Rethinking mobility of international university students during COVID-19 pandemic

Seda Yıldırım
*Business Department, Faculty of Economics and Administrative Sciences,
Tekirdağ Namık Kemal University, Tekirdag, Turkey*

Seda H. Bostancı
*Faculty of Economics and Administrative Sciences,
Political Science and Public Administration, Tekirdağ Namık Kemal University,
Tekirdag, Turkey*

D. Çağrı Yıldırım
*Economics Department, Faculty of Economics and Administrative Sciences,
Tekirdağ Namık Kemal University, Tekirdag, Turkey, and*

Fatma Erdoğan
Economics, Tekirdağ Namık Kemal University, Tekirdag, Turkey

Abstract

Purpose – The purpose of the study is to examine the relationship between the COVID-19 pandemic and international student mobility from an alternative perspective and to reveal descriptive findings.

Design/methodology/approach – This study follows qualitative research methodology. In accordance with the purpose of the study, the data were collected by the literature review and then it was analyzed by the descriptive analysis method. The effect of the COVID-19 pandemic on international student mobility and the relationships between these variables are explained by tables and classifications.

Findings – According to the findings obtained, the restrictions in physical student mobility and shutdown are observed as the biggest challenges that occurred in higher education during the COVID-19. On a global scope, international student mobility has experienced a major break. Physical campus life is still on standby. Online higher education does not give any campus life as before. Students cannot benefit form city's or country's facilities when studying online at home country. The collaboration between university and business has been declined and this is even more discouraging for international students. The hybrid education model produced an intermediate solution in this period. On the other hand, the rise of online education has created new techniques for higher education. University students who cannot go abroad attend different countries lectures and education programs. But also a new challenge has come as the access of online platforms in under developing countries university students. Online education system also discussed in terms of creating inequality in higher education.

Research limitations/implications – This study focused on student mobility and not focused about academic mobility.

Practical implications – It is seen that the traditional higher education system has been adapted into online distance higher education system since COVID-19 crises began globally. On the other side, it is observed that most of studies have focused the effect of COVID-19 on university students based on the transition to online

The main idea of this study is derived from a paper which is called "COVID-19 Pandemi Sürecinde Öğrenci Coğrafyalarına Ne Oldu? What Happened to Student Geographies During the COVID-19 Pandemic Process?" was presented in International Congress of Management, Economy and Policy (ICOMEP'20), 5–6 December 2020, Turkey.

education. When considering the effect of pandemic process on the mobility of international students and higher education, the authors can suggest policy makers to develop new higher education protocols and teaching models supporting key issues (economic, social, health, education and equalization) in the long-term. Higher education institutes have been able to produce creative and innovative solutions for both education and communication during the pandemic process.

Social implications – University students who cannot go abroad attend different countries lectures and education programs. But also a new challenge has come as the access of online platforms in under developing countries university students. Online education system also discussed in terms of creating inequality in higher education.

Originality/value – This study provides a new perspective for international student mobility in the context of COVID-19 pandemic. This is an emerging issue for the literature. This study is original with its approach to the subject from a global perspective through reviewing the studies of different countries. This study points out key variables for determining the effect of COVID-19 on international student mobility for future studies. When employing quantitative research models, the current key variables can guide them.

Keywords Higher education, Universities, COVID-19 pandemic, International student mobility, International university students

Paper type Research paper

Introduction

As the COVID-19 pandemic changes urban life in every aspect, a new field of the literature has emerged in social sciences as from sociology to economics or psychology to geography (Matthewman and Huppatz, 2020; Nicola *et al.*, 2020). In this literature, it has been questioned that how each area of daily life has undergone a transformation. Especially, both of policy makers and academicians focus on investigating the effects of pandemic on higher education area (Nicola *et al.*, 2020; Gonzalez *et al.*, 2020) due to huge break in student mobility.

The estimations and scenarios have been made on which transformations will become permanent in the new normal after pandemic. In this process, it has provided a large literature on how to change after COVID-19 in every field related to social sciences. It shows that the new normal life will become more digital. It is also discussed how cities will be affected and transformed by this process (Sharifi and Khavarian-Garmsir, 2020). University life consists of sense of belonging relations among university students, academicians, physical campus and the identity value of the university. In this manner, universities have some facilities and social activities. These facilities can be categorized as basic education, research and support facilities (Kim and Kim, 2020). COVID-19 pandemic has changed the sense of belonging relations to the universities deeply. In online learning, sense of belonging can be achieved through interaction, participation, learning culture and support (Peacock *et al.*, 2020). Hybrid systems nowadays give limited possibilities for using university facilities like laborites, drawing workshops and libraries. In some countries, face-to-face university education continues despite pandemic conditions. And also universities try to find some innovative solutions for using labs like mixed reality laborites. In these labs there are uses of virtual reality, augmented reality, remote laborites and simulations used (Hoffmann *et al.*, 2016).

International student mobility has also includes diplomatic content. One of the objectives of the developed countries accepting international students is to encourage those students to return and contribute to their homeland. However, the most of international students tend to stay at abroad, rather than to return their home country. This issue is discussed in the context of mobility ethics as a phenomenon defined as brain drain. University administrators are expected to develop an approach based on equality, social justice and public good toward transformative social change in the communication process between citizens and students (Ozios and Pasque, 2019). With these aspects, issues such as how the university-city interaction will be shaped after COVID-19, how the spaces will be affected by this and the contributions of online distance education to equal opportunity are all matter of discussion.

