

MODELLING COUNTRY, CITY, AND INSTITUTIONAL LEVEL PREDICTORS
OF INBOUND AFRICAN STUDENTS IN TÜRKİYE

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BATUHAN TAPIRDAMAZ

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PREDICTORS OF INBOUND AFRICAN STUDENTS IN TÜRKİYE**

submitted by **BATUHAN TAPIRDAMAZ** in partial fulfillment of the requirements for the degree of **Master of Science in Educational Sciences, Educational Administration and Planning, the Graduate School of Social Sciences of Middle East Technical University** by,

Prof. Dr. Sadettin KİRAZCI
Dean
Graduate School of Social Sciences

Prof. Dr. Zeynep SÜMER
Head of Department
Department of Educational Sciences

Prof. Dr. Yaşar KONDAKÇI
Supervisor
Department of Educational Sciences

Examining Committee Members:

Assoc. Prof. Dr. Merve ZAYİM KURTAY
(Head of the Examining Committee)
Middle East Technical University
Department of Educational Sciences

Prof. Dr. Yaşar KONDAKÇI (Supervisor)
Middle East Technical University
Department of Educational Sciences

Assoc. Prof. Dr. Yakup ÖZ
Karamanoğlu Mehmetbey Üniversitesi
Department of Educational Sciences

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name: Batuhan TAPIRDAMAZ

Signature:

ABSTRACT

MODELLING COUNTRY, CITY, AND INSTITUTIONAL LEVEL PREDICTORS OF INBOUND AFRICAN STUDENTS IN TÜRKİYE

Tapırdamaz, Batuhan

M.S., The Department of Educational Sciences, Educational Administration and

Planning

Supervisor: Prof. Dr. Yaşar Kondakçı

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Global trends and path of International Student Mobility (ISM) unfold on an East-West axis, from the global South to the Global North (Barnett et al., 2016). Research on ISM in general focused on analyzing the overall trends and flows in ISM towards traditional destinations, while leaving out different geographies and patterns out of the focus. As several different studies indicate, Türkiye has emerged as a regional hub for international students despite being a semi-peripheral country. However, attracting great many students from African countries has sparked broad public discussions over the phenomenon of inbound African students, which questions the ISM phenomenon

in Türkiye in general. To investigate this phenomenon under a push-pull framework, a multi-level model was constructed. The outcome variable was chosen to be the total number of students in an institution, nested inside a city, from a particular African country, at a certain year. The results suggest that, overall, city socio-economic development and same-nation network effects best predict the number of African international students in Türkiye. An investigation into smaller samples of the data also reveals that public universities are influenced by academic performance and student satisfaction, while foundation universities, on the other hand, are very strongly and positively influenced by city-level factors. On the other hand, the occurrences of “internationalization” in internal evaluation reports reveal a negative correlation, while “international student” indicates a positive correlation for almost all of the models. Additionally, a general preference for universities that are not struggling to fill their available spots is observed.

Keywords: International Student Mobility, Student Mobility of Africa, Student Mobility in Turkey, Regional hubs

ÖZ

TÜRKİYE'YE GELEN AFRİKALI ÖĞRENCİLERİN ÜLKE, ŞEHİR VE KURUMSAL DÜZEY ÖNGÖRÜCÜLERİNİN MODELLENMESİ

Tapırdamaz, Batuhan

Yüksek Lisans, Eğitim Bilimleri Bölümü, Eğitim Yönetimi ve Planlaması

Tez Danışmanı: Prof. Dr. Yaşar Kondakçı

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Uluslararası Öğrenci Hareketliliğinin (ISM) küresel ölçekte giderek katlanan sayıda bir eğilimi ve genel olarak dünyanın Güneyinden Kuzeyine doğru bir akışı gösteren örüntüler çizmektedir (Barnett ve diğerleri, 2016). Genel olarak uluslararası öğrenci hareketliliği üzerine yapılan araştırmalar, geleneksel hedef ülkelere odaklanırken, farklı coğrafyaları ve hareketlilik örüntülerini göz ardı etmiştir. Çeşitli çalışmaların ortaya koyduğu üzere, Türkiye, yarı-çeper bir ülke olmasına rağmen uluslararası öğrenciler için bölgesel bir merkez olarak ortaya çıkmıştır. Ancak, Afrika ülkelerinden çok sayıda öğrenci çekmesi, gelen Afrikalı öğrenciler olgusu üzerine olumsuz kamuoyu tartışmalarını tetiklemiş ve genel olarak ülke, kurum ve birey düzeyinde önemli katkıları olan Türkiye'deki uluslararası öğrenci hareketliliği olgusunun sorgulanmasına neden olmuştur. Bu problemten hareketle, Afrika'nın çeşitli

lkelerinden Trkiye'ye doęru olan ęrenc hareketlilięinin incelenmesi iin g kuramlarından alınmıř olan itme-ekme kavramsallařtırması altında ele alınmıř ve bu kapsamda lke, kurum ve řehir dzeyindeki deęiřik modelleri kapsayan ok dzeyli bir model oluřturulmuřtur. Elde edilen bulgular, genel olarak, řehrin sosyo-ekonomik geliřimi ve aynı milletten aę etkilerinin, Trkiye'deki Afrikalı uluslararası ęrenci sayısını en iyi yordayan deęiřkenler olduklarını gstermiřtir. Veri analizler ayrıca, devlet niversitelerinin akademik performansı ve bu niversitelerden duyulan memnuniyetinden de gelen ęrenci sayısını yordamada etkili olduęu grlmřtr. Vakıf niversitelerinin řehir dzeyi faktrlerden ok gl ve pozitif bir řekilde etkilendięini ortaya koymaktadır. te yandan, i deęerlendirme raporlarında "uluslararasılařma" kelimesinin gemesi negatif bir korelasyon gsterirken, "uluslararası ęrenci" kelimesi neredeyse tm modeller iin pozitif bir korelasyon gstermektedir. Ayrıca, mevcut kontenjanlarını doldurmakta zorlanmayan niversitelerin genel olarak tercih edildięi gzlemlenmiřtir.

Anahtar Kelimeler: Uluslararası ęrenci Hareketlilięi, Afrika ęrenci Hareketlilięi, Trkiye'de ęrenci Hareketlilięi, Blgesel Merkezler

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LIST OF ABBREVIATIONS

CoHE	Council of Higher Education
IS	International Student
ISM	International Student Mobility
MoNE	Ministry of National Education
ODUS	Student-Friendly University Cities Research
SEGE	Socio-Economic Development
URAP	University Ranking by Academic Performance
TUMA	Türkiye University Satisfaction Survey

CHAPTER 1

INTRODUCTION

1.1. Internationalization of Higher Education and ISM

The pace and scale of change in higher education have been intensified over the last decades (Rumbley et al., 2022). Technology, demographic changes, economic strains, and governmental pressures have been pressing for change in the structural and functional characteristics of higher education institutions. The massification of higher education has continued (Calderon, 2018); globalization and the global knowledge economy have become the centerpiece of higher education (Marginson, 2010). According to Altbach & Levy (2005), higher education has become increasingly subject to commercial and market-driven forces. Rapid developments in technology have occurred that redefine how teaching is done and drive the need for international collaborations and connections for research (Alexander et al., 2019).

One of the joint and remarkable implications of these developments was the acceleration in the internationalization of higher education. With the end of the Cold War, national security and foreign diplomacy trends in international higher education shifted towards globalization and global society trends (De Wit & Merckx, 2023). This has made the internationalization of higher education a very important part of higher education, as globalization naturally transformed cultural, social, and economic

aspects of life (Aba, 2013). Furthermore, economic arguments gained prominence in international higher education and were promoted accordingly (De Wit & Merckx, 2023). Lyman (1995) and Callan & de Wit (1995) describe the view of international higher education as shifting from mutual understanding and peace towards economic competitiveness with the end of the Cold War, in the US and Europe, respectively.

Teichler (1999) describes 3 newly emerging trends post-1990s. Simply put, these are a focus on internationalization policies at an institutional level, international relations being developed on equal levels rather than vertical hierarchies, and higher education's characteristics being redefined in the light of globalization that goes beyond simple student/academic mobility and cooperation. Indeed, well into the 21st century, de Wit & Merckx (2023) and Teichler (2017) report that internationalization policy has become a mainstream pursuit of institutional policy. Financial support for such endeavors is ever-increasing, and higher education is becoming increasingly intertwined in the knowledge economy (De Wit & Merckx, 2023; Teichler, 2017).

However, de Wit & Merckx (2022) name the massive increase in the number of globally circulating students that has happened in the last decades as the most impactful trend in internationalization. UNESCO (2024a) reports that outbound international students went from 2.1 million in 2001 to 6.8 million in 2022. De Wit & Merckx (2023) report that an important market has emerged for Western countries such as the United States, Australia, and the United Kingdom that house a majority of these students. De Wit & Merckx (2023) also mention that onshore campuses continue to expand and that physical mobility around the globe is beginning to encounter dangers due to rising nationalism and geopolitical tensions.

Global student mobility has historically been toward traditional destinations in an East to West and North to South direction (Altbach, 2004; Barnett et al., 2016; Chen & Barnett, 2000). In other words, in essence, economically advanced nations with widely spoken languages such as English, French, or German tend to be destination countries, while Asian nations primarily serve as sources of outgoing students. Altbach (2004) argues that the predominance of English in academia and better living prospects attract this flow. Stein & de Andreotti (2015) argue that this flow into Western countries represents the post-colonial state of the world and that this preference comes from the accepted value of Western education. De Wit & Merckx (2023) state that the ever-increasing global competition for a skilled workforce has become a pull factor due to aging populations in developed countries. Wood et al. (2022) also state that soft power and knowledge diplomacy aims of countries such as France and Germany drive countries' international student recruitment efforts.

1.2. ISM in semi-peripheral and peripheral regions

A popular explanation of the flows into the traditional destinations is the World Systems Theory, where a country's economic development and its political position in the world order determine its position in global interaction patterns in ISM (Barnett & Wu, 1995; Chen & Barnett, 2000; Chirot & Hall, 1982). However, studies such as Hou & Du (2020) and Kondakci et al. (2018) indicate that there is a flow into countries in the periphery and non-periphery in recent decades. De Wit et al. (2018) note that traditional host countries such as the USA, the UK, Germany, France, and Australia are encountering growing competition from emerging destinations outside the traditional core, including Russia, China, Singapore, and Malaysia.

There are a couple of explanations as to why this phenomenon occurs. Barnett & Wu (1995) argue that colonial ties of countries and the prevalence of English as a language factor depreciated over the 1990s, and economic development became a determining factor in mobility in both direction and volume. The post 9/11 period also can be claimed to have affected the ease of access to these traditional institutions in Western nations (Choudaha & De Wit, 2014). Barnett et al. 2016 also suggest that ISM clusters form around language and cultural factors. However, internationalization trends in higher education and globalization of culture can be said to have eroded these factors' determinacy. Furthermore, Zayim-Kurtay et al. (2025) indicate that non-traditional destinations such as China, Türkiye, the United Arab Emirates, and Russia have gained a spark in popularity as regional hubs, while reducing their sender roles during the COVID-19 period.

For Africa's outbound students, a similar trend towards non-traditional destinations can be observed. Although a flow into non-traditional destinations is occurring, even though France and the UK are still among the top destinations for African IS (UNESCO, 2024b). This flow of African students into non-traditional destinations is mostly shaped as a South-South flow, where students from Africa travel to countries in the Global South for higher education (UNESCO, 2024b). China, for example, has risen as a center for African students, hosting a significant portion of total outbound African students despite having no colonial or historical ties to China (Ho, 2017; Mulvey, 2021a). Lee & Schoole (2015) also indicate that African students preferred South Africa for better qualifications and better stability in the university environments that they lack at home. Brazil is another example that draws students

from Africa with scholarship opportunities and from Portuguese-speaking African countries (França & Cairns, 2020; Nogueira & Ramos, 2014).

However, despite the recent trends with ISM flows into non-traditional destinations, Africa's role in ISM can still be mostly claimed as a sender rather than a receiver. UNESCO (2024c) data estimates that today, Sub-Saharan nations have an outbound student / local tertiary student ratio of 4.96. While North Africa's ratio is at 2.75 for 2021, both regions show numbers above the world mean, which was at just 2.60 in 2021. The two regions' inbound international students / total tertiary students ratio is at 1.77 and 1.21, respectively, for 2021. In comparison, the world average on this ratio is 2.60. Therefore, it is possible to observe both an above-mean sending and below-mean receiving ratio in Africa. Additionally, according to the same dataset, from 2000 onwards, these trends stood around the same percentages, and African countries had even higher outbound student rates and even lower inbound student rates in the early 2000s (UNESCO, 2024c). The full graph can be observed in Figure 1.

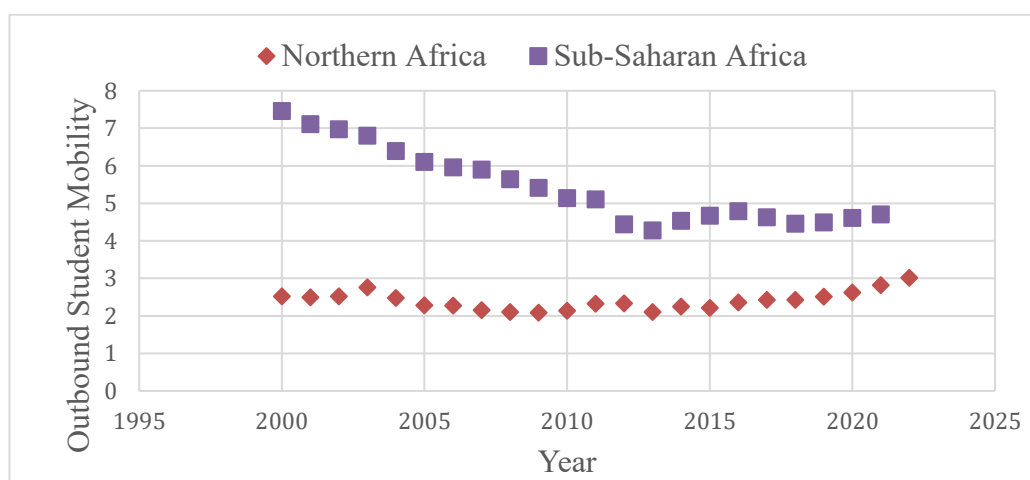


Figure 1: *Net Flow of African Outbound Mobility*

Note. Data was taken from UIS Data Browser, <https://databrowser.uis.unesco.org/>.

1.3. Student Mobility in Türkiye

Türkiye's early history of ISM is marked by the state sending hand-picked students abroad to receive a Western education in the modernization attempts of the newly established republic (Şarman, 2005; Yıldırım, 2005). However, despite an emphasis on Western education, it is still possible to argue that Türkiye has always been a regional hub, categorically. Türkiye, from its foundation in 1923, has utilized its relatively established higher education to conduct diplomatic missions. Early examples of this are, as Yıldırım (2005) exemplifies, the work Turkish embassy in Romania to recruit students from a Turkish minority group named “*Gagauz*” in 1931. Dok (2009) also describes student recruitment efforts from East Turkistan in 1937.

However, the Great Student Project (GSP), launched in the 1990s, was a turning point for ISM in Türkiye and the largest use of higher education in diplomatic goals to date. GSP aimed to bring tertiary-level students, Turkic students, to Türkiye to study, to strengthen its relationships with the newly rising republics (Terzi, 2013). However, after 2012, the Great Student Project and other programs were unified under “Türkiye Scholarships” and started serving under the Presidency for Turks Abroad and Related Communities on a larger scale. Today, Türkiye Scholarships offer scholarships to 171 different countries (YTB, 2024).

Over the years, as can be seen from Figure 2, Türkiye's net flow of students went from negative to positive, and from Figure 3, it can be seen that Türkiye has received a massive influx of international students in recent years. The Syrian civil war began in 2011, and the consequent flow of Syrian refugees and, naturally, Syrian higher education students into Türkiye entailed. Furthermore, CoHE released its first internationalization strategy document in 2017, which clearly stated the aims of

massification in international student numbers and increased internationalization of Turkish tertiary institutions (CoHE, 2017).

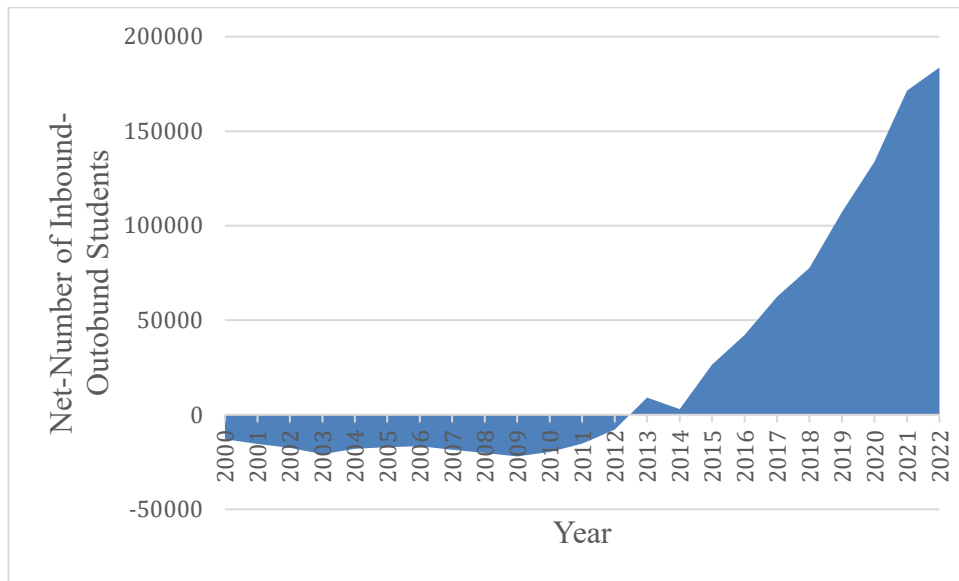


Figure 2: Annual Net Numbers of Inbound-Outbound Students to Türkiye (Numbers)

Note. Data was taken from UIS Data Browser, <https://databrowser.uis.unesco>

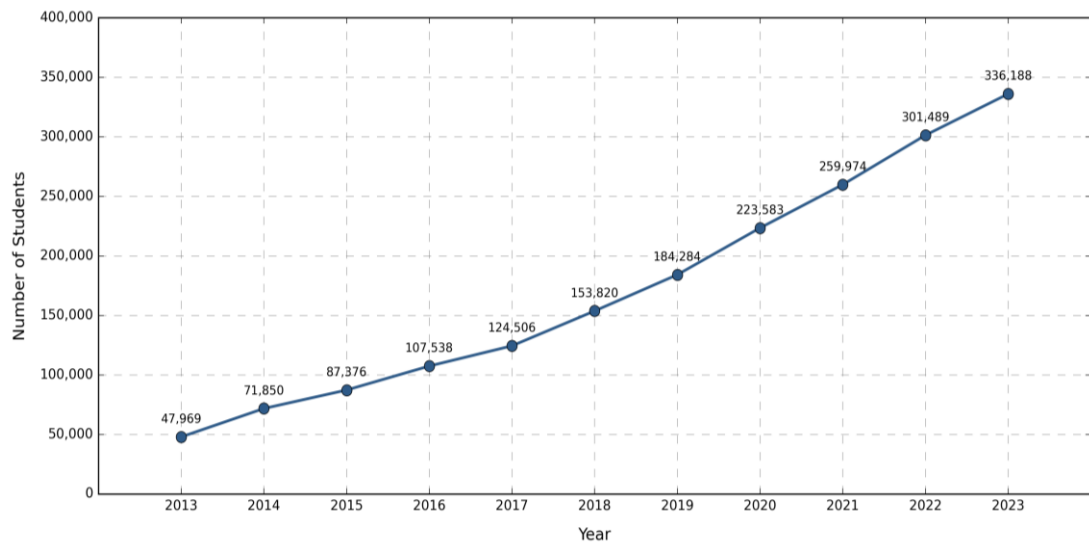


Figure 3: Total Number of International Students Plotted by Year

Note. Data from CoHE (n.d.-a), <https://istatistik.yok.gov.tr/>.

1.4. African Students in Türkiye

A clear focus on African countries, specifically, can be observed in official documents. Although not included in this study due to the inconsistency of this data over periods, the Türkiye Scholarships (2019) report indicates that approximately 35% of the total applications were from the African region, and 28% of the total scholarships awarded belonged to the region of Africa. This meant that a total of 1.339 student scholarships were awarded to African students in the year 2019. This is not an insignificant number of scholarships, as there were a total of 28.540 African students in that year. Furthermore, CoHE's (2017) report indicates a policy focus on recruiting students from Africa to study in Türkiye. As a result, it is possible to observe a massive spike in the number of African students in Türkiye from 2017 to 2022, as can be seen from Figure 4.

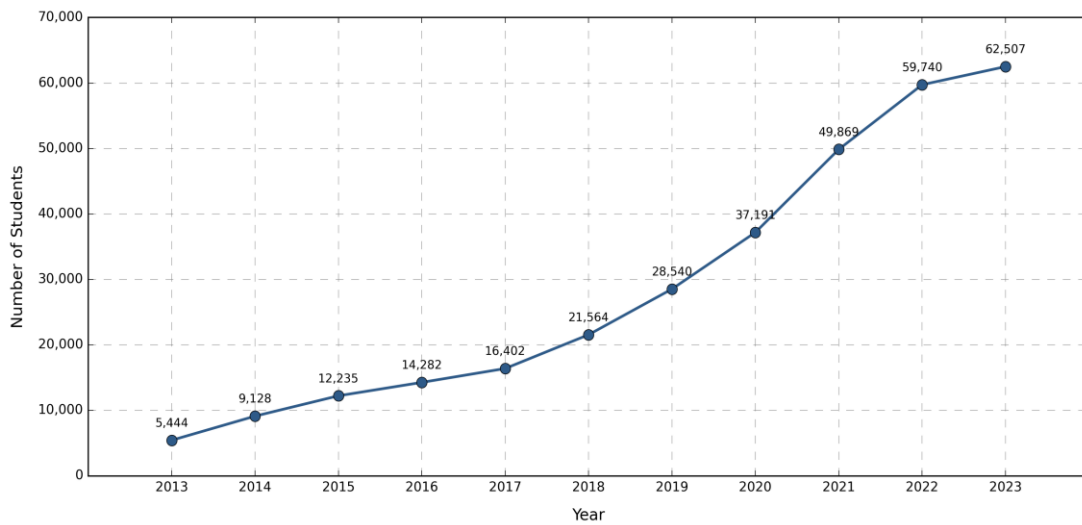


Figure 4: *The Number of African International Students in Türkiye (2013-2023)*

Note. Data from CoHE (n.d.-a), <https://istatistik.yok.gov.tr/>.

1.5. The Categorical Differences of Turkish Universities

It is possible to differentiate between types of educational institutions in Türkiye most notably, public and foundation universities. While government-supported public universities in Türkiye have traditionally existed, foundation universities are a recent phenomenon that emerged with neoliberal policies in the 1980s (Şimşek, 2022). However, these universities differ from private institutions in that they are established and funded by foundations, and they must not establish a profit-seeking business model; although this is often not observed (Kondakçı & Şenay, 2022). The literature also reports significant differences between public and foundation universities in terms of spending policy (Ergin, 2022), student acceptance criteria (Balyer & Gündüz, 2011), and lower rates of student-to-teaching staff ratio on average (Zayim-Kurtay & Kaya-Kaşıkçı, 2022).

Another categorical differentiation that can be made is the massification period in Türkiye, where the newly established universities are often criticized. Türkiye entered a period of massification to meet a lack of supply in its higher education in 2006 (Gür, 2016). This initiative aimed at establishing a public university in each province, which raised concerns of educational quality and lower quality for HE institutions across the scene (Kaynar et al, 2005). Indeed, this approach has caused a series of issues, such as subpar quality of education, difficulties in management, and faculty staff shortages (Gür, 2016; Özoğlu et al., 2016). Furthermore, these newly developed universities were often established in the not highly developed regions which caused serious physical infrastructure problems (Doğan, 2013). Additionally, it is possible to observe a similar massification phenomenon with foundation universities. The number of these institutions has increased four times as much after

2005 in accordance with the ruling party's vision to meet the higher education demand (Şimşek, 2022). However, these universities are often accused of spending significantly less resources per student (Ergin, 2022), of subpar educational practices (Çelik, 2015), and they often struggle to attract students (Erkut, 2018).

