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THE IMPACT OF LOGISTICS EDUCATION QUALITY ON STUDENTS' SATISFACTION AND ATTITUDE DURING THE COVID-19 PANDEMIC PERIOD

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Abstract

The Covid-19 epidemic has spread rapidly since the day it first appeared and has turned into a global phenomenon and led universities to reorganize their existing systems. Logistics lessons' applications could not implement in customs, airports, and seaports due to social distancing and isolation in itself which leads to negative impacts on logistics education quality. This study is aimed at analyzing the logistics education quality impact on logistics students' satisfaction and attitude during Covid-19 in state and foundation universities. A survey was conducted with 310 logistics students studying at five universities in Turkey during the Covid-19 outbreak. As a result of the research, the rapidly evolving global pandemic has affected the way logistics of education quality, students' attitudes, and satisfaction during this crisis. In the Covid-19 outbreak, it was determined that students were not satisfied with the logistics education quality sub-factors "academical personal of logistics, education programs of logistics, measurement, and evaluation". The logistics education quality sub-factors "teaching methods, internationalization, access, and approachableness of services had a positive effect on student attitude. In addition, it is envisaged that this study will develop an understanding of interdisciplinary cooperation and offer new solutions.

Keywords: *Covid-19, Logistics education quality, Student satisfaction, Student attitude, Logistics.*

Covıd-19 Pandemi Sürecinde Lojistik Eğitim Kalitesinin Öğrenci Memnuniyeti ve Tutumu Üzerindeki Etkisi

Öz

Covid-19 salgını ilk ortaya çıktığı günden itibaren hızla yayılarak küresel bir boyuta ulaşmış ve üniversitelerin mevcut sistemlerini yeniden düzenlemeye yöneltmiştir. Sosyal mesafe ve izolasyon nedeniyle lojistik ders uygulamalarının gümrüklerde, havaalanlarında, limanlarda uygulanmaması lojistik eğitim kalitesini olumsuz yönde etkilemektedir. Bu çalışmada, Covid-19 sürecinde devlet ve vakıf üniversitelerinde lojistik eğitim kalitesinin lojistik öğrencilerinin memnuniyeti ve tutumunu üzerindeki etkisini ölçmeyi amaçlamaktadır. Covid-19 salgını sürecinde Türkiye'de beş üniversitede öğrenim gören 310 lojistik öğrencisiyle anket çalışması yapılmıştır. Araştırma sonucunda, hızla gelişen küresel pandemi lojistik eğitim kalitesini, öğrencilerin tutumlarını ve memnuniyetlerini etkilemiştir. Covid-19 salgınında öğrencilerin lojistik eğitim kalitesi alt faktörlerinden "lojistik akademik kadrosu, lojistik eğitim programları, ölçme ve değerlendirme" den memnun olmadıkları belirlenmiştir. Lojistik eğitim kalitesi alt faktörlerinden "öğrenme yöntemleri, uluslararasılaşma ve destek hizmetleri" öğrenci tutumunu olumlu yönde etkilemektedir. Ayrıca bu çalışmanın disiplinler arası bir işbirliği anlayışını geliştirmesi ve yeni çözümler sunması öngörülmektedir.

Anahtar Kelimeler: *Covid-19, Lojistik eğitim kalitesi, Öğrenci memnuniyeti, Öğrenci tutumu, Lojistik.*

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1. Introduction

The first disease reported for Covid-19 was seen on December 1, 2019 (World Health Organization, 2022), and the first hospitalization date of the patient with Covid-19 is stated as December 16, 2019 (Huang et al., 2020). The first Covid-19 case was observed on 11 March 2020 in Turkey. The Covid-19 pandemic has caused universities to close rapidly. It was decided that education at universities would be temporarily suspended and then classes would be taught completely online. As logistics lessons were designed for face-to-face instruction, academicians needed to adapt themselves to online lecturing.

During the Covid-19 pandemic in 2020, students have faced unprecedented challenges in the delivery of logistics education. Before the Covid-19 epidemic, logistics students had the chance to see their lessons practically at the customs, warehouses, airports, seaports, and freight forwarder companies. Domestic and international flights were gradually abolished as the Covid-19 epidemic began to show its effect worldwide. Besides, within the scope of the precautionary measures, countries had to close their customs gates to many countries. Unfortunately, the logistics students' chance has been eliminated to learn the functioning of logistics by seeing at the airport or customs.

This study examines the impact of logistics education quality on the satisfaction and attitudes of logistics students in the Covid-19 process. Although many academic studies examined the quality of logistics education, there is no study examining the quality of logistics education in the Covid-19 process. So, the specified gaps in the literature are tried to be fulfilled via this study's contributions as listed above:

1. It reveals the relations among education quality perceptions of logistics students and their attitudes and satisfaction levels.
2. The survey is specially constructed for this study and applied in the logistics departments of Turkey's foundation and state universities.
3. There is no study investigating the current situation of education quality during the Covid-19 pandemic. This study tries to understand the feelings and opinions of the students who take their lectures in virtual classes during this special circumstance.

