

The effect of service quality in education on brain drain attitude: A study on Erasmus+ students

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Abstract

This study aims to examine the effect of service quality in education (SEQ) on brain drain attitude (BDA) among undergraduate students who participated in the Erasmus+ program. A quantitative approach was adopted, and data were gathered from 127 undergraduate students at a Turkish university. The data were analyzed using Structural Equation Modeling (SEM). The results revealed that students' perceptions of service quality in their educational institutions positively and significantly affect their brain drain attitudes ($\beta=0.40$, $p<0.001$). These findings suggest that better educational opportunities are a key determinant of students' inclination to migrate to developed countries, which can exacerbate brain drain from less developed nations. Accordingly, it is advised that developing countries invest in improving their education service quality to mitigate brain drain. This study is among the first to empirically examine the relationship between SEQ and BDA in the context of the Erasmus+ program, thereby contributing to the higher education and brain drain literature.

Keywords

Keywords: Brain Drain, Service Quality in Education, Erasmus+ Program.

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Artificial Intelligence Usage Statement

The authors declare that no generative artificial intelligence (AI) or AI-assisted tools were used at any stage of the study, including idea development, data analysis, text writing, or language editing. No images, graphics, tables, or other visual materials were generated using AI. All academic, ethical, and legal responsibility for the content, analyses, and conclusions of the manuscript rests entirely with the authors.



1. Introduction

In the past few decades, in addition to the classical resources of labor, capital, and land, the importance of intangible concepts such as technology, ideas, creativity, and innovation has increased. Behind these abstract concepts lies human talent: the capacity of individuals to create and develop ideas and objects (software, hardware, artistic activities, vaccines, etc.) of high economic value (Siekierski et al., 2018). In other words, the largest capital in the 21st century, which is also called the information age, is educated brainpower. The sources of many countries are now measured by the value they give to science and education rather than the labor force potential or industrialization rates. For this reason, “brain power” is a serious investment for the production and development of a country (Yılmaz, 2019). As the global market for a skilled labor force becomes more competitive, the challenge of human resource development has become a major concern for governments (Ziguras & Gribble, 2015). In this information age, countries are trying to provide high-quality education to their citizens to compete globally. Providing better education enables society to develop the use of skills more efficiently, especially through technological and innovative means (Ayaz & Arakaya, 2017). This rapid growth in higher education demand has led students to seek opportunities abroad (Ziguras & Gribble, 2015).

As stated before, developments in the field of knowledge, transportation, and communication enable people to progress faster, more practically, and cheaply in issues such as employment, education, career opportunities, and quality of life. Apart from these attractive opportunities, due to adverse conditions such as conflict, unemployment, poverty, and inequality in their own countries, individuals are looking for a better future for themselves and their families (United Nations, 2017). This situation leads qualified and educated individuals to migrate from developing to developed countries. Moreover, an aging population and low birth rate in most developed countries have led younger people with high education to immigrate to these countries (Ziguras & Gribble, 2015). However, the migration of educated individuals to developed countries, that is, brain drain, results in the loss of the investment made in human capital and reduced productivity of the people left behind. Consequently, developing countries may be caught in a poverty trap (Mountford, 1997; Pires, 2015).

Most individuals who are susceptible to brain drain leave their mother country for better educational opportunities. In other words, countries with higher-quality education generally attract more highly skilled workers. This can cause educated individuals to move to countries that offer better education and career opportunities when they cannot find sufficient opportunities in their own. When brain drain occurs, fewer experienced instructors remain in educational institutions, and consequently, the quality of education suffers. To prevent brain drain, developing countries should provide high-standard education (Muthanna & Sang, 2018).

Therefore, this study contributes to the literature by discussing the main findings of a study that investigates the effect of service quality in education on the attitude of brain drain. The remainder of this paper is organized as follows: First, the literature review section presents a theoretical background on service quality in education and brain drain. The next section describes the study methodology. The findings section presents the results of the study, and the concluding remarks are provided in the final section of the paper.

2. Literature Review

1.1. Service Quality in Education

Quality is one of the most important paths to success, and in the service sector, it is the greatest foundation for competitive advantage. The education sector is part of the service sector, and in the current century, the progression from a labor-intensive to a knowledge-intensive employment market has made the quality of teaching even more critical. The dissolution of political borders and globalization, which have enabled easier movement of the workforce, have led to the concept of educational quality gaining greater importance. The quality of society increases with the development and use of individuals' skills. Because the quality and usability of the knowledge provided in higher education institutions are important for both national and international competitive power, countries try to provide education to more people at high standards (Ayaz & Arakaya, 2017; Gencel, 2001; Serin & Aytekin, 2009).