Lastly, a categorical differentiation can be made between research universities and non-research universities. These universities were established by CoHE in the “Regional Development Oriented Mission Differentiation and Specialization Project”, which entrusted these universities with a research and development focus (Maral, 2023). These universities are monitored annually on research performance and, therefore, are expected to be highly competitive in academia (Maral, 2023). Indeed, as can be seen by the list shared by CoHE (n.d.-a), these universities are often some of the oldest and most prestigious institutions in the country.

1.6. The Purpose of the Study

There has been some qualitative research that attempts to analyze why Türkiye is a popular choice for African students (e.g., Dzirwornu et al. 2016). However, these studies are often done based on international students' experiences rather than explaining the general phenomenon under a theory. Moreover, there is no study in the literature that studies the landscape of Türkiye quantitatively as a regional center for African students, nor are there any qualitative studies that focus on African countries as a whole instead of focusing on African students from a specific nationality. Therefore, there exists a gap in the literature in that there are no generalizable explanations for the African student inflow in Türkiye. This study, therefore, aims to bridge that gap in the literature through a push-pull model.

The problem investigated here is that we don't necessarily know what factors the many newly arriving African students respond to in their selection of tertiary institutions. Furthermore, it would be faulty to draw assumptions without considering how the effect of the variables differs based on categorically different types of institutions. Therefore, this study will look at the criteria across institutions, cities, and countries to determine what correlates with the number of African students in Türkiye. It will also analyze how these criteria differ based on the category of the institution modeled. These categories are: public universities, foundation universities, the universities that were established before 2005, the universities established after 2005, and research universities. This paper, therefore, has two research questions:

- What factors at the university, city, and country levels influence African international student enrollment in Turkish higher education institutions?
- How do these factors differ based on the category of institution observed?

1.7. Framework of Analysis: Push-Pull

The push-pull model originally stemmed from Lee (1966), who explained the dynamics of migrants' decision making. Chen (2006) and Li & Bray (2007) used this model to explain the dynamics of ISM. In this study, a push-pull model is used to interpret the pull factors available at the city and university levels in Türkiye. Chen (2006) describes the pull factors simply as factors that attract international students to their destination. Li & Bray (2007) highlight that certain factors can encourage students to remain in their home country (such as expanded access to higher education) while others can deter them from studying abroad, like unwelcoming attitudes following events such as 9/11. Nevertheless, due to often incomplete data for African

countries on a macro level and the fact that the model is already very complex, the study mostly concerns itself with pull factors of Türkiye.

A model with three levels was devised based on what was thought to be relevant to ISM, as indicated by the literature and what descriptive statistics of African students reveal. The first level of analysis was chosen to be the university. The fact that university academic performance and prestige play an important role in attracting ISM is well documented in the literature (Arambewela & Hall, 2008; Lee, 2014; Souto-Otero & Enders, 2015). Therefore, the *University Ranking by Academic Performance* (URAP) scores of universities are used to represent university performance and prestige. URAP score was deemed appropriate rather than a more globally known metric because it scores a majority of Turkish universities every year. Rankings that would be known more to IS, such as QS or THE, were not preferred because they only ever take the most successful institutions in the country into account, disregarding a majority of universities in Türkiye.

However, as the literature indicates that such rankings should not be relied on completely to determine the quality of universities (Altbach, 2006; Altbach et al., 2010; Hazelkorn, 2013), and because URAP scores are biased towards bigger universities (URAP, n.d.), complementary variables were needed. Although there does not exist annual data on international students and their university learning satisfaction, such a metric exists for the local students. Therefore, *Türkiye Üniversite Memnuniyet Araştırması* [Türkiye University Satisfaction Survey] (TUMA) reports released by *Üniversite Araştırmaları Laboratuvarı* [University Research Lab] (URL) are used as a second university-level performance indicator. Furthermore, the ratio of available quotas for each university and actual enrollments by Turkish students is calculated to

determine how attractive they are for the local students. This was done by utilizing annual reports released by *Ölçme, Seçme ve Değerlendirme Merkezi Başkanlığı* [Department of Assessment, Selection and Placement Center] (DASPC) on national university exam results.

Additionally, as African students are perceived as being clustered in certain universities, it became a necessity to explore how institutional policy may have influenced the ISM flow. A simple keyword search function was set up on internal evaluation reports released by Turkish institutions annually. Two keywords were deemed appropriate, one being *international student* and the other *internationalization*, to detect policy focuses' influences by the institutions.

Perez-Encinas et al. (2020), Van Mol & Ekamper (2016), and Weber (2024) report that city-level variables influence ISM. Although city-level variables are often not reported for degree-seeking students, it is still helpful to include them, as the nature of flows into non-traditional destinations is still relatively undocumented. Socioeconomic development of a city (SEGE) was taken from 5-year interval reports on districts by *Sanayi ve Teknoloji Bakanlığı* [Ministry of Technology and Industry] (MTI). Türkiye has become a source of migration and step-wise migration (Düvell, 2014; Düvell, 2018; Kuschminder & Waidler, 2020), and city socio-economic development may indeed indicate a migration intention by the students, while also signaling job availability and quality of life. Furthermore, in order to test for migration appeal of a city, the total number of foreign migrants was taken from *Türkiye İstatistik Kurumu* [Turkish Statistical Institute] (TUIK). The student satisfaction with the city was taken from the URL's *Öğrenci Dostu Üniversite Şehirleri Araştırması* [Student-Friendly University Cities Research] (ODUS), released by the University Research

Lab. This variable was included as Perez-Encinas et al. (2020) and Weber (2024) social life opportunities were important in their respective studies. ODUS, similar to TUMA, reports local student satisfaction. In the lack of presence of a report published annually on international students, however, the usage of this data was deemed appropriate.

A main focus of the public debate regarding African students is the fact that they cluster in some of the universities. Therefore, in order to test this, the outcome variable at ($t-1$) is included to see whether the past number of students explains the future number of students over the same university-sending country combinations. A lot of other options for this level were considered, such as colonial history, unemployment rate, the number of news reports of humanitarian work done by Türkiye in government channels, etc. However, it was deemed appropriate that such research questions be evaluated under a gravity model that focuses explicitly on bilateral country movement. Furthermore, the model was deemed complex enough as is with the inclusion of other variables.

The visualization of the model can be seen in Figure 5, which will be applied across 6 different datasets in order to evaluate how African students' preferences change depending on the type of institution. These are: all universities, public universities, foundation universities, universities that were established before/after the massification period, and research universities.

1.8. Significance of the Study

The research problem is significant in consideration of Africa's booming young population. According to the World Bank (2024), Africa today has the world's youngest population, with approximately 873 million people aged 0-24. UNESCO

(2024d) reports that the tertiary enrollment ratios are increasing in Africa and have more than doubled in the 2004-2024 period. It can be claimed that these will, in return, cause more internationally mobile African students in the incoming years, by Teichler's (2017) claim that tertiary student and outbound student ratios have remained mostly consistent throughout the years. Seeing what factors at the institution/city/country levels the African students' mobility is favored can also be vital to policymakers who may want to make informed decisions about this inflow of African students.



Figure 5: *Multi-Level Correlational Design Study on Incoming African International Students*

Additionally, the topic of African students is a topic of interest in terms of international policy. Türkiye's official policy is to provide African students with

education that can contribute to the diplomatic and economic cooperation between parties and Türkiye's international vision (*Milli Eğitim Bakanlığı* [Ministry of National Education], 2014; YTB, 2019). This study's results can help researchers and policymakers understand whether African students are distributed in a way that aids the vision of Türkiye's foreign policy. Furthermore, learning what factors seem to correlate with African student flow can further the understanding of why a flow into regional hubs occurs.

The study is also significant to the understanding of ISM patterns for different categories of universities. Because foundation universities are struggling with demand (Erkut, 2018), the study's results could indicate whether this gap is being met by international students from a particular region. Additionally, looking at how ISM is affected due to the massification of higher education can give unique insights regarding the phenomenon.

Another significance of the study comes from the health crisis that occurred in 2024 at Karabük University, where massive numbers of unregulated African students were thought to be the culprits. Although university management and City Health Governance have denied these claims (Anadolu Ajansı, 2024), the news of this phenomenon has become a prominent point of hot political debate. Consequently, whether Türkiye should host this many African students, the nature of institutions these students enroll in, and the clusterization of African students in universities such as Karabük and Kütahya Dumlupınar have also become topics of debate. This study's results can't explain student agency or unique cases like Karabük. However, it can nevertheless explain the preferences of African students and whether a country-level network effect can be attributed to be the main cause for enrollment. Furthermore, this

political debate has created a public pushback towards ISM. Therefore, it has become a necessity that this phenomenon should be studied in order to properly conduct affairs related to ISM in Türkiye.

Additionally, ISM is often studied on a micro level concerning the students. Macro-level studies on ISM are often done at the country level and the institutional level. There are only a few studies that evaluate ISM quantitatively on city-level variables (e.g., Van Mol & Ekamper, 2016; Weber, 2023). This study does a comprehensive analysis at the country, city, and institution levels to study ISM, which is not common in the literature. Furthermore, there are next to no studies that evaluate ISM in Türkiye at a macro level, which should close this gap if only a little.

1.9. Definition of Terms

An international student is defined as a person who physically moves between two countries to receive tertiary education (Richerts & Teichler, 2006).

Traditional destinations are countries that are in the West (The United States and Western Industrialized Countries) that attract huge bodies of student flow (Chen & Barnett, 2000).

Non-traditional destinations and regional hubs are countries in the periphery and semi-periphery that attract significant student flows (Kondakci et al., 2018).

Internationalization of higher education refers to the process of integrating an international dimension to the functions of higher education (Knight, 1994).

Core countries are the centers of the capitalist/imperialist production system (Wallerstein, 1974).

Periphery countries are countries that are not economically developed and are also often economically dependent on core countries (Wallerstein, 1974).

Semi-periphery countries are countries that have some industrialization; however, they are not as developed as core countries (Wallerstein, 1974).

Similar to Chen & Barnett (2000), this study uses Wallerstein's distinguishment between the core, periphery, and semi-periphery as a distinction made on academic hegemony that mimics the economic and political hegemony of countries.

CHAPTER 2

LITERATURE REVIEW

2.1. Internationalization of Higher Education in Türkiye

Türkiye's history of internationalization in its higher education can be traced to a Western-centric approach. Gürüz (2003) argues that Turkish tertiary institutions have been heavily influenced by Western approaches to the point of copying their systems entirely rather than relying on an expansion of internal dynamics and traditions. This is perhaps not a surprising result, as both Gürüz (2003) and Şimşek (1999) argue that this dependency is a result of Türkiye's predecessor, the Ottoman Empire, not having strong higher education traditions in the Western sense.

This Western-centric understanding of higher education resulted in universities being established based on the continental model in the early 1930s and the Anglo-Saxon model in the 1950s (Gürüz, 2003). The establishment of new tertiary institutions under the Anglo-Saxon influence is explained by Türkiye's shift towards Anglo-Saxon ideas in the economy and its horizons extending beyond continental Europe (Barblan et al., 2008). Today, the universities established during these periods are considered the flagship HE institutions of the country, and many of them are listed as research universities by CoHE (n.d.-a).

It is also possible to see English being practiced as a medium of instruction during this period. Middle East Technical University, a university that was established in 1956 as part of the Anglo-Saxon tradition with the United States giving support, used English as its primary language of education (Üsdiken et al., 2013). This approach to freedom in the selection of language continued until 1984, when a law was established requiring explicit permission from CoHE (Üsdiken et al., 2013). This approach continued until 1994, when a law was enacted that permitted only 5 universities to deliver instruction in foreign languages, which was revoked shortly after, and in 2008, total freedom was given in the language of instruction (Üsdiken et al., 2013). However, contemporary education in Türkiye is still being done in Turkish for the most part, and international staff in Türkiye therefore remains low in numbers (Şahin, 2017).

The 21st century, however, was a period of rapid change in Türkiye's higher education scene, which coincided with the period Turkey became a candidate to join the European Union in 1999 and the subsequent changes it entailed. Participation in the Erasmus program in the 2004-2005 academic year is another significant factor in Türkiye's internationalization history (Şahin, 2017). Şahin (2017) shows that although the numbers of Türkiye's outbound staff and international students continue to grow, the outbound numbers outweigh the incoming staff and international students. A contemporary process in 2001, the Bologna reforms, also began in 2001, which introduced the ECTS (European Credit Transfer System) and Diploma Supplements (Şahin, 2017). The removal of central examination for international students was also implemented in 2010, where universities could make decisions on recruitment on their own (Şahin, 2017).

Internationalization strategy policy by CoHE can be examined for the contemporary internationalization policy of Türkiye. The internationalization strategy report for 2018-2022 (CoHE, 2017) reveals that internationalization is focused on increasing ISM and bilateral connections. This fact can be observed from the main goals listed, as 3 of the 6 main goals focus on increasing the ISM flow: increasing the accommodation availability for international students, works of internationalization focused on particular countries, and expanding the scholarship opportunities for international students. The remaining 3 goals are focused on the international recognizability of Turkish universities, cooperation between Turkish tertiary institutions in the focus countries, and works of internationalization focused on pilot universities. It is helpful to note that only 2 African countries are listed as the focus countries: Sudan and Egypt, which nevertheless make up a significant portion of the African IS in Türkiye.

2.1.1. Student Mobility in Türkiye

However, the most impactful internationalization project of Türkiye is, without a doubt, the Great Student Project (GSP). Following the dissolution of the Soviet Union, Eurasia opened as a zone for political influence and opportunity. Türkiye, in the period following 1992, reached out to the “Turkic Republics” and assumed a leadership position due to both historical ties and democratic state-building experience (Dal & Erşen, 2014; Köstem, 2019). However, one of the most prominent tools used by the Turkish government during this period was the grants and invitations granted to students from these countries to study in Türkiye under GSP. The program in 1992 involved 5 countries (Azerbaijan, Kazakhstan, Turkmenistan, Kyrgyzstan,

Uzbekistan) (Terzi, 2013). It was extended to include 57 countries by the project's end in 2012, with various Balkan and Caucasus states added. The results of GSP were mixed in terms of success. From 1992 to 2012, a total of 42.318 scholarships were made available (Terzi, 2013). However, only 31.037 of these scholarships were taken by the students (Budak, 2012). Furthermore, as of the end date of the project, only 8.914 of these students graduated by the project's end, and a total of 16.138 stopped continuing their education (Budak, 2012).

In 2012, Türkiye Scholarships emerged as a successor to GSP, which unified the governmental scholarships distributed by Türkiye and extended its scope to other countries around the globe (Türkiye Scholarships, 2012). These scholarships offered very generous benefits that continue to be offered as of 2024 (Türkiye Scholarships, n.d.-a). These benefits include health insurance that Turkish citizens take advantage of, tuition fees, accommodation, monthly financial aid, travel aid, and free Turkish language instruction (Türkiye Scholarships, n.d.-a). However, the biggest change from GSP was that Türkiye Scholarships did not place any restrictions on the country of origin of the applicant. Approximately 40.000 applications were made to Türkiye Scholarships at the time of its launch in 2012 (Türkiye Scholarships, n.d.-b).

It is also possible to observe various challenges with Türkiye Scholarships, however. The scholarship program entails a year of Turkish language education, even if the language of instruction is in English (Türkiye Scholarships, n.d.-c). However, problems of language barrier in both social and academic life were often reported by the international students both inside and outside the program (Aras & Mohammed, 2018; Tok, 2023; Yılmaz, 2018). Indeed, it can be considered quite unrealistic that international students participating in this program can be expected to adapt to the

Turkish language in both academia and social life with only a year of education provided. Especially so if the student's native language does not have linguistic proximity to Turkish. Aras & Mohammed (2018) also reveal that some students report that they had expected to see world-class universities and were disappointed by the rigidity of the Turkish education system.

It should be noted that Türkiye Scholarships has a scope beyond the scholarships it provides. An explicit focus on soft power can be observed from a placed emphasis on forming "Türkiye Graduate Networks" from YTB (2019), where the graduates from these programs are encouraged to be emissaries of the bilateral bonds established between the countries. It is also possible to observe interviews done with the YTB executives and government officials regarding the soft power goals, expressing similar aims (Aras & Mohammed, 2018). Indeed, Ergun et al. (2025) indicate this goal being achieved in the case of Azerbaijan. However, they also indicate that these soft-power related goals are achieved in the light of already existing relations, rather than a standalone achievement perpetuated by ISM.

The matter of forcibly displaced migrants also plays a huge role as far as Turkish ISM is concerned. As of 2022, Türkiye is still the country with the largest number of refugees present (International Organization for Migration (IOM), 2024), including Sub-Saharan countries that are facing political turmoil, such as Sudan. Nevertheless, the bulk of the refugees come from the Syrian Arab Republic, which is ranked as the 2nd biggest after the Mexico-US corridor (IOM, 2024). As a result, there are a lot of Syrian students in Turkish higher education. Studies indicate that such forcibly displaced migrants use higher education to reconstruct their lives and identity (Arar et al., 2020; Kondakci et al., 2022). These studies report the geographical and

cultural proximity of the origin countries and Türkiye’s open door as one of the key factors in choosing Türkiye as a destination country.

Migration intentions can also be seen as one of the driving reasons for physical mobility, as indicated by the literature (Teichler, 2015). Even though such migration is often described as being made towards economically developed countries (Chen & Barrett, 2000), the studies show that Türkiye has become a destination for both migration and stepwise migration (Düvell, 2014; Düvell, 2018; Kuschminder & Waidler, 2020). However, the same studies point out that a considerable percentage of participants in these studies plan on moving to the EU after Türkiye. Schapendonk (2012) reports Türkiye and Morocco as major destinations in this process due to their geographical proximity to the EU. Furthermore, Kondakci (2011) also reports that staying in Türkiye after graduation was not found as a key rationale among participants from all regions, including Africa.

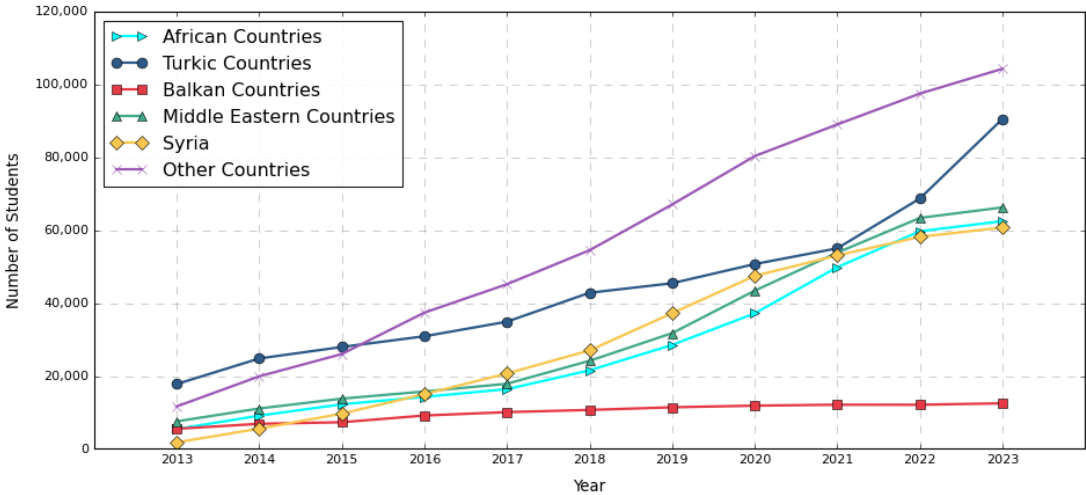


Figure 6: *The Distribution of International Students in Türkiye by Region of Interest*

Note. Data sourced from CoHE (n.d.-b).

In any case, as can be seen from Figure 6, the majority of ISM in Türkiye comes from either politically or historically linked countries, although a not insignificant flow

from other countries can still be observed (CoHE, n.d.-b). There are a few other explanations for this phenomenon that can be put forward, other than policy focuses towards increased ISM. One such explanation can be the debasement of Turkish currency following the year 2017 increased the volume of incoming ISM, which is supported by the literature on exchange rates and tourism in Türkiye (Akay et al., 2015; Ölmez & Çiftçi, 2023) and ISM literature (Zheng, 2014). Another explanation could be the political reforms that occurred in 2018 in Türkiye, where it can be argued that policymakers found an easier political environment to actualize their ISM goals.

2.2. African ISM

Africa has a history of higher education that dates back to its pre-colonial history. Lulat (2003) states that contemporarily advanced learning centers existed in Egypt, Timbuktu, and Ethiopia. An example is Al-Karaouine University in Morocco, which Esposito (2003) names as one of the oldest functioning universities. Teferra (2008) also states that it was possible to observe both student and scholar mobility from outside and inside the continent, long before the European involvement. However, it is possible to say these centers appeared as part of the Islamic and Christian traditions, and it can't be said that such institutions existed in Sub-Saharan Africa outside Timbuktu.

Teferra (2008) argues that whatever higher education tradition on the continent was replaced with that of the Europeans. This does not necessarily mean that Europeans led a campaign of higher education accessibility across Africa, however. For example, Lulat (2003) states that French colonies did not prioritize education in colonial Africa, as they saw the colonies as an extension of France, and they thought mainland France necessarily covered the educational needs of the country. Lulat

(2003) also point out that the British established the University of East Africa. Nevertheless, during colonization of Africa, several higher institutions with ties back to the European continent were established, which inherently made these institutions internationalized (Lulat, 2003; Teferra, 2008).

Wallerstein (2004) describes colonialism as a way of incorporating countries in the periphery into the world-system, while avoiding other countries than the colonizer influencing the region. Grosfoguel (2008) describes post-colonialism as a period of continued coloniality, where the countries in the non-periphery maintain their relations to colonial powers under similar terms. In this post-colonial period, post-colonial relationships heavily influence student mobility patterns, as indicated by the literature. Kishun (2011) indicates that the distribution of outbound African ISM is mainly directed to the colonizing countries of a particular African state. This rate is reported to be 51% at the time. Besides that, South Africa, with 21% for Sub-Saharan countries and North America with 20%, appears as strong attractors of African ISM.

This tendency to go to former colonial countries is explained by linguistic and cultural similarities (Maringe & Carter, 2007; Zheng, 2014). Post-colonial relationships also heavily influence student mobility patterns due to the bilateral connections between countries and the political landscape (Madge et al., 2015). Raghuram (2009) argues that the flow of students from colonies to colonizer nations is also an early indicator of brain drain, and today, many of the routes established in the colonial system are still in use. Zheng (2014) indicates that the influence of various projects conducted by the UK government assists the flow of international students from the UK's former colonies to the UK.

However, in the 21st century, a different political landscape can be observed to influence ISM flows similar to colonialism. Pieterse (2011) describes the international arena post 9/11 as a movement from unipolarity (The dominance of the US after the Cold War) to a multipolar order (Where counter-hegemonic powers are present). Donelli (2021) points to the fact that Africa is in a prominent position due to its natural supply of raw materials and that major powers compete for exclusive rights to these. Lee (2006) coins this situation as “The 21st Century Scramble for Africa”, where, with the changing power dynamics, countries like the US and countries in the Global South (China, Brazil, and India) compete for the continent’s resources. Mulvey (2021b) explains the flow from Africa to China in consideration of the economic relationships between and it is perhaps no surprise that African students make up significant proportions of total inbound internationally mobile students in countries like Brazil and India (UNESCO, 2024b), which have neither cultural nor historical ties to Africa.