2. Literature Review

The education quality literature is fruitful and some important examples from the literature on higher education quality are mentioned here to take a picture of the general perspective. Many researchers have performed a comprehensive perspective review of logistics education in the literature: Sakthivel and Raju (2006) developed a tool to assess the customer-perceived quality of higher engineering education via multiple regression analysis from the view of total qlity management. Tikly and Barrett (2011) discussed the quality of education in low-income countries from a social justice perspective within the framework of human capital and human rights approach through qualitative analysis. Aikman et al. (2011) integrated four approaches, namely human capital theory, human rights and power perspective, postcolonial critique, and development as social action for empowerment with the aim of conceptualizing gender equality in education quality. Akareem and Hossain (2012) worked on understanding the students' perception of education quality in private universities in Bangladesh and their principal component analysis showed that perceptions toward quality depend on students' current status and socio-economic background.

Logistics is mostly seen as advancing as a 'discipline' in its own right. The role of the "new economy" understanding in the recent reshaping of the logistics phenomenon is indisputable. Due to the rapid development of information and communication technologies within the scope of the new

economy, the structural appearance of logistics sub-functions has changed, and the meaning of logistics has changed as a new phenomenon. Logistics is defined as planning, executing, and controlling the flow of material, information, and capital within the supply chain from the starting point of the raw material to the end consumer to meet customer needs and demands (Koban & Yıldırır Keser, 2011). Logistics activities (procurement, demand forecasting, order processing, inventory management, transportation, handling, insurance, customs clearance, storage, distribution, packaging, and labeling) undertake a leverage mission in the development and growth of a country (Taşkın & Durmaz, 2012).

Naim et al. (2010) introduced the concept that logistics education is comprised to have four main parts, with several subsets that indicate the skills required: finance (logistics economy and inventory management), organization (supply chain management, logistics modeling, and simulation), technology (transportation and information systems), and people (supplier management and marketing). Tong (2011) has comprehensively evaluated implementation for logistics higher education management and intends to ensure a guide for lecturers to administrate logistics higher education.

3. Method

3.1. Translation of the Scales into Turkish

Education quality, student satisfaction, and student attitude scales were used to measure the research data. The education quality and student satisfaction scales were created by benefiting from the studies of Barnes (2007), Brochado and Marques (2007), and Abdullah (2006). The student attitude scale was compiled from Arslan (2006) and Duatepe-Paksu (2013). For the translation studies of the scale, the original scale was first translated into Turkish by an English teacher and logistics academic personnel with good English. The translations obtained were examined separately by four field experts, and the most appropriate one in terms of meaning and language structure was selected for each item from the translations to the original. The obtained Turkish scale was translated back into English and the consistency between the two forms was checked. First, a pilot survey was conducted with 30 logistics students to test whether the questionnaire applied in the research is valid and suitable for the research. Logistics students were asked to mark the most appropriate option. The questionnaire form was finalized in light of the information obtained from the preliminary study.

3.2. Data Collection and Data Analysis

In this study, the effect of logistics education quality on student satisfaction and student attitude was examined. It is envisaged that this research will serve as a guide for taking steps to increase the quality of logistics education in state and foundation universities of Turkey. The universe of this research is composed of students in the Transport and Logistics, Logistics Management, International Trade, and Logistics programs at the state and foundation universities in Istanbul, Turkey.

There was a total of 720 clicks on the survey link, but only 310 responses accompanied by consent forms were received. The reasons for the selection of Istanbul are as follows: (1) about 30% of the universities in Turkey are located in Istanbul, (2) the universities with high-quality education take place in this city, (3) the ease of reach to the researchers' data, (4) the number of students is high in İstanbul. In this study, the simple random sampling formula was used to determine the sample size. Research data were collected through a questionnaire. A sample size of 310 at a 95% confidence level and a 5% tolerance level is considered sufficient.

The questionnaire form link was created and sent to logistics students via e-mail, and they were asked to participate in the survey by providing information about the study. Survey questions were prepared on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree) to measure logistics education quality on student satisfaction and student attitude. The

questionnaire was used as a data collection tool from the sample. It consists of three parts: preliminary information, demographic information, and scales. Gender, age, class, and university type of participants constitute the first four questions of the survey. SPSS 24 statistical package program was used in the analysis of these data.

3.3. Research Model and Hypothesis

A model has been developed within the framework of the purpose of the research and it is shown in Figure 1.

