



EXAMINING THE MODERATOR EFFECT OF SENDER CHARACTERISTICS ON THE RELATIONSHIP BETWEEN SERVICE PERFORMANCE AND CUSTOMER LOYALTY IN THE CARGO TRANSPORTATION SERVICE SECTOR¹

Furkan Sabit DÜZEN², Melih ENGİN³

Abstract

Customer loyalty holds great importance for many sectors. The main objective of this study is to determine the moderating factors in the relationship between service performance and customer loyalty. In this context, factors such as the shippers' gender, age, type of cargo usage, whether they have cargo agreements, and their average monthly number of shipments were examined for their effects on the relationship between service performance and customer loyalty. According to the analysis results, it was found that the gender factor does not have a moderating effect. However, age, type of cargo usage, having a cargo agreement, and the average monthly number of shipments were found to have moderating effects. These results provide important guidance for cargo service providers regarding which factors they should focus on to enhance customer loyalty. The findings of this research are strategically significant for companies in the cargo sector aiming to gain a competitive advantage and increase customer satisfaction.

Keywords: Cargo, Sender Characteristics, Customer Loyalty, Service Performance, Moderator Effect

JEL Classification: D11, D12, D22

KARGO TAŞIMACILIĞI HİZMET SEKTÖRÜNDE HİZMET PERFORMANSI İLE MÜŞTERİ BAĞLILIĞI İLİŞKİSİNDE GÖNDERİCİ ÖZELLİKLERİNİN DÜZENLEYİCİ ETKİSİNİN İNCELENMESİ

Öz

Müşteri bağlılığı, birçok sektör için büyük bir öneme sahiptir. Bu çalışmanın ana amacı, hizmet performansı ile müşteri bağlılığı arasındaki ilişkide moderatör etkisi olan faktörleri belirlemektir. Bu doğrultuda, göndericilerin cinsiyeti, yaşları, kargo kullanım türleri, kargo anlaşmaları olup olmadığı ve aylık ortalama kargo gönderim adetleri gibi faktörlerin hizmet performansı ile müşteri bağlılığı arasındaki etkileri incelenmiştir. Analiz sonuçlarına göre, cinsiyet faktörünün moderatör bir etkisi olmadığı görülmüştür. Fakat yaş, kargo kullanım türü, kargo anlaşması olup olmaması ve aylık ortalama kargo gönderim adedinin moderatör bir etkisi olduğu bulunmuştur. Bu sonuçlar, kargo hizmeti sağlayıcılarına, müşteri bağlılığını artırmak için hangi faktörlere odaklanmaları gerektiği konusunda önemli bir yol gösterici sunmaktadır. Bu araştırma sonuçları, kargo sektöründe rekabet avantajı elde etmeyi ve müşteri memnuniyetini artırmayı hedefleyen şirketler için stratejik bir öneme sahiptir.

Anahtar Kelimeler: Kargo, Gönderici Özellikleri, Müşteri Bağlılığı, Hizmet Performansı, Moderatör Etki

JEL Sınıflandırması: D11, D12, D22

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² Independent Researcher, furkansabitduzen@gmail.com, ORCID: 0009-0001-5774-3564

³ Assoc. Prof., Bursa Uludağ University, İNİF, Management Information Systems Department, melihengin@uludag.edu.tr, ORCID: 0000-0002-4953-6119

1. Introduction

As in every field of the business world from history to the present day, the cargo service sector has a customer-centered structure. Every product produced or service offered gains meaning with a customer. Therefore, what is vital for a business is to reach out to customers and ensure that the customer purchases products or services on a regular basis. Cargo companies strive to offer faster, more affordable, safer and more attractive services, aiming to improve service performance and thus increase customer loyalty. However, beyond all these factors, it is important not to ignore that cargo companies also have an impact on their customers, the shippers. Shippers are important actors in the industry who can choose to receive or not receive regular service from the cargo service provider. Therefore, examining the customer loyalty of cargo companies shows that they need to take into account the characteristics of the shippers as well as the performance of the service offered. Being able to classify shippers and identify which factors are taken into account and which group of shippers continue to receive service can provide opportunities for a courier company to customize its services and manage its resources more effectively. This study is based on the assumption that different customer characteristics may change the direction or strength of the factors affecting customer loyalty. Therefore, examining the effects of shipper characteristics on the relationship between service performance and customer loyalty in the rapidly evolving cargo service industry may provide important insights for improving customer loyalty.

Over the last 40 years, the logistics industry has been one of the fastest growing sectors worldwide, driven by the increasing use of the internet and the spread of e-commerce. According to the Ministry of Industry and Technology (2021: 8), the share of logistics services in GDP generally varies between 6% and 12% across countries and is estimated to be over TL 500 billion in Turkey in 2019, which implies a share of approximately 8.6%. Moreover, the share of transportation and warehousing services in GDP was approximately 9.0% between 1998 and 2019, ranking third behind sectors such as manufacturing industry and wholesale/retail trade. While the concept of cargo is defined in the international literature as the transportation of a cargo regardless of its content, size and weight, cargo transportation in Turkey has limitations. According to the definition of the Turkish Statistical Institute (TÜİK, 2021: 5), cargo is accepted as the transportation of cargo that does not contain communication letters, can fit in a container and has a volume between 100 kilograms and 300 cubic decimeters. In Turkey, package delivery services, which are a sub-category of cargo transportation services, are called cargo transportation services.