Although economic and socio-cultural opportunities attract African students to non-periphery regions, it can’t be said that all African students view these non-periphery countries as a permanent new home. Dzirwornu et al. (2016) and Farah & Barack (2019) point out that African students in Türkiye often express a desire to move to the West and see Türkiye as a gateway to Africa. Mulvey (2021a) also expresses that African students across socio-economic backgrounds do not consider China as a place of integration. Case studies such as Li & Sun (2019) also reveal that a majority of African medical students have an intention of going into Western countries or returning home as their post-study plans.

Additionally, regional hubs that attract African students in Africa can be observed, although Africa remains a mainly sending region. Woldegiorgis & Doevenspeck (2015) name South Africa as one of the most prominent examples of this, attracting students from the South African region en masse after the end of the apartheid state. While South Africa's prominence can be argued to be because of a mixture of quality education and English as a medium of instruction, Chien & Kot (2012) indicate that South Africa is also becoming a destination for Francophone countries. Woldegiorgis & Doevenspeck (2015) also point out that Angola is receiving students from other Portuguese-speaking countries in the region. Woldegiorgis & Doevenspeck name the growing economy of Angola, the relative peacefulness of Angola compared to other regions, and recent improvements as the reasons why Angola has started attracting IS from other African countries.

Kaya-Kasikci & Glass (2025) indicate that Morocco has risen as a regional education hub for African ISM. Berriane (2015) names Morocco's position as a transit country for Sub-Saharan students and Morocco's efforts to form alliances with Sub-Saharan countries as the reasons Morocco has managed to become a center for students from Sub-Saharan Africa. Uganda is another regional hub in Africa that attracts students mainly from East Africa, retaining its status as a regional hub for African students since the colonial period (Woldegiorgis & Doevenspeck, 2015).

Furthermore, the COVID-19 period has also affected the regional mobility in Africa in favor of the regional hubs within Africa. Obadire et al. (2020) suggest that countries such as Kenya, Uganda, and Egypt have strengthened their receiver positions in the intra-African mobility. Furthermore, Zayim-Kurtay et al. (2025) argue that the

restrictive receiving policies of popular countries and students' concerns during this time have strengthened the receiving roles of African countries.

Literature can also be reviewed in terms of push-pull factors at the individual level for African students. Maringe & Carter (2007) in their study based on the UK, find that prominent push factors are economic, political, and a lack of higher education capacity. They also find that prominent pull factors for the UK are the international recognition of credentials acquired from the UK, the teaching and learning environment, international education experience, and straightforwardness of the application process. Gbollie & Gong (2020) in their study about African Students in China also find that the students prefer China as a destination because they perceive a foreign degree to be better than one they can acquire at home. The students in the study also list career development and personal development as important goals, while they list entertainment at a lower value. Furthermore, a brain drain phenomenon can be observed in Africa, where permanent migration can be a pull factor for lucrative fields such as medicine (Ojo et al., 2023).

In summary, the African ISM landscape can be described as being heavily influenced by post-colonial landscape and linguistic ties due to its history of colonialism. However, this mobility is increasingly changing in the 21st century due to new political alliances and economic relationships. As a result, even though there are regional hubs that are emerging within Africa to meet the demand for higher education, Africa's outbound mobility continues to expand to regional hubs outside Africa that go beyond colonialist and lingual ties.

2.3. Turkish-African Relations

Türkiye's Africa policy is often evaluated under two parts: North Africa and Sub-Saharan Africa. Northern Africa has historical, cultural, and religious ties to today's Türkiye due to being a part of the Ottoman Empire. This region, therefore, has managed to find itself to be prominent in African studies in Türkiye (Tepeciklioğlu, 2016). However, the Turks have historically neglected most of Sub-Saharan Africa in their foreign diplomacy and literature (Donelli, 2021; Tepeciklioğlu, 2016). This neglect reached its peak during the early Republican era, when the country followed a more isolationist approach in its foreign policy (Donelli, 2021). Tepeciklioğlu (2017) states that Türkiye has taken a relatively passive stance towards these regions until recent decades.

This passive stance towards Africa ended in the late 1990s, when an active Africa policy was drafted by İsmail Cem, in combination with the newly emerging business leaders seeking new markets (Hazar, 2012). Reviewing this plan by Türkiye's Strateji Araştırma Merkezi [Center for Strategic Research] (CSR, n.d.) is possible. The plan consists of goals that include an increased number of embassies, visits made to Africa by top government officials, the development of transportation between Türkiye and African countries, establishing African studies as a discipline in Türkiye, etc. It is also possible to observe established trade connections during this period, where direct investment of Turkish companies to Africa rose from 400 million USD to 6.2 billion USD in the 2007-2016 period (Tepeciklioğlu, 2017). However, the most important goal stated in this plan for the scope of this paper is "Increasing the number and amount of scholarships awarded to African students.", which indicates a continuation of soft-power policy using higher education similar to the GSP. The CSR

states that there were 18 thousand African students who received scholarships between 2012 and 2022, which is not an insignificant number.

It is also helpful to notice Türkiye’s connection to the Horn of Africa region, with some of its regions, Türkiye also has historical ties. Bereketeab (2013) describes this region as severely underdeveloped, suffering from poverty and political instability. Türkiye’s involvement in the region dates back to 2008, when Türkiye’s humanitarian involvement in Somalia eventually transformed Türkiye’s position into a regional peace-maker (Donelli, 2021). Donelli further points out that Türkiye’s model of engagement in the region has been a mixture of economic development and emphasis on cultural similarities, such as the Muslim identity.

Nevertheless, these policies and established economic connections can perhaps be observed in Figure 7, where countries from Eastern Africa and Northern Africa make up the largest portions of the sending regions from Africa.

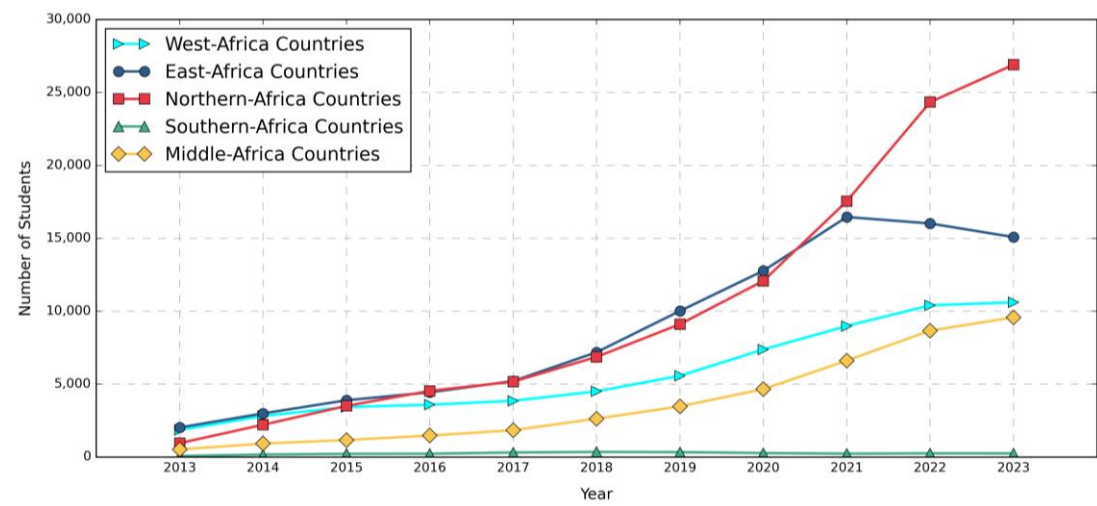


Figure 7: *The Distribution of African International Students by Region of Interest*

Note. Regional categorization is based on the UN Geoscheme for Africa. Data was taken from CoHE (n.d.-a), <https://istatistik.yok.gov.tr/>.

2.4. Push-Pull Factors

2.4.1. Country Level

A useful starting point for examining the push and pull factors influencing students' decisions is the international migration literature (Kondakci, 2011). According to Massey et al. (1993), economic motivations for migration stem from wage disparities between origin and destination countries, as well as imbalances in labor supply and demand across borders. Borjas (1990) argues that international migration occurs because individuals want to maximize their earnings, where migrants make a calculation based on the probability of risks and economic gain. Stark & Bloom (1985) argue that the movement of individuals depends on the maximization of a group of people rather than the individual, such as family or relatives. Indeed, Kondakci (2011) and Wolfeil (2009) connect these economic rationales to student rationales for ISM, and it is only natural to observe that this flow is directed towards economically developed countries.

Massey et al. (1993) also point to World Systems Theory by Wallerstein (1974). This theory argues that in the new age, the flow of migration from periphery to non-periphery happens due to the capitalist interests of the firms and nations, and this, in return, creates a flow of international migration. This flow of migration happens in the peripheral countries due to changed dynamics due to capitalism (i.e., private gain, individualism, social change), and the economic/cultural links formed between the countries. Castles & Miller (1998) further argue that such a movement is especially prevalent in the light of globalized culture.

The application of the World Systems Theory is quite popular in ISM literature and is utilized to explain why ISM flows occur from the periphery to the non-

periphery. Chen & Barnett (2000) claim that Western (core) countries as holders of resources and knowledge, while the periphery countries can't attract international students due to limited technical and educational capabilities. They also argue that the flow of ISM happens as a way to maximize returns to the labor they provide. Knight (2004) argues that the sectoral and national development of both sending and receiving countries is a main reason behind the flow. Altbach (2003) argues that the developing and non-developed countries in the periphery can scarcely afford quality research universities. Altbach also argues that countries with a colonization history rarely developed universities, and as such, the flow into traditional destinations is expected. Altbach points out that some parts of Africa, for example, didn't observe the first types of these institutions until as late as the second half of the 20th century.

Massey et al. (1993) list other factors that influence migration outside economics. Network effects consist of interpersonal connections between people and the people who are in the destination country. These cross-nation networks, in return, enable the people in the origin country to migrate with decreased risks and costs. Weber (2024), for example, points out that the total number of students from a nation predicts future enrollments from that sending nation, which indicates a cross-nation network of ISM. Institutions (both voluntary and private) can also act as mitigators between the people who want to migrate and the volume that the host countries are willing to take. Indeed, it is possible to observe student agencies that play this role (Pimpa, 2003; Jiang, 2015).

It is possible to speak of other dynamics at the country-level for ISM beyond what Massey et al. (1993) indicate, however. For example, the push-pull factors should not be interpreted as mitigators between the two ends of a corridor. A push or a pull

factor can cause ISM to be directed towards other countries. Chen (2006), for example, reports that Asian students are drawn to Canada instead of the US because of visa-related problems. Schapendonk (2012) reports that the desire to migrate to Europe draws in students to countries such as Morocco or Türkiye due to their geographical proximity to Europe. It is also possible to observe countries that offer pull factors outside of economic factors. Chen (2006) reports that for Asian students in Canada, a multicultural and tolerant environment is a major pull factor. Ergun & Kondakci (2021) and Kondakci (2011) indicate that cultural proximity is also important in the host country. Furthermore, Park (2009) finds that the students' perception of the host country can be reflected in their view of the host country's universities, especially in a lack of information or unfamiliarity with the host country's universities.

2.4.2. City Level

While it may seem counterintuitive that students would rather base their decision-making on cities than universities, the research indicates a contrary pattern. Van Mol & Ekamper (2016) put forward that Erasmus students are drawn to big cities rather than the top-of-the-line institutions. even though studies for non-European students are very scarce. Perez-Encinas et al. (2020) employ a Latent Dirichlet Allocation (LDA) to look for patterns in reviews of international students. They find that students do place a lot of emphasis on city and social life during their stay, although different preferences for bachelor's and master's students can be observed. Weber (2024) also reports that HEIs in the Netherlands use city life as a selling point for IS. Lee (2014) also reports that living costs are considered an important aspect by the students.

The distribution of African students for the top 20 Turkish cities in African student numbers can be seen as follows in Figure 8. Even though the students show a clear preference for Istanbul, which is both socioeconomically developed and populated, cities that are not particularly populated or developed are still favored by the African students.

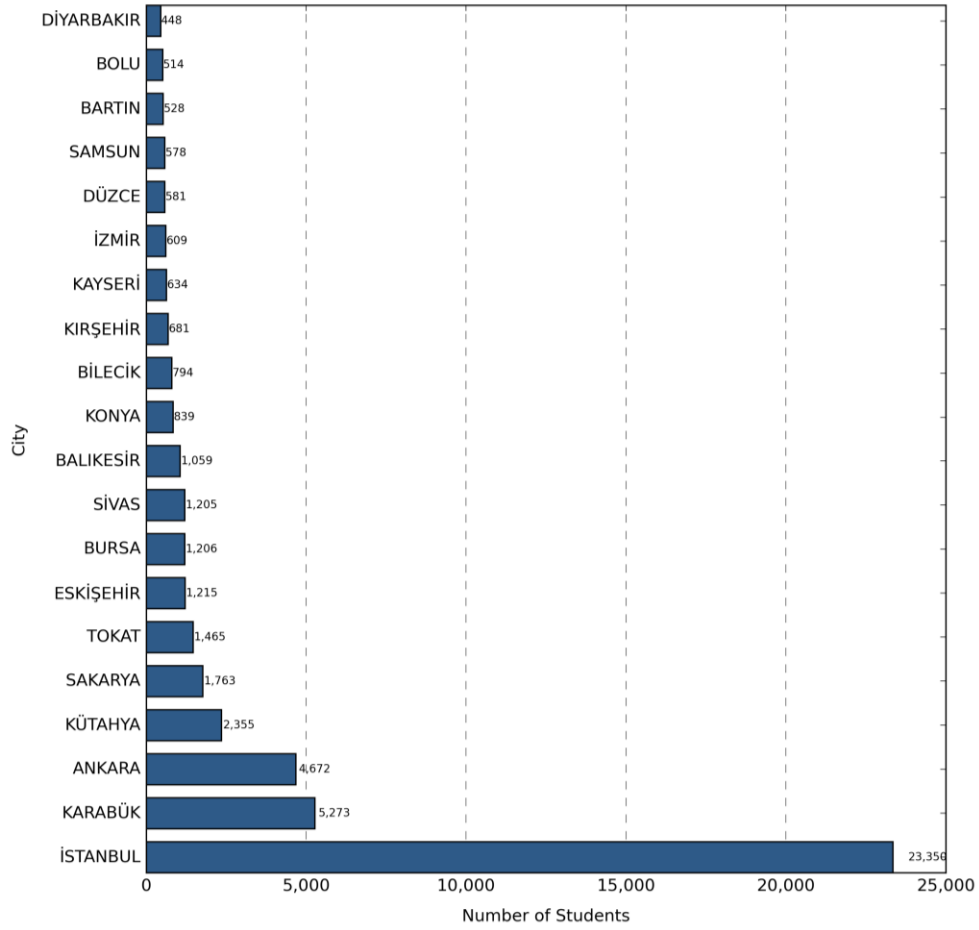


Figure 8: *The Distribution of All African International Students by Cities in 2022*

Note. Data was taken from CoHE (n.d.-b), <https://istatistik.yok.gov.tr/>.

2.4.3. University Level

At the university level, instructional methods/quality, international recognition of courses, prestige of the university, and support availability for international students

are deemed pull factors (Arambewela & Hall, 2008; Lee, 2014). Knight (2004) also deems higher education policies and facilitator programs, such as language training opportunities are important for ISM. Mazzarol & Soutar (2002) indicate that recognition of their qualifications was one of the strongest considerations for ISM. Another interesting finding of their study was that the recognizability of their previous education qualifications was deemed very important by the students as well, which could indicate that the education systems' similarity between sending and host countries is a factor.

University rankings are another aspect that is deemed very important in the literature due to them signaling the quality of the universities in the eyes of ISM (Souto-Otero & Enders, 2015). Various studies (Altbach, 2006; Altbach et al., 2010; Hazelkorn, 2013) indicate that university rankings should not be relied on solely as a determinant of quality in universities due to the in associated methodology in calculating them. However, De Wit (2020) describes university rankings as the pathway to internationalization and ISM, as the competition for funding and talent increases. De Wit also points out consequently, both global and local rankings have become an important goal for many institutions and even national governments.

When universities in Türkiye are looked at, however, it is possible to observe different phenomena than what is often described. From Figure 9, it can be seen that African ISM seems to favor universities that are neither particularly visible on global rankings nor are considered academically successful if URAP rankings are looked at (URAP, 2022).

University policies, such as establishing partnerships with other universities or the use of technology for extending visibility of the institutions, are named prominent

strategies institutions use (Choudaha et al., 2013). Falcone (2017) and Asaad et al. (2013) point out how having cultural awareness and being aware of the educational systems contribute to attracting IS. Russel (2005) also argues that early and later bureaucratic experiences influence students' decisions to apply. The literature also suggests that international student fairs and working with recruitment agencies are very prominent tools HEIs use to attract IS (Gök & Gümüş, 2018; James-MacEachern, 2018).

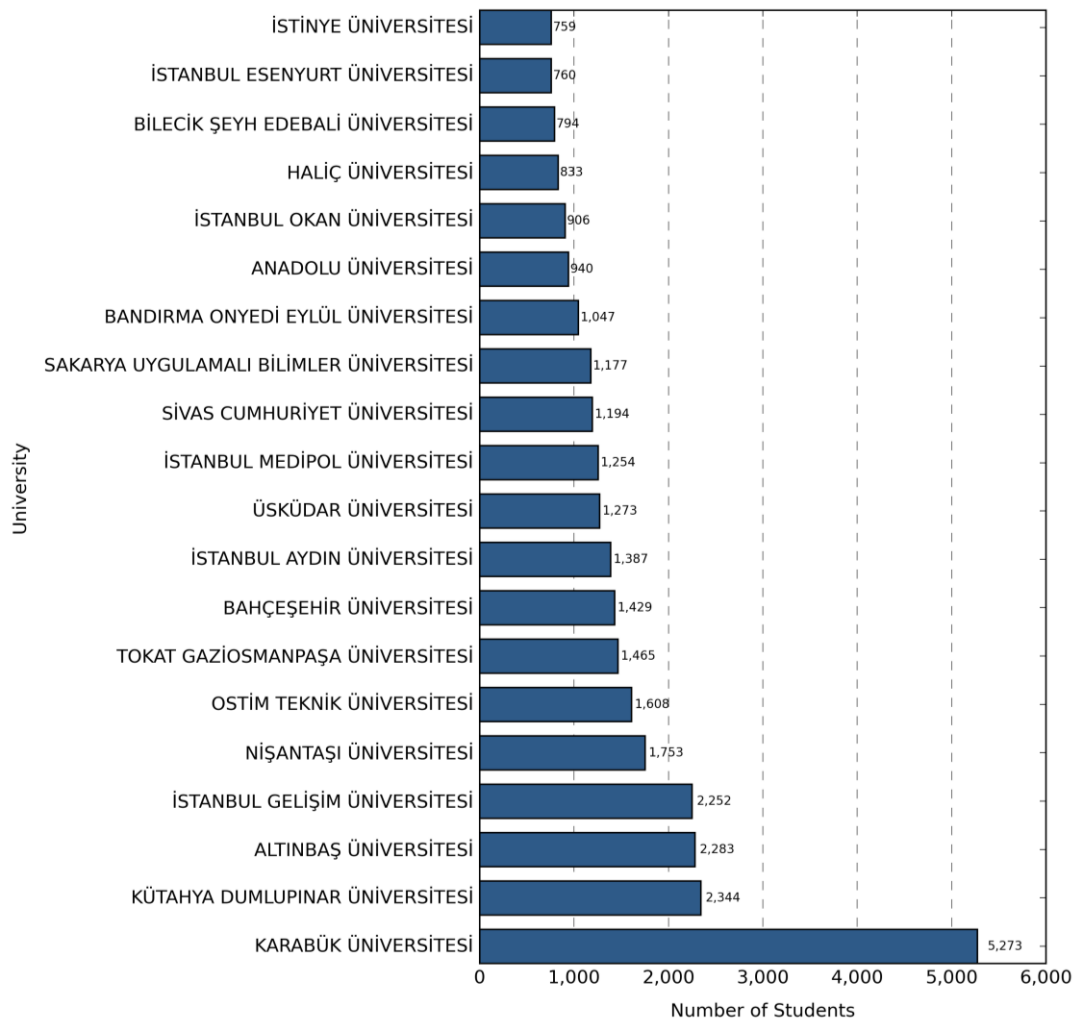


Figure 9: *The Distribution of African International Students by University in 2022*

Note. Data was taken from CoHE (n.d.-b), <https://istatistik.yok.gov.tr/>.

2.5 Summary of the Literature Review

The literature reveals that university-level and city-level factors shape ISM. Additionally, the literature suggests that the ISM is heavily shaped by bilateral connections between countries and their positions in the World System. However, new regional hubs are emerging as competitors to the traditional and still popular countries. Africa's ties to these regional hubs depend on economic and post-colonial dynamics and, naturally, its history of higher education. Türkiye is using ISM as a foreign policy tool, and perhaps as a result, a serious inflow of African IS to Türkiye can be observed. This flow is hoped to achieve economic and cultural connections between Türkiye and the countries of Africa.

CHAPTER 3

METHODOLOGY

3.1. Design of the Study

This study was designed as a correlational study utilizing existing datasets at the country, city, and university levels to determine what correlates with the inbound ISM from Africa to Türkiye. While micro-level studies can be argued to provide better insights into the study, it is often very difficult to generalize them, as they often take place on a small number of HEIs. Such micro-level studies are also often biased on the strengths and weaknesses of the institutions studied (Hemsley-Brown & Oplatka, 2015). Furthermore, in such studies, it is not possible to model why students do not prefer one institution over the other, which macro-level studies can accomplish.

Additionally, this study models the aftermath of the decision-making by the students rather than relying on the reasons given in self-reported data by the international students. While insightful, the reliance of literature on these studies based on self-reported data brings about two caveats. The first caveat is the intention-behaviour gap, where what people report they want and what they do are often inconsistent (Sheeran & Webb, 2016). The second caveat is the choice-supportive bias, where a person may make a decision without fully comprehending the reasons behind it, but still can come up with reasons after the fact (Kafae et al., 2021). Therefore,

modeling actual enrollment decisions made by the students may bring about results that are not reported by such studies. This is especially the case for Türkiye, which relies almost entirely on studies at the micro-level that study students' decision making (e.g., Kondakci, 2011) on its understanding of ISM.

There are 6 sets of data analyzed in this study that use the model proposed in Figure 5 (Chapter 1): All universities, foundation and public universities, universities founded before and after 2005 (The year of foundation was taken from CoHE (n.d.-c), which indicates no universities were established in 2005), and research universities. The reasoning for the split into foundation and public universities is that these are expected to show different patterns due to financial factors. Additionally, foundation universities in Türkiye are a relatively new phenomenon, and ISM patterns regarding these universities are relatively undocumented. The reasoning for the split by time of foundation is to analyze whether younger universities that appeared during the massification period after 2005 exhibit different patterns. Furthermore, the research universities (CoHE n.d.-a), which have both public and foundation universities among them, will give additional insights in regards to how African students make their decisions among the top universities. Additionally, it is a time series study in the period between 2018-2022.

The study analyzes the longitudinal data between 2018-2022. Initially, the 2017-2022 period was considered for analysis as it was the largest range for which a complete dataset existed. However, due to convergence issues across different R libraries, it was selected to be the 2018-2022 period. This period can also be coined as the rapid increase period in African student numbers.

3.2. Outcome Variable

The outcome variable is the total number of students from a certain country of origin present in a particular university, in a particular city, and in a particular year. While in a perfect scenario, the total students from a particular nationality would be used to predict future enrollments from that nationality, this information is not publicly available. Therefore, the study uses the total students as the outcome variable. This variable was taken from CoHE's statistics website *yokistatistik.com*, which is a governmental website for university-level information.

The period of the data includes entries specific to education periods t to $(t + 1)$, i.e., the 2018-2019 period from September to July. Although some of the data that was used in this study also shares its data in the same form, some do not. Therefore, it was decided that the data was merged for t rather than $(t + 1)$, as the students are more likely to base their decisions on the preceding year than the following year. An example of this would be that for the 2018-2019 period, 2018 UNESCO data was used. It is helpful to keep in mind that this approach also caused the outcome variable for 2018 to show up as the counterpart of 2019 in the UNESCO database.