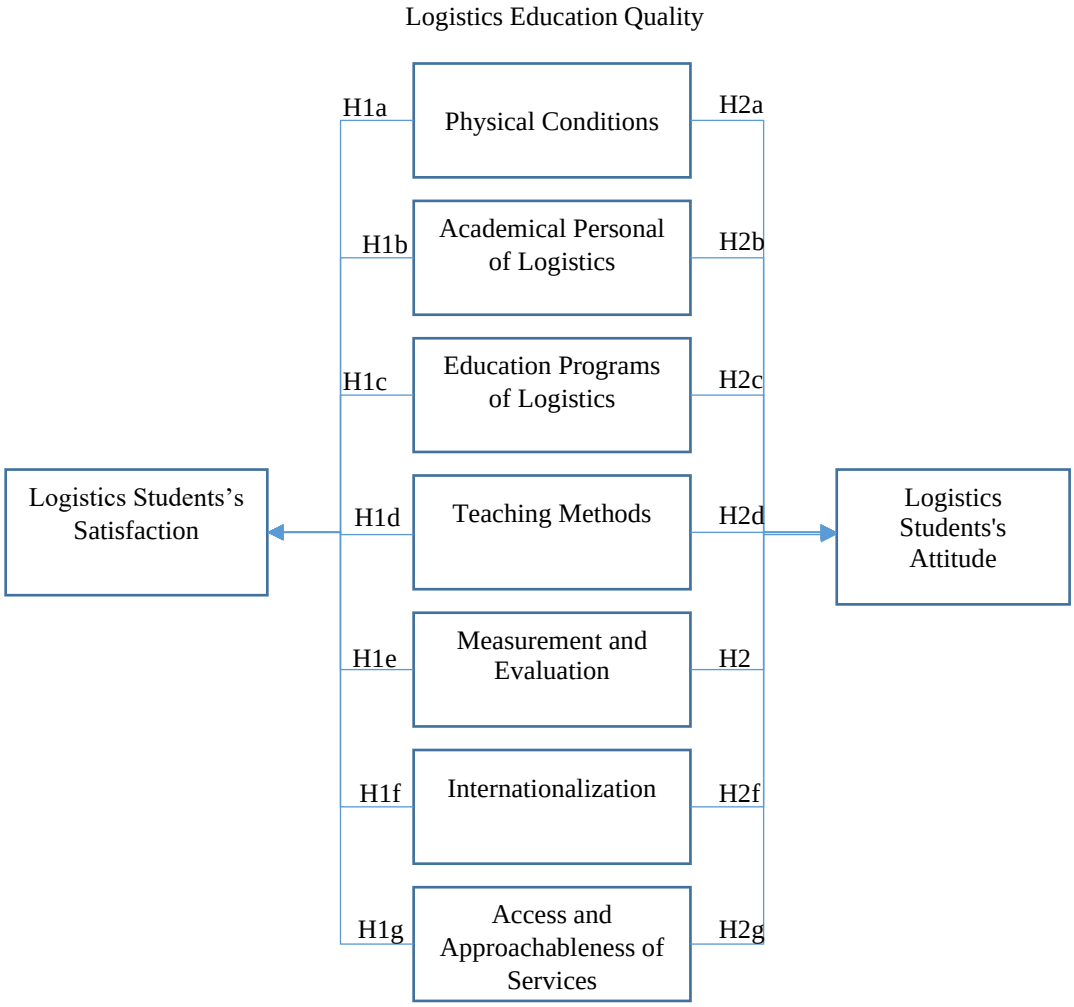

Figure 1. *Research model*

In the literature, there are several academic studies on student satisfaction and attitudes during the pandemic process. Shapiro et al. (2017) categorized the internal and external factors that determine the participation of students in the classroom environment in online education and affect learning. Divjak et al. (2018) discussed the relationship between working attitudes and working behavior and analyzed the effect on students' overall satisfaction. Odriozola-González et al. (2020) provided a detailed discussion that students were affected during the Covid-19 pandemic period. Ross et al. (2020) explained their students 'attitudes toward their participation in research and examine the relationship between academic factors and students' attitudes. Based on all these studies, the H1a and H2a hypotheses were developed.

The dependability of the tutor and efficacy-oriented attitudes significantly influence the level of satisfaction with shadow education (Castro & Guzman, 2014). One of the major logistics industry's

biggest challenges is the lack of well-trained logistics professionals (Pohlen, 2011). Snijders et al. (2020) evaluated the effects of students' relationship with the academician and the involvement of students in the perception of educational quality with structural equation modeling. Based on all these studies, the H1b and H2b hypotheses were developed.

Lancioni et al. (2001) provided a more detailed discussion about logistics education. They declared that there was still an important gap between the logistics industry needs and logistics university curriculum, logistics university training simply could not meet the logistics industry requirement. Marinov and Ricci (2012) introduced the concept of developing adequate solutions for logistics-specific problems. Therefore, defining the need for the logistics industry has become a primary in university logistics course design (Ozment & Keller, 2011). Mangan et al. (2010) pointed out that the existing logistics of education and training are not comprehended as completely meeting either the present or future needs. Moreover, they emphasized that it may also require some reorganization to the development of logistics program lessons such as warehouse management, transport management, logistics information technology, and supply chain management. Based on all these studies, the H1c and H2c hypotheses were developed.

Zhang et al. (2020) explained that online learning is a good option for students because classroom learning has a high risk. However, it cannot replace the need for face-to-face learning in the classroom. Senna et al. (2013) presented a general analysis of teaching and learning strategies and developed several standards for logistics education. Liu (2017) provided useful insights into video game-based learning effects and they proved video game-based learning has positive effects on logistics higher education. Wu and Huang (2013) clarified empirical evidence about the online logistics self-learning platform which encourages interaction and reduces the lecturer's teaching load. Wang et al. (2020) described the factors that play a role in the change in postgraduate students' attitudes toward online education. Based on all these studies, the H1d and H2d hypotheses were developed.