2. Literature Review

In Turkey, the cargo transportation sector has developed rapidly under the influence of economic and social changes and has taken its current shape. While cargo companies respond to consumer needs by providing fast, reliable and efficient services, it has become a more complex sector with technological innovations and the growth of international trade. This process helps Turkey to increase its competitiveness in logistics and strengthen its role in international trade.

In recent years, the Consumer Union Federation has received many complaints about cargo companies in Turkey. According to the content of the Consumer Union Federation Website (2019), according to research; cargo transportation costs are higher than passenger transportation by plane, and cargo companies are found to be inadequate in fulfilling their responsibilities. In addition, there are complaints that measurement errors are deliberately made during the transportation of cargo, cargo is damaged, and complaints from consumers are treated disrespectfully. Durmaz (2010), in his research on a cargo branch in Kütahya province, emphasized the importance of the quality of service provided and delivery times on customer satisfaction. In this context, the loyalty of customers to the company was examined and it was concluded that the company met 80% of the customers' expectations. In their study on air cargo transportation, Meng, Liang, Chen & Lin (2010) examined the effect of cargo transportation service purchase on customer satisfaction and identified four basic factors. These factors are reliability, flexibility, agility (ability to take quick action) and self-criticism.

In cargo transportation, the relationship between service performance and customer loyalty plays a critical role in enhancing customer satisfaction in the logistics sector. Jang and Kim (2012) examined the impact of logistics service performance on customer loyalty in maritime transportation, emphasizing the importance of logistics service quality in fostering customer loyalty. This study highlights that logistics performance is a crucial tool in strengthening customer relationships and ensuring long-term loyalty.

Similarly, Özoğlu and Büyükkelik (2017) analyzed the performance of third-party logistics providers and found that cost performance is a key factor influencing customer loyalty. In addition to cost, operational and relationship performance were also found to have significant effects on customer loyalty. These findings demonstrate that both cost management and customer relationships are equally important in the logistics sector.

Wallenburg and Lukassen (2011) focused on the proactive improvements made by logistics service providers, noting that such efforts significantly enhance customer loyalty. Specifically, proactive measures aimed at improving customer satisfaction strengthen the likelihood of customers returning for services, thereby fostering loyalty. This study provides insights into how logistics service providers can turn customer relationships into a strategic advantage.

Huma et al. (2019) explored the effects of logistics service quality on customer loyalty, identifying factors such as speed, accuracy, and convenience as direct influencers of customer satisfaction, which in turn drives customer loyalty. The research emphasizes that logistics service providers must focus on service quality to improve customer loyalty.

Finally, Xu and Kim (2023), in their study in the Chinese retail sector, examined the relationship between logistics service quality, customer satisfaction, and loyalty. The study found that customer satisfaction plays a mediating role between logistics service quality and customer loyalty, highlighting its importance in fostering long-term customer relationships for logistics service providers.

In response to these complaints, the sector is adopting new legal regulations and measures. Especially new entrants are taking various measures to prevent these complaints. However, the sudden surge in demand in the sector has led to massive investments and a three-fold growth of the sector. Over the last two decades, the number of businesses offering cargo transportation services at regional, national and international level has increased significantly.

Service performance means that customers evaluate the service they receive as satisfactory, effective and reliable. This concept is directly related to other factors such as cost, profitability, customer loyalty, marketing and quality. Studies in the literature generally define service performance as a combination of factors that positively influence customer satisfaction, customer loyalty, the degree to which customer expectations are met, and the firm's image. These definitions can sometimes lead to confusion between service performance and quality.

In the measurement of service quality, various scales have been employed across different sectors, playing a critical role in assessing service quality in the service industry. One of the most widely used scales in the literature is the SERVQUAL scale. Developed by Parasuraman, Zeithaml, and Berry (1988), this scale measures service quality across five key dimensions: tangibility, reliability, responsiveness, assurance, and empathy. SERVQUAL is considered a robust measurement tool for identifying service quality gaps in a wide range of sectors. Wisniewski and Donnelly (1996) emphasized the potential of using SERVQUAL in the public sector to assess service quality and improve the effectiveness of public services.

One criticism of the SERVQUAL scale is that measuring both expectations and perceptions simultaneously can be misleading. In response to this critique, the SERVPERF scale was developed by Cronin and Taylor (1992), focusing solely on measuring service performance. SERVPERF offers a shorter and more focused approach to service quality assessment by evaluating only perceived

performance. Some researchers regard this as a more efficient tool for measuring service quality. For instance, Aliçavuşoğlu and Gürbüz (2017) applied the SERVPERF scale to measure service quality perceptions in Turkey's urban transportation sector, highlighting the significance of transport services as a key advantage in urban life.

In addition to these two scales, other measurement instruments have been developed for different sectors such as education, healthcare, hospitality, banking, insurance, and retail. These sector-specific studies aim to identify service quality gaps and develop tools to measure these gaps effectively (Devi, 2019). This diversity of measurement tools emphasizes the importance of understanding the dynamics of service quality perceptions in various sectors, as each sector may require tailored measurement instruments.