3.3. Sampling and Organization of the Data

The data was merged based on whether the university had a URAP ranking score, as it was the most limited dataset that was used in the study. Therefore, it can be said that universities were sampled from the overall data based on the fact that whether they had a URAP score. The universities that offered off-campus degrees were also removed completely for all years (Anadolu University, Atatürk University, and Istanbul University), as there is no official data in regards to the nationality of students

who are engaged in these programs. The CoHE had registered a few entries as heimatlos; however, they were merged with normal citizenship data for simplicity. The cities affected by the devastating earthquake in February 2023 were also removed from the study between the 2022-2023 period, as there is no sensible way to calculate the missing city-level variables for this period. Nevertheless, despite filtering of the data provided by CoHE, the study keeps a relatively high proportion of African students, as can be seen from Table 1.

All United Nations member states in Africa are included in the dataset, and a complete list can be seen in Appendix B. It is also worth mentioning that the universities that didn't have a URAP score were removed from a particular year because they were missing internal evaluation reports. However, the number of such instances was only 5 across all years. These instances were dropped rather than imputed. ODUS and TUMA reports are collected in the spring semester after the new year, therefore in year $(t + 1)$. Therefore, for these reports, t year reports were used to better reflect student experience in a particular year (I.e., the report for 2019 was used to resemble the 2018-2019 period)

Table 1: *The Comparison of Sampled Data to Available Data*

Year	African Students in the Dataset	Total African Students	Percentage
2018	19,132	21,564	88.72%
2019	26,363	28,540	92.37%
2020	34,264	37,191	92.13%
2021	45,948	49,869	92.14%

Table 1 (continued)

2022	51,463	59,739	86.15%
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3.3. Explanatory Variables

3.3.1. University Level Variables

The internal evaluation reports from each year were collected from the Yükseköğretim Kalite Kurulu [Turkish Higher Education Quality Council] (n.d.). However, as some of the files were missing from the university website, some files were collected individually from their respective websites. Two keywords were deemed appropriate for search as areas of policy focus: “internationalization” and “international student”. To create the keyword variables, a simple search function was created to search the PDFs using PyMuPDF to count the number of instances in which this keyword was mentioned. The search function also handled preceding/following punctuation marks to capture iterations provided in website links, combined with re.IGNORECASE function to detect both upper and lower versions of the words. Additionally, some common synonyms of keywords were included, such as “yabancı öğrenci” and “foreign student”, which were observed being used interchangeably with the word international student. Some of the reports were found to be in English language than Turkish, therefore the function scanned for both languages and merged their respective numbers.

The quota fulfillment rates were calculated from DASPC’s yearly placement reports. These reports are released in the form of Excel files for both the selection and the extended selection period of the students. The files show how many quotas are available for a particular program, followed by how many new students registered for

them. However, as the study had only university-level variables rather than program variables, total quota fulfillment rates were calculated per university. A function was created to scan these reports. This function summed the students enrolled and the available quota for both the selection and the extended selection files for a university for a particular year across different programs. Then, it divided the total number of students by the total number of available quotas.

University ranking scores of the Turkish universities were taken from the URAP rankings lists. Rankings from URAP were preferred specifically since they encompass a majority of the universities in Türkiye. The rankings score is done quantitatively based on a variety of university performance indicators. These indicators are the number of scholarly articles published in high-impact journals, the citations those articles receive, and the total scientific documents produced with data sourced from the InCites database. It also has variables based on academic staff and graduates, such as the ratio of doctorate students to total students and the total number of doctorate student graduates. Additionally, it includes the number of projects received from the Turkish government, the number of these projects divided by the number of teaching staff, and international/local collaborations. However, these three are included only in the 2022 index, and therefore, they were dropped from the data in 2022 in order to ensure consistent scoring across years.

TUMA reports were taken from ÜNİAR, which are annually published reports of bachelor students' satisfaction with the university where Turkish students study. They are based on surveys and include items that test 6 characteristics of the parent university: The satisfaction with the learning experience, the satisfaction with the campus and campus life, academic support and attention, the satisfaction with the

management and operation of the institution, the richness of the learning opportunities and resources, and personal development and career support. However, only the sum of these metrics was included in the model instead of looking at them separately to avoid overcomplicating the model.

3.3.2. City Level Variables

ODUS reports were again taken from ÜNİAR, which are stated as extensions of the TUMA reports taken from the bachelor students and are also published annually. Unlike TUMA, it deals with the single question of “The satisfaction with the city and its people”. However, these reports have some caveats. Understandably enough, they didn’t publish the reports for the COVID period in 2020-2021, when such a study wouldn’t make sense as it was during the period of distance education (Karadağ & Yücel, 2022). For this period, the average of the following and previous years was taken rather than applying imputation to the data. Additionally, since the reports include Istanbul on Europe and Asia on two different measurements, the mean of Istanbul’s score was included. The difference between the two regions is often extremely minimal, and therefore shouldn’t disrupt the result by a significant margin. Furthermore, for the 2022-2023 period, some ten cities that were affected by the devastating earthquake were left out.

Numbers of immigrants coming to Türkiye were taken from TUIK. Unfortunately, this data is published in a way that only permits the total number of incoming immigrants in a city rather than offering different cells based on nationality. Therefore, this variable can only be judged in terms of overall attraction to foreign immigrants rather than a network effect.

SEGE reports that indicate the socio-economic development of a city were taken from the MTI. Unfortunately, the city score was not available for the years past 2017, while the district scores were available. Therefore, the average of the district scores was taken to create this variable for the city as a whole. These reports are published in 5-year intervals. To apply them to a specific year, the change in score from 2017 to 2022 was calculated for each cell, then it was divided into 5, and each $\frac{1}{5}$ was added to the subsequent years. A principal component analysis is used on both 2017 and 2022 reports (MTI, 2022; MTI, 2017), where there are 32 and 56 variables, respectively, to calculate each district. While the total number of variables is different, the categories of these variables are roughly the same, except for “Innovation” variables, which are not involved in the 2017 report:

- Demographics: variables like birth rate, net rate of internal migration, fertility rate, etc.
- Employment rate and Social Security variables: District's Share of Turkey's Manufacturing Employment, Percentage of District Population with Social Security Premiums Paid by the State, etc.
- Educational variables: mean of average university entrance exam scores, the number of university graduates, etc.
- Healthcare variables: infant mortality rate; doctor/dentist rate per person, etc.
- Financial variables: municipality expenditure per person, number of bank branches per person, the net share of businesses' commercial sales amount in Türkiye, etc.

- Competitiveness variables: include the share of active businesses in Türkiye, the share of industry electrical consumption in Türkiye, etc.
- Innovation variables: patent application rate per person, the share of high-tech production businesses in Türkiye, etc.
- Quality of life variables: electrical consumption per person, the number of gas stations per person, etc.

3.3.3. Country Level Variables

The only country-level variable of interest is the outcome variable at $t-1$ in order to test for network effects that cause flows between university and country pairs. While an easier-to-interpret modeling can be seen in Weber (2024), where the total international students from a particular country is used to predict new enrollments, this type of data is not publicly available. Additionally, this study draws its data from the growth period from 2018 to 2022. This means that this variable should also be able to indicate how strongly this growth occurred bilaterally between country and university pairs.

3.5. Control Variables

The tertiary age population was taken from UNESCO for the age group 18-25. The distance between Türkiye and a specific African country was taken from the CEPII institute. There are a couple of ways to compute the distance between countries, such as the distance between capitals or the distance between the most populated cities. However, distance was included as an arithmetic average of the distance between the two countries based on Head et al. (2010), which creates a weighted average of the distance between each combination of cities between the two countries. This selection

was done with the purpose of better accounting for the actual distance between a student in a host country and the student's destination country. Additionally, total student numbers in an institution were taken from CoHE to account for the size of the universities and the size of international quotas they can offer.

3.6. Software Used

The data from various sources mentioned was merged using Python 3.13.1, with the Pandas library (Version 2.2.2) used to handle the data stored in Excel sheets. These were carefully checked through debugging code in due process and calculation of some of the entries by hand in the aftermath. Keyword searches were done using PyMuPDF version 1.25.5. Data analysis was done in R version 4.5.0. DHARMA library version 0.4.7 was used for diagnostic plots regarding model assumptions (Hartig & Hartig, 2017), glmmTMB version 1.1.11 was used for the model construction, and MuMIn library version 1.48.11 was used for the calculation of marginal/conditional R^2 . Performance library version 0.13.0 was used for generating the VIF results.

3.7. Data Analysis

Multi-level regression was considered suitable, as it accommodates hierarchically structured data and yields more accurate estimates when such a structure is present (Maas & Hox, 2005). Student counts were modeled with random intercepts for sending universities nested inside cities, nationalities of the students, and the years in order to account for the variation between them. A visualization of this structure can be seen in Figure 10.

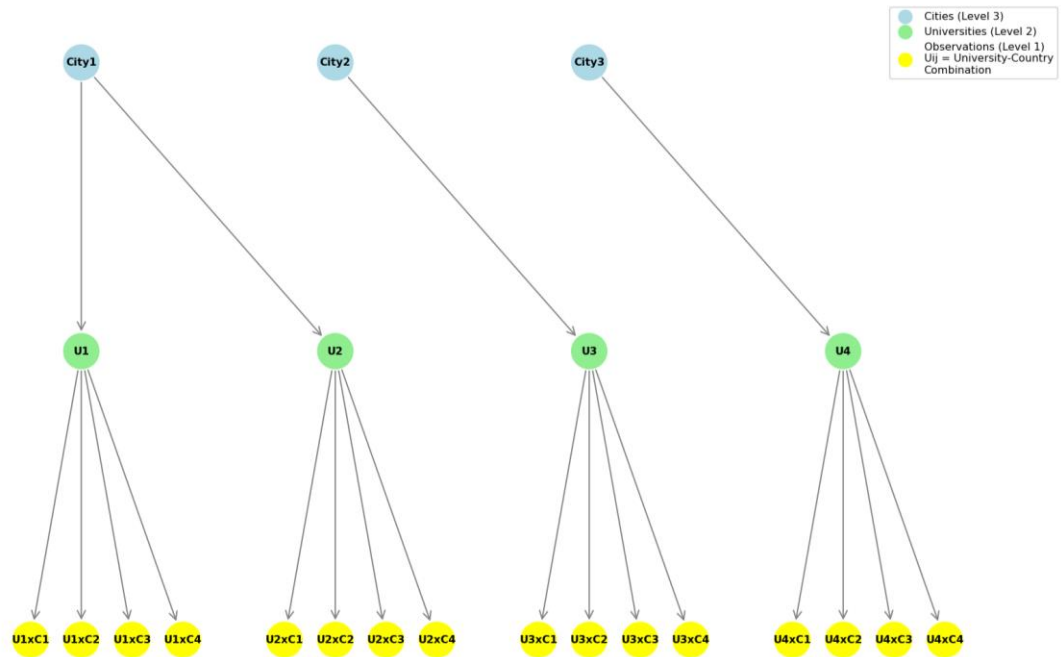


Figure 10: *Three-Level Hierarchical Structure*

As the outcome variable had many zeroes due to the structure of the data and was thus overdispersed, a negative binomial model was used to estimate the results, which is argued to provide better results with this type of data (Winter & Bürkner, 2021) and is similarly applied by Weber (2024). A logarithmic transformation was applied to population variables, as they showed improved DHARMA residuals. However, this approach led to problems with model assumptions in foundation universities, and as a result, the total students in a university was standardized rather than log transformed. The distance control variable was also standardized across all models.

All continuous variables were standardized using R's scale function. Confidence intervals were calculated using glmmTMB's confint function with the Wald method. Zero-inflation was modeled using "ziformula" in the model, which yielded better residuals and AIC/BIC values (Hui et al., 2015), specifics of which can

be seen in the result tables. A few models where dispersion was explicitly modeled were also utilized, which showed better AIC/BIC values and better residual patterns. Additionally, interactions between variables and random slopes were tried. However, these either produced convergence errors, NaN values for the variables, or indicated a worse fit. Some quadratic terms were considered; however, they were dropped on account of better comparability across variables.

The analysis was done using the `glmmTMB` library with the “`nbinom2`” function. VIF values were found to be within acceptable thresholds, as can be seen from Table 2, and the DW test for temporal autocorrelation of variables was not significant, as can be seen in Appendix C. DHARMA residuals indicated no concerning problems with model assumptions (Hartig & Hartig, 2017) in consideration of the large sample size (Hartig, 2024). Diagnostic plots and tests can be found in Appendix C.

Although the DHARMA plots in Appendix C do not necessarily indicate a perfect fit, options such as adding interactions between theoretically related variables, random slopes, removing certain variables/intercepts, and transformations on the data (i.e., removing entries with 0, removing influential outliers, box-cox transformations) did not necessarily improve the fit without seriously harming the generalizability and cross-model comparability of the results. Different libraries and adding splines were also experimented with to no avail. While estimating the results with random forest methods showed promising results, this method seemed inappropriate due to the fact that it is not possible to make interpretations on the direction of the effects. Therefore, because the results aligned with what has been reported in the literature and were in alignment with observations on the data, the models were deemed suitable for interpretation.

Table 2: Variance Inflation Factors for Predictors Across Models

	All Universities	Public Universities	Private Universities	Pre-2005 Universities	Post-2005 Universities	Research Universities
<i>University Level</i>						
Quota Fulfillment Ratio	1.03	1.07	1.14	1.08	1.03	1.19
KEYWORD - Internationalization	1.12	1.10	1.36	1.13	1.17	1.34
KEYWORD - International Student	1.11	1.09	1.20	1.11	1.20	1.15
URAP Score	1.13	1.16	1.25	1.03	1.05	1.41
TUMA Score	1.06	1.07	1.26	1.06	1.06	1.40
Number of Total Students	1.14	1.17	1.19	1.16	1.06	1.07
<i>City Level</i>						
SEGE Score	1.30	1.16	1.34	1.42	1.36	1.39
ODUS Score	1.28	1.15	1.52	1.25	1.40	1.35
Number of Foreign Migrants	1.04	1.08	1.18	1.09	1.04	1.15
<i>Country Level</i>						
Students from Previous Year	1.01	1.01	1.02	1.01	1.00	1.02
Distance	1.08	1.08	1.08	1.08	1.08	1.06
Number of the population between 15-24	1.08	1.08	1.09	1.08	1.08	1.07

Table 3: R² Results of the Models without Dispersion Explicitly Modeled

Model	Marginal	Conditional
All Universities	.57	.89
Public Universities Foundation	.56	.88
Universities	.53	.93
Pre-2005 Universities	.65	.88
Post-2005 Universities	.46	.88
Research Universities	.66	.82

3.8. Limitations

The limitation of this study is that it only focuses on interactions between a continent and a single country. The dataset also focuses only on the rapid increase of African ISM between the 5 years of 2018-2022. The study also tracks the total students at a given institution per nationality, as it was the only data made available by CoHE that distinguished between different nationalities. Therefore, the results of the study should be interpreted as “what correlated with total student numbers in the period of sharp increase in African student numbers in Türkiye”. Another distinct limitation of the study is that it can’t differentiate between the mobility patterns of graduate students and undergraduate students due to the nature of the data available. Additionally, the observation period coincides with the COVID period, which probably has affected the results. Another limitation of the study is the fact that the models use data from local students in the form of ODUS and TUMA, instead of international students. Therefore, it assumes that the international students respond to the same factors as local students do in their decision-making. Lastly, due to how SEGE scores are calculated in this study, the city-socioeconomic score for the interim years may have errors that do not account for sudden increases or decreases.

Including a lagged dependent variable in the form of students from the previous year can suppress the explanatory strength of other variables (Achen et al., 2000). However, it is the only available data to test for the effects of recruitment agencies, migration paths, and targeted recruitment efforts of the universities. Additionally, the removal of this variable at times makes the models unusable, while also indicating

significantly worse fits. Nevertheless, the coefficient size of this variable should be treated with caution in the results, as it is likely to be inflated.

It is also helpful to mention the limitations of the framework of analysis in this study, the push-pull theory. A useful critique comes from the Aspirations and Capabilities Framework (de Haas, 2021). This framework sees the people as decision-makers based on their abilities & resources rather than responders to push-pull factors. Admittedly, the study design does not allow for factors regarding individual agency, which is an important piece of the topic. Furthermore, the study also does not capture the effects that influence this agency, such as culture and media.

CHAPTER 4

RESULTS

4.1. Descriptive Statistics

Descriptive statistics of variables for each model can be observed in Table 3, where the values are the mean and the values inside the parentheses are the standard deviation. The regional distribution of African students per model can be observed from Figures 11 to 16.

Table 4: *Combined Descriptive Statistics Table*

	All (n = 43.578)	Public (n = 28.350)	Foundation (n = 15.228)	Pre-2005 (n = 19.062)	Post-2005 (n = 24.516)	Research (n = 5.292)
Student Count	4.1 (26)	3.9 (27)	4.3 (23)	4.2 (23)	3.9 (27)	3.8 (12)
<i>University Level</i>						
Quota Fulfillment Ratio	0.88 (0.14)	0.91 (0.11)	0.82 (0.16)	0.91 (0.12)	0.86 (0.13)	.98 (0.05)
KEYWORD - Internationalization	20 (13)	20 (14)	19 (12)	23 (15)	18 (11)	26 (18)
URAP Score	397 (147)	436 (133)	323 (143)	487 (135)	327 (114)	653 (64)
<i>City Level</i>						

Table 4 (continued)

SEGE Score	0.73 (1.20)	0.18 (0.88)	1.8 (0.89)	0.88 (1.1)	0.61 (1.2)	1.2 (0.91)
ODUS Score	74 (16)	69 (17)	84 (5.1)	79 (11)	71 (18)	84 (5.5)
Number of Foreign Migrants	66986 (103669)	24467 (65489)	146144 (114628)	68295 (102165)	65968 (104814)	81864 (105015)
<i>Country Level</i>						
Students from Previous Year	3.2 (22)	3.1 (23)	3.3 (19)	3.6 (21)	2.9 (22)	3.7 (12)
Distance	4937 (1457)	4937 (1457)	4937 (1457)	4937 (1458)	4937 (1457)	4937 (1458)
School Age Population	2293478 (3353582)	2292087 (3351342)	2296069 (3357856)	2287911 (3344564)	2297807 (3360639)	2289791 (3347810)
TUMA Score	385 (85)	377 (81)	401 (90)	420 (67)	358 (87)	469 (48)
KEYWORD - International Student	8.6 (9.2)	8.4 (9.2)	9 (9.1)	9.1 (10)	8.2 (8.5)	8.5 (6.7)
Number of Total Students	21249 (16951)	26920 (17521)	10693 (8914)	30959 (19139)	13700 (9780)	37445 (21780)

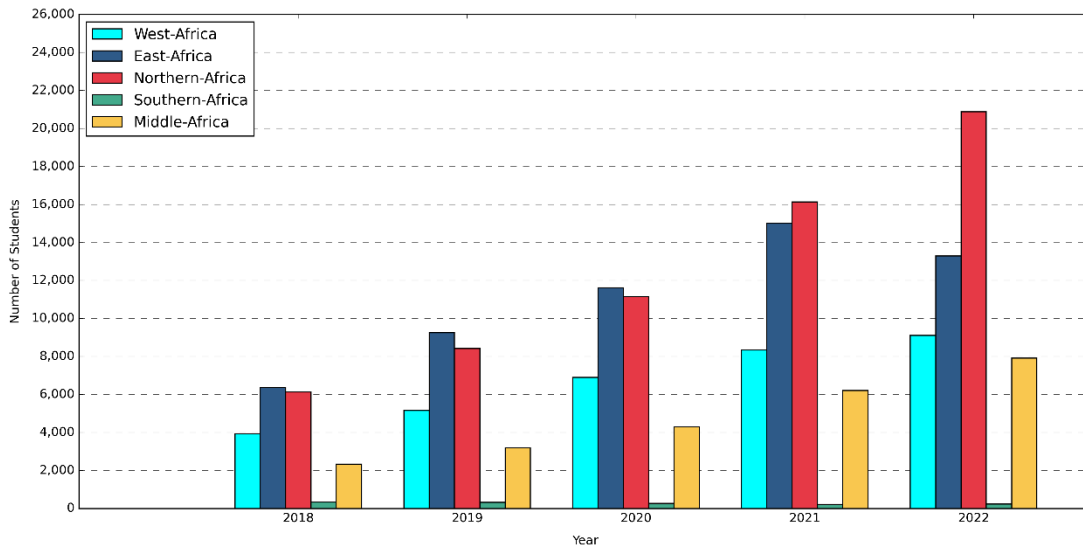


Figure 11: *The Distribution of Students by African Regions in All Universities*

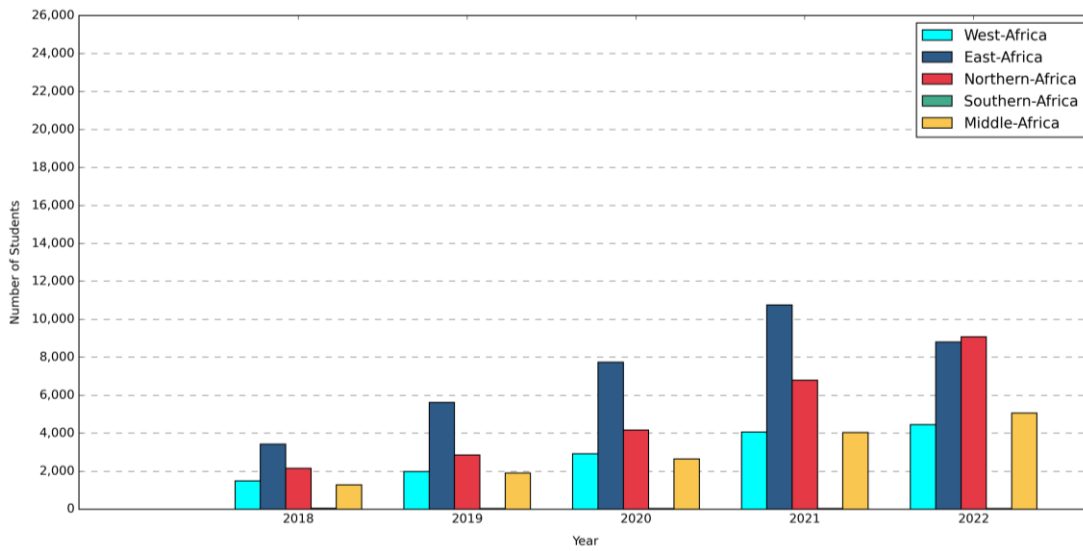


Figure 12: *The Distribution of Students by African Regions in Public Universities*