Guangli (2016) studied the effectiveness of the higher education quality assessment systems such as quality assurance and accreditation in China and revealed that establishing a social accountability system is mandatory. Pham (2018) discussed the effects of higher education quality accreditation in Vietnam from the perspective of quality managers at the university, and it was found that the participants were clearly resistant to existing quality assurance approaches. Based on all these studies, the H1e and H2e hypotheses were developed.

Barbulescu (2015) found that the high education quality culture in Romania has undergone a great change and evolution in the last two decades after the European and international tendency to passage from the quality specification and guarantee from inside the university to outside it. Lee et al. (2019) examined the quality of hospitality education in the USA under the headings of student support, innovative curriculum, industry networking, learning environment, and program credentials, and compared the perceptions of domestic and international students. Sulis et al. (2020) studied how European countries were performing in terms of the quality and equity of their educational systems via multilevel regression models on the PISA surveys. Based on all these studies, the H1f and H2f hypotheses were developed.

Access and accessibility to services are strongly associated with student satisfaction and student attitude (Chau and Cheung, 2018). Liu et al. (2020) proved the existing differences due to social experiences and access, and approachableness of services between university and other school students during the Covid-19 pandemic. Based on all these studies, the H1g and H2g hypotheses were developed.

4. Results and Findings

4.1. Research Setting

Before starting the analysis of the data, Kolmogorov-Smirnov, and Shapiro-Wilk tests, which are the most powerful ones, were performed to determine whether the scales showed normal distribution. When the results were examined, it was observed that Kolmogorov-Smirnov and Shapiro-Wilk values of each scale and its sub-dimensions were statistically significant. Besides, it was concluded that the values obtained by dividing the Skewness and Kurtosis values that give information about the normal distribution by the standard error values (Z) are in the range of -1.96 and +1.96.

When the descriptive statistics regarding the variables used in the study are examined as given in Table 1, it is seen that the scores of all dimensions of logistics education quality are above average. When focusing on the mean scores for the sub-dimensions of logistics education quality, it was determined that the academic staff ($\bar{x}$= 4.008, s.s.= 0.69) got the highest score, while the physical properties ($\bar{x}$= 3.221, s.d.= 0.910) got the lowest score.

Table 1. *Descriptive statistics for variable*

Dimensions	Mean	S.D.	Skewness	Kurtosis
Physical Conditions	3.2210	0.91063	0.275	-0.722
Academical Personal of Logistics	4.0089	0.69125	-0.329	-0.454
Education Programs of Logistics	3.7785	0.71535	-0.185	-0.645
Teaching Methods	3.9194	0.67587	-0.711	-0.041
Measurement and Evaluation	3.9581	0.73725	-0.341	-0.612
Internationalization	3.3242	0.91029	-0.313	-0.264
Access and Approachableness of Services	3.5038	0.88876	-0.141	-0.657
Logistics Students' Satisfaction	3.5935	0.99214	-0.368	-0.587
Logistics Students' Attitude	3.8557	0.79470	-0.576	-0.315

Principal Component Analysis was performed as a factor extraction technique in the study. KMO test analysis (KMO: 0.831) was found to be at an excellent level. Bartlett's test result ($p = 0.0005$) was calculated to be statistically significant It was determined that the reliability alpha value of the survey questions was 0.960 and the McDonald's Omega value was 0.962. These values indicate that the research is highly reliable.

When the demographic characteristics of the logistics students in the sample are examined in terms of gender, it is seen that 44.8% of them are women and 55.2% are men. It was determined that 24.5% of the students were in 1st grade, 25.5% were in 2nd grade, 24.8% were in 3rd grade, and 25.2% were in 4th grade. Different demographic characteristics of the participants strengthen the representation ability of the sample. An Independent group t-test was applied to determine whether the scores of student satisfaction and student attitude scale differ according to the gender status variable. According to the results of the analysis given in Table 2, a statistically significant difference was found between the satisfaction and attitude scores of the logistics students according to the gender variable ($p<0.05$). The satisfaction and attitude of female logistics students participating in the study were determined to be higher than male logistics students.

According to the information given in Table 3, it was determined that during the Covid-19 Pandemic student satisfaction at foundation universities ($\bar{x}$: 3.675) was higher than that of students in state universities ($\bar{x}$: 3.4646). Student attitude scores were found to be very close to each other in foundation universities ($\bar{x}$: 3.898) and state universities ($\bar{x}$: 3.8557). At this stage of transition to online education, logistics student attitudes do not differ according to the type of university.