The research area includes questions such as the spatial relations of the higher education literature is very old and includes a wide range of contents such as campus life, campus design,

university-city interaction and identity of being university college student (Clark, 1986, 1989; Bender, 1988; Rosousky, 1991; Chakrabarti and Santoro, 2004). At this point, concepts as international students, student mobility, student geographies and studentification have been new topics for researchers. For example, Holton and Riley (2013) explained the concept of student geographies with different dimensions Holton and Riley, 2013; Uysal *et al.*, 2017). The concept of studentification which put forward by Smith (2002), states that university students' expectations of housing and social facilities cause an urban transformation similar to gentrification and this creates positive and negative consequences in the lives of citizens. There are several challenges of mentoring international students (Pedersen, 1991). In today's information age, online access opportunities are the first step in internationalization of young people. Student mobility can be national or international. Generally, national mobility is toward big cities and international mobility is toward developed countries. When countries facilitate the arrival and adaptation of foreign students, they increase their chances of competition in the global market (Verbik and Lasanowski, 2007).

E-learning has become quite common in the 21st century in terms of online facilities. However, even before the pandemic, debates on the effects of these online education systems continued. In various studies, e-learning has been determined that e-learning is not sufficiently adopted by the students and also that it cannot contribute largely to student success. On the other side, studies also reveal that e-learning is a useful tool as supportive education (Titthasiri, 2013; Hameed *et al.*, 2008; Elfaki *et al.*, 2019). Based on this approach, it is useful to focus on the hybrid, network and blended education model, which combines traditional and online education. The pandemic process brought virtual university models to the agenda along with hybrid education (Carius, 2020). The hybrid education model and hybrid campuses offer students a choice by combining digital and face-to-face education (Skulmowski and Rey, 2020).

It is now widely accepted that the formation of human capital and the production of scientific knowledge are powerful indicators for regional growth. At the same time, higher education institutions positively influence regional development by contributing to their cultural status by establishing strong links with host communities (Russo *et al.*, 2003). Accordingly, the impact of universities on urban life increases with student mobility. Among the various categories of immigrants, international students appear to have experienced the fastest growth relatively. For example, it was seen that the number of international students in Europe increased by roughly 114% from 2000 to 2010. Improving student mobility has become an important policy priority of the EU agenda which is a fundamental aim of the European Higher Education Area and to modernize higher education (Barrioluengo and Flisi, 2017). Higher education institutions establish a mobility framework for students, academic staff and administrative staff when creating mobility projects and reaching agreements for exchange programs (Bergström, 2017). Student mobility has still become a high priority for internationalization. In other words, student mobility is often seen as the 'face' of internationalization and it is not surprising that it is sometimes used inadvertently interchanged with the term. International student mobility brings various benefits to students, home and host institutions, their families, communities and society in general (Knight, 2012). Geographical youth mobility arises for a variety of reasons, even at a regional, country or even domestic level, yet its importance can improve the performance and quality of education and training systems. Higher qualities seem necessary for example gaining healthier lives, a higher probability of employment with higher income and a satisfactory job. Investing in education often requires more spatial mobility toward more competitive universities in order to obtain highly qualified degrees (Zambon, 2019).

The mobility of international university students is related to internship processes as well as education and training (Bostanci, 2013). Internship opportunities can be found in another country different from the country where the student is studying. Thus, students can take advantage of opportunities to get to know different cultures and find jobs in new countries.

As internships as a cooperative education enables students to better understand their profession, it also increases self-confidence and motivation (Schambach and Dirks, 2002). Study abroad programs and work and travel programs of agencies of student mobility programs also advantages for gaining international education and experience. While these short-term study abroad programs provide international experience, they contribute to developing intercultural awareness and developing skills to turn social networks into opportunities for these students' future career (DeJordy *et al.*, 2020). This process also has some challenges. For example, this cultural interaction enhances the students' vision and self-confidence, increasing their future job search opportunities, and may also cause a problem area such as delaying graduation times (Curtis and Ledgerwood, 2018).

The mobility has a great importance for academics to gain recognition, career plans, motivation and to obtain innovative information. As Rosovsky (1990) stated, faculty members are among the most frequent travelers in the USA. Since this current study focuses on the mobility of students who may be candidates for academics in the future, the mobility of academicians is outside the scope of the study.

The comprehensive analyses of the global and local characteristics of students' mobility across geographic boundaries and studying the intensification of this movement include research areas of student geographies (Holton and Riley, 2013). The effects of higher education systems carry student migration to different geographies (Smith, 2009). The establishment of universities and formation of student geographies, in the sense indicated by Sassen (1991, 2002), can be expressed as one of the urban network systems that connect cities. This cultural interaction brings with it the relationship system that results in the global mobility of especially qualified human capital.

Studentification, which was first handled in England, was conceptualized on the residence of university students in certain neighborhoods (Hubbard, 2008). In England, this student community has been seen as a problem area regarding the integrity of the society by the urbanites. Hubbard (2008) raised a new concept such as student ghettos, designed housing policies and students can spread the city more finely, but in order to reducing city-university tensions, students and argues that the relationship between the wider society requires other forms of regulation. Smith (2008) states that studentification is accepted as a kind of positive gentrification approach and claims that the inability of institutional actors to intervene or regulate the geographies where students reside brings unbalanced populations. When these definitions are examined, it is seen that while student geographies mostly deal with the interaction in the global network system, studentification focuses more on local regional effects. While studentification is handled as an urban problem area, student geographies are addressed with a positive interaction as a spatial mobility, global interaction and potential human capital movements in global competition. It can be said that student mobility creates a beginning, and the result of this constitutes student geographies and when this is seen as a problem, it is discussed with the concept of studentification concept.