In this context, it has become vital for universities to continuously improve their education quality (Artuner et al., 2012). The business world is now looking for more qualified employees rather than just hiring more workers. A diploma from a higher education institution, even from a well-known university, does not guarantee a job (Dragut, 2011). Therefore, universities must provide quality services that meet students' expectations (Küçük et al., 2018; Tayyar & Dilşeker, 2012). In addition to providing the basic needs of educational services, such as teaching staff, classrooms, materials, and libraries, students must also be provided with mandatory facilities, such as accommodation, food, and security, and opportunities related to socialization, such as sports, arts, and cultural activities (Tayyar & Dilşeker, 2012).

Services have their own characteristics that distinguish them from tangible products and make it difficult to measure their quality (Fitzsimmons & Fitzsimmons, 2011, pp. 18; Parasuraman et al., 1985; Rahman, 2012). Services are intangible, and customers cannot touch, see, or try the product before purchasing it, as they do with tangible products. Customers decide on the reputation of a service provider before purchasing a service. Given that the education sector provides a service, its quality cannot be assessed using the same objective metrics used for tangible products. This inherent complexity and intangibility necessitate specialized academic inquiry, leading many researchers to focus on this field (Abdullah, 2006; Horng et al., 2009; Ramsden 1991).

Many models have been developed to measure service quality. The most well-known models among these are SERVQUAL (SERVICE QUALity), which measures service quality by comparing customer expectations and perceived service quality (Abdullah, 2005; Eraqi, 2006; Maksüdünov et al., 2016). SERVQUAL was developed by Parasuraman et al. (1988). The model aims to measure service quality by measuring the difference between customers' expectations and perceived quality (Service Performance) (service quality = perceived quality (service performance)–expectation). According to the model, if the perceived quality is below expectations, the service quality is low; if the perceived quality is above expectations, the service quality is high. The model uses 22 items to measure service quality, which were grouped under five dimensions: Tangibles, Reliability, Responsiveness, Assurance and, Empathy.

I. Tangibles: The physical appearance of the facilities, equipment used, personnel and materials used for communication. The condition of the physical environment (e.g., cleanliness, good appearance, etc.) represents the service provider's care and attention to the customer.

II. Reliability: Correct and reliable delivery of the promised service. A reliable service should be provided on time, in the same manner, and without errors every time.

III. Responsiveness: Voluntarily helping customers and providing services. Keeping customers waiting for no apparent reason leads to a negative perception of quality. In addition, in the event of a service failure, professional and prompt compensation for errors increases the perception of quality.

IV. Assurance: The courtesy and knowledge of the personnel providing the service and creating a sense of trust. This dimension includes being competent to provide the service, showing respect to the customer, and effective communication with the customer.

V. Empathy: Showing personal attention to customers and caring for them. Sensitivity and understanding the customer are included in this dimension.

The scales used to measure service quality can also be adapted to the field of education and used in measuring service quality (Güzel, 2006). Ergün (2013) adapted a service quality scale to measure the quality of higher education from the student's perspective. The scale comprises 49 items structured under five sub-dimensions of service quality: physical facilities, reliability, responsiveness, assurance, and empathy. This instrument is an effective tool for evaluating service quality in the educational sector.

Brain Drain

The concept of brain drain refers to the international transfer of human resources and the migration of a highly educated and qualified workforce from less developed or developing countries to developed countries for better living and working conditions (Aytaç & Aydın, 2019; Docquier et al., 2009; Kizito et al., 2015; Öncü et al., 2018; Yurcu & Akinci, 2024). This term is usually used for the migration of people who have a university education and high skills, such as engineers, doctors, and scientists. (Rapoport & Docquier, 2006). The concept of brain drain was generated by the British Royal Society for the emigration of engineers, physicians, professionals, and scientists from the United Kingdom to the United States (Adeyemi et al., 2018).