Both the SERVQUAL and SERVPERF scales are widely used in service quality measurement due to their reliability and validity. While SERVQUAL provides a broader perspective on service quality, SERVPERF offers a more practical and performance-focused assessment. Both scales contribute significantly to understanding the impact of service quality on customer satisfaction and loyalty.

Service performance is a broad concept that includes a number of different factors in different sectors. Cronin Jr. and Taylor(1992) stated that there were many studies that define and examine this concept. For example, scales such as SERVQUAL and SERVPERF are frequently used to measure service performance. However, the SERVQUAL scale has been criticized by some researchers due to its length. It is also claimed that measuring perception and expectation at the same time is not accurate and may lead to confusion. Therefore, a shorter and more direct approach such as the SERVPERF scale has been developed. However, there is still no consensus on which scale is better.

Both scales were accepted as applicable and defensible. The SERVPERF (Cronin Jr. and Taylor 1992) scale applied in the study consists of five sub-dimensions:

- Physical appearance: The visual aspects of service delivery, such as the physical facilities, equipment and appearance of employees.
- Reliability: The ability to deliver the promised service in a reliable, error-free and complete manner.
- Speed of response: The ability to respond quickly to customer questions and issues.
- Assurance: Employees' level of knowledge about the service and their ability to reassure customers.
- Empathy: The ability to show attention, care and personal attention to customers.

The consignor represents the party requesting the transportation of a cargo or package, while the consignee represents the party to whom the transportation is made. According to the Road Transport Law, the consignor or sender is defined as "the person who delivers the goods to the carrier, identifies the consignee and signs the bill of carriage." The consignee or consignee is defined as "the person to whom the goods specified in the consignment note and the bill of carriage will be delivered" (Republic of Turkey Presidency Legislation Information System 2003).

For cargo companies, shippers are the recipients of the transportation service, and it is important that these shippers continue to receive service. For this reason, cargo companies aim to improve the quality of the service they offer to the shippers and the process of the shipment reaching the recipient, ensuring that the shippers are satisfied with their services and receive service again.

Cargo companies create service groups by grouping their customers according to certain characteristics. This helps the customer to evaluate the service and the carrier to evaluate the customers. For example, customer characteristics such as cargo size, number of shipments per

month, type of cargo usage, cargo agreement status, education level, and age can affect the service, the customer purchases and the carrier's strategies for managing customers.

Technological advances bring new opportunities for businesses, but also some challenges. Increased competition, increased product similarities and rapidly changing technology mean that products or services become obsolete quickly. For this reason, businesses have started to pay more attention to customer loyalty. Customer loyalty means that the party who understands the value of the relationship makes the necessary effort to maintain the relationship. To increase customer loyalty, businesses focus on factors such as valuing the customer, providing personalized service, continuous communication, solving problems and giving importance to customer feedback.

Customer loyalty can include various dimensions and offers many strategic opportunities for businesses. In this context, it is important for businesses to understand the different dimensions and develop appropriate strategies to increase customer loyalty. In this study, we focus on different dimensions of customer loyalty such as affective, normative, economic, forced and habitual. Understanding these dimensions can help businesses develop more effective strategies to increase customer loyalty.

In the past, customer loyalty was generally considered as a unidimensional concept, while later studies have evaluated this concept more comprehensively. The three-dimensional commitment model developed by Meyer and Allen includes normative, affective and calculative commitment. This model has helped to analyze customer loyalty in more detail. Customer loyalty is based on factors such as customer satisfaction, perceived value and trust.

The five-dimensional model developed by Keiningham et al (2015: 440). Includes affective, normative, economic, forced and habitual commitment. This model helps businesses to better understand customer engagement. Identifying which dimensions should be emphasized more allows businesses to shape their customer engagement strategies more effectively.

Increasing customer loyalty carries the potential for long-term profitability and sustainable growth for businesses. Therefore, businesses focus on developing various strategies to increase customer loyalty. These strategies are based on factors such as valuing the customer, providing personalized service, continuous communication, solving problems and giving importance to customer feedback.

Increasing customer loyalty can strengthen businesses' competitive advantage and attract customers into long-term relationships. By understanding the different dimensions of customer loyalty, businesses can develop strategies to better serve customers. This can help businesses to sustain their long-term success.

Increasing customer loyalty is recognized as a key driver for long-term profitability and sustainable growth in businesses. According to Reichheld (1993), the economic benefits of high customer loyalty are measurable, and companies that prioritize building a loyal customer base see significant improvements in profitability and market share. Studies show that businesses which focus on customer retention and loyalty experience long-term financial success, contributing to their competitive advantage and growth (Obafemi, Onyebuchi, & Omoyebagbe, 2023).

One of the main strategies businesses use to foster customer loyalty is providing personalized services, which significantly enhances customer satisfaction and retention. Personalized service, coupled with continuous communication and problem-solving efforts, plays a crucial role in maintaining long-term customer relationships (Rahmadhani & Syahriza, 2022). Moreover, implementing effective loyalty programs has been shown to increase customer retention rates, thereby minimizing customer defection and improving purchase frequency (Nandal & Malik, 1000).