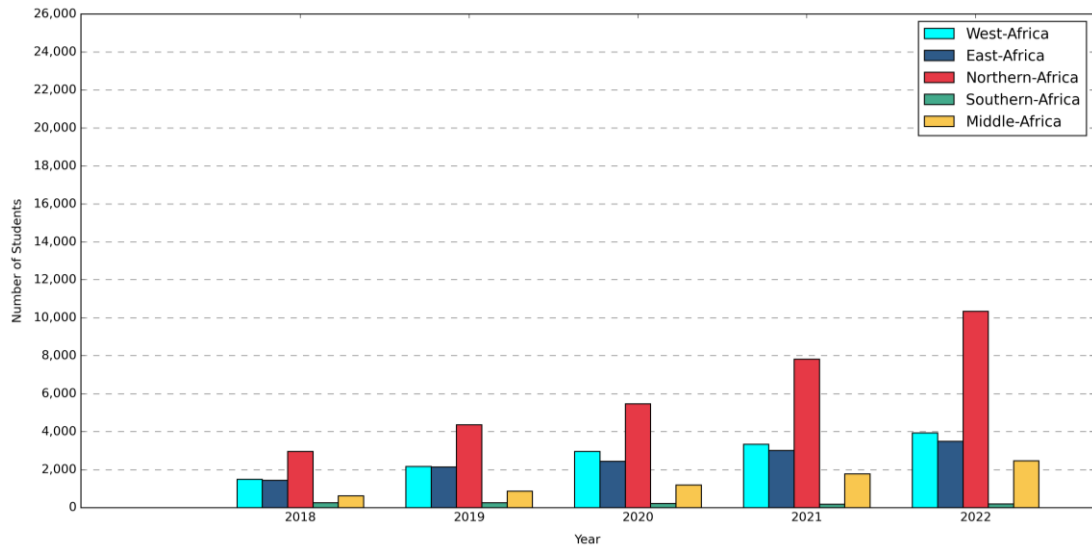


Figure 13: *The Distribution of Students by African Regions in Foundation*

Universities

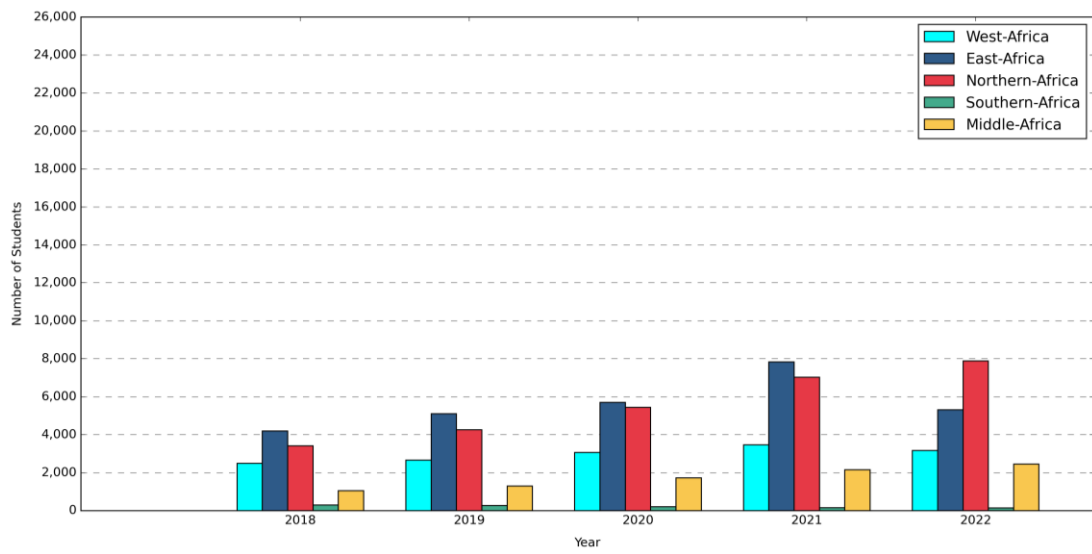


Figure 14: *The Distribution of Students by African Regions in Pre-2005 Universities*

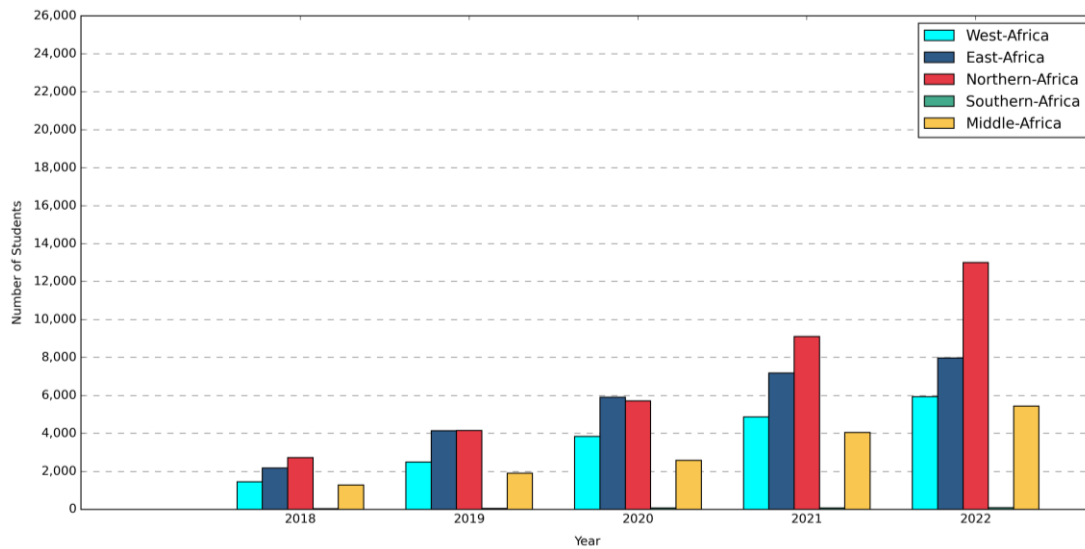


Figure 15: *The Distribution of Students by African Regions in Post-2005*

Universities

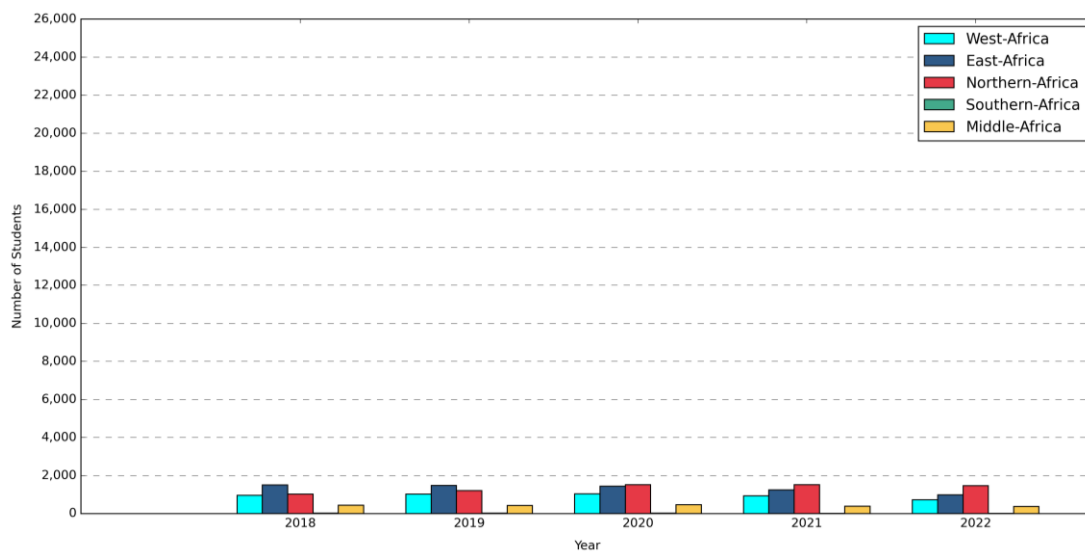


Figure 16: *The Distribution of Students by African Regions in Research Universities*

4.2. Multi-level Model Results

Table 5: *Multilevel Regression Results of the Number of African Students in All*

Universities

	Estimate	SE	95% CI Lower	95% CI Upper
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Table 5 (continued)

(Intercept)	-19.13***	1.32	-21.72	-16.54
<i>University Level</i>				
Quota Fulfillment Ratio	0.11***	0.02	0.07	0.14
KEYWORD - Internationalization	-0.04***	0.01	-0.07	-0.02
KEYWORD - International Student	0.11***	0.01	0.09	0.14
URAP Score	0.12**	0.04	0.03	0.20
TUMA Score	0.03	0.04	-0.04	0.10
<i>City Level</i>				
SEGE Score	0.27**	0.09	0.09	0.46
ODUS Score	0.07	0.07	-0.06	0.20
Number of Foreign Migrants	-0.02	0.02	-0.06	0.02
<i>Country Level</i>				
Students from Previous Year	0.80***	0.02	0.77	0.84
Distance	-0.81***	0.13	-1.07	-0.55

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. Zero inflation was modeled for SEGE score, internationalization keyword and quota fulfillment ratio. Dispersion was modeled for URAP, TUMA and ODUS Scores, as well as both keyword variables. All variables presented in the table are standardized using scale() function. The model was controlled for the log of population between 15 and 24 for the sender country, and the log of the total number of students in a university.

Table 6: Multilevel Regression Results of the Number of African Students in Public Universities

	Estimate	SE	95% CI Lower	95% CI Upper
(Intercept)	-17.99***	1.38	-20.70	-15.28
<i>University Level</i>				
Quota Fulfillment Ratio	0.15***	0.02	0.11	0.19
KEYWORD - Internationalization	-0.04**	0.01	-0.07	-0.01
KEYWORD - International Student	0.12***	0.02	0.09	0.15
URAP Score	0.20***	0.05	0.11	0.29
TUMA Score	0.08*	0.04	0.00	0.16
<i>City Level</i>				
SEGE Score	-0.10	0.10	-0.30	0.10
ODUS Score	-0.00	0.07	-0.14	0.13
Number of Foreign Migrants	-0.05**	0.02	-0.09	-0.01
<i>Country Level</i>				
Students from Previous Year	0.93***	0.02	0.88	0.98
Distance	-0.73***	0.13	-0.98	-0.48

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. Zero inflation was modeled for SEGE score and quota fulfillment ratio. Dispersion was modeled for SEGE, ODUS and URAP scores, and both keyword variables. All variables presented in the table are standardized using scale() function. The model was controlled for the log of population between 15 and 24 for the sender country, and the log of the total number of students in a university.

Table 7: Multilevel Regression Results of the Number of African Students in Foundation Universities

	Estimate	SE	95% CI Lower	95% CI Upper
(Intercept)	-9.83***	1.41	-12.58	-7.07
<i>University Level</i>				
Quota Fulfillment Ratio	0.10***	0.03	0.05	0.15
KEYWORD - Internationalization	-0.09**	0.03	-0.15	-0.03
KEYWORD - International Student	0.09***	0.02	0.04	0.13
URAP Score	0.09	0.08	-0.07	0.25
TUMA Score	0.12.	0.07	-0.02	0.26
<i>City Level</i>				
SEGE Score	0.74***	0.22	0.31	1.16
ODUS Score	0.34***	0.08	0.19	0.50
Number of Foreign Migrants	-0.03	0.04	-0.10	0.05
<i>Country Level</i>				
Students from Previous Year	0.39***	0.02	0.35	0.42
Distance	-1.04***	0.15	-1.34	-0.73

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. Zero inflation was modeled for internationalization keyword. Dispersion was modeled for quota fulfillment ratio, and both keyword variables. All variables presented in the table are standardized using scale() function. The model was controlled for the log of population between 15 and 24 for the sender country, and the total number of students in a university.

Table 8: Multilevel Regression Results of the Number of African Students in Pre-2005 Universities

	Estimate	SE	95% CI Lower	95% CI Upper
(Intercept)	-19.22***	1.53	-22.23	-16.21
<i>University Level</i>				
Quota Fulfillment Ratio	0.07***	0.02	0.03	0.11

Table 8 (continued)

KEYWORD - Internationalization	-0.04*	0.02	-0.07	-0.01
KEYWORD - International Student	0.12***	0.02	0.08	0.15
URAP Score	0.01	0.06	-0.11	0.14
TUMA Score	-0.03	0.04	-0.10	0.04
<i>City Level</i>				
SEGE Score	0.27**	0.10	0.07	0.46
ODUS Score	-0.00	0.06	-0.12	0.11
Number of Foreign Migrants	0.01	0.03	-0.04	0.06
<i>Country Level</i>				
Students from Previous Year	0.90***	0.03	0.86	0.95
Distance	-0.74***	0.12	-0.98	-0.50

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. Dispersion was modeled for SEGE score, and both keyword variables. All variables presented in the table are standardized using scale() function. The model was controlled for the log of population between 15 and 24 for the sender country, and the log of the total number of students in a university.

Table 9: *Multilevel Regression Results of the Number of African Students in Post-2005 Universities*

	Estimate	SE	95% CI Lower	95% CI Upper
(Intercept)	-18.20***	1.72	-21.57	-14.83
<i>University Level</i>				
Quota Fulfillment Ratio	0.16***	0.03	0.11	0.21
KEYWORD - Internationalization	-0.05	0.03	-0.11	0.02
KEYWORD – International Student	0.14***	0.02	0.10	0.19
URAP Score	-0.04	0.05	-0.15	0.06
TUMA Score	0.05	0.07	-0.08	0.18
<i>City Level</i>				
SEGE Score	0.24	0.16	-0.07	0.56
ODUS Score	0.08	0.12	-0.16	0.32
Number of Foreign Migrants	-0.03	0.03	-0.09	0.04
<i>Country Level</i>				
Students from Previous Year	0.64***	0.03	0.59	0.70
Distance	-0.97***	0.16	-1.28	-0.66

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. All variables presented in the table are standardized using scale function. The model was controlled for the log of population between 15 and 24 for the sender country, and the log of the total number of students in a university.

Table 10: *Multilevel Regression Results of the Number of African Students in Research Universities*

	Estimate	SE	95% CI Lower	95% CI Upper
(Intercept)	-9.51***	1.15	-11.76	-7.25
<i>University Level</i>				
Quota Fulfillment Ratio	0.03.	0.02	-0.00	0.07
KEYWORD - Internationalization	-0.07***	0.02	-0.10	-0.03
KEYWORD - International Student	-0.02	0.02	-0.06	0.03
URAP Score	0.11.	0.06	-0.00	0.21
TUMA Score	0.01	0.03	-0.04	0.06
<i>City Level</i>				
SEGE Score	-0.23.	0.12	-0.46	0.01
ODUS Score	0.12***	0.04	0.05	0.19
Number of Foreign Migrants	-0.04	0.03	-0.10	0.01
<i>Country Level</i>				
Students from Previous Year	0.35***	0.01	0.32	0.38
Distance	-0.43***	0.06	-0.55	-0.31

Note: Significance levels are indicated as follows: *** $p < .001$, ** $p < .01$, * $p < .05$, $p < .10$. Zero inflation was modeled for students from previous year. All variables presented in the table are standardized using scale function. The model was controlled for the log of population between 15 and 24 for the sender country, and the log of the total number of students in a university.

4.2.1. University Level

The URAP score of a university was found significant in all universities model ($\beta = .12$, $SE = .04$, $p < .01$, $CI [.03, .20]$) and public universities model ($\beta = .20$, $SE = .05$, $p < .001$, $CI [.11, .29]$). The TUMA score of the variables was also only found to be significant in the model with public universities, with a positive impact ($\beta = .08$, $SE = .04$, $p < .05$, $CI [.00, .16]$). Additionally, quota fulfillment rates, the model for public

universities has a similar significant positive effect ($\beta = .15$, $SE = .02$, $p < .001$, $CI [.11, .19]$). These mean that African ISM is more likely to enroll in public universities with relatively high academic performance and student satisfaction, which are also in relatively high in demand. However, a noticeable discrepancy between university student satisfaction and URAP score can be observed for public universities. When foundation universities are looked at, however, none of the performance indicators for universities are significant, other than the small positive effect that quota fulfillment rates have ($\beta = .10$, $SE = .03$, $p < .001$, $CI [.05, .15]$). This indicates that although the African ISM is not particularly directed towards successful or high-level student satisfaction universities, the African ISM is directed towards universities not struggling to fulfill their local student quotas.

When the analysis is conducted on the universities that were established before or after 2005, neither URAP nor TUMA is found to be significant. While the quota fulfillment rates are found to be significant in both models, their impact is much more in the post-2005 universities ($\beta = .16$, $SE = .03$, $p < .001$, $CI [.11, .21]$) than in universities that were founded before 2005 ($\beta = .07$, $SE = .02$, $p < .001$, $CI [.03, .11]$). This indicates that although African students attend universities in high demand in both groups, this preference becomes even more prevalent in universities established during the massification period.

The created keyword count variables indicate an interesting pattern. In the model with all universities, the word internationalization appearing in self-evaluation reports has a small but significant negative effect ($\beta = -.04$, $SE = .01$, $p < .001$, $CI [-.07, -.02]$). This small but significant effect was also present in all models except post-2005 universities. This indicates that there is a potential negative correlation between

the internationalization aims of an institution and incoming African ISM that exists in Turkish tertiary institutions, which, interestingly enough, is not present in the universities that were established during the massification period. The other variable that was created is the word “international student” and its variants. This variable was found to be significant in all models except the one for research universities. Furthermore, this variable was often found to be the most influential variable among other university-level variables, only competing with quota fulfillment rates at times. Although the effect of these variables should also be interpreted with caution, the results suggest that institutional policy focus on international students and internationalization could be the most influential university-level drivers behind the African ISM to Türkiye.

4.2.2. City Level

SEGE score was found to have a moderate positive effect on the model for all universities ($\beta = .27$, $SE = .09$, $p < .01$, $CI [.09, .46]$). This indicates that the socioeconomic development of a city is far more effective than any of the university-level variables, indicating that cities may be the real drivers behind African ISM. ODUS score was not found to be significant, indicating that local student satisfaction with the city’s opportunities is not a determining factor in African ISM. This indicates that, overall, factors such as job opportunities, travel infrastructure, healthcare, quality of life indicators, etc., of a city where the students reside could be the main attractions for the African students, rather than student satisfaction with the city.

The SEGE score was found to have no significant effects for public universities, while it was found to have a very strong positive effect on the model for foundation universities ($\beta = .74$, $SE = .22$, $p < .001$, $CI [.31, 1.16]$). Furthermore, the

same pattern for ODUS was observed. ODUS score of cities was also significant and strong for foundation universities ($\beta = .34$, $SE = .08$, $p < .001$, $CI [.19, .50]$), while it was again not significant for public universities.

SEGE was also found to have a relatively strong effect for universities that were founded before 2005 ($\beta = .27$, $SE = .10$, $p < .01$, $CI [.07, .46]$), while it was not significant for universities that were founded during the massification period after 2005. This indicates that the socioeconomic development of a city has a moderate effect on the relatively rooted universities in Türkiye, while the student satisfaction with the city is insignificant for both models. However, it may be possible to explain this phenomenon by looking at the fact that the ODUS score for research universities was found significant ($\beta = -.05$, $SE = .02$, $p < .001$, $CI [-.0, .19]$). These together indicate that for relatively successful or established universities, city-level factors are much more prominent than university-level factors.

The number of incoming foreign migrants into a city was found to be insignificant for all models except public universities, where it had a small but negative effect ($\beta = -.05$, $SE = .03$, $p < .001$, $CI [-.09, -.01]$). Furthermore, this negative effect is the single city-level significant effect that public universities have. This indicates that African IS is slightly more likely to be located in cities that attract fewer foreign migrants. Although this variable, sadly, wasn't available per nationality and hence it can't be used to assess the country-level migration network, it still indicates that the foreign migration appeal of a city, and African ISM, does not have a relationship outside public universities.

4.2.3. Country Level

Although the arithmetic distance between two countries was added as a control variable, it still provides some unique insights. All of the models had very strong negative relationships with the distance variable, which is not surprising because the bulk of the African IS in Türkiye are from Northern and Eastern Africa, while South Africa remains steadily low across the years. However, differences among datasets can be observed, reaffirming observations that are possible to make from the descriptive graphs. The most striking difference across models happens for research universities, where the negative effect of the distance is much lower than in other models ($\beta = -.43$, $SE = .06$, $p < .001$, $CI [-.55, -.31]$). Furthermore, pre-2005 universities can also be observed to have a significantly lower negative effect for distance ($\beta = -.74$, $SE = .12$, $p < .001$, $CI [-.98, -.50]$) than those were found post-2005 ($\beta = -.97$, $SE = .16$, $p < .001$, $CI [-1.28, -.66]$).

The number of students of the same nationality was found to be positive and significant for all the models. It was also the strongest predictor in most of the models, which can be partly attributed to the issues with lagged dependent variables (Achel et al., 2000). However, this variable's effect was the weakest for the foundation universities ($\beta = .39$, $SE = .02$, $p < .001$, $CI [.35, .42]$) and research universities ($\beta = .35$, $SE = .01$, $p < .001$, $CI [.32, .38]$) compared to the overall model ($\beta = .77$, $SE = .02$, $p < .001$, $CI [.74, .76]$) and public universities ($\beta = .92$, $SE = .03$, $p < .001$, $CI [.87, .97]$). Furthermore, the network effect was found to be noticeably higher for post-2005 universities ($\beta = .64$, $SE = .03$, $p < .001$, $CI [.59, .70]$) than for pre-2005 universities ($\beta = .90$, $SE = .03$, $p < .001$, $CI [.86, .90]$). It is also helpful to point out that when a quadratic term of this variable was added, its quadratic term was found to

be negative across all models. This indicates an inverted-U relationship, where the strength of this variable gradually becomes less effective over time. However, this fact is not surprising as it is only natural that universities have an upper limit in regards to the amount of students they can receive.

4.3. Summary of the Results

In conclusion, the factors that correlate with incoming African IS seem to differ vastly based on the type of institution observed. Overall, university performance variables (URAP and TUMA scores) paint a mixed picture. While quota fulfillment ratios have a consistent positive effect across models, the URAP score has a positive effect on student enrollments only in the model with all universities and public universities, while the TUMA Score has a small positive effect on the public universities only. This means that university performance is important when the overall picture is looked at; however, this relevance seems to be coming from public universities. Therefore, it is safe to argue that the URAP score has a more prevalent effect than the TUMA score when university performance variables matter, while quota fulfillment ratios matter across all types of institutions. This indicates that, in consideration of the fact that all models control for university size, which URAP is biased towards, African ISM is influenced more by URAP score than they are influenced by the degree to which local students are satisfied. African IS also seems to prefer universities that are high in demand by the local students, as indicated by the consistent small effect of quota fulfillment ratios. When university policy variables are looked at, the picture is less complex compared to university performance factors. The occurrence of the international student keyword in internal evaluation reports

positively affects African ISM, while the word internationalization negatively affects African ISM.

SEGE has a moderate positive effect on enrollments in the overall model. Furthermore, socioeconomic development and ODUS score both have strong positive effects on African student numbers in foundation universities. Additionally, in universities that were established before 2005, the SEGE score has a moderate positive effect, while ODUS has a small positive effect on research universities. However, both variables' effects are missing from public universities, which indicates that visibly different patterns for public and foundation universities. Additionally, among relatively well-established universities founded prior to 2005, the city-level predictors better explain the number of African IS. Lastly, in public universities, the number of foreign migrants have a negative effect on African IS numbers.

Distance has a consistently significant negative effect across models. Total students from the same nation in the year (t-1) have positive effects across the models, indicating network effects being prevalent in predicting African IS. However, this variable's influence is much weaker in foundation universities and research universities.

CHAPTER 5

DISCUSSION

5.1. Model Implications

From the model with all universities, it is possible to claim that overall, African ISM in Türkiye is mainly shaped by the same nation network effects, and the socio-economic development of the city. University-level effects only play a small to moderate role, in which African IS seems to be attracted to university performance/demand factors rather than university satisfaction and internationalization focus. Besides, the internationalization focus has a negative effect. Furthermore, the socio-economic development of a city has a much stronger effect than any of the university-level variables. These all seem to occur under a very strong network effect. These combined, it is possible to explain the flow of African IS as: the tremendous flow that happens for specific institutions that form bilateral ties between the university and the sender country, which is shaped by university performance and policy, but more so by the city the university resides.

It is also important to note the two distinctly different patterns between the public and foundation universities. For public universities, a moderate positive correlation exists for local student satisfaction scores and university academic performance, while socioeconomic development and local student city satisfaction do

not have an effect. For foundation universities, university rankings and local student satisfaction have no effect, while socioeconomic development and local students' city satisfaction have very strong positive effects. These results suggest that the African ISM in Türkiye should be studied separately for foundation and public universities, which have almost two distinctly different patterns. Both public and foundation universities attract students from North Africa, as illustrated in Figures 12 and 13 (Chapter 4). However, Eastern African students show a marked preference for public universities over foundation ones. This trend may be attributed to economic factors: students from wealthier regions like North Africa are generally better able to afford the higher tuition fees and living costs associated with foundation universities, which are often located in socioeconomically advanced cities. In contrast, Eastern African students likely prioritize the lower tuition fees offered by public universities.