The outflow of these qualified individuals from less developed or developing countries to developed nations has become a worrying issue for researchers and governments. The situation of the most qualified and competent labor travelling out of their countries to contribute to the development of other nations leaves their countries underdeveloped. Due to brain drain, countries are facing problems, such as a shortage of qualified labor, which can lead to declines in innovation, science, productivity, and the economy (Adeyemi et al., 2018; Kaya et al., 2023; Lawal et al., 2022; Papatthanassis, 2021; Prato, 2022). When brain drain occurs, developed countries save millions of dollars in education costs of educating people. This implies a loss of millions of dollars for less developed nations. This loss of investment in human capital and the reduced productivity of the people left behind may leave a developing country in a poverty trap (Mountford, 1997; Pires, 2015).

The negative aspects of developing countries cause an outflow of educated and skilled labor to developed countries. These aspects include economic uncertainty (Nourani et al., 2022), political turmoil (Khan, 2021), poverty, unemployment, lack

of research facilities, lack of freedom, job discrimination, and poor working conditions (Nourani et al., 2022; Yurcu & Akinci, 2024). Apart from these negative aspects, the positive features of developed nations induce the movement of qualified labor. A better quality of life, intellectual freedom, excellent economic outlook, higher-paying jobs, a modernized educational system, and a decent political atmosphere constitute positive features (Adeyemi et al., 2018).

Öncü et al. (2018) developed a scale for measuring brain drain attitude. Researchers identified two components in this scale. When the first component was examined, it was seen that the component was related to the characteristics that attract individuals to other countries. Therefore, they were named “pull factors.” Since the items in the second component were related to the situations that affect the decision of individuals to leave their country, this component was named “push factors.” Previous studies have also identified push (unemployment, low salary, political concerns, etc.) and pull (higher living and working standards, political stability, freedom, etc.) factors influencing brain drain (Adeyemi et al., 2018; Khan, 2021; Slibar et al., 2023).

As discussed above, the migration of highly skilled individuals from developing to developed countries (a phenomenon known as brain drain) is driven by the pursuit of better working conditions and career opportunities in developed countries. While influenced by economic instability and poor living conditions, this transfer is critically affected by the quality of higher education in the source country. Developed nations cultivate attractive environments through significant investment in their educational systems (Yılmaz, 2019), making it vital for other institutions to continuously improve their service quality to remain competitive and meet students’ expectations. Therefore, this study operates on the premise that educational quality is a key factor in an individual’s decision to emigrate. Accordingly, the following hypothesis is tested:

H1: Service quality in education significantly affects brain-drain attitudes.

3. Research methodology

This study, which aims to reveal the effect of service quality in education on the attitude toward brain drain, embodies a quantitative research technique. Permission to collect data was obtained from the Social and Human Sciences Scientific Research and Publication Ethics Board, with a decision dated 27.01.2023 and numbered 44. The study’s data were gathered from students who applied to the Erasmus+ student exchange programme and were still studying at Afyon Kocatepe University at the time of the survey application. According to the International Relations Office of Afyon Kocatepe University, 546 students applied to the Erasmus+ student exchange program (120 in 2020, 123 in 2021, 161 in 2022, and 142 in 2023). At this point, the sample size was determined as 111 with G*POWER software (power = 0.95, $f^2 = 0.30$, $\alpha = 0.05$), and the data were gathered from 127 students of Afyon Kocatepe University from 05.04.2023 to 30.05.2023 via questionnaire. The questionnaire consisted of three parts, starting with demographic variables (gender, age group, nationality, faculty, country of Erasmus, and time spent in another country for Erasmus). The second part consists of 16 statements about brain-drain attitudes adapted from Öncü et al. (2018). For the third part, 33 statements about service quality in educational institutions from Ergün’s (2013) study are listed. Although the original scale had 49 statements and five sub-dimensions (physical facilities, reliability, responsiveness, assurance, and empathy) about service quality, some of them (e.g., internship office was working efficiently, advisors were guiding students in selecting elective courses in line with their abilities and professional goals) were extracted from the questionnaire, since Erasmus+ students were not able to experience/be aware of them. A five-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree” was used to measure the responses in the final version of the questionnaire.

In the data analysis process, the data were coded in SPSS to analyze demographics and create a source for the AMOS program, in which a structural equation model was performed. In SPSS, EFA was performed for validity, Cronbach’s alpha was calculated to test reliability, and the descriptive results of the participants were analyzed. CFA was then performed to measure data validity. Path analyses followed the CFA to test the research model.