Table 2. *Comparison test of logistics student's satisfaction and attitude by gender variable*

	Levene's Test for Equality of Variances		t-test for Equality of Means		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Eta Squared
Logistics Students's Satisfaction	0.925	0.337	3.212	308	0.001	0.35862	0.11163	0.032
Logistics Students's Attitude	2.21	0.138	3.067	308	0.002	0.27461	0.08955	0.030

Table 3. *Comparison test of logistics student's satisfaction and attitude by university type variable*

		Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Logistics Students's Satisfaction	Between Groups	3.256	1	3.256	3.333	0.069	0.011
	Within Groups	300.906	308	0.977			
	Total	304.162	309				
Logistics Students's Attitude	Between Groups	0.881	1	0.881	1.397	0.238	0.005
	Within Groups	194.269	308	0.631			
	Total	195.15	309				

4.2. Findings Related to Correlation and Regression Analysis between Research Variable

Correlation analysis was conducted to determine the degree and direction of the relationship between variables. While the independent variable in our hypothesis model is education quality sub-factors, our dependent variable is the satisfaction of logistics students and the attitude of logistics students.

The correlation values in the literature are categorized as weak when it is between $0 < r \leq 0.30$; average when it is between $0.30 < r \leq 0.70$; and strong when it is within the range of $0.70 < r \leq 1$. The correlation coefficients between the scales were examined and a value above 0 was found. This shows that there is a strong relationship between logistics students' satisfaction and education programs of logistics. A statistically significant correlation was found between logistics education quality, student satisfaction,

and attitude. Accordingly, correlation coefficients between participants' education quality and student satisfaction and attitude indicate significance at the 0.01% significance level at the confidence interval.

Regression analysis was conducted to discover how the quality of logistics education has an impact on student satisfaction and attitude. While our independent variable in our hypothesis is logistics education quality; our dependent variables are student satisfaction and attitude.

According to regression analysis results in Table 4, the logistics education quality sub-variables and student satisfaction scores are statistically significant. It is seen that the established regression model is valid at a significance level of 0.001 (F-value = 55.109). It is concluded that Physical Conditions, Teaching Methods, and Internationalization positively affect student satisfaction at the highest level ($p<0.05$). When the analysis results for each explanatory variable are examined, it is seen that the greatest effect on the student satisfaction variable is Internationalization ($\beta = 0.636$), followed by Teaching Methods ($\beta = 0.410$). 56% of the variance in logistics education quality sub-factors is explained by student satisfaction. Every one-unit change in logistics education quality creates a 74% change in student satisfaction. According to the VIF values analyzed, the highest value is 3.865 and this value is less than 10. Also, none of the Variance Proportion ratios are more than the 0.90 limits. These reasons explain that there is no multicollinearity.

Table 4. *Regression analysis between logistics education quality and logistics student's satisfaction*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.718	0.279		-2.572	0.011
Physical Conditions	0.215	0.055	0.197	3.900	0.000
Academical Personal of Logistics	-0.022	0.089	-0.015	-0.242	0.809
Education Programs of Logistics	-0.183	0.098	-0.136	-1.875	0.062
Teaching Methods	0.410	0.095	0.279	4.310	0.000
Measurement and Evaluation	0.034	0.042	0.031	0.807	0.420
Internationalization	0.636	0.104	0.458	6.115	0.000
Access and Approachableness of Services	0.088	0.054	0.079	1.637	0.103

F: 55.109 R: 0.749[a] R2: 0.561 Durbin-Watson: 1.889

The logistics education quality sub-variables explain student attitude scores in a statistically significant way as can be seen in Table 5. The established regression model is valid at a 0.001 significance level (F value = 35.321). It was concluded that teaching methods, internationalization access, and approachableness of services positively affected student attitudes. However, it was determined that physical conditions, academical personal of logistics, education programs of logistics, measurement, and evaluation sub-variables do not affect student attitude ($p<0.05$). When the analysis results for each explanatory variable are examined, it is seen that the greatest effect on the student attitude variable is Teaching Methods ($\beta = 0.452$), followed by Internationalization ($\beta = 0.214$). According to the R2 value in the model, the logistics education quality independent variable explains 67% of the variability in student attitude. Every one-unit change in logistics education quality creates a 45% change in student attitude. When VIF values were analyzed, it was calculated that the highest value was less than 10 and none of the Variance Proportion ratios exceeded the 0.90 limits.

Table 5. *Regression analysis between logistics education quality and logistics student's attitude*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.370	0.250		2.946	0.003

Physical Conditions	-0.054	0.049	-0.062	-1.099	0.273
Academical Personal of Logistics	-0.023	0.080	-0.020	-0.287	0.775
Education Programs of Logistics	0.072	0.087	0.067	0.824	0.411
Teaching Methods	0.452	0.085	0.384	5.301	0.000
Measurement and Evaluation	-0.025	0.038	-0.028	-0.657	0.512
Internationalization	0.214	0.093	0.193	2.299	0.022
Access and Approachableness of Services	0.172	0.048	0.192	3.559	0.000

F: 35.321 R: 0.671a R2: 0.450 Durbin Watson: 1.818

In the regression analysis made hypotheses H1a, H1d, H1f, H2d, H2f, H2g are supported. Physical conditions, teaching methods, and internationalization have impacts on student satisfaction while teaching methods, internationalization, and approachableness of services have been proven to positively affect student attitude. It is noteworthy that teaching methods and internationalization positively affect both. The results presented that physical condition which is one of the sub-factors of education quality during the pandemic process increased student satisfaction and negatively affected student attitude. Because it was determined that state and foundation universities included in the sample had the necessary infrastructures and information technologies for distance education before the pandemic, and they were more easily integrated into the process. There are several academic studies in the literature that support our study. Naser (2008) proved that students' access to audio-visual academic resources directly affects the quality of education.