The point that is desired to draw attention in the fields of student geography and studentification, especially during periods of noneducation, the places where students mostly live are empty, that this sometimes causes an urban security problem. While the COVID-19 pandemic process causes student geographies to remain vacant for longer periods, especially in countries where education is carried out remotely, it makes the trade and real estate sectors worry about what will happen to these places. At the same time, it is seen that student loss is among the economic problems of private universities during the pandemic.

This study reviewed the literature of COVID-19 pandemic and international student mobility and then provides some descriptive findings. Thus, it is thought to provide new perspective for the related literature. We can examine the main contributions of this study as below:

First, there has been an emerging literature including studies on the link between COVID-19 pandemic and international student mobility.

Second, the pandemic is a global issue that influences global higher education system. As it is a global issue, this study investigated this context of global scope.

Third, the methodology can provide a new approach for future studies and the current literature. We prefer to employ descriptive analysis method to give more extensive findings, rather than analyzing one specific case.

Lastly, this study points out key variables for determining the effect of COVID-19 on international student mobility for future studies.

Methodology

This study employs qualitative research model. The data collection is based on the literature review. Then, the data were analyzed by qualitative descriptive analysis. The descriptive analysis aims to provide detailed information about the research issue. Qualitative description is preferred to examine unknown and new research issues in general. In other words, new phenomenon or emerging issues in the literature can be investigated by descriptive analysis method (Nassaji, 2015; Kim *et al.*, 2017). Qualitative descriptive studies examine the main issue by summarizing the key factors in general (Lambert and Lambert, 2012). The descriptive study is mostly used in education science and it claims to define and analyze the issues by observation and description methods (Koh and Owen, 2000). This point, we prefer to examine the effect of COVID-19 on international student mobility by descriptive analysis.

The data collection

The international student mobility is an indicator for globalization in general. International student mobility expresses the intellectual dimension of the labor mobility (Sassen, 1988). In addition, international student mobility indicates global university ranking. Mascovitz (2020) stated that the COVID-19 pandemic effected international student mobility and changed the perspective of higher education globally. International students are among the groups most affected by the pandemic process worldwide. These students have been obliged to have a reverse mobility during the pandemic process in the countries they go to, overcoming difficult conditions such as exams, accommodation, scholarships and work opportunities (Moscovitz, 2020). At this point, this study analyzes empirical studies which have these issues:

(1) Studies including the effect of COVID-19 on international student mobility and higher education.

(2) Studies including the effect of COVID-19 pandemic to international student mobility.

The data collection includes the below studies as a result of empirical literature review:

Mercado (2020) points out some important findings for the effect of COVID-19 pandemic on international student mobility. According to him, the pandemic is the most effective global crises ever that happened to the world. Pandemic has caused a huge break in international student mobility. For example, it was observed that the large numbers of international students decreased in the semester of 2020 spring in Australia. Higher education and degree courses have been adapted for online platforms. In addition, international student exchange programs and summer courses were all denied. There are still many challenges in travel restrictions or campus closures for international students. Mercado (2020) determined that many popular study destinations, including New Zealand, Australia and the United States, are closed to international student mobility, and schools in Europe and North America are unlikely to continue full campus activities for a long time.

Xiong *et al.* (2020) studied on the relationship between international student mobility and COVID-19 pandemic. They employed a survey to Chinese and Hong Kong students about studying abroad after COVID-19. In the study, it is seen that 84% of the 2,739 respondents did not want to study abroad after the pandemic. Respondents determined that they mostly preferred to study at Asian regions and countries as Hong Kong, Japan and Taiwan, rather than USA or the UK. The study determined that the pandemic significantly reduced international student mobility; it also changed the mobility flow of international students.

Haugen and Lehmann (2020) investigated the effect of the COVID-19 on higher education and student mobility including the case of Chinese students in Australia. They pointed out how student mobility can be sustained in the long-term. The study determines that the mobility can cause some risks, but responses to the risks are varied based on prohibitions. Haugen and Lehmann (2020) examined what kinds of implications supported Chinese students for education and traveling issues.

ICEF Monitor (2020) examined the key changes in higher education during the COVID-19 pandemic for US as: (1) leading universities such as Stanford University, MIT and Harvard University canceled their face-to-face courses and moved all courses into online platform. In addition, University of Washington, Lake Washington Institute of Technology and several other universities in the Seattle area are all closed. Then, universities from all over the country were closed. (2) International students should take all courses by face-to-face due to extend their visa. However, new protocols for online education have been developed to protect international student's visa and related rights. (3) It can be said that the COVID-19 pandemic has affected higher education's conditions for current international university students and potential ones.

There was another survey research to determine how the COVID-19 pandemic changed university student's mobility and their life conditions for Finland. As a result of survey, Finnish students who studied abroad participated to survey. A total of 4176 Finnish students who study abroad and 4917 foreign students who study in Finland are included in the research. It was seen that 27% of 4176 students continued to study abroad and 53% of them have returned to their home country (Finland). On the other side, 48% of 4917 foreign university students in Finland returned to their home countries. In the global scope, it was seen that almost 90% of higher education students decreased their mobility. Most of students kept higher education by online platforms. The research determines the effect of the pandemic on higher education by considering international student mobility (Finnish National Agency for Education, 2020).