The correlation patterns of public universities depict a very interesting picture. It resembles some of the patterns from the global model, which is not surprising, as public universities host significantly more African students than foundation universities do. University academic performance is more important than local student satisfaction and is defined by a very strong network effect. However, unlike foundation universities, public universities offer no clear explanations as to how the high volumes of African IS are directed or caused other than the network effect, which is even stronger than the model with all universities. Although this flow is slightly more likely to happen in cities that attract fewer foreign migrants, it is possible to argue that cities that are less popular for foreign migrants create unique migration paths due to student mobility in these cities.

It is also possible to argue that this flow into public universities, similar to China, as argued by Mulvey (2021b), is caused by lower entry criteria and ease of admission for popular fields provided by specific universities. Indeed, it is possible to support this argument by looking at the statistics of Karabük University from CoHE (2023), which is a very popular choice for African students, as can be seen from Figure 9 (Chapter 2). About a quarter of the total international students present (about half of which are African students) in the 2022-2023 education period consisted of students enrolled in the faculty of engineering, followed in popularity by many other STEM, medicine-related faculties, and economics and business administration faculties. A similar case is also observable in Kütahya Dumlupınar University, another popular destination for African students. Indeed, similar to Mulvey (2021b), it is possible to argue that economic connections between Türkiye and Africa may have created a demand for credentials in the Turkish language, and these public universities may be meeting this demand. It is also helpful to point out that Karabük University and Kütahya Dumlupınar University applications can be done via a high school diploma instead of taking a standardized exam (Karabük University, 2024), which is usually a standard procedure for other universities.

Foundation universities, on the other hand, indicate an entirely different pattern. City-level factors are found to be very important, while university-level performance factors are not significant. This is a surprising result, as the literature on Turkish foundation universities in Türkiye indicates that ISM emphasizes educational quality (Tekelioğlu et al, 2012). Furthermore, an emphasis on the quality of the academic staff in the decision to enroll in a foundation university by the local students can be observed (Aydın, 2013; Aydın & Bayır, 2016; Özgüven, 2011). However, on a

closer look, these studies are done on relatively well-established and older foundation universities. As can be seen from Figure 9 (Chapter 2), African students can be seen as concentrating on relatively newly established foundation universities such as Nişantaşı, Altınbaş, and Gelişim that often have below foundation-university average URAP or TUMA scores, which undoubtedly has affected the results.

SEGE and ODUS scores having highly strong effects suggest that African IS in foundation universities could be attracted by a combination of economic opportunities and a vibrant urban lifestyle that is tempting. It could also indicate that the perception of major cities in Türkiye is passed down to its tertiary institutions, and foundation tertiary institutions use this as a means to attract African IS. This could indeed be a phenomenon, as most of the foundation tertiary institutions in Türkiye are relatively new and are not often listed on the global rankings. The results align with what has been reported for the local students; the socio-economic development of cities where the foundation universities reside is found to be an important factor (Aydın, 2013; Yalcintan & Thornley, 2007). The network effect being much less prevalent compared to other models also indicates that these institutions overall are less defined by the bilateral connections they have with African countries. The reason for this could be due to the fact that university performance variables are not significant could cause drop-out rates, tuition expenses, and a lack of government funding/support, preventing a massive bilateral inflow like the public universities.

The differences between pre- and post-2005 models are also interesting. Socioeconomic development of a city has a moderate impact on African IS for pre-2005 universities, while this variable is insignificant for post-2005 universities. This indicates that among the relatively well-established universities, socioeconomic

development is a factor rather than university-level performance, which further supports the argument that the flow of African ISM is not influenced heavily by university-level performance factors. While quota fulfillment rates are found to be significant for both pre- and post-2005 universities, the effect of this factor is much more prevalent in the post-2005 universities. This result suggests that an abundance of supply and a lack of demand by local students in the country do not necessarily mean a flow into the host country occurs. This finding is further supported by the fact that the network effect is much more prominent for pre-2005 universities, which suggests that these universities can maintain the bilateral flow of African students into Türkiye more successfully compared to post-2005 universities.

The investigation into research universities also reveals patterns that are distinctly different from other datasets, as they have only the negative effect of the internationalization keyword, while also having a positive student city satisfaction effect. Its network effect is also nowhere as prevalent as in the public institutions, even though a vast majority of the research universities are public. This fact could indicate that research universities are more concerned with selective recruitment rather than bilateral arrangements or the work of agencies. This finding is further supported by the fact that distance has a relatively low negative effect compared to other countries. Another aspect to keep in mind is that the number of “international students” occurrences in internal evaluation reports was not found to be significant for research universities, which could indicate that a lack of policy focus can lead to lesser network effects. The prevalence of the ODUS score again repeats the pattern of city-level factors being more important than university-level factors in relatively established universities in Türkiye.

5.2. University Level

While the URAP score is significant in the model with all universities and public universities, this does not necessarily mean that African IS flow happens due to globally recognized educational quality offered by Türkiye. Since URAP is biased towards larger universities, and TUMA has only a very small effect on African IS in public universities, it is possible to say that African universities only showed a preference for larger universities that have bigger URAP scores compared to the rest. This preference for bigger institutions, therefore, can be argued to happen because of the larger resources these institutions possess to accommodate the incoming African IS rather than educational quality. Furthermore, as can be seen in Figure 16 (Chapter 4), only a very small proportion of African students are enrolled in research universities, which are the most prestigious institutions in the country. However, even these institutions can't be considered globally prestigious universities due to the fact that as many as half of the research universities of the country are often not listed on global rankings. However, in consideration of the fact that quota fulfillment rates have a positive effect on African IS, it can be said that while African IS still shows a slight preference for universities that are better on average per country standards.

This result does not exactly align with what Kondakci (2011) reports, where countries from economically developing regions report academic quality in Türkiye as a pull factor. Chen & Barnett (2000) view traditional destinations as holders of resources and knowledge that can attract international students in mass numbers. However, from the results, it can be interpreted that the availability of higher education and the relative quality of education between the two countries attract the African IS. This aligns with Altbach's (2003) view that African students have to be mobile due to

a lack of tertiary education. Furthermore, from the city-level and country-level results, it can be interpreted that Turkish tertiary institutions derive their attractiveness from city-level factors and through the reputation of Türkiye as a destination, as indicated by the network effect.

Policy-focused variables indicate an interesting prospect that should be discussed separately. The “International student” keyword has a positive correlation in all models except research universities. Of course, this can indicate a circulatory effect where the prevalence of international students in the first place caused this word’s presence in internal evaluation reports. Nevertheless, the results suggest that ISM could be due to targeted recruitment efforts (Which would also explain the relevance of network effects in the study), support structures for IS, or visibility to prospective IS. This finding is in alignment with what the literature often reports regarding the importance of institutional strategy (Sin et al., 2019; Tham et al., 2013). Furthermore, the prevalence of this variable can also indicate active recruitment strategies by the institutions, which is a very common tool used by HEIs (Gök & Gümüş, 2018). The lack of significance for this variable regarding research universities also suggests that research universities could be relying on reputation to attract African IS, which also explains why network effects are less prevalent for research universities compared to other datasets. It could also mean that despite a policy focus, these prestigious universities could be very selective in their acceptance, despite attracting many students through policy.

On the other hand, the word “internationalization” had a small, significant negative effect across all models except on the post-2005 dataset. This negative correlation could indicate that internationalization took place as a focus on

international rankings or research collaborations rather than active IS recruitment efforts, which may have decreased the volume of incoming African IS. It can also lead to a discussion that internationalization is used as a concept to attract students from wealthier regions. It could also be completely trivial, as internationalization is a popular trend among HEIs (Teichler, 2017) and these institutions may have simply placed these words in their internal evaluation reports as a way to appease policymakers. Additionally, the present negative effect for pre-2005 indicates an interesting contrast. The relatively established institutions' internationalization goals have a negative effect on African IS, while this negative effect is not present for universities that were founded after 2005. This indicates that internationalization may have two different meanings for institutions regarding international students based on the year of foundation. Relatively more established pre-2005 institutions could be focusing on international rankings, research partnerships, etc., which could be making these universities more selective in their recruitment. While internationalization could mean no such selectivity in post-2005 institutions.

5.3. City Level

While African ISM is happening due to a lack of higher education institutions in the origin country can be argued, it does not fully explain why this flow is directed towards cities with higher socio-economic development. Kondakci (2011) finds that post-graduation employment opportunities are not a significant pull factor for students from Africa, the Middle East, and Iran. Therefore, Türkiye's big cities transforming their recognizability to their universities due to a lack of information is a possibility, which is indicated as a phenomenon in the literature (Park, 2009). It could also be hypothesized that African ISM is heavily influenced by city factors such as quality of

life and the ease of travel. Additionally, the fact that the pre-2005 model has a significant effect on socioeconomic development, while the post-2005 lacks this significance, indicates that city development is not necessarily a determining factor in attracting African IS. This fact is important considering the fact that post-2005 universities are often founded in non-socioeconomically developed cities.

Perez-Encinas et al. (2020) and Weber (2024) both report that social life is an important consideration for bachelor students. In accordance with the literature, ODUS is found to have an effect on research universities and an even stronger effect on foundation universities. However, neither socio-economic development nor local student satisfaction affects public universities. This could be explained by the fact that these types of cities could offer low costs of living, which is a prominent attractor for Türkiye, as shown by Kondakci (2011). It is also entirely possible that the students enrolled in distance education during 2020 may have sparked the popularity of these universities in non-developed cities, and they may have retained this popularity despite the city factors.

5.4. Country Level

The study finds that, contrary to often trivialized effects of distance due to East-West or South-North flows of ISM, which happen over great distances, for regional hubs, naturally, distance may play a huge role. This finding does not align with what has been reported in Kondakci (2011), where only the students from Azerbaijan and Turkic countries to Türkiye exhibit proximity as a factor influencing them. However, from the results, it is clear that the further away an African country is from Türkiye, the less IS it attracts. This fact could be due to countries further away being attracted by different regional hubs (i.e., Portuguese-speaking countries preferring Brazil, South

Africa becoming a regional hub for South Africans, etc.). Nevertheless, it is undeniable that distance has its influence as a factor.

All models indicate that African IS is likely to happen over the same university-country pairs, and less so in research universities and foundation universities. In light of the fact that Türkiye is seen as a prominent destination for both migration and step-wise migration (Düvell, 2014; Düvell, 2018; Kuschminder & Waidler, 2020), the cheap tuition costs in public universities may be used by African students as a way of migration. Hence, information networks may have been established by the African IS may have caused this phenomenon to occur. Indeed, it is possible to view this phenomenon as a migration network, where a flow may have occurred due to reduced social, economic, and emotional costs of subsequent migrants (Somerville, 2015). Furthermore, it is well known in the migration literature that migration networks heavily influence the decision-making of the migrants (Massey et al., 1993). It is entirely possible to argue that African students going into Türkiye influenced the decision-making of students from the same country, which caused a strong network phenomenon to occur. Additionally, from Figure 4 (Chapter 1), a sharp increase in student numbers can be observed in the distance education period of 2020 during the height of the COVID-19 pandemic. It is possible to argue that African students, who probably were not residing in Türkiye during this time, may have caused a migration network to occur strongly due to the spreading of information in their home country.

Additionally, student recruitment agencies that operate in certain African countries and Türkiye Scholarships' efforts may have caused this variable to be significant, in accordance with CoHE's vision of increased volume of ISM. Indeed, Mulvey (2021a) reports a similar phenomenon where scholarships provided by the

Chinese government enable bilateral movement between China and African students. Furthermore, Weber (2024) also finds international students from the same country strongly influencing future enrollments and explains this phenomenon with a reliance on recruitment agencies. This finding is further reinforced by the fact that the students from Eastern Africa and Northern Africa together are the vast majority in public universities, as can be seen from Figure 11 (Chapter 4), both of which are zones of focus for Turkish foreign policy (Donelli, 2021). Lastly, although incoming foreign migration at the city-level is not found to be a significant predictor, bilateral migration networks that could happen in socioeconomically developed cities that were not captured by this variable could also indicate a network phenomenon.

5.5. Conclusion

Results of the study for all data are in alignment with what Kondakci (2011) and Cantwell (2009) suggest. Flows into regional hubs can't be explained by traditional pull factors that are used for Western countries, which often point to dominant university-level performance factors in explaining ISM (Altbach, 2006; Altbach et al., 2010; Arambewela & Hall, 2008; Hazelkorn, 2013). In the case of African students, the results of this study suggest that such factors can't be relied on to accurately predict incoming students, as these variables only have small to moderate effects, and only in public universities. Additionally, university-level policy focus seems to be influencing African ISM, although slightly. Network effects, potentially caused by information networks, migration paths, or agencies, can also be said to be one of the significant determinants of African ISM in Türkiye, while city-level factors have sway even when only research universities are considered.

5.6. Implications for Policy

It is possible to make a critique of the soft power goals of the Turkish government from the results of the study. The majority of the African ISM are located in non-research universities that have Turkish as their language of education, which can prove to be very hard to adapt to. Furthermore, for public universities, African IS are not necessarily located in cultural centers or developed cities of Türkiye. Indeed, in such environments, African students may experience limited integration into Turkish society, reducing their potential to serve as cultural ambassadors for Türkiye and weakening the intended soft power goals that the Turkish government aims to achieve. Furthermore, the student concentration in these universities can reach a threshold where African students can form communities that bypass the need to integrate into Turkish culture and language, as indicated by the very prevalent network effect. Although these are not necessarily harmful prospects for the African students, Turkish CoHE may have to reconsider some of its goals in light of these results.

A focus on increased volume of international students by CoHE also raises some concerns. University-level factors are often weak predictors of African ISM, and URAP often does not have a significant effect. Even when they have a significant positive effect in public universities, it is only small to moderate, and when research universities are taken out of the public model, this effect severely diminishes. This is important as most tertiary students are enrolled in non-research public universities. Therefore, it is possible to argue that this flow is directed towards tertiary institutions that are not particularly academically competitive and have a negative association with the internationalization keyword. Hence, it is very possible that these institutions are not available to support such an influx in terms of both internationalization and the

quality of education. African students will likely struggle with adaptation, and their degree of satisfaction with the education they receive may be less than what is hoped. This deduction aligns with what has been reported with IS in Türkiye (Aras & Mohammed, 2018; Tok, 2023; Yılmaz, 2018).

5.7. Recommendations for Future Research

The study also reveals a lot of gaps for future researchers to explore. A deeper dive into policy analysis by institutions can reveal whether the internationalization focus indeed correlates negatively with African students. This phenomenon can be further investigated by more sophisticated document analysis methods or qualitative studies at the institutional level. The rest of the results presented in this study should also be explored in studies with a narrower focus, as, due to the nature of the data, it is not possible to establish clear-cut causality between the factors in this study and African ISM. Prevalence of some variables may have entirely different implications rather than being the direct cause of increased African IS numbers. Additionally, the prevalence of the network effect and the reasons they differ across models should be another topic of investigation that invites micro-level studies into the discussion. It is also helpful to mention that more robust models can be constructed for future studies without having to rely on a lagged dependent variable. This is, of course, not possible unless CoHE enriches the type of information it shares, i.e., new enrollments in a university per nationality and study program.

The investigation of other regions besides Africa, of course, is another natural implication of the results of this study. Similar macro-level studies are needed in order to understand this phenomenon further for other regions, which are severely lacking in the context of Türkiye. The future studies can also further sample the data to post-

2005 public/foundation, pre-2005 public/foundation, and pre- and post-COVID periods for further insight into different dynamics.

The city levels' prevalence in this study is also a subject of interesting future research. It is very hard to establish clear-cut cause-and-effect connections between city-level variables and the total number of African IS with the variables in this study. Therefore, reasons why these variables are prevalent in some of the models should be investigated with micro-level studies, with potential implications being migration intentions and whether big cities transform their recognizability to the institutions that reside within them. An investigation such as this can be very fruitful for foundation universities, which are a relatively new sector in Türkiye.

Additionally, the results of the study imply that the lack of marketing of Turkish tertiary institutions due to being unlisted on global rankings or their overall lack of appeal to IS can be compensated for by other factors. Namely, from the results, these are university policy, the student networks, recruitment agencies, and cities. However, these require micro-level studies to establish clear connections and investigate whether this is a healthy practice for both the students and the institutions.

The study's results also reveal that pull factors can vary distinctly when looking at different types of institutions. This indicates that future studies should consider the type, city, and age of a university when assessing the student mobility of African students. Most distinctly, however, the results reveal that two mainstream inflows of African students occur: one for foundation institutions where city-level factors are dominant, and one for public institutions where strong network effects and small to moderate university-level effects can be observed.

Across the models, a clear preference for universities not struggling to fulfill their quota rates can be observed. Therefore, whether this is caused by a lack of opportunities offered by these institutions or a lack of pull factors to perpetuate such a flow requires further investigation. Furthermore, the big difference observed in quota fulfillment rates between pre-2005 and post-2005 universities suggests that the newly established universities specifically are struggling with attracting African IS. Whether such a struggle is observed in attracting students from other countries and investigating the nature of this phenomenon could reveal interesting suggestions for policymakers.

Lastly, it is indicated in the literature that a degree from the traditional destinations can be seen as an important source of symbolic and economic capital (Maringe & Carter, 2007). It is also indicated that outbound African students tend to prioritize personal and career development (Gbollie & Gong, 2020; Maringe & Carter, 2007; Ojo et al., 2023). However, it is very doubtful that universities that do not have high academic performance could provide such capital to incoming students. This is especially so when Türkiye lacks the “globally recognized educational quality” branding of the traditional destinations. While non-traditional destinations can still attract African students by the prospect of a “foreign degree” (Gbollie & Gong, 2020), it is very plausible that institutions in Türkiye may fail to meet the African students’ expectations severely. Therefore, whether this flow of African students is sustainable in regards to the problem of capital gain by the students should also be investigated for African students.

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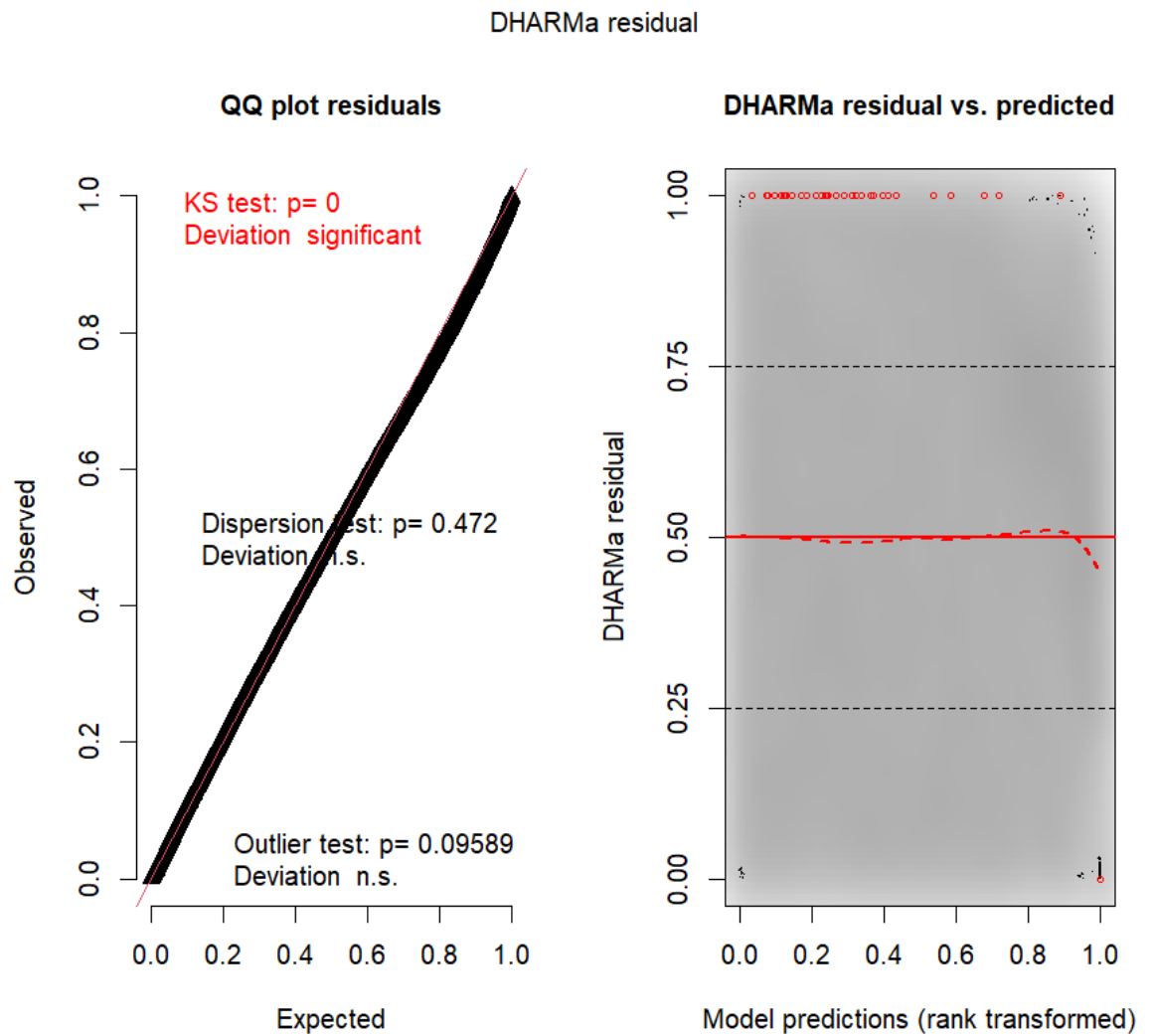
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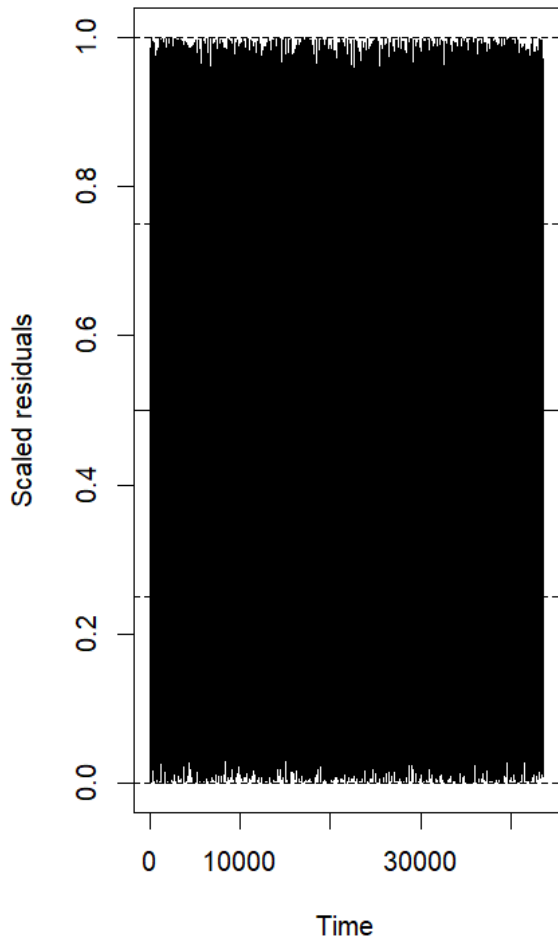
APPENDICES