For investigating the perceptions of the research group on the quality of education, it is seen that the dimension of academical personal of logistics has the highest average. The number of higher education institutions in Turkey has reached a total of 197, including 129 state and 78 foundation universities. Although the number of academicians has reached 175,703 in total, only 15.4% of them are on duty in foundation universities (YÖK, 2022). Despite, logistics training has gained momentum in the last 25 years in Turkey, it appears that a quiet level of qualified logistics academic personnel in Turkey has not been trained yet. It can be seen that there was a negative relationship between academic staff, student satisfaction, and attitude the fact that most of the academics graduate from different departments instead of logistics.

Logistics higher education programs are defined under the headings such as Logistics Management, International Trade, and Logistics, Transportation and Logistics in 80 state and foundation universities in Turkey. 24% of the logistics higher education institutions are located in Istanbul which is a remarkable size (YÖK, 2022). The fact that the education curriculum in these programs is different from each other negatively affects student satisfaction and attitude. It is vital to standardize foundation and state universities' logistics education programs and ensure AACSB (The Association to Advance Collegiate Schools of Business) accreditation for improving logistics education quality.

Due to the distance logistics training during the pandemic process, it was concluded that measurement and evaluation procedures were not carried out fairly and in line with student expectations. Besides, the spread of the Covid-19 virus throughout the country in March and the immediate transition to distance education can be explained by the fact that the measurement and evaluation criteria cannot be conveyed to the students clearly and understandably. The prominence of social distance and cleanliness during the pandemic process has led to the inability to organize sports, and cultural, social, and scientific activities. All the events in logistics companies, logistics fairs, airports, seaports, and customs have been canceled. Logistics students have no longer internalized the topics which they have seen in the lessons by seeing them practically.

There is a positive relationship between internationalization and student satisfaction as well as attitude. The number of Turkish universities in the top 1000 in the world is increasing day by day. On the other hand, Çankaya University, Sabancı University, Bilkent University, Hacettepe University, Koç University, Boğaziçi University, Karabük University, Istanbul Technical University, Middle East Technical University, Atılım University, which are in the top 1000, do not have logistics programs. There is a Transportation and Logistics program at Istanbul University, which is the only one in the first 1000 (World University Rankings, 2022). It is observed that Turkey universities have a relatively high international reputation and there are many initiatives to attract foreign students to our universities. Moreover, focusing on logistics education in our universities, which are in the top 1000, will play a leverage role in increasing the quality of logistics education in our country.

5. Discussion and Conclusion

In the globalizing world, logistics has become the most important element of competition. Covid-19 has highlighted the importance of the concept of logistics even more. While it affects all industries negatively, it is observed that there is an increase in the world of e-commerce and logistics. Due to the countries declaring quarantine and isolation, user activity has increased in online shopping applications worldwide, and logistics activities have played a key role in the delivery of products and services to consumers. In the 21st century, logistics is the heart of production, trade, and economy, adding value to countries in political, economic, social, and cultural areas. Without logistics, it especially does not seem possible for countries to get a share from international trade, to grow economically during a pandemic. The Coronavirus disease 2019 (Covid-19) emerged in mid-December 2019, first in China. The disease spread rapidly across all the Chinese provinces within a few days soon afterward throughout the world. Covid-19 is a global concern affecting higher education institutions. The objective of this study is to measure the effect of logistics education quality on student satisfaction and attitude. Moreover, it aims to compare logistics student satisfaction and attitude levels between state and foundation universities.

Across the globe, the spread of Covid-19 has led to profound changes in social interaction, and logistics education has not been immune. The rapidly evolving global pandemic has affected the way logistics of education quality, students' attitudes, and satisfaction during this crisis. In this process, logistics students' attitudes were changed due to a lack of in-person activities and the implementation of social distancing and quarantine measures. During this Covid-19 pandemic, students were unsatisfied with the factors of logistics education quality such as academic personnel of logistics, education programs of logistics, measurement, and evaluation. However, Physical Conditions, Teaching Methods, and Internationalization have been proven to have a positive effect on student satisfaction. In the context of logistics education, students were reluctant toward the implementation of an online blended learning approach due to physical conditions, academic personnel of logistics, education programs of logistics, measurement, and evaluation. It has been concluded that the mentioned three education quality sub-factors have significant and positive effects on student attitudes.

Turkey is trying to position itself as a logistics hub center within the global supply chain. With the advent of logistics as an important industry-relevant discipline, there is a greater need than ever before for well-educated logistics personnel. Bridging the gap between logistics students' capabilities and logistics sector requirements is so significant for logistics education. Logistics graduates have to be able to apply logistics knowledge and experience, which is acquired from the logistics program in the university for establishing a logistics center in Turkey. Having well-trained logistics personnel is only possible through quality logistics training.