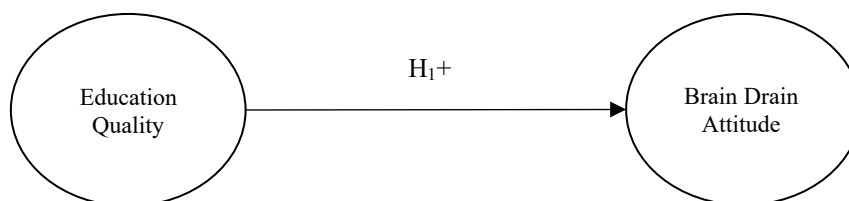


Figure 1. Research Model

Source: Authors’ own elaboration

4. Findings

The demographics of the gathered data reveal that the participants' genders are nearly equal (male (n: 65, 51,2%) and female (n:62, 48,8%)), while the majority of them are in the 18-24 group of ages (n:88, 69,3%). Of the 127 (69,3%) who joined the Erasmus+ program between 2020 and 2023, the rest joined the program between 2016-2019 (n = 21, 16,5%) and 2012-2015 (n = 18, 14,2%). 65 participants (51,2%) went to Poland for the Erasmus+ program, and Portugal was the second major group. Most of the participants stayed in other countries for 3–6 months (n:82, 64,6%).

Table 1. Demographics

Group	Variables	n	%	Group	Variables	n	%
Gender	Female	62	48,8	Country	Poland	65	51,2
	Male	65	51,2		Portugal	15	11,8
Ages	Ages Between 18-24	88	69,3		Lithuania	11	8,7
	Ages 25 and older	39	30,7		Latvia	5	3,9
	Year	Between 2012-2015	18		14,2	Hungary	5
Year	Between 2016-2019	21	16,5		Romania	5	3,9
	Between 2020-2023	88	69,3		Others	21	16,5
	Period	Less than 3 months	6	4,7	n: frequency, %: percentage		
3-6 months		82	64,6				
More than 6 months		39	30,7				

Source: Authors' own elaboration

Validity and Reliability of the Scales

The validity and reliability of the data were checked using a two-step approach consisting of EFA and CFA. Due to the limited number of previous validity tests of the scales in different studies and the extraction of some statements from the SQE scale, as mentioned before, EFA was performed for both the SEQ and BDA scales. Table 2 summarizes the EFA results.

In terms of EFA for SQE, eight items were extracted from the model because of lower factor loadings than 0,50. However, it was observed that the factor loadings of five items, which were directly related to the campus setting/atmosphere, were lower than 0,25, thus this dimension was also extracted from the analysis. At this point, we assume that Erasmus+ students are going abroad for a short period, and this exclusion is justifiable as many Erasmus+ host institutions operate from facilities spread across a city rather than a single campus, making campus-specific questions less relevant to the student's experience. Subsequently, during the EFA for BDA, four items were extracted from the analysis owing to low factor loading.

Table 2. EFA Results

Item	Factor loading	Eigenvalue	Cumulative variance	Item	Factor loading	Eigenvalue	Cumulative variance		
Real&assur1	,500	5,588	27,942	Pull1	,629	4,410	36,752		
Real&assur2	,540			Pull2	,638				
Real&assur3	,684			Pull3	,733				
Real&assur4	,455			Pull4	,588				
Real&assur5	,726			Pull5	,734				
Real&assur6	,840			Pull6	,789				
Real&assur7	,819			Pull7	,805				
Real&assur8	,792			Pull8	,726				
Real&assur9	,765			Push1	,767			3,334	64,534
Real&assur10	,575			Push2	,750				
Des1	,676	Push3	,890						
Des2	,706	Push4	,825						
Des3	,797	5,003	52,959	KMO Coefficient	,903	df	66		
Des4	,703			x ²	915,545	Sig.	,000		
Des5	,729			Cronbach's Alpha Coefficients					
Des6	,686			Real&assur	,946	Pull	,895		
Phy1	,727			Des	,910	Push	,885		
Phy2	,649			Phy	,874	Total	,919		
Phy3	,639			Total	,952				
Phy4	,788								
KMO Coefficient	,942			df	378				
x ²	2098,352			Sig.	,000				

Source: Authors' own elaboration

As shown in Table 2, the KMO coefficients (SQE: 0,942, BDA: 0,903 > 0,90) and significance levels (0,000<0,05) provide the critical values. Additionally, the cumulative variances of both the SQE and BDA scales were above 0,60,

whereas the factor loadings of the items were equal to or greater than 0.50. Therefore, the measurement scales of the study are valid in terms of EFA, and they are also reliable, since Cronbach’s alpha coefficients are greater than 0,70, which indicates good reliability for studies in social sciences.