A. MODEL DIAGNOSTIC PLOTS

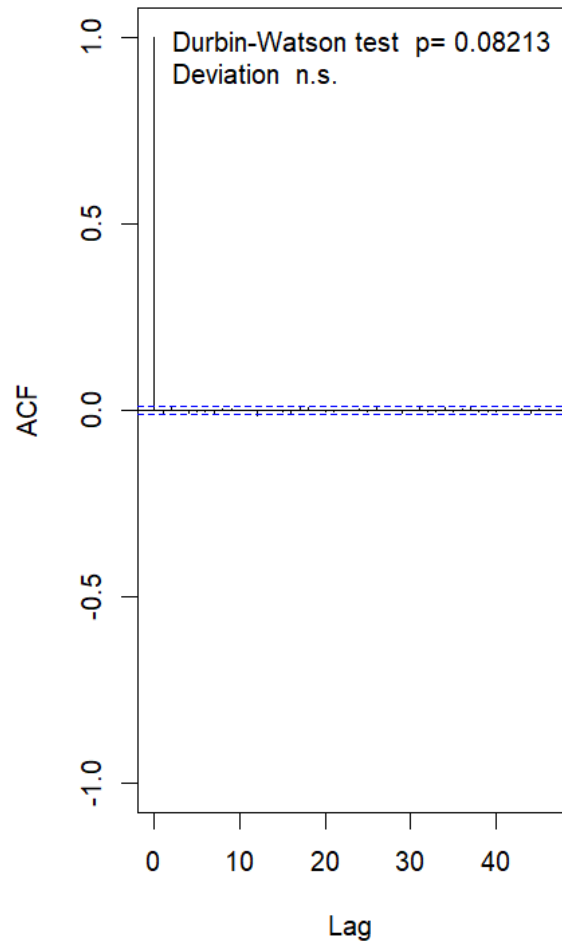
Main Results



Residuals vs. time

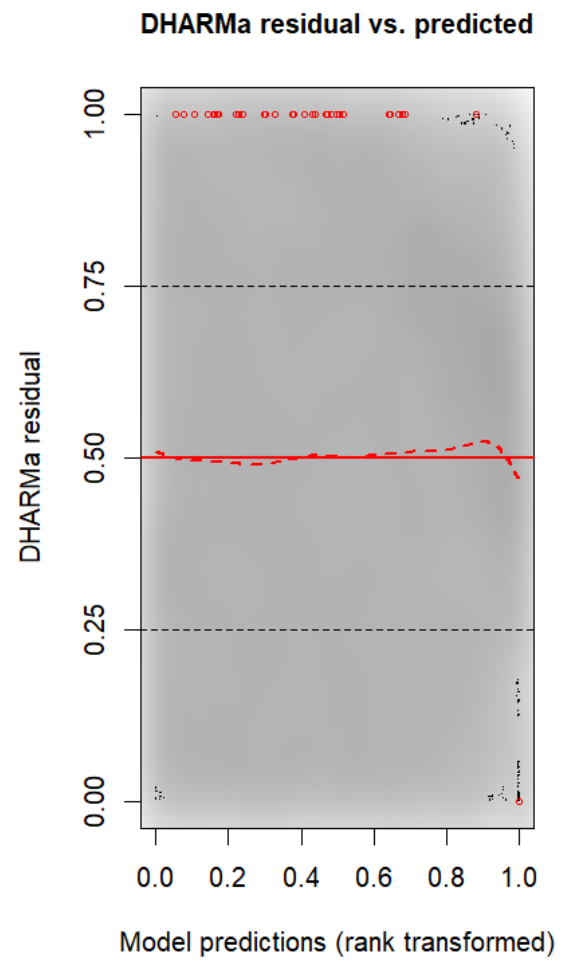
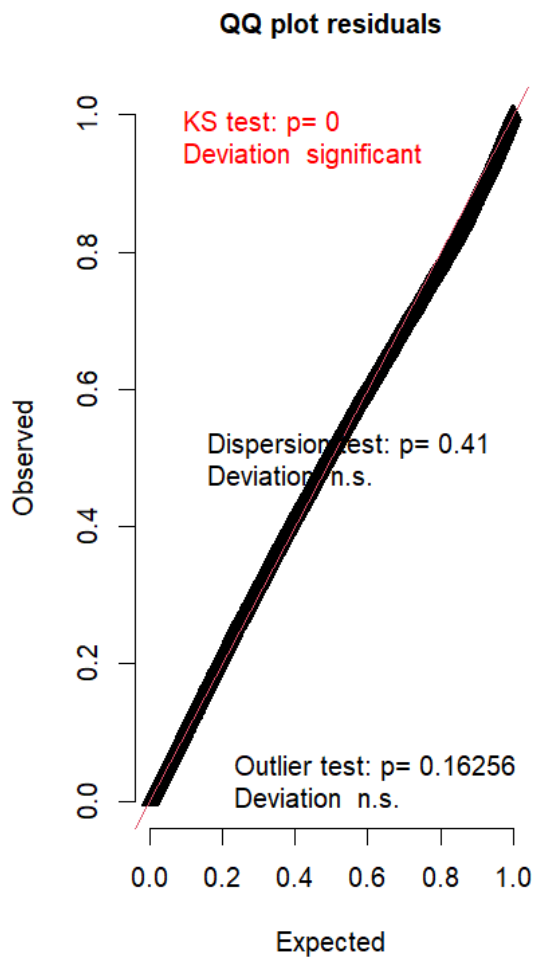


Autocorrelation

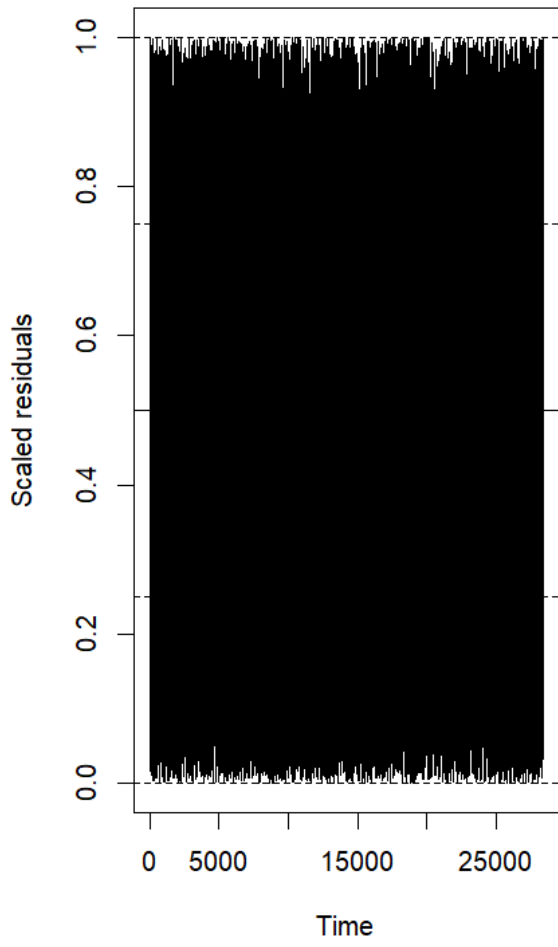


Public Universities

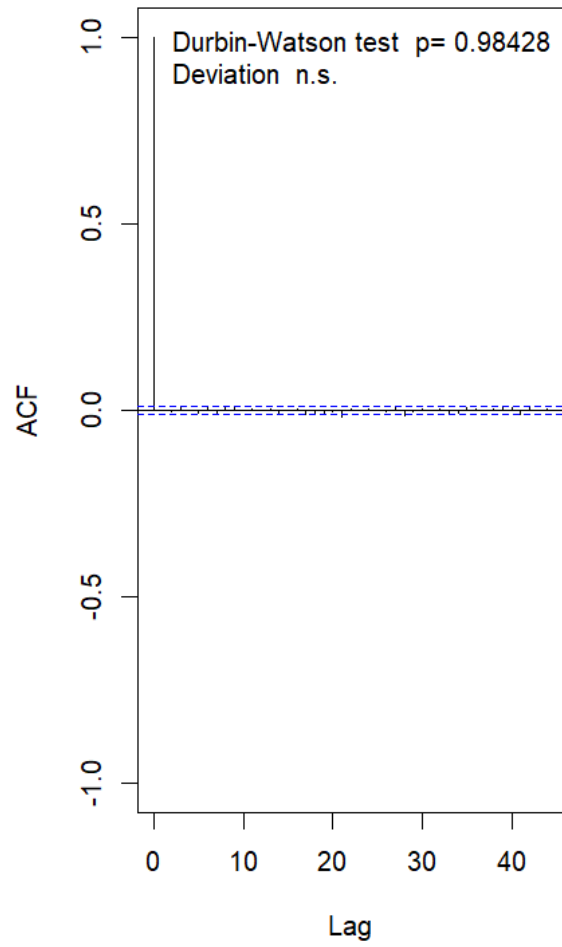
DHARMA residual



Residuals vs. time

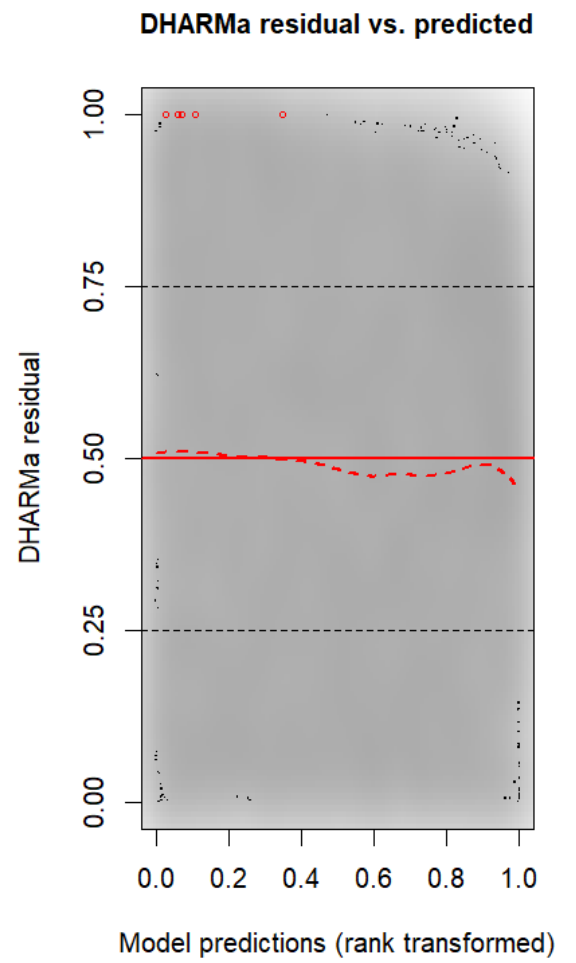
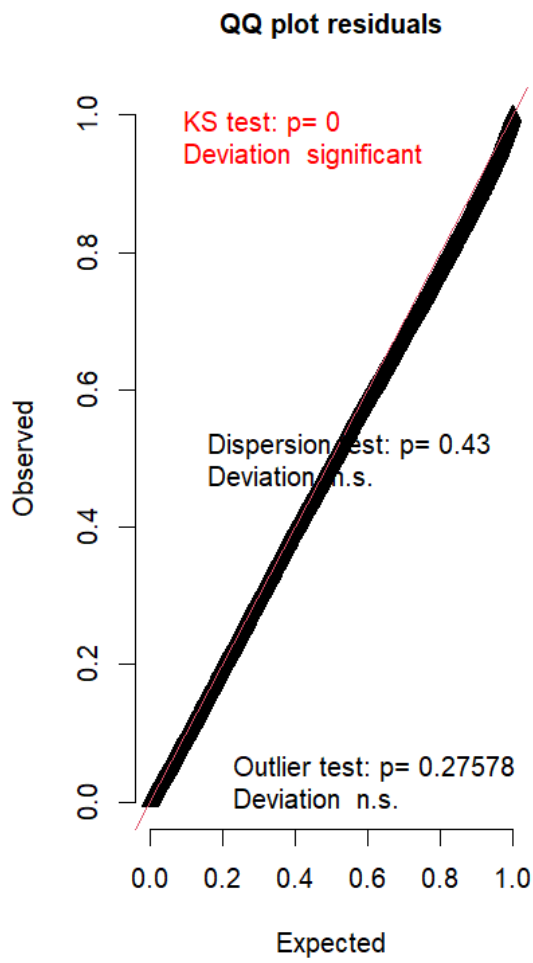


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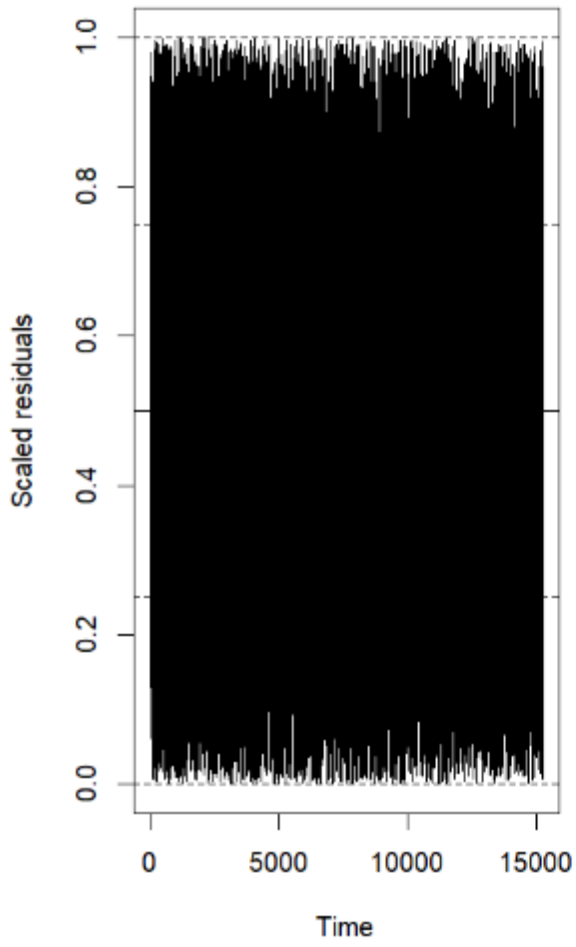


Private Universities

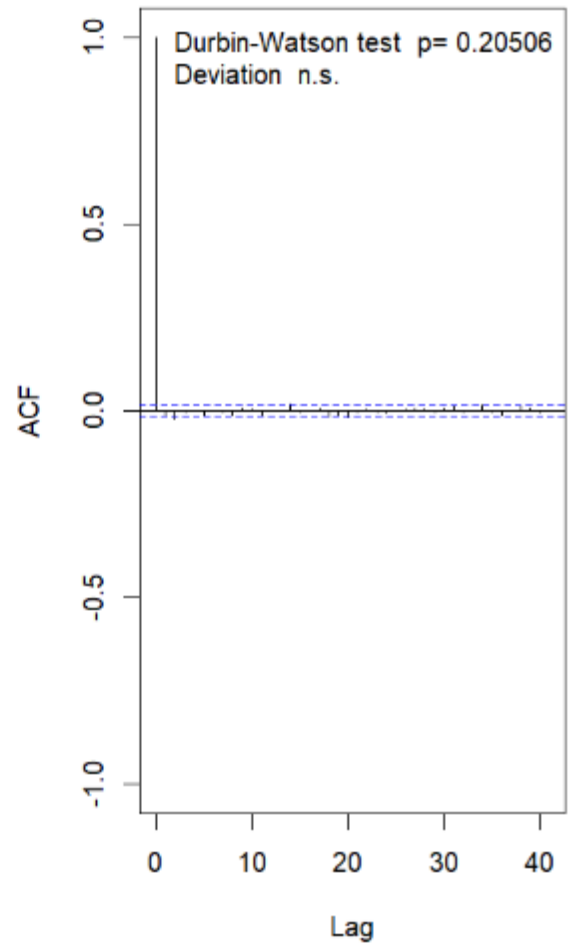
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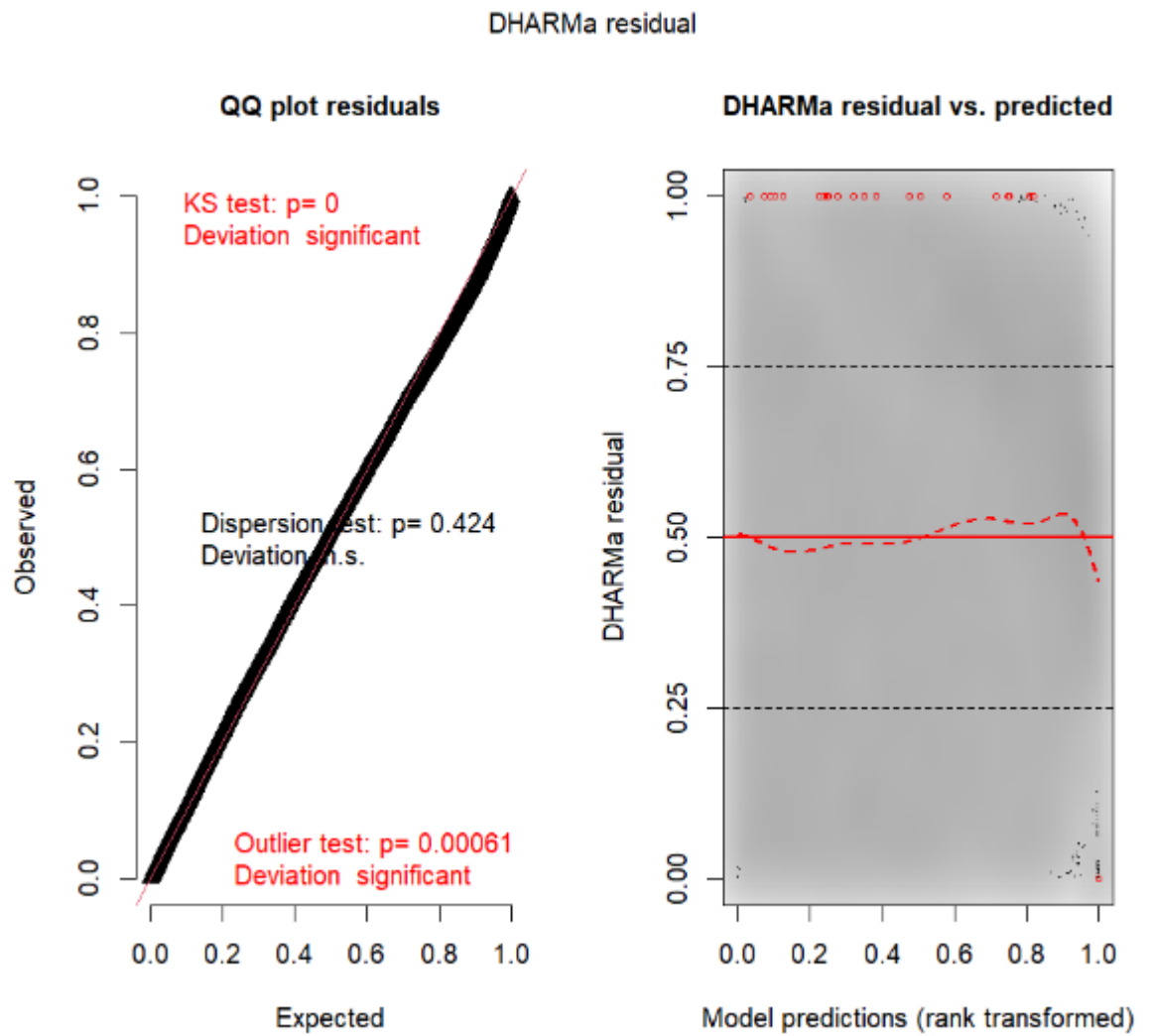
Residuals vs. time



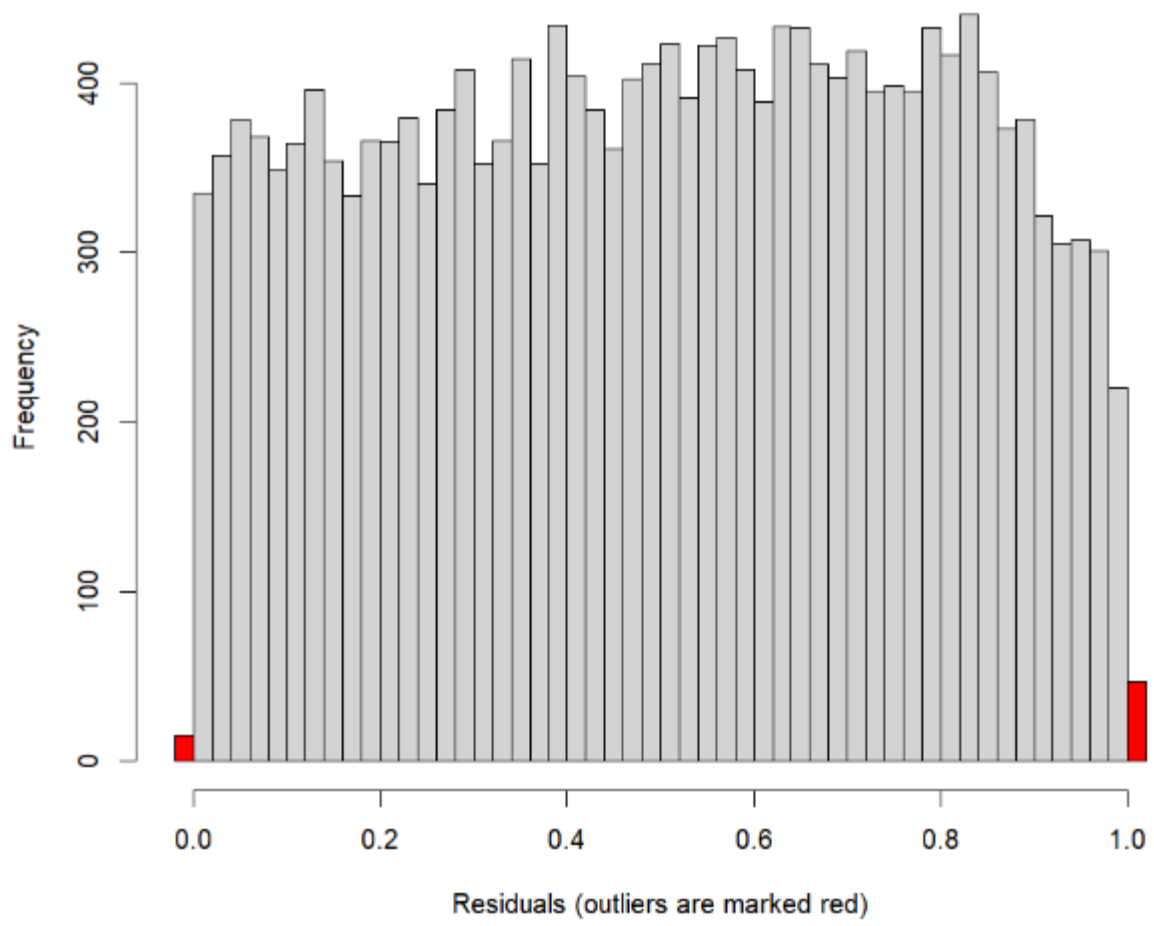
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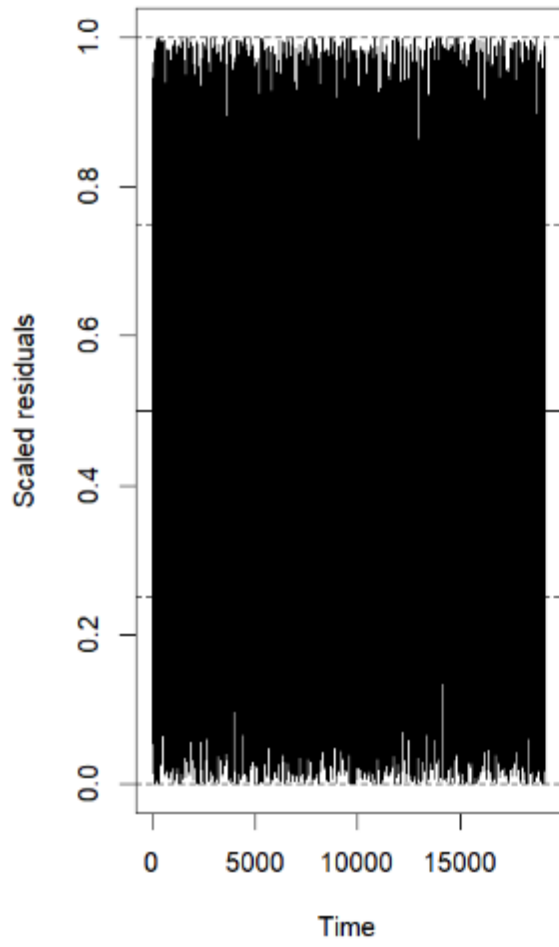
Pre-2005 Universities



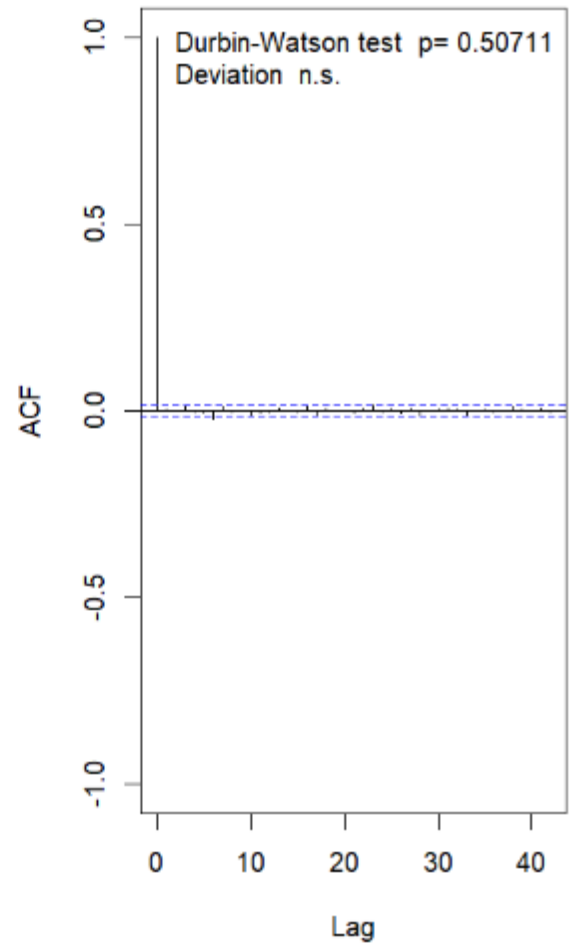
Outlier test n.s.