We have provided information on what strategies logistics students perceive to be beneficial and presented important issues for improving logistics education during the pandemic period. Also, this is an early study that offers a unique opportunity to investigate the student satisfaction and attitude impact of the Covid-19 pandemic in a university environment. It provides valuable information about the logistics education quality useful in possible future global crises. The Covid-19 pandemic revealed the strengths as well as the weaknesses of logistics education in Turkey. We hope that these results may be helpful to academicians in Turkey and around the world, who are engaged in logistics educational reform.

The study has some strengths and limitations. The sample of this research consists of 310 students studying Transportation and Logistics, Logistics Management, International Trade, and Logistics programs at the state and foundation universities. Conducting surveys voluntarily and only at five universities in Istanbul causes restrictions. For this reason, the scale should be practiced for logistics students studying in different states and foundation universities in the future.

6. Kaynakça

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Etik Kurul Kararı

Tarih: 24/03/2021
Sayı: E-65836846-044-205860
0000205860

HİZMETE ÖZEL

İSTANBUL TİCARET ÜNİVERSİTESİ

T.C.
İSTANBUL TİCARET ÜNİVERSİTESİ REKTÖRLÜĞÜ

Sayı : E-65836846-044-205860 24.3.2021
Konu : Etik Onayı

Sayın Dr. Öğr. Üyesi Gözde YANGINLAR

İlgi : 22.02.2021 tarihli dilekçeniz.

İlgi yazınız ile "Covid-19 Pandemisi Sürecinde Lojistik Eğitim Kalitesinin Öğrenci Memnuniyeti ve Tutumu Üzerindeki Etkisi" isimli çalışmanız için önerdiğiniz anket sorularına Etik Kurul onayı talep edilmektedir.

Adı geçen ve ekte yer alan anket soruları, Üniversitemiz Etik Kurulunca incelenerek etik tanım, değer ve ilkelere aykırı bir düzenleme tespit edilmediği, önerilen anket sorularının etik kurallara uygun olduğu ve etik onayının verildiği ifade edilmiştir.

Konuya ilişkin bilgilerinizi rica ederim.

Prof. Dr. Elçin AYKAÇ ALP
Rektör Yardımcısı V.

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COVID-19 PANDEMİSİ SÜRECİNDE LOJİSTİK EĞİTİM KALİTESİNİN ÖĞRENCİ MEMNUNİYETİ VE TUTUMU ÜZERİNDEKİ ETKİSİ
ANKET FORMU

Bu çalışmada; Lojistik eğitiminin kalitesi ile öğrenci memnuniyeti arasındaki ilişki araştırılacaktır. Bu anket akademik bir çalışma (makale) için düzenlenmiştir. Verdiğiniz yanıtların doğru olması araştırmanın güvenilirliği açısından büyük önem taşımaktadır.

İlginize şimdiden teşekkür ederiz.

BİRİNCİ BÖLÜM

1.Cinsiyetiniz:
Kadın ( ) Erkek ( )

2.Sınıfınız:
1. sınıf ( ) 2.Sınıf ( ) 3.Sınıf ( ) 4.Sınıf ( )

3.Yaşınız:
17-19 ( ) 20-22 ( ) 23-25 ( ) 26 ve üstü ( )

(1:Kesinlikle katılmıyorum 2:Katılmıyorum 3:Kararsızım 4:Katılıyorum 5:Kesinlikle katılıyorum.)

İKİNCİ BÖLÜM

Lojistik Eğitim Kalitesi Ölçeği					
	1	2	3	4	5
4. Akademik bina ve sınıflar amacına uygun dizayn edilmiştir					
5.Lojistik derslerindeki tesisler (sınıflar, laboratuarlar, konferans salonları, çalışma alanları vb.) yeterli sayıdadır.					
6. Lojistik eğitiminde, kütüphane koleksiyonları ve veri tabanları öğrencinin akademik ihtiyaçlarını yeterince karşılar.					
7. Okulumda lojistik eğitimi için kullanılan malzemeler (araç, gereç, malzeme) yeterli seviyedidir.					
8. Lojistik öğretim elemanları gerekli entelektüel yapıya sahiptir					
9. Lojistik öğretim elemanları öğrencinin gizlilik haklarına duyarlıdır					
10. Lojistik öğretim elemanları eleştiriye açıktır					
11. Lojistik öğretim elemanları öğrencilerin kendilerini ifade etmelerine yardımcı olur					
12. Lojistik öğretim elemanları yeterli bilgi ve beceriye sahiptir					
13. Lojistik öğretim elemanları öğrencilere güvenir ve seviyeli davranır.					
14. Lojistik öğretim elemanları uzmanlık alanlarındaki gelişmeleri takip eder.					
15. Lojistik öğretim elemanları ölçme ve değerlendirmede tutarlıdır.					
16. Lojistik öğretim elemanları sözlerini tutar ve dürüsttür.					
17. Lojistik öğretim elemanları ders içi sunumlarında etkilidir.					
18. Lojistik öğretim elemanları hoşgörülü ve sabırlıdır.					
19. Lojistik öğretim elemanlarının öğretme deneyimleri iş hayatına uygundur.					
20. Lojistik eğitim programları günün gereklerine uygun şekilde yenilenilir					
21. Lojistik ders programlarının öngördüğü bilgi düzeyine ulaşılır					
22. Lojistik müfredat programı mesleki yeterlilik için uygundur					