Furthermore, businesses that value customer feedback and take proactive steps to address complaints and concerns build stronger trust with their customers. This trust, in turn, is a precursor to customer loyalty, which is essential for sustaining a company's long-term success (Sharma et al.,

2020). Thus, by understanding the various dimensions of customer loyalty, businesses can develop more targeted strategies that enhance customer satisfaction and strengthen their competitive position in the market (Azahari & Nayan, 2020).

3. Methodology

3.1. Purpose of the Research

In the literature, customer loyalty and the factors affecting this loyalty in the cargo service sector are generally considered as unidimensional. However, this study is based on the idea that different characteristics of customers may change the direction and degree of influence of the factors affecting customer loyalty. Therefore, this study aims to examine the relationship between service performance and customer loyalty in the cargo service industry and to investigate whether there is a moderating effect of shipper characteristics on this relationship.

The main purpose of this study is to determine how different sub-dimensions of perceived service performance affect customer loyalty in the shipping service sector and to reveal how shipper characteristics moderate this effect.

3.2. Method

This study was conducted between 01.02.2023 and 24.02.2023 to determine whether there is a moderating effect of shipper characteristics on the relationship between customer loyalty and service performance in the cargo service sector. The research was conducted simultaneously among cargo company customers using the SERVPERF Scale developed by Cronin Jr. and Taylor (1992: 56) and the Customer Loyalty Scale developed by Keiningham et al. (2015: 440). Ethics committee permission was obtained for the scales and survey items used in the research. Quantitative research aims to test the accuracy of hypotheses by examining the relationships between variables. It states that quantitative research is preferred when it is desired to measure diversity in a subject and numerical data are used to understand this diversity.

This study aims to explain the relationship between service performance and customer loyalty in the cargo service sector. Explanatory researches are studies conducted to understand how certain events or phenomena occur or why they occur. In this type of research, cause-effect relationships are tried to be established in order to understand the relationships between the analyzed events.

3.3. Participants

In accordance with the purpose of this study, it should include potential participants who can receive service from a cargo company. However, in order to examine the factor of the presence or absence of a cargo agreement, which is among the sender characteristics, it is limited to individuals aged 18 and over, which is the minimum age limit that can make a cargo agreement.

The exact number of individuals in Turkey who meet the requirements of making a cargo deal cannot be determined precisely. Therefore, the sample size in this study was calculated with the formula $n = t^2 \cdot p \cdot q / \alpha^2$ as stated by Saruhan and Özdemirci (2018: 198). Accordingly, at 95% confidence level, assuming that the population is homogeneous, the sample size should be at least 385 people.

The snowball sampling method was preferred in order to reach the number of participants specified in the study. As a result of the data collection process, 453 questionnaire forms were completed. In the digitally prepared questionnaire, the problem of missing data was prevented by ensuring that all fields were marked as mandatory. However, the questionnaires filled out by two participants under the age of 18 and a questionnaire with more than one city information were excluded from the analysis. As a result, the study was completed using 450 questionnaires that did not contain missing data and were suitable for analysis.

3.4. Data Collection

The data collection process was completed between 01.02.2023 and 24.02.2023. The data collection tool used in the research consists of three parts. The first part includes questions that include information such as age range, gender, education level, type of cargo use, cargo agreement status, the most frequently sent cargo size, the average number of cargo shipments per month in order to determine the demographic characteristics of the customers.

In the second part, the Turkish adaptation of the SERVPERF Scale developed by Cronin Jr. and Taylor was used. Considering that this scale is generally accepted in the literature to measure perceived service performance and has high validity, it was preferred. In the research, 5 sub-dimensions and 22-item form, which is thought to better reflect the cargo sector, were used. The scale is designed so that the participants can rate the items as "strongly disagree", "strongly disagree", "strongly disagree", "strongly disagree" and "strongly disagree." "I disagree," "I'm not sure," "agree," and "strongly agree" on a 5-point Likert-type scale.

In the third section, the Turkish adaptation of the Customer Loyalty Scale developed by Keiningham et al (2015: 440). The fact that this scale is recent in the literature and has high validity was the reason for its preference. In the research, it was decided to use this adaptation with 5 sub-dimensions and 15 items, which was language and culture adapted. In this scale, the responses ranged from "strongly disagree," "I disagree," "I'm not sure," "agree," and "strongly agree" on a 5-point Likert-type scale.