European Commission (2020) published a report on the effect of COVID-19 pandemic on student mobility. The report determined that international students had challenges both in education and work due to restriction of mobility, globally. As a result, international students can have a job after studying in a host country. Although students could keep higher education by online platforms, they lost an opportunity of finding a job in a host country. Especially, students from less developed countries had a big disappointment due to COVID-19 pandemic.

The Institute of International Education (IIE) (2020) provided a research survey explaining the effects of COVID-19 on international student mobility and higher education for US. IIE (2020) published three main series for this survey research. In the first report, IIE (2020) focused on the effects of COVID-19 on student mobility to and from China. According to survey results, it was seen that international students from China (831) were challenged with travel restrictions. These students could not study abroad when the pandemic expanded. Almost all of the higher education institutions adapted online courses and remote study. On the other side, exchange protocols such as visa, interview and submission were delayed for international students. During COVID-19 pandemic, most of study abroad programs in China was canceled or delayed (Martel, 2020a). The most apparent result of

COVID-19 pandemic was seen as the closures of higher education institutions by spring 2020. The physical mobility of students was stopped due to travel restrictions, closed campus areas and buildings and closure of other related places with university students (Martel, 2020b). By 2020 summer, it was observed that most of US higher education institutions employed online courses. The closure of some campus events and campus buildings was continued. In the fall 2020, it was seen that the number of international student decreased as it was expected (Martel, 2020c).

Aristovnik et al. (2020) studied on the effects of the COVID-19 pandemic on university students and they provided significant findings for changes of higher education students during the COVID-19 pandemic. The study focused on social issues of higher education students in general. Aristovnik et al. (2020) observed that the demographics of students also influenced their acceptance of online education and adaptation of new life standards. In addition, it was seen that most of university students felt more anxious about career and job after the COVID-19 pandemic (Aristovnik et al., 2020).

The future of higher education is questioned in todays. Mitchell (2020) claimed that there are some benefits from distance education for international students as being away from university. In addition, he determined that new opportunities including improved physical conditions of university campuses can be occurred for more international students. In his interview, the current picture showed that there would be no usual normalization for a long time even though the vaccine process began in many economies. New normal standards can mostly include internationalization at home and virtual mobility.

Jørgensen and Claeys-Kulik (2021) explained targets of "Universities Without Walls: A Vision for 2030" which was based on EUA – European University Association, (2020). The future universities will be new and hybrid organizations will be having higher numbers of participations, combining physical and virtual facilities and being cross-border.

Quilantan (2021) pointed out some problems in higher education in 2020. For example, some higher education institutes wanted to sell their main campuses and some of them tried to decline approval conditions of international students. After the vaccine implications, the world will meet new higher education models. On the other side, there is another threatening issue for students when considering how employers will evaluate degrees of students who are graduated during the pandemic.

Results

In this section, we analyzed the empirical literature review by descriptive analysis method. We focus on the effect of COVID-19 on university students and higher education system in the context of student mobility. Accordingly, this study summarizes the key points for the effect of COVID-19 on university students and student mobility as below:

Since COVID-19 crises began globally, the new education systems seek for new effective education. Online education is the first solution for this crisis management. We present the findings on the link between student mobility and online education in Table 1.

Table 1 shows that the current situation of student mobility has transformed into online mobility. It is estimated that physical student mobility will be declined in the next few years. However, online student mobility will be higher in the long-term. Many of face-to-face courses have transformed into online courses and this will be expanded too. And hybrid education gives some opportunities international students to continue their education.

Table 2 shows the general findings for the effect of COVID-19 on international student mobility. International student mobility can be examined through three basic periods as past, present and future. The international student exchange courses or programs have been so popular since decades. Since COVID-19 pandemic, most of foreign students have to return their home or they have to stay abroad without any campus facilities and health support.

International university students usually make a choice based on some variables as "campus life, being international citizen, study and work abroad, city life, accommodation, costs, transportation and location". In a sense, higher education is interpreted as a tool that stands out as the source of citizenship preparation for international students (Rhoads, 1998). After COVID-19 pandemic, the importance of some variables has declined. But these may change again over time. The options for study and work abroad are also declined during COVID-19 pandemic as seen in Table 3.

According to Table 4, it is observed that international students have more loss during the pandemic. However, host countries have mostly loss in employment and economic issues. During COVID-19, it can be said that foreign university students have so many troubles in economic conditions and social life conditions.

Recio and Colella (2020) gave a detailed report on how COVID-19 affected university students including titles as education, research internationalization, societal engagement and governance. Table 5 summarizes the key findings of this report:

We can give five main issues to be considered to make new policies for higher education and international student mobility as:

Economic issues
International students lost their job opportunity in the host country. In addition, most of the international students consume their budget during COVID-19 pandemic. On the other side, most of countries make a great profit on the international student mobility. During the pandemic, the market of higher education decreased.

Social issues
The limited physical mobility causes loss in social life of international students. Without campus events, campus areas, student houses and classes, international students cannot benefit culture of the host country. In addition, most of international students cannot experience real higher education in the host country as they expected before the COVID-19 pandemic.

Health issues
In the host country, international students' health conditions are emerging matter for health policies. After the COVID-19 pandemic, it is a new issue to determine the health conditions of international students of higher education due to their effect on public health in the host country.

