo
- ☐ Sürat Cargo
- ☐ PTT Cargo
- ☐ UPS Cargo

What is your main role when dealing with the cargo company? \*

- ☐ I send shipments
- ☐ I receive shipments
- ☐ I do both

**Tangibles**  
**Questions (1-4)**

1. The cargo company uses modern and reliable equipment and technology for shipping. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

2. The company's office environment (e.g., warehouses, offices) is clean and organized. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

3. Employees of the company wear professional and neat uniforms. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

4. Materials associated with the service (e.g., \*, packaging, documents, invoices) of the cargo company I mostly use are visually appealing and clear.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree



**Reliability  
Questions (5-8)**

Use the scale:

**1 = Strongly Disagree**

**2 = Disagree**

**3 = Neutral**

**4 = Agree**

**5 = Strongly Agree**

5. The company always adheres to the  
promised shipping dates. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

6. The cargo company I mostly use performs the service correctly the first time. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

7. The cargo company I use most frequently accurately tracks shipments and informs me of delivery status. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

8. The company consistently keeps the promises it makes to customers. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

### **Responsiveness**

**questions (9-12)**

**Use the scale:**

**1 = Strongly Disagree**

**2 = Disagree**

**3 = Neutral**

**4 = Agree**

**5 = Strongly Agree**

9. The employees of the Cargo company I mostly use are always willing to help me when needed. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

10. My inquiries and requests are handled quickly and effectively. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

11. When I face an issue, company staff work <sup>\*</sup> to resolve it as quickly as possible.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

12. The company responds promptly to any <sup>\*</sup> changes or delays in shipments.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

**Assurance**

**Questions (13-16)**

Use the scale:

**1 = Strongly Disagree**

**2 = Disagree**

**3 = Neutral**

**4 = Agree**

**5 = Strongly Agree**

13. The employees of the Crago company I I \*  
mostly use have sufficient knowledge and  
experience to provide the service correctly.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

14. The employees of the Cargo company I mostly use teats me with respect. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

15. I feel safe and secure when interacting with this company. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

16. The employees of the Cargo company I mostly use appear confident and competent in their work. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

### **Empathy**

#### **Questions (17-19)**

**Use the scale:**

**1 = Strongly Disagree**

**2 = Disagree**

**3 = Neutral**

**4 = Agree**

**5 = Strongly Agree**



17. The company provides shipping services <sup>\*</sup> that meet my specific needs as a customer.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

18. Employees treat me personally and care <sup>\*</sup> about delivering the best service.

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

19. The company considers my feelings and offers solutions tailored to me as a customer. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

20. I feel that company staff care about providing me with the best shipping experience. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

1. I am satisfied with the overall service I received from the cargo shipping company. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

2. The service provided meet or exceed my expectations. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

3. I am satisfied with the speed and quality of the service offered by the company. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

4. I am satisfied with the interaction and assistance I received from the company's staff. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

1. I am likely to continue using this cargo company for my future needs. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

2. I would recommend this cargo company to my friends and family. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

3. I consider this company my first choice  
compared to other shipping companies. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

4. Even if the cargo company I mostly use  
does not offer any incentives (such as  
discounts), I would still choose it based on  
the quality of service provided. \*

1 = Strongly Disagree

1 ☐

2 ☐

3 ☐

4 ☐

5 ☐

5 = Strongly Agree

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