3.5. Research Model and Hypotheses

The main purpose of this study is to determine whether the characteristics of cargo shippers have a moderating effect on the effect of perceived service performance sub-dimensions on customer loyalty in the cargo transportation service sector. In this context, the sender characteristics considered in this study are gender, age, type of cargo use, whether there is a cargo agreement or not, and the average number of cargo shipments per month. The hypotheses we tested around this purpose are as follows:

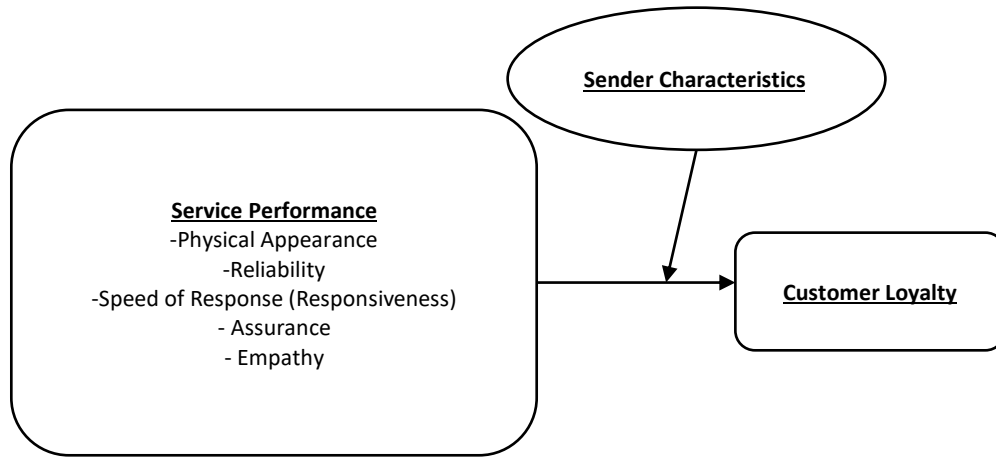
- H1: There is a moderating effect of sender gender on the relationship between physical appearance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H2: There is a moderating effect of sender gender on the relationship between reliability, one of the sub-dimensions of Service Performance, and customer loyalty.
- H3: Sender gender has a moderating effect on the relationship between responsiveness, one of the sub-dimensions of Service Performance, and customer loyalty.
- H4: There is a moderating effect of sender gender on the relationship between assurance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H5: Sender gender has a moderating effect on the relationship between empathy, one of the sub-dimensions of Service Performance, and customer loyalty.
- H6: There is a moderating effect of sender age on the relationship between physical appearance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H7: There is a moderating effect of sender age on the relationship between reliability, one of the sub-dimensions of Service Performance, and customer loyalty.
- H8: There is a moderating effect of sender age on the relationship between responsiveness, one of the sub-dimensions of Service Performance, and customer loyalty.
- H9: There is a moderating effect of sender age on the relationship between assurance, a sub-dimension of Service Performance, and customer loyalty.

- H10: There is a moderating effect of sender age on the relationship between empathy, a sub-dimension of Service Performance, and customer loyalty.
- H11: Cargo utilization type has a moderating effect on the relationship between physical appearance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H12: There is a moderating effect of cargo usage type on the relationship between reliability, one of the sub-dimensions of Service Performance, and customer loyalty.
- H13: There is a moderating effect of cargo utilization type on the relationship between responsiveness, one of the sub-dimensions of Service Performance, and customer loyalty.
- H14: There is a moderating effect of cargo usage type on the relationship between assurance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H15: Cargo utilization type has a moderating effect on the relationship between empathy, one of the sub-dimensions of Service Performance, and customer loyalty.
- H16: There is a moderating effect of the shipper having a cargo agreement on the relationship between physical appearance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H17: There is a moderating effect of the shipper having a cargo agreement on the relationship between reliability, one of the sub-dimensions of Service Performance, and customer loyalty.
- H18: There is a moderating effect of the shipper having a cargo agreement on the relationship between responsiveness, one of the sub-dimensions of Service Performance, and customer loyalty.
- H19: There is a moderating effect of the shipper having a cargo agreement on the relationship between assurance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H20: There is a moderating effect of the sender having a cargo agreement on the relationship between empathy, one of the sub-dimensions of Service Performance, and customer loyalty.
- H21: There is a moderating effect of the monthly average number of cargo shipments on the relationship between physical appearance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H22: There is a moderating effect of the monthly average number of cargo shipments on the relationship between reliability, one of the sub-dimensions of Service Performance, and customer loyalty.
- H23: There is a moderating effect of the monthly average number of cargo shipments on the relationship between responsiveness, one of the sub-dimensions of Service Performance, and customer loyalty.
- H24: There is a moderating effect of the monthly average number of cargo shipments on the relationship between assurance, one of the sub-dimensions of Service Performance, and customer loyalty.
- H25: There is a moderating effect of the monthly average number of cargo shipments on the relationship between empathy, one of the sub-dimensions of Service Performance, and customer loyalty.

The research data were analyzed using SPSS 27 and AMOS 22 software packages. In the first stage, descriptive statistics were applied for the data. Then, confirmatory factor analysis was

applied to assess the validity of the measurement model. The reliability of the measurement model was assessed using Cronbach's Alpha test. Finally, the hypotheses based on the research model were examined using path analysis.

Figure 1: Research Model



In order to obtain information about the sample, descriptive statistics such as frequency and factor averages were presented for the demographic data of the participants and the moderating effects of the factors examined. Since the normality condition was met, confirmatory factor analysis was started. At this stage, the factor loadings of all items were reviewed separately. The number of observations required to achieve the acceptable factor loadings specified by Hair and Ribeiro (2005: 5) was calculated as power = 0.80 and alpha = 0.05. In line with this calculation, it was checked whether the factor loadings were above 0.35 with a sample size of 450 people. After the validity analyses were applied, a reliability analysis was conducted for each factor using Cronbach's alpha test. This analysis was conducted to determine whether each factor had a reliability value higher than 0.5. After the validity and reliability analyses, the path analysis phase was started in which moderator effects were examined for hypothesis testing.