In an ongoing process, the validity of the overall model was measured using a second-order CFA (Table 3). As stated above, the BDA and SEQ were adapted from other studies. CFA enables the assessment of the contribution of each scale item and better measurement of scale reliability (Hair et al., 2010). For the CFA, some measurement values should be demonstrated to determine its validity and reliability. Fornell and Larcker (1981, pp. 45-46) propose using Average Variance Extracted (AVE) to assess convergent validity by stating that construct validity is doubtful if AVE is less than 0.50. Moreover, Hair et al. (2022, p. 307) suggest using composite reliability (CR) to measure internal consistency reliability, which should be greater than 0,70. Hu and Bentler (1999) place additional emphasis on the evaluation of model fit with various fit indexes. According to researchers, the Tucker–Lewis index (TLI) and comparative fit index (CFI) values must be at least 0.90 to accept the model. Additionally, the root mean square error of approximation (RMSEA) and root mean square discrepancy between the observed and model-implied correlations (SRMR) values are other criteria in CFA (Hair et al., 2022, pp. 323-324). According to Browne and Cudeck (1992, p. 13), an RMSEA value of 0.08 indicates a reasonable error of approximation, while Hu and Bentler (1999, p. 27) accept an SRMR cutoff value that is close to .08 for SEM modeling.

Table 3. Validity and Reliability

Items	SFLA	AVE	CR	Items	SFLA	AVE	CR
Real&assur1	0,712	0,812	0,928	Pull1	0,612	0,766	0,864
Real&assur2	0,552			Pull2	0,700		
Real&assur3	0,776			Pull3	0,727		
Real&assur4	0,852			Pull4	0,655		
Real&assur5	0,702			Pull5	0,704		
Real&assur6	0,904			Pull6	0,727		
Real&assur7	0,895			Pull7	0,851		
Real&assur8	0,917			Pull8	0,751		
Real&assur9	0,866			Push1	0,771		
Real&assur10	0,754			Push2	0,801		
Des1	0,752	Push3	0,878				
Des2	0,803	Push4	0,828				
Des3	0,740			Indices	Ob. Val.	Cr. Val.	
Des4	0,710			χ^2/df	1,569	≤ 5	
Des5	0,853			RMSEA	0,067	≤ 0.08	
Des6	0,848			TLI	0,906	≥ 0.90	
Phy1	0,615			CFI	0,914	≥ 0.90	
Phy2	0,797			SRMR	0,063	≤ 0.08	
Phy3	0,840			$\chi^2: 710,700. df: 453 p<0.000$			
Phy4	0,655			Abbreviations			
Real&assur: Reliability & Assurance				Ob Val.: Observed Values, Cr. Val.: Critical Values			
Des: Desirability							
Phy: Physical Facilities							

Source: Authors' own elaboration

The second-order CFA results in Table 3 propose a reasonable model fit for the measurement model based on the research hypothesis. In the model, the RMSEA value was calculated as 0,067, while TLI was 0,906, CFI was 914, and SRMR cutoff indice was 0,063. These indices indicate the goodness of fit of the model. The measurement model also registered convergent validity and composite reliability requirements. The AVE values of the SQE and BDA were greater than 0,50 (SQE: 0,812, BDA: 0,766). Moreover, it is clear from the table that the CR indexes of the variables confirm reliability (CR>0,70). Thus, the dataset of this study is valid and reliable regarding the second-order CFA analysis results.

Subsequently, the validity and reliability of the data were verified using second-order CFA, the discriminant validity of the research variables with the square root of the AVE value and HTMT was checked, and the mean and standard deviations were provided (Table 4). As shown in Table 3, the independent (SEQ) and dependent (BDA) variables have relatively high mean scores, indicating positive outcomes in terms of SEQ and BDA. Accordingly, the mean scores ranged from 3,997 to 4,539.

Table 4. Means, Standard Deviations, Correlations, \sqrt{AVE} , and HTMT

	Mean	SD	SEQ	√AVE	HTMT
SEQ	4,3220	,65026		0,901	0,388
BDA	3,9626	,62358	,400**	0,875	

Notes: Correlation is significant at the 0.01 level.
 The square root of the AVE values was shown in the dark grey shaded cells.
 HTMT correlations were shown in the light blue shaded cells.