23. Lojistik ders programlarının içeriği öğrencileri tatmin eder.					
24. Lojistik ders programları, ara ve yılsonu sınavlarının tarih ve saatleri zamanında ilan edilir					
25. Lojistik tüm seçmeli dersler uygun olarak tanımlanmış ve sınıflandırılmıştır					
26. Lojistik ders programları öğrencilerin zamanlarını etkili kullanabilecekleri şekilde hazırlanır.					
27. Lojistik öğrencilere araştırma ve proje hazırlamaları için fırsat verilir.					
28. Lojistik öğrencilerinin derslere aktif katılımı (sunum) sağlanır.					
29. Konular, kolaydan zora, basitten karmaşığa, yakından uzağa, somuttan soyuta göre verilir.					
30. Öğrencilerin öğretme kaynaklarına bağımsız, açık bir şekilde erişimi sağlanır.					
31. Öğretme stratejileri (basamaklama yöntemleri) derslerin içeriklerine uygundur					
32. Öğrencilerin rahatça soru sorup derse katılmalarına imkan verilir.					
33. Derslerin işlenişinde modern öğretim araçları ve donanım (projeksiyon, tepegöz, yazı tahtası, vcd, dvd, bilgisayar) kullanılır					
34. Ölçme ve değerlendirme işlemleri açık, adil ve önyargısızdır.					
35. Ölçme ve değerlendirme kriterleri öğrencilerin gerekli standartlarına eriştiğini doğrular					
36. Ölçme ve değerlendirme kriterleri öğrencilere, dönem başında açık ve anlaşılır şekilde iletilir.					
37. Ölçme ve değerlendirme işlemleri öğrenci beklentilerine paralel şekilde gerçekleşir					
38. Öğrenciler sanatsal yeteneklerine (resim, müzik, tiyatro, sinema vb.) geliştirmek için yeterli imkanlara sahiptir.					
39. Öğrenciler kültürel ilgi alanlarında (kulüp, panel, seminer, konferans vb.) kendilerini geliştirebilmek için yeterli imkanlara sahiptir.					
40. Öğrencilerin taleplerine etkin ve hızlı yanıt veren sağlık hizmetleri mevcuttur.					
41. Öğrenciler çeşitli sosyal aktiviteler (parti,konser, tur, piknik, vb.) yapmaları ve organize etmeleri konusunda desteklenir.					
42. Öğrencilere verilen akademik danışmanlık hizmetleri yeterlidir.					
43. Kütüphane ve veri tabanları (internet) öğrencinin akademik ihtiyaçlarını yeterince karşılar.					
44. Başarılı öğrencilere burs olanağı tanınır.					
45. Kampüs içerisinde güvenlik sağlanmıştır.					
46.Lojistik Öğrencilerin spor faaliyetleri için elverişli koşullar sağlanmıştır.					
47. Üniversitenin uluslararası alanda itibarı vardır.					
48. Yabancı öğrencileri çekebilmek için iyi bilinmek amacıyla yapılan girişimler söz konusudur.					
49. Lojistik Akademik personel uluslararası alanda takdir görür.					
50. Öğrenci ve personel değişimlerine (Erasmus ve Sokrates vb.) katılma faaliyetleri vardır.					
52. Lojistik Öğrenciler etkili bir psikolojik rehberlik hizmetlerinden yararlanır.					

Lojistik Öğrencilerinin Memnuniyeti					
	1	2	3	4	5
53. Genel olarak verilen lojistik eğitim hizmetin kalitesinden memnunum					
54. Üniversiteden aldığım lojistik eğitimi beklentilerimi tamamen yerine getirmiştir.					
55. Her şeyi dikkate aldığımda verilen lojistik eğitim hizmeti tatmin edicidir.					
56. Bu üniversitedeki zihinsel gelişimimden tatmin oldum.					

Lojistik Tutum Ölçeği					
	1	2	3	4	5
57.Lojistik dersi bana sıkıcı gelir.					
58.Lojistik dersine olan ilgim gittikçe artıyor.					
59.Lojistik dersi benim için çok zevklidir.					
60.Lojistik dersinde daha çok şey öğrenmek isterim.					
61.Lojistik dersini eğlenceli buluyorum.					
62. Lojistik dersinin olduğu günleri sabırsızlıkla bekliyorum.					
63.Lojistik dersine zorunlu olmasa gitmek istemem.					
64. Lojistik dersine harcadığım zamanda başka şeyler yapmak isterim.					
65. Lojistik ile ilgili konular ilgimi çeker.					
66. Lojistik dersinde yapılan etkinliklerden hoşlanırım					
67. Lojistik dersinin boş geçmesini istemem.					
68. Lojistik derslerinde yeteneğimin geliştiğini hissediyorum.					
69. Lojistik derslerinde çaba harcarsam, iyi bir lojistisyen olabileceğimi düşünüyorum					
70. Lojistik derslerine istekli giderim.					