4. Findings

The demographic information of the participants is shown in "Table 1". Since the demographic variables mentioned are also the sender characteristics that are the subject of the research, each variable is analyzed separately.

Table 1: Demographic Information of Participants

		f	%			f	%
Gender	Male	243	%53,6	Education Status	Primary/Sec. School	10	2,2
	Woman	210	%46,4		High School	94	20,8
Age	Between 18-29	124	27,4		Associate Degree	103	22,7
	Between 30-39	119	26,3		License	142	31,3
	Between 40-49	101	22,3		Master's Degree	103	22,7
	Over 50	107	23,6		PhD	1	0,2

Of the 450 participants, 46.4% were women and 53.6% were men. While 53.8% of the participants were under the age of 40, 46.2% were 40 years and above. In terms of educational attainment, 45.3% of the participants have less than a bachelor's degree, while 54.7% have a bachelor's degree or higher. This balanced distribution will provide healthier results to test whether the direction or severity of the relationship varies significantly depending on the level of education.

Information about the participants' cargo usage is shown in "Table 2:", "Table 3:", "Table 4:" and "Table 5:". Since some of the variables expressed are also the characteristics of the sender subject to the research, each variable is analyzed separately.

Table 2. **Distribution of Participants' Cargo Usage Type**

Type of Cargo Use	f	%
Individual	79	%17,4
Corporate	374	%82,6

While 17.4% of the participants in the research consist of individuals who receive cargo services individually, 82.6% of the participants consist of individuals who receive cargo services corporately. Since this survey was applied to individuals who regularly send cargo, it can be concluded from this data that people who send cargo regularly generally prefer to receive corporate service and that the opportunity to receive corporate service is important for customers.

Table 3. **Distribution of Participants' Cargo Agreement**

Cargo Agreement	f	%
Yes	376	%83
No	77	%17

While 83% of the respondents have a cargo agreement, 17% do not have a cargo agreement. Since the survey was applied to individuals who make regular cargo shipments, it can be concluded from this data that people who make regular cargo shipments generally prefer cargo-contracted services and that the opportunity to make a cargo agreement is important for customers.

Table 4: **Distribution of Participants' Most Frequent Shipping Size**

The Cargo Size	f	%
Small Package (0 - 1,99 Desi)	168	%37,1
Middle Package (2 - 10,99 Desi)	144	%31,8
Large Package (11 - 99 Desi)	141	%31,1

When the data on the most frequently sent cargo sizes of the participants in the study are analyzed, it is observed that 37.1% of the participants most frequently send small packages, 31.8% most frequently send medium packages, and 31.1% most frequently send large packages. Although the data shows a balanced distribution, it is seen that the participants mostly prefer small packages.

Table 5: **Distribution of Participants' Monthly Average Number of Cargo Shipments**

Average Number Of Cargo Shipments Per Month	f	%
25 Shipments and Below	228	%50,7
Over 25 Shipments	222	%49,3

When the data on the average monthly number of cargo shipments of the participants participating in the research are analyzed, it is seen that 50.7% of the participants send 25 or less cargo on average, while 49.3% of the participants send more than 25 cargo on average per month. Although a balanced distribution is observed in this data, most of the participants prefer to send 25 or less cargo per month.

In addition, as a result of the investigations, it was observed that the majority of the surveyed respondents consisted of individuals who send 25 or less small parcels per month on average, have a cargo agreement, and receive corporate services. This indicates that the number of respondents who receive services on an institutional basis is different from the number of respondents who have a cargo agreement, i.e. some respondents send cargo individually at the same time as they receive services with a cargo agreement.

At this stage, confirmatory factor analysis was applied based on the adjusted data and validity analysis was performed. The goodness of fit values and standardized regression coefficients of the model were carefully examined. Although the goodness of fit values were generally within the acceptable range, it was observed that the factor loadings of some items were below 0.35. As a result of confirmatory factor analysis, items with factor loadings lower than 0.35 were removed in order, starting with the lowest factor loading. As a result of this process, 8 items were removed and the model was reorganized. The factor loadings of the new model are presented in "Table 6". After the model was accepted, the factor loadings were checked again and it was determined that the lowest factor loading belonged to the GVN_3 item with 0.377. In this case, it was concluded that all factor loadings were above the acceptable level.

Table 6: Confirmatory Factor Analysis Adjusted Model Factor Loadings

Item	Factor Loading	Item	Factor Loading
FG4	0,73	EMP4	0,48
FG3	0,748	EMP3	0,514
FG1	0,733	EMP2	0,667
GVN5	0,482	DB1	0,759
GVN4	0,779	DB3	0,756
GVN3	0,377	NB1	0,747
GVN2	0,726	NB2	0,768
GVN1	0,741	NB3	0,75
YV3	0,632	EB1	0,782
YV2	0,564	EB2	0,458
YV1	0,487	EB3	0,583
GV3	0,507	ZB1	0,425
GV2	0,585	ZB2	0,516
GV1	0,537	ZB3	0,514
EMP5	0,477		

Although the reliability test helps us to understand the internal consistency of the scale, the most commonly used test method is the Cronbach's Alpha test. The test results are presented in Table 7.