Education issues
The traditional teaching methods has transformed into digital teaching methods. Teaching staff and university management are all responsible for efficient online courses to sustain

Variables	Changes
Physical mobility	Decrease
Online international courses	Increase
Online education	Increase
Online mobility	Increase
Face-to face education	Decrease
The integration to online education methods	Increase
Hybrid education	Discussed*
International student mobility	Decrease
Note(s): *Advantage for local students, alternative for international students	

Table 1.
The main changes in student mobility and higher education during COVID-19

Variables	Past	Present	Future
Study abroad	It was a rising trend, globally. It was also seen as new job opportunities and a new life	There is a huge break in traditional studying abroad	It seems to be transformed into online study abroad maybe with short visits to the university, for example, for exams and some practical studies
Study at home country	It is known that students from developed countries prefer to study at home country in general. On the other side, students from developing countries or less developed countries generally prefer to study abroad	International students mostly have to return to their home. And new submissions were declined and most of students had to study at home	There is a great demand for study abroad that online international student mobility will be higher until the conditions are sufficient for physical student mobility
Online education	Online education is not the first preference for teaching in higher education	COVID-19 pandemic period made university management and teaching staff to transform into online education	The demand of the online education programs and systems is getting higher that the future will be hosted much more online courses and education globally
Hybrid education	Hybrid models that combine face-to-face and online education are challenging for academics, but provide an advantage for international students to continue their education	As the hybrid education system that started in the pandemic period develops, it will affect the university choices of the students in various periods in the future	In particular, the hybrid system will create the opportunity to spend some semesters face-to-face and some semesters online in the future, depending on the budgets of students
Working abroad	Working abroad was so popular for university students	Working abroad programs and options are all declined and reduced	Working abroad will not be as easy as past periods
Internship abroad	The support of internship abroad home country universities was an opportunity to test their adaptation skills	The pandemic also reduced opportunities for internship abroad, and students returned before completing their internship	The post-pandemic period can be an internship abroad for students who have difficulty deciding on studying abroad
Working at home country	Although their governments give scholarships to serve their country students from developing or less developed countries preferred to work abroad	Working conditions has been changed, students' hopes of finding a job in their home country also decreased	Under the pandemic conditions of countries, job sharing approaches to working from home will reveal a new group of students who work in countries and receive online international education
Internship at home country	Especially in applied professions, an internship in vocational education is required for graduation	Universities have explored the possibilities of graduating by making various reports for students who cannot complete their internships	Not having an internship in the future will create a deficiency for graduation. Maybe universities will try to provide some make-up internship opportunities for graduates
Agencies for student mobility	There are many types of agencies for international student ex-change programs	Agencies need to be adapted for online student mobility	Agencies will adapt more online courses or higher education programs

Variables	Before COVID-19	After COVID-19
Campus life	Campus life is an important indicator to prefer a university. The historical identity of the universities also increases this interest	Physical campus life is still on standby. Online higher education does not give any campus life as before. Nevertheless, organizing online activities that will give students a common experience on campus provides students with some motivation
Being international citizen	The effects of higher education systems carry student migration to different geographies	This also reduces the students opportunities to improve their vision to adapt different cultures and gaining new citizenship
Internship work abroad	Internship abroad is an opportunity for how a profession is practiced in another country and to learn how to find future job opportunities in that country	Increasing online job opportunities can also create online internship opportunities abroad
Study and work abroad	The options for study and work abroad together are important indicator to prefer a university in the future. This adapts to language and culture	Study and work abroad choices are all on standby, but the inability of countries to send their employees abroad creates alternative representation opportunities for those who can speak different language perfectly
City life	City life and city' life conditions are all are important indicator to prefer a university in the context of social expectations. Attractions of city or country are important indicator to prefer an university	International students cannot experience with city life. Students cannot benefit form city's or country's facilities when studying online at home country
Accommodation	Accommodation is an important indicator to prefer a university	For online education or courses, accommodation options in a foreign country do not matter students. This can be thought as an advantage for international students
Costs	How much costs will be paid for study abroad will influence the choice. Scholarship opportunities are also very important at this point	Costs include online courses or education programs after COVID-19 in general. For this reason, fees are expected to decrease, but universities are not keen to take these decisions
Transportation	Public transport and discounted tickets for students are very important for international students	For online education or courses, transportation options in a foreign country do not matter students. But travel restrictions are a serious problem for students
Location	The location is an important indicator for students. While universities in the city centers allow for urban student interaction. Large self-sufficient campuses create a culture of life for students. Each location has its own advantages and disadvantages	For online education or courses, location options in a foreign country do not matter students. However, considering that face-to-face training will start in the future, position will always be important, especially for more than two years of training students

higher education. In this point, the collaboration between higher education institutions and software business is important to develop efficient and appropriate online course platforms for higher education.

Equalization issues
Most of higher education students challenge with online education due to having insufficient skills of computer usage or having no any mobile tools or personal computer to connect online

course. However, most of the teaching staff have some troubles in teaching online during the pandemic. On the other side, some inequalities between students from developed countries and less developed countries occur as a result of the COVID-19 pandemic.

Discussion

Since education and training activities at all levels, including universities, are indispensable, it has been among the areas where it is desired to return to normal in the COVID-19 pandemic. The pandemic significantly affected international student mobility that this topic has created an up-to-date research area in the academic literature and reports. It is seen that the

Variables	Loss for host country	Loss for international student
Economic market profit	x	
Employment	x	x
City life (local and national)	x	x
Regional development	x	
Access to culture	x	x
Access to equal higher education		x
Access to social life and adaptation		x
Access to health services		x

Table 4.
What loss during COVID-19 pandemic?