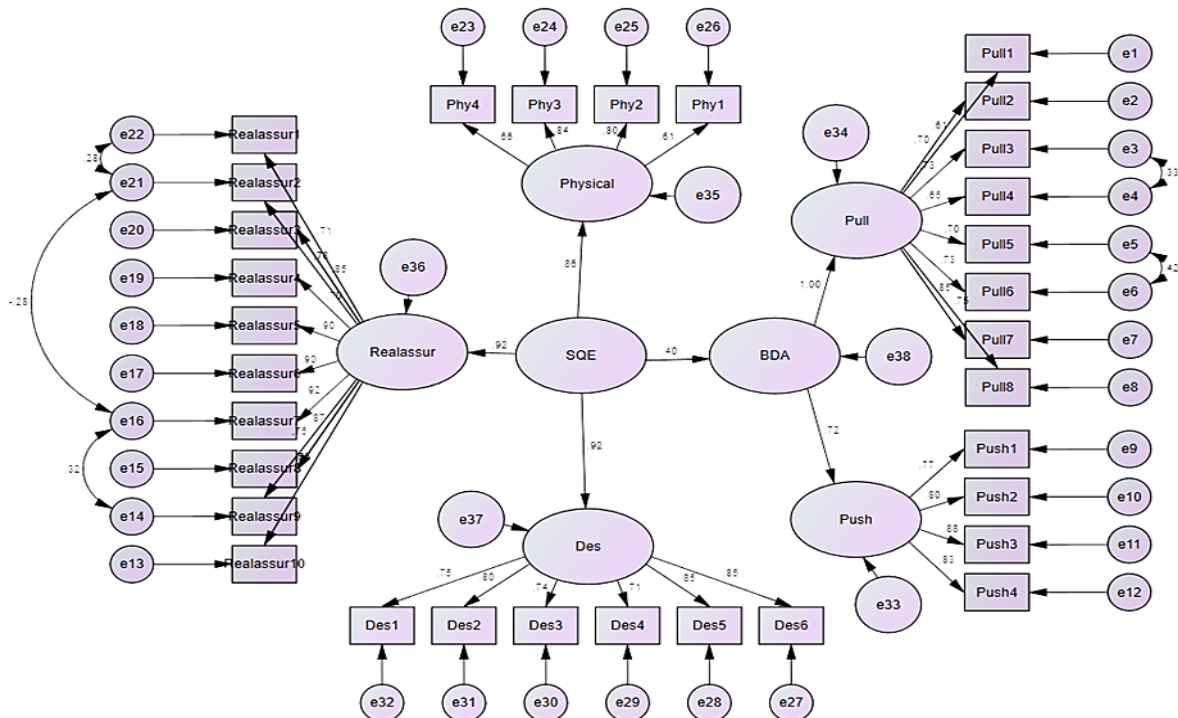
Source: Authors' own elaboration

As seen from Table 4, the Spearman correlation coefficient, without shading, was calculated as 0,400, which indicates a medium level correlation between the variables. Furthermore, the \sqrt{AVE} values in Table 4 affirm convergent validity ($AVE > 0,50$). Additionally, the HTMT threshold was calculated to assess the discriminant validity. According to Henseler et al. (2015, p. 121), the HTMT threshold is the average of the heterotrait-heteromethod correlations (i.e., the correlations of indicators across constructs measuring different phenomena), and they offer HTMT thresholds equal to or lower than 0,90 to assess sensitivity levels of 95% in terms of discriminant validity (Henseler et al., 2015, p. 124). In this context, the HTMT threshold, calculated as 0,388, verifies the discriminant validity of the model.

Structural model and hypotheses testing

This study relied on structural equation modelling to test the research hypothesis. AMOS was used to create the structural model shown in Figure 2. The results confirm that the structural model fits the data reasonably ($\chi^2 = 710,700$, $df = 453$, $p = 0,000$, $RMSEA = 0,067$, $TLI = 0,906$, $CFI = 0,914$, $SRMR = 0,032$). The variance inflation factor (VIF) was calculated to diagnose multicollinearity. When the VIF, which is used to measure and quantify the extent to which the variance is inflated, equals "1," there is no correlation. However, variances are highly correlated when the VIF exceeds 5. Hereby, it should be less than "5" or between "1 and 5", indicating a moderate correlation (Daoud, 2017, p. 4). The VIF values of the structural model were below the threshold of 5; that is, the model did not have multicollinearity.