Tablo 7: Cronbach's Alpha Testi Sonuçları

Factor Name	Item Count	Cronbach's Alpha
Physical Appearance	3	0,781
Reliability	5	0,755
Speed of Response (Responsiveness)	3	0,574
Assurance	3	0,552
Empathy	4	0,623
Emotional Loyalty	2	0,729
Normative Loyalty	3	0,799
Ekonomik Loyalty	3	0,618
Forced Loyalty	3	0,489

In this section, path analysis was used to test the hypotheses of the study. According to the research model, the relationship between the 5 sub-dimensions of service performance and customer loyalty was examined one by one, and the effect of variables such as gender, age, type of cargo use, whether there is a cargo agreement or not, and the average number of cargo shipments per month were investigated in this relationship.

In the path analysis results performed in the AMOS program, the "critical ratios for differences between parameters" field was first taken into consideration and it was checked whether the difference between the parameters was greater than 1.96 in absolute value. This value refers to factor loadings. Parameters with a difference between them greater than 1.96 in absolute value

were considered significant. The direction and severity of the effect were evaluated by examining the factor loadings for the significant parameters and the results are presented in "Table 8".

Table 8: Findings on Structural Relationships

Structural Relationship	Moderator	Estimate		Critical Ratios
		Woman	Male	
Physical Appearance → Customer Loyalty	Gender	,686	,585	0,079
Reliability → Customer Loyalty		,702	,652	0,502
Responsiveness → Customer Engagement		,600	,548	0,265
Assurance → Customer Loyalty		,640	,543	1,587
Empathy → Customer Loyalty		,672	,657	0,531
		Under 40	40 and Over	
Physical Appearance → Customer Loyalty	Age	,448	,327	2,698
Reliability → Customer Loyalty		,576	,400	3,330
Responsiveness → Customer Loyalty		,503	,255	4,501
Assurance → Customer Loyalty		,472	,293	3,525
Empathy → Customer Loyalty		,559	,342	4,165
		Individual	Corporate	
Physical Appearance → Customer Loyalty	Cargo Usage Type	,646	,346	3,101
Reliability → Customer Loyalty		,713	,443	3,152
Responsiveness → Customer Loyalty		,664	,300	4,430
Assurance → Customer Loyalty		,621	,298	3,995
Empathy → Customer Loyalty		,708	,384	4,225
		Yes	No	
Physical Appearance → Customer Loyalty	Is there a Shipping Agreement	,344	,707	3,684
Reliability → Customer Loyalty		,438	,756	3,848
Responsiveness → Customer Loyalty		,281	,739	5,974
Assurance → Customer Loyalty		,303	,624	3,876
Empathy → Customer Loyalty		,383	,731	4,624
		25 and Below	Over 25	
Physical Appearance → Customer Loyalty	Monthly Average Number of Cargo Shipments	,634	,656	1,850
Reliability → Customer Loyalty		,574	,470	1,980
Responsiveness → Customer Loyalty		,486	,333	2,272
Assurance → Customer Loyalty		,463	,341	2,342
Empathy → Customer Loyalty		,544	,421	2,399

The hypotheses that are the subject of the research and the test results of these hypotheses are given in Table 9.

Table 9: Hypothesis Test Result

Structural Relationships	Moderator	Conclusion
H1: Physical Appearance → Customer Loyalty	Gender	Not supported
H2: Reliability → Customer Loyalty	Gender	Not supported
H3: Responsiveness → Customer Loyalty	Gender	Not supported
H4: Assurance → Customer Loyalty	Gender	Not supported
H5: Empathy → Customer Loyalty	Gender	Not supported
H6: Physical Appearance → Customer Loyalty	Age	Supported
H7: Reliability → Customer Loyalty	Age	Supported
H8: Responsiveness → Customer Loyalty	Age	Supported
H9: Assurance → Customer Loyalty	Age	Supported
H10: Empathy → Customer Loyalty	Age	Supported

Table 9 (Continued): Hypothesis Test Result

Structural Relationships	Moderator	Conclusion
H11: Physical Appearance → Customer Loyalty	Cargo Usage Type	Supported
H12: Reliability → Customer Loyalty	Cargo Usage Type	Supported
H13: Responsiveness → Customer Loyalty	Cargo Usage Type	Supported
H14: Assurance → Customer Loyalty	Cargo Usage Type	Supported
H15: Empathy → Customer Loyalty	Cargo Usage Type	Supported
H16: Physical Appearance → Customer Loyalty	Shipping Agreement	Supported
H17: Reliability → Customer Loyalty	Shipping Agreement	Supported
H18: Responsiveness → Customer Loyalty	Shipping Agreement	Supported
H19: Assurance → Customer Loyalty	Shipping Agreement	Supported
H20: Empathy → Customer Loyalty	Shipping Agreement	Supported
H21: Physical Appearance → Customer Loyalty	Monthly Average Number of Cargo Shipments	Not supported
H22: Reliability → Customer Loyalty	Monthly Average Number of Cargo Shipments	Supported
H23: Responsiveness → Customer Loyalty	Monthly Average Number of Cargo Shipments	Supported
H24: Assurance → Customer Loyalty	Monthly Average Number of Cargo Shipments	Supported
H25: Empathy → Customer Loyalty	Monthly Average Number of Cargo Shipments	Supported

5. Conclusion

The results of the study show that age, type of cargo usage, whether there is a cargo agreement or not, and average number of cargo shipments per month have a moderating effect on the effect of service performance on customer loyalty. In order to support these results and provide a broader perspective, it is aimed to provide general validity by comparing similar studies with the literature.