Factors	What happened	New normal	Adaptation	Main effect
Education	All universities and institutes were closed, physically	Hybrid teaching models come to life	New teaching methods should be adapted for online platforms	For future, the hybrid education models seem to be permanent
Research	COVID-19 has been included as a new issue in the literature	Some researches has been postponed until COVID-19 ended	The funds for researchers mostly decreased. Most of the researchers has been affected negatively	Research areas and methodologies have changed
Internationalization	There has been a huge break for international student mobility globally	Campus life was nearly ended. Most of international students went back to their home country	International students mobility transformed into online facilities	The physical mobility has been reduced globally
Societal engagement	Societal engagement transformed into online societal engagement	The collaboration between university and business has been declined	New institutional platforms and channel will guide university students	Local communities and integration with local communities will be higher
Governance	University leaders make a new plans for higher education during COVID-19	University leaders had to keep new adaptations for COVID-19	University leaders should adapt new technologies and guide teaching staff for new education plans	University leaders focus on IT systems and integration with technology business

Table 5.
The effect of COVID-19 on university students and higher education

Source(s): Adapted from Recio and Colella (2020)

accommodation costs reduced as great advantage of online course. The studies discussed in the current research showed that most students returned to their home countries in the pandemic and it was observed that students were anxious about studying abroad during the COVID-19 pandemic. One of the notable issues in the literature review is to rethink international higher education opportunities in the context of mobility ethics.

Today, well-known academicians around the world have published online training videos. Higher prestigious symposiums can be accessible on digital platforms for everybody in the world. International students find an opportunity to benefit from these facilities. By the support of online systems to higher education, more flexible academic access opportunities will be created.

It is seen that higher education has been significantly affected by the COVID-19 pandemic and experienced a transformation process. Although many higher education institutions develop new approaches for online education platforms, virtual universities, hybrid campuses, especially for international students, most of students are very eager to live a life connected with their campuses. University campuses are places where students live their social experiences. In general, physical facilities such as buildings and campus areas contribute institute's corporate identity and support making a link between students and institutions. In other words, it can be said that campus, academicians and students are integral parts of a common university identity. International students provide opportunities to gain social knowledge and share their culture with other students. At this point, higher education institutes have been able to produce creative and innovative solutions for both education and communication during the pandemic process. Student geographies will continue to develop under more digital and hygienic conditions after the pandemic is over.

Conclusion

This study includes an early research that addresses the issue of international student mobility and pandemics in a global context. As a result of literature review, it was seen that there were reports and surveys that investigating the effect of the COVID-19 pandemic on international student mobility and higher education. This study concluded these reports and surveys in the context of global scope and provided basic issues and variables to determine the effects of the COVID-19 on international student mobility. The rising trend of international student mobility and exchange programs and internships in higher education decreased rapidly during the pandemic. Actually, this fall is the worst one that ever happened. The management of higher education institutes is worried about the future of international student mobility. Although some countries began to use the COVID-19 vaccine, new normal in higher education is still an emerging issue in the world. However, the development of online courses and online education programs accelerate the adaptation of new normal higher education system. On the other side, there have been new arguments for inequalities between university students when considering insufficient tools and skills to access online education programs.

According to the review of the prior literature and obtained descriptive findings, some policy implications can be suggested for policy makers to adopt more student friendly online and hybrid education in the long-term. One of the basic policies of the online system is supporting sense of belonging in distance education by interactive education methods. In order for applied branches to turn to the online system, especially innovative technological solutions are required. In this sense, mixed reality laboratories should be increased around the world for applied branches like engineering. So international university students can use new technical tools and do not lose their sense of belonging to their universities. Universities will continue their creative and innovative education in the future by combining different participatory attitudes and different types of education.

As mentioned in tables, some new opportunities will be accrued in higher education during and after pandemics. For example, under the pandemic conditions of countries, job sharing approaches to working from home will reveal a new group of students who work in countries and receive online international education. And also the hybrid system will create the opportunity to spend some semesters face-to-face and some semesters online in the future, depending on the budgets of international students. Since higher education is a huge market and human capital input for developed countries, it is thought that they will create more comprehensive health facilities and alternative hygienic accommodation and transportation opportunities for international students in their countries.

References

Aristovnik, A., Kerzic, D., Ravselj, D., Tomazevic, N. and Umek, L. (2020), "Impacts of the COVID-19 pandemic on life of higher education students: a global perspective", *Sustainability*, Vol. 12 No. 20, p. 8438.

Barrioluengo, M.S. and Flisi, S. (2017), *Student Mobility in Tertiary Education: Institutional Factors and Regional Attractiveness*, Publications Office of the European Union, Luxembourg.

Bender, T. (Ed.) (1988), *The University and the City: From Medieval Origins to the Present*, Oxford University Press.

Bergström, J. (2017), "Student mobility – an overview", *EJHEIT*, Report, available at: https://www.eunis.org/erai/student-mobility-an-overview/ (accessed 20 November 2020).

Bostanci, S.H. (2013), "The role of municipalities as a tool in teaching for urban planning education", *International Multidisciplinary Scientific GeoConference: SGEM*, Vol. 2, pp. 595-602.

Carius, A.C. (2020), Network education and blended learning: Cyber University concept and Higher Education post COVID-19 pandemic, *Research, Society and Development*, Vol. 9 No. 10, p. e8209109340.

Chakrabarti, A.K. and Santoro, M.D. (2004), "Building social capital and learning environment in university–industry relationships", *International Journal of Learning and Intellectual Capital*, Vol. 1 No. 1, pp. 19-36.