Figure 1: Structural Model



CMIN=710,700; DF=453; CMIN/DF=1,569; RMSEA=,067; TLI=,906; CFI=,914

χ^2 : 710,700, SRMR: 0,063, VIF: 1, *: $p < 0,000$

Source: Authors' own elaboration

The results in Figure 2 indicate that the service quality perceptions of participants have a significant and direct effect on their brain drain attributes (β : 0,40, $p < 0,001$). Thus, it is concluded that students' perception of service quality in their educational institutions affects their attitudes toward brain drain.

5. Conclusion and Discussion

The international transfer of human resources is referred to as "brain drain." People with higher levels of education, in particular, move from developing or less developed nations to developed nations as part of this transfer. This phenomenon seriously hampers the development of the nation from which migration originates (Kaya et al., 2023; Lawal et al., 2022). Economic uncertainty, discrimination, unfavorable living and working conditions, unemployment, and limited access to higher education and research opportunities are some of the major factors influencing this brain drain (Khan 2021; Slibar et al. 2023). However, for people to acquire knowledge, apply that knowledge, and compete on a national and worldwide scale, the quality of their education is crucial. To meet students' expectations, educational institutions should constantly enhance the quality of their instruction (Küçük et al., 2018). The extent to which the quality of education and research opportunities constitute one of the reasons for brain drain, forms the basis of this research. This study focuses on the effect of service quality in education on brain-drain attitude, with a sample of 127 students who applied to the Erasmus+ student exchange program. This is also one of the first few studies to explore the relationship among relevant variables regarding Erasmus+ exchange program students.

The study's findings indicate that students' perception of service quality in their educational institutions affects their attitudes toward brain drain. This result is in line with Odhiambo's (2013) study, which demonstrated that if students are satisfied with their education, their attitudes towards brain drain will be lower. Indeed, many studies on brain drain factors confirm that better educational opportunities are a pull factor for brain drain (Aytaç & Aydın, 2019; Khan, 2021; Öncü et al., 2018; Slibar et al., 2023). Moreover, in their study Ziguras and Gribble (2015) stated that to meet the growing demand for global education, the Singaporean government endeavored to expand higher educational opportunities and committed to establishing the country as a global education hub. These policies have resulted in a growing number of foreign students in Singapore.

In addition, significant relationships were found between the service quality dimensions and the brain drain dimensions. In this context, the strongest relationship was found between the service quality sub-dimension, physical facilities, and the brain drain sub-dimension, pull factors. In this regard, we can say that if the universities visited in other countries within the scope of Erasmus have better physical facilities, they will attract more students in terms of brain drain. The same result can be seen in Yılmaz's (2019) study, which reports that inadequate physical conditions are the most important reason for brain drain. According to the researcher, universities should increase their quality to reduce brain drain. Additionally, another study found that in China and Greece, increasing the capacity and quality of higher education options resulted in a decline in students studying abroad (Ziguras & Gribble, 2015). It can be concluded that better educational opportunities act as a determinant for students migrating to developed countries. Therefore, as a practical implication, less developed and developing countries should increase their education service quality to mitigate brain drain.

Although many studies have discussed service quality in education and brain drain separately, very few have addressed their relationship. Therefore, we postulate that this study makes an essential contribution to filling the gap in the literature by inferring significant correlations among the variables. Correspondingly, it provides new insights and paves the way for future studies.

Although this study reveals some important findings that indicate originality, it is still subject to some limitations in terms of sampling, data collection, analysis, and findings. First, all participants in this study were studying at Afyon Kocatepe University. Second, the data were collected using only questionnaires. Therefore, it was not possible to evaluate the results of the compared groups, and the findings are based only on quantitative research techniques. However, the findings are acceptable for this sampling and cannot be generalized to other samples or cultures. Thus, future studies should implement both qualitative and quantitative research techniques and gather data from multiple groups. In this sense, researchers can also choose different institutions from other countries and exchange programs to obtain better and more comprehensive results.

This study is grounded in brain drain and service quality in education. Similar studies could be conducted on various variables, such as those that affect brain drain. Such studies will extend our knowledge and make valuable contributions to the literature.

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