When the studies in the related literature are examined, it is seen that the results of the study are in line with Chen and Tsai (2017: 13), Chen and Zhang (2017: 90), Anisimova and Khapova (2019: 165), Smith and Johnson (2022: .21), Brown et al. (2021: 271), Wu and Liu (2016: 916), Li and Wang (2019: 349), Davis and Miller (2020: 94), Wang et al. (2020: 305), Johnson and Smith (2023: 488), White and Brown (2022: 584). These results support that service performance is an important factor on customer loyalty in line with the findings of our analysis.

It is observed that the effect of service performance on customer loyalty differs depending on age. While this effect is more significant and directive for young shippers, this effect is less for older shippers. This suggests that cargo companies should consider the age factor when creating strategies for their target audiences.

The result that the effect of cargo usage type on the relationship between service performance and customer loyalty is higher for individual users emphasizes the importance of focusing more on this segment of customers. The result that the effect of cargo usage type on the relationship between service performance and customer loyalty is higher for individual users emphasizes the importance of focusing more on this segment of customers. Cargo companies can develop targeted strategies such as providing personalized service options tailored to individual users' specific needs, as personalized services have been shown to significantly improve customer loyalty in logistics (Huma et al., 2019). For example, offering flexible delivery schedules and user-friendly digital platforms for tracking shipments can enhance both convenience and customer satisfaction (Xu & Kim, 2023).

Additionally, creating loyalty programs that reward frequent usage is crucial, as loyalty programs have been proven to increase customer retention and reduce switching behaviors (Hartmann & Grahl, 2011). Implementing customer support services that are more responsive and

accessible can also significantly improve the overall customer experience, thereby increasing satisfaction and loyalty (Liu & Zhao, 2008). By focusing on these targeted strategies—personalization, flexibility, loyalty incentives, and improved customer support—cargo companies can better meet the expectations of individual users and foster long-term loyalty, ultimately enhancing their competitive edge in the logistics industry.

The result that the effect of the shipping agreement factor on the relationship between service performance and customer loyalty is higher for shippers who do not have a shipping agreement shows that customers who do not have a shipping agreement interact more with shipping companies and this interaction is more determinant on customer loyalty.

Finally, it is found that the moderating effect on the relationship between service performance and customer loyalty decreases as the average number of shipments per month increases. This suggests that carriers need to pay more attention to heavy shippers and providing the same high service quality to these customers can increase the impact on customer loyalty.

This study examined the relationship between service performance and customer loyalty in cargo services and identified moderating effects. These results provide important insights for cargo companies on which factors they should focus on to increase customer loyalty.

The results highlight the complexity and diversity of the relationship between service performance and customer loyalty. The effects of different factors on customer loyalty may vary depending on shippers' characteristics and preferences. Therefore, cargo service providers should consider shippers' needs and expectations and offer customized solutions for different classes of shippers to increase customer loyalty.

Given the moderating effect of age between service performance and customer loyalty, carriers should focus on the needs and expectations of customers of different age groups. For younger customers, it is important to offer higher service performance and improve services to meet their expectations. For older customers, attributes such as flexibility and understanding may be important.

Individual users were found to have a higher referral effect. Therefore, carriers should offer tailored solutions for individual customers and provide benefits such as personalized services and more careful packaging. They should pay attention to the physical appearance of individual users' shipments and focus on factors such as reliability, responsiveness, reassurance and empathy.

The moderating effect between service performance and customer loyalty is found to be stronger for shippers without a shipping agreement. In this case, carriers can offer special offers to customers without shipping agreements and provide additional support and services to increase customer satisfaction.

The average number of shipments per month was found to have a moderating effect. Carriers should pay more attention to customers with low shipping volume and emphasize their reliability and speed. In addition, these customers can be encouraged to ship more frequently by offering incentives, discounts or benefits.

While the results of our study provide a very meaningful and unique perspective, examining the complex relationship between service performance and customer loyalty through the demographic and behavioral characteristics of shippers can make an important contribution to the cargo sector or similar service sectors.

In conclusion, this study reveals that shipper characteristics have moderating effects on the relationship between service performance and customer loyalty. Age, type of cargo usage, whether there is a cargo agreement or not, and average number of shipments per month are important variables that affect customer loyalty. By taking these factors into account, cargo service providers should improve their services and increase the satisfaction of shippers. It should also be

emphasized that future research should address more factors to better understand the complexity of customer loyalty.

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