Clark, B.R. (1986), *The Higher Education System: Academic Organization in Cross-national Perspective*, University of California Press, California.

Clark, B.R. (1989), "The academic life: small worlds, different worlds", *Educational Researcher*, Vol. 18 No. 5, pp. 4-8.

Curtis, T. and Ledgerwood, J.R. (2018), "Students' motivations, perceived benefits and constraints towards study abroad and other international education opportunities", *Journal of International Education in Business*, Vol. 11 No. 1, pp. 63-78.

DeJordy, R., Milevoj, E., Schmidtke, J.M. and Bommer, W.H. (2020), "The success of short-term study abroad programs: a social networks perspective", *Journal of International Education in Business*, Vol. 13 No. 1, pp. 73-86.

Elfaki, N.K., Abdulraheem, I. and Abdulrahim, R. (2019), "Impact of e-learning vs traditional learning on student's performance and attitude", *International Medical Journal*, Vol. 24 No. 3, pp. 225-233.

European Commission (2020), "Inform # 2 – impact of COVID-19 on international students in EU and OECD member states series of EMN-OECD informs on the impact of COVID-19 in the migration area", available at: https://ec.europa.eu/homeaffairs/sites/homeaffairs/files/00_eu_inform2_students_final_en.pdf (accessed 20 November 2020).

Finnish National Agency for Education (2020), "Impact of COVID-19 on higher education student mobility in Finland", available at: https://www.oph.fi/en/news/2020/impact-covid-19-higher-education-student-mobility-finland (accessed 20 November 2020).

Gonzalez, T., De la Rubia, M.A., Hincz, K.P., Comas-Lopez, M., Subirats, L., Fort, S. and Sacha, G.M. (2020), "Influence of COVID-19 confinement on students' performance in higher education", *PLOS ONE*, Vol. 15 No. 10, pp. 1-23.

Hameed, S., Badii, A. and Cullen, A.J. (2008), "Effective e-learning integration with traditional learning in a blended learning environment", *European and Mediterranean Conference on Information Systems*, pp. 25-26.

Haugen, H.O. and Lehmann, A. (2020), "Adverse articulation: third countries in China–Australia student migration during COVID-19", *Dialogues in Human Geography*, Vol. 10 No. 2, pp. 169-173.

Hoffmann, M., Meisen, T. and Jeschke, S. (2016), "Shifting virtual reality education to the next level–Experiencing remote laboratories through mixed reality", *Engineering Education 4.0*, Springer, Cham, pp. 235-249.

Holton, M. and Riley, M. (2013), "Student geographies: exploring the diverse geographies of students and higher education", *Geography Compass*, Vol. 7 No. 1, pp. 61-74.

Hubbard, P. (2008), "Regulating the social impacts of studentification: a Loughborough case study", *Environment and Planning A*, Vol. 40 No. 2, pp. 323-341.

ICEF Monitor (2020), "US: COVID-19 impacts include campus closures and recruiting challenges", available at: https://monitor.icef.com/2020/03/us-covid-19-impacts-include-campus-closures-and-recruiting-challenges/ (accessed 25 November 2020).

Jørgensen, T. and Claeys-Kulik, A.-L. (2021), "What does the future hold for Europe's universities?", available at: https://www.universityworldnews.com/post.php?story=20210204091600372 (accessed 3 March 2021).

Kim, M.S. and Kim, J.H. (2020), "Effective university facility management plan proposal reflecting the needs of the main users", *Frontiers in Psychology*, Vol. 11, p. 219.

Kim, H., Sefcik, J.S. and Bradway, C. (2017), "Characteristics of qualitative descriptive studies: a systematic review", *Research in Nursing and Health*, Vol. 40 No. 1, pp. 23-42.

Knight, J. (2012), "Student mobility and internationalization: trends and tribulations", *Research in Comparative and International Education*, Vol. 7 No. 1, pp. 20-33.

Koh, E.T. and Owen, W.L. (2000), "Descriptive research and qualitative research", *Introduction to Nutrition and Health Research*, Springer, Boston, MA, pp. 219-248.

Lambert, V.A. and Lambert, C.E. (2012), "Editorial: qualitative descriptive research: an acceptable design", *Pacific Rim International Journal of Nursing Research*, October - December 2012, pp. 255-256.

Martel, M. (2020a), "COVID-19 effects on U.S. higher education campuses academic student mobility to and from China", *COVID-19 Snapshot Survey Series*, available at: https://www.iie.org/COVID19-Effects-on-US-Higher-Education-Campuses (accessed 20 January 2021).

Martel, M. (2020b), "COVID-19 effects on U.S. higher education campuses from emergency response to planning for future student mobility", *COVID-19 Snapshot Survey Series*, available at: https://www.iie.org/Research-and-Insights/Publications/COVID-19-Effects-on-US-Higher-Education-Campuses-Report-2 (accessed 20 January 2021).

Martel, M. (2020c), "COVID-19 effects on U.S. higher education campuses. new realities for global student mobility in summer and fall", *COVID-19 Snapshot Survey Series*, available at: https://www.iie.org/Research-and-Insights/Publications/COVID-19-Effects-on-US-Higher-Education-Campuses-Report-3 (accessed 20 January 2021).

Matthewman, S. and Huppatz, K. (2020), "A sociology of COVID-19", *Journal of Sociology*, Vol. 56 No. 4, pp. 675-683.

Mercado, S. (2020), "International student mobility and the impact of the pandemic", available at: https://bized.aacsb.edu/articles/2020/june/covid-19-and-the-future-of-international-student-mobility (accessed 25 November 2020).

Mitchell, N. (2020), "Students to decide which institutions survive COVID-19", available at: https://www.universityworldnews.com/post.php?story=20200507135847614 (accessed 3 March 2021).

Moscovitz, H. (2020), "The "International University" in an immobile world: rethinking internationalisation in the COVID-19 era", available at: https://postpandemicuniversity.net/2020/09/13/the-international-university-in-an-immobile-world-rethinking-internationalisation-in-the-covid-19-era/ (accessed 25 November 2020).

Nassaji, H. (2015), "Qualitative and descriptive research: data type versus data analysis", *Language Teaching Research*, Vol. 19 No. 2, pp. 129-132.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M. and Agha, R. (2020), "The socio-economic implications of the coronavirus pandemic (COVID-19): a review", *International Journal of Surgery*, Vol. 78, pp. 185-193.

Ozias, M. and Pasque, P. (2019), "Critical geography as theory and praxis: the community–university imperative for social change", *The Journal of Higher Education*, Vol. 90 No. 1, pp. 85-110.

Peacock, S., Cowan, J., Irvine, L. and Williams, J. (2020), "An exploration into the importance of a sense of belonging for online learners", *International Review of Research in Open and Distributed Learning*, Vol. 21 No. 2, pp. 18-35.

Pedersen, P.B. (1991), "Counseling international students", *The Counseling Psychologist*, Vol. 19 No. 1, pp. 10-58.

Quilantan, B. (2021), "How the pandemic forever changed higher education?", available at: https://www.politico.com/newsletters/weekly-education-coronavirus-special-edition/2021/01/25/how-the-pandemic-forever-changed-higher-education-792939 (accessed 3 March 2021).

Recio, S.G. and Colella, C. (2020), "The world of higher education after COVID-19. How COVID-19 has affected young universities", *YERUN*, June 2020, available at: https://www.yerun.eu/wp-content/uploads/2020/07/YERUN-Covid-VFinal-OnlineSpread.pdf (accessed 25 November 2020).

Rhoads, R.A. (1998), "In the service of citizenship: a study of student involvement in community service", *The Journal of Higher Education*, Vol. 69 No. 3, pp. 277-297.

Rosovsky, H. (1990), *The University: An Owner's Manual*, W.W. Norton, New York.

Russo, A., van den Berg, L. and Lavanga, M. (2003), "The student city strategic planning for student communities in EU cities", *ERSA Conference Papers, European Regional Science Association*.

Sassen, S. (1988), *The Mobility of Labor and Capital: A Study in International Investment and Labor Flow*, Cambridge University Press, New York.

Sassen, S. (1991), *The Global City: New York, London, Tokyo*, Princeton University Press, NJ.

Sassen, S. (Ed.), (2002), *Global Networks, Linked Cities*, Psychology Press.

Schambach, T.P. and Dirks, J. (2002), "Student perceptions of internship experiences", *Proceedings of the International Academy for Information Management (IAIM) Annual Conference: International Conference on Informatics Education Research (ICIER), 17th*, Barcelona, Spain.

Sharifi, A. and Khavarian-Garmsir, A. (2020), "The COVID-19 pandemic: impacts on cities and major lessons for urban planning, design, and management", *Science of the Total Environment*, Vol. 749, p. 142391.

Skulmowski, A. and Rey, G.D. (2020), "COVID-19 as an accelerator for digitalization at a German university: establishing hybrid campuses in times of crisis", *Human Behavior and Emerging Technologies*, Vol. 2 No. 3, pp. 212-216.

Smith, D. (2002), "Patterns and processes of studentification in leeds", *The Regional Review*, Vol. 12 No. 1, pp. 15-16.

Smith, D. (2008), "The politics of studentification and(un) balanced'urban populations: lessons for getrification and sustainable communities?", *Urban Studies*, Vol. 45 No. 12, pp. 2541-2564.

Smith, D.P. (2009), "Student geographies', urban restructuring, and the expansion of higher education", *Environment and Planning A*, Vol. 41, pp. 1795-1804.

Titthasiri, W. (2013), "A comparison of e-learning and traditional learning: experimental approach", *International Conference on Mobile Learning, E-Society and E-Learning Technology (ICMLEET)*, Singapore, pp. 6-7.

Uysal, A., Güngör, Ş. and Meydan, A. (2017), "Üniversite öğrencileri ve ikametgâh ilişkisi/bir mekânın eve dönüştürülmesi: Nevşehir örneği", *Doğu Coğrafya Dergisi*, Vol. 22 No. 38, pp. 15-38.

Verbik, L. and Lasanowski, V. (2007), "International student mobility: patterns and trends", *World Education News and Reviews*, Vol. 20 No. 10, pp. 1-16.

Xiong, W., Mok, K.H., Ke, G. and Cheung, J.O.W. (2020), "Impact of COVID-19 pandemic on international higher education and student mobility: student perspectives from Mainland, China and Hong Kong", *Working Paper*, No. 54, September 2020. Published by the Centre for Global Higher Education.

Zambon, I. (2019), "Exploring student mobility: university flows and the territorial structure in Viterbo", *Urban Science*, Vol. 3 No. 47, pp. 1-13.

Corresponding author
Seda H. Bostancı can be contacted at: shbostanci@nku.edu.tr