Residuals vs. time

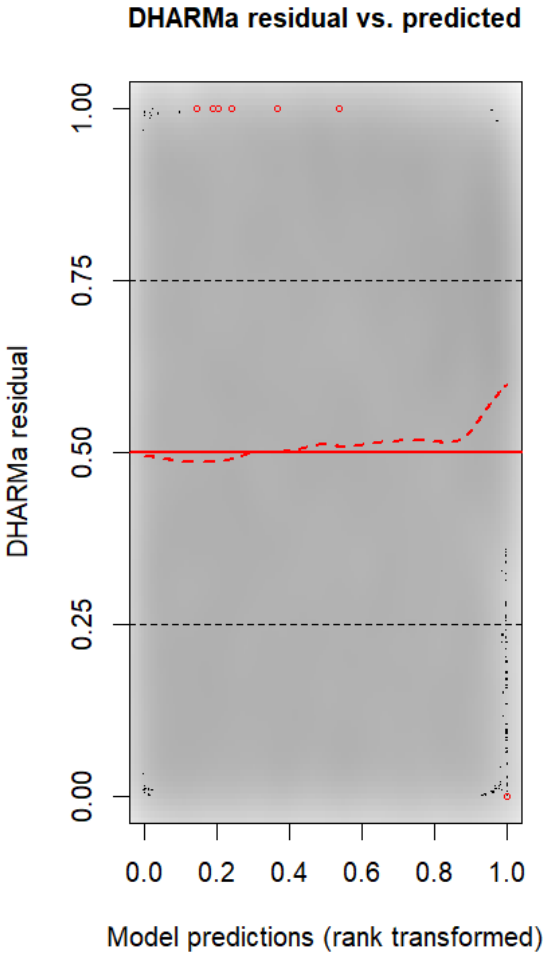
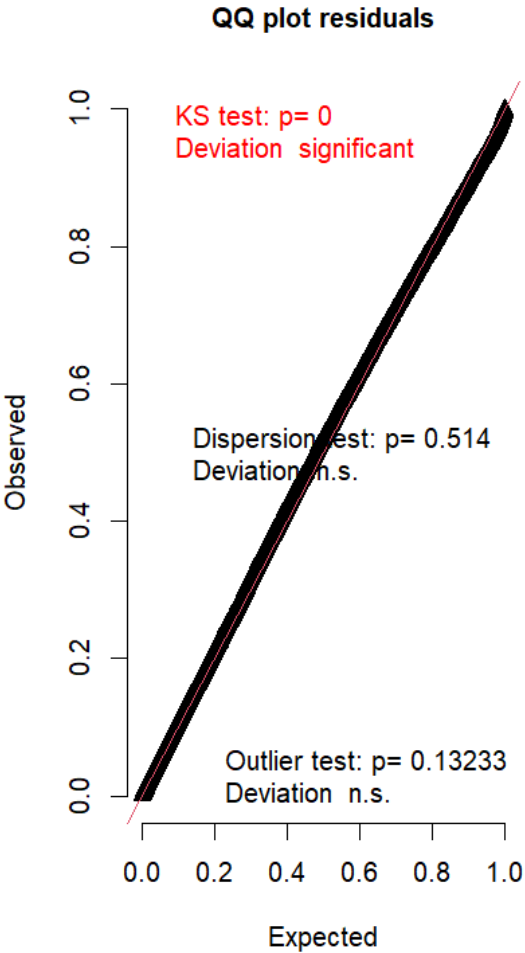


Autocorrelation

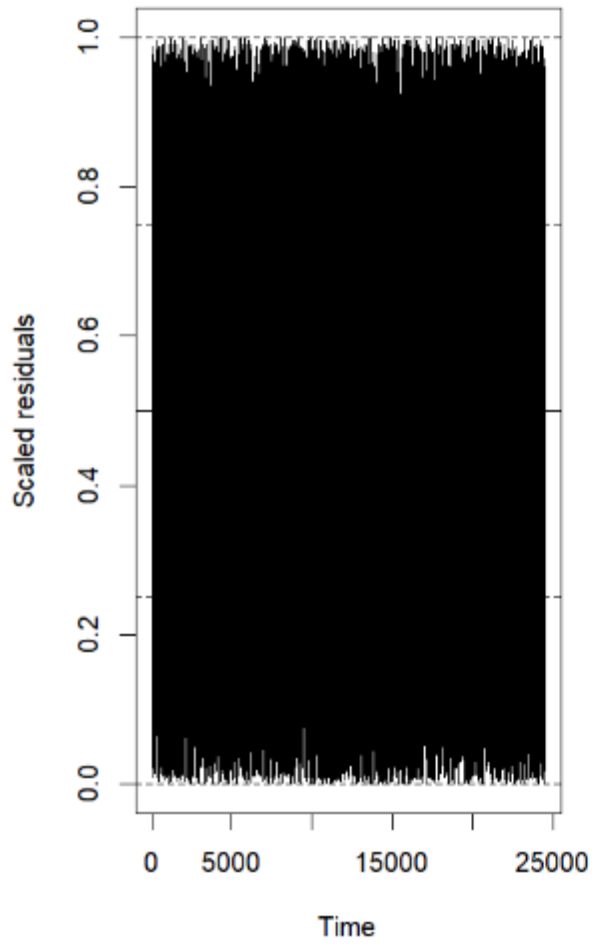


Post-2005 Universities

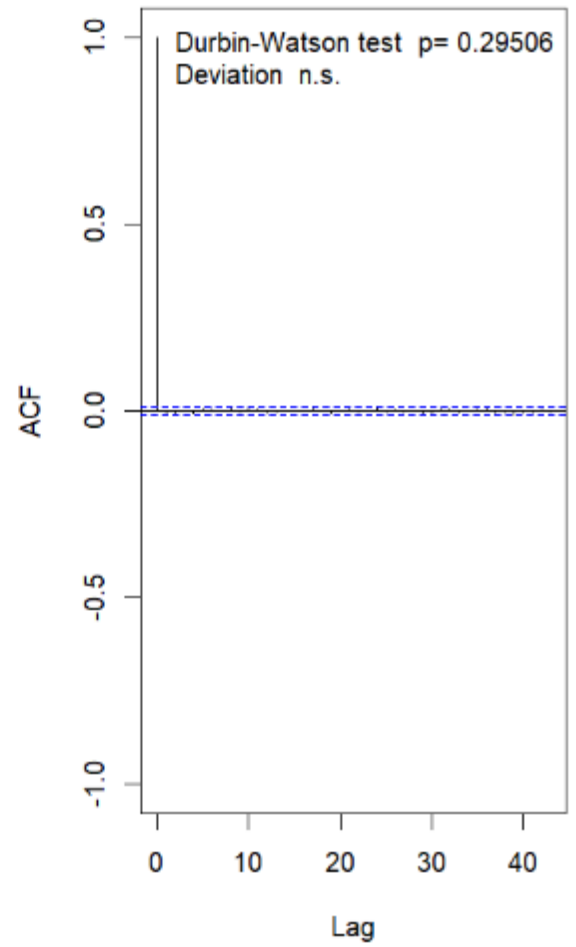
DHARMA residual



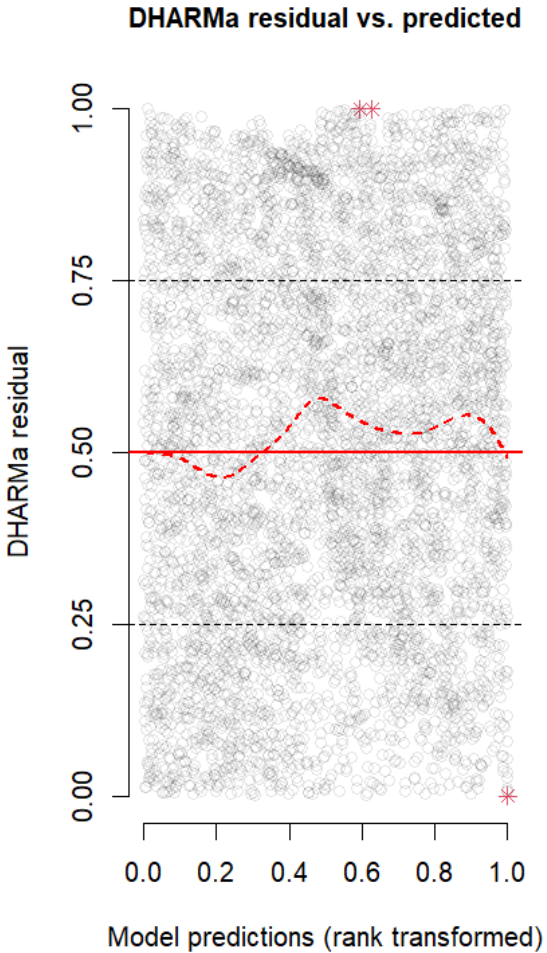
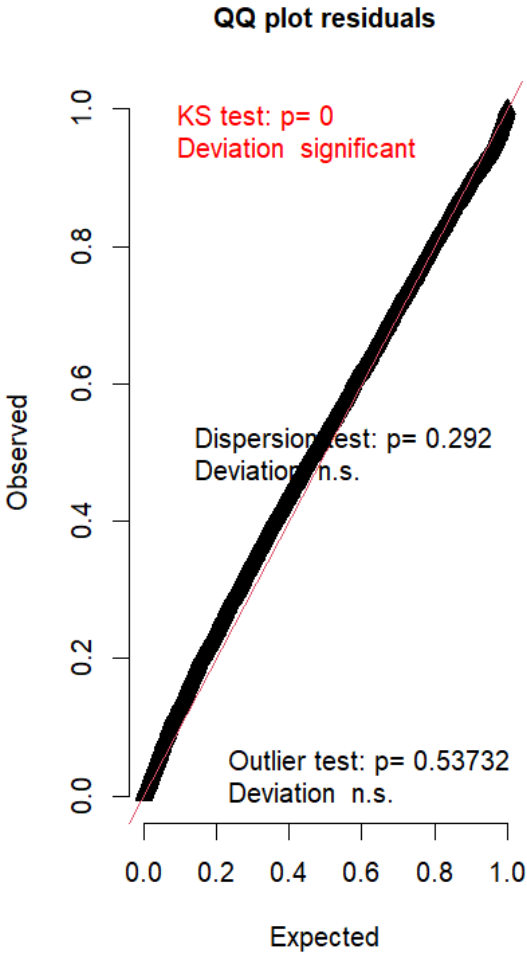
Residuals vs. time



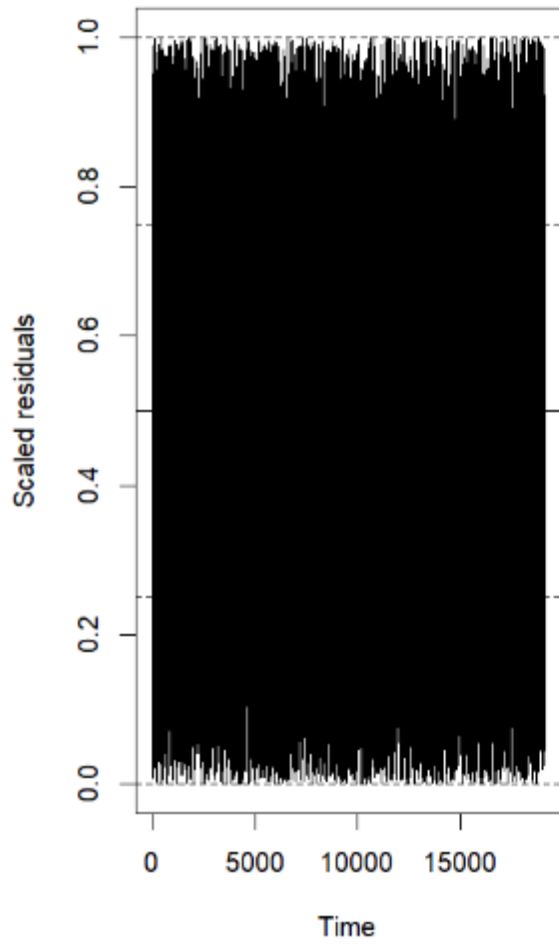
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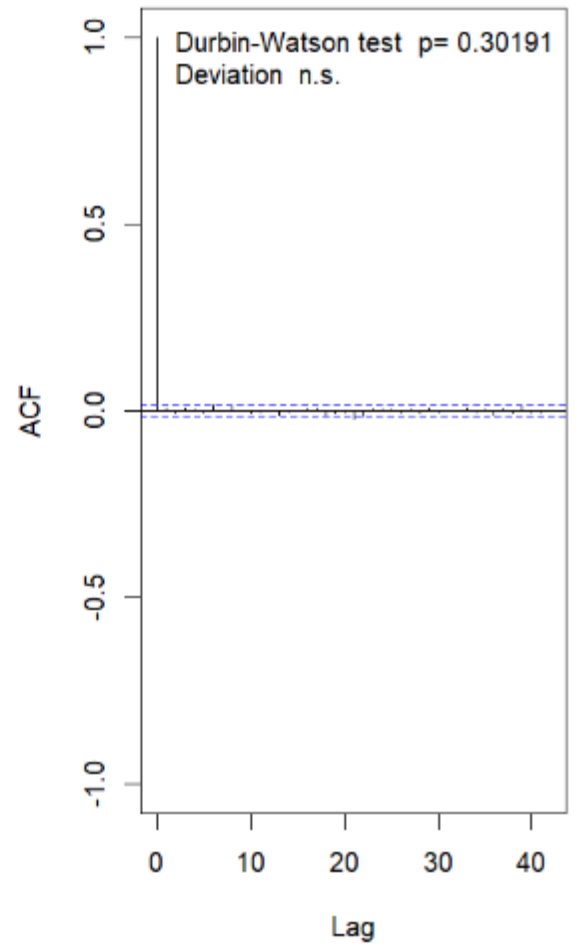
DHARMA residual



Residuals vs. time



Autocorrelation



B. LIST OF AFRICAN COUNTRIES IN THE STUDY

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

C. TURKISH SUMMARY/ TÜRKÇE ÖZET

1. Giriş

1.1 Yüksek Öğretimin Uluslararasılaşması ve Uluslararası Öğrenci Hareketliliği

Yükseköğretimdeki değişimin hızı ve ölçeği son yıllarda yoğunlaşmıştır (Rumbley ve diğerleri, 2022). Teknoloji, demografik değişiklikler, ekonomik baskılar ve hükümetlerin talepleri, yükseköğretim kurumlarının yapısal ve işlevsel özelliklerinde değişimi zorlamaktadır. Yükseköğretimin kitleselleşmesi devam etmiştir (Calderon, 2018); küreselleşme ve küresel bilgi ekonomisi, yükseköğretimin merkezine yerleşmiştir (Marginson, 2010). Yükseköğretim giderek artan bir şekilde ticari ve piyasa odaklı güçlere tabi olmuştur (Altbach & Levy, 2005). Teknolojideki hızlı gelişmeler, öğretimin nasıl yapıldığını yeniden tanımlamış ve araştırma için uluslararası iş birliği ve bağlantıların gerekliliğini artırmıştır (Alexander ve diğerleri, 2019).

Bu gelişmelerin ortak ve dikkat çekici sonuçlarından biri, yükseköğretimin uluslararasılaşmasının hızlanması olmuştur. Soğuk Savaş'ın sona ermesiyle, uluslararası yükseköğretimdeki ulusal güvenlik ve dış diplomasi eğilimleri; küreselleşme ve küresel toplum eğilimlerine doğru kaymıştır (De Wit & Merckx, 2023). Bu, yükseköğretimin uluslararasılaşmasını, küreselleşmenin kültürel, sosyal ve ekonomik yaşam yönlerini etkilediği bir ortamda çok önemli bir hale getirmiştir (Aba, 2013). Ayrıca, uluslararası yükseköğretimde ekonomik argümanlar önem kazanmıştır (De Wit & Merckx, 2023). Lyman (1995) ve Callan & de Wit (1995), Soğuk Savaş'ın

sona ermesiyle, uluslararası yükseköğretimin ekonomik rekabetçiliğe doğru bir geçiş yaşadığını, sırasıyla ABD ve Avrupa'da ifade etmektedir.

Bununla birlikte, de Wit & Merckx (2022), son yıllarda küresel olarak dolaşan öğrenci sayısındaki büyük artışın, uluslararasılaşmadaki en önemli eğilim olduğunu belirtmektedir. UNESCO (2024a), yurtdışına giden uluslararası öğrenci sayısının 2001'de 2,1 milyondan 2022'de 6,8 milyona yükseldiğini bildirmektedir. De Wit & Merckx (2022), bu öğrencilerin çoğunluğuna ev sahipliği yapan Amerika Birleşik Devletleri, Avustralya ve Birleşik Krallık gibi Batı ülkeleri için önemli bir pazarın ortaya çıktığını bildirmektedir.

Küresel öğrenci hareketliliği tarihsel olarak, doğudan batıya ve kuzeyden güneye doğru geleneksel destinasyonlara yönelik olmuştur (Altbach, 2004; Barnett ve diğerleri, 2016; Chen & Barnett, 2000). Başka bir deyişle, İngilizce, Fransızca veya Almanca gibi yaygın konuşulan dillere sahip ekonomik olarak gelişmiş ülkeler genellikle destinasyon ülkeleri olurken, Asya ülkeleri öncelikle giden öğrenci kaynakları olarak rol oynamaktadır. Altbach (2004), akademide İngilizce'nin baskınlığı ve daha iyi yaşam beklentilerinin bu akışı çektiğini savunmaktadır. Stein & de Andreotti (2015), Batı ülkelerine olan bu akışın, dünyanın sömürge sonrası durumunu yansıttığını ve bu tercihin Batı eğitiminin kabul görmüş değerinden kaynaklandığını savunmaktadır. De Wit & Merckx (2022), gelişmiş ülkelerdeki yaşanan nüfuslar nedeniyle, yetkin bir iş gücü için artan küresel rekabetin bir çekim faktörü haline geldiğini belirtmektedir. Wood ve diğerleri (2022), Fransa ve Almanya gibi ülkelerin yumuşak güç ve bilgi diplomasisi hedeflerinin, ülkelerin uluslararası öğrenci alımı çabalarını yönlendirdiğini ifade etmektedir.

1.3 Türkiye’de Öğrenci Hareketliliği

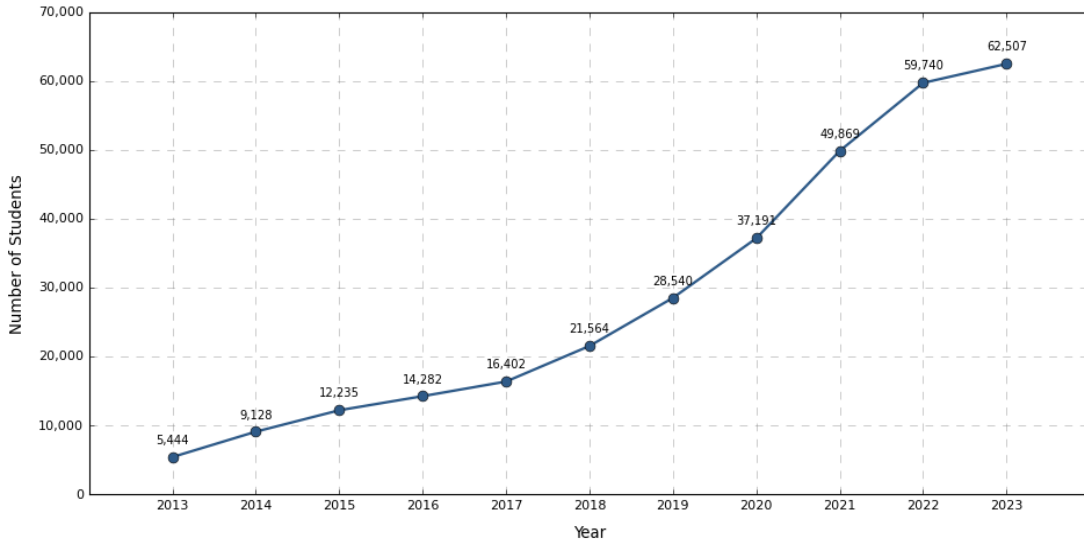
Türkiye’nin uluslararası öğrenci hareketliliği (ISM) tarihindeki erken dönem, yeni kurulan cumhuriyetin modernleşme çabaları kapsamında devletin seçkin öğrencileri Batı eğitimi almak üzere yurtdışına göndermesiyle şekillenmiştir (Şarman, 2005; Yıldırım, 2005). Ancak, Batı eğitimine verilen öneme rağmen, Türkiye’nin kategorik olarak her zaman bölgesel bir merkez olduğu savunulabilir. Türkiye, 1923’teki kuruluşundan itibaren, nispeten köklü yükseköğretim sistemini diplomatik misyonlar yürütmek için kullanmıştır. Bunun erken örnekleri, Yıldırım (2005) tarafından belirtildiği üzere, 1931 yılında Romanya’daki Türk büyükelçiliğinin “Gagavuz” adlı Türk azınlık grubundan öğrenci almak için yaptığı çalışmalardır. Dok (2009) ayrıca 1937 yılında Doğu Türkistan’dan öğrenci alımı çabalarını tarif etmektedir.

Ancak, 1990’larda başlatılan Büyük Öğrenci Projesi (GSP), Türkiye’de uluslararası öğrenci hareketliliği açısından bir dönüm noktası olmuş ve bugüne kadar Türkiye’de yükseköğretimin diplomatik hedefler için en büyük atılımı olmuştur. GSP, yeni ortaya çıkan cumhuriyetlerle ilişkileri güçlendirmek amacıyla Türk kökenli öğrencileri Türkiye’ye yükseköğrenim için getirmeyi amaçlamıştır (Terzi, 2013). Ancak, 2012 yılından sonra Büyük Öğrenci Projesi ve diğer programlar “Türkiye Bursları” altında birleştirilmiş ve Yurtdışı Türkler ve Akraba Topluluklar Başkanlığı bünyesinde daha geniş bir ölçekte hizmet vermeye başlamıştır. Bugün, Türkiye Bursları 171 farklı ülkeye burs imkanı sunmaktadır (YTB, 2024).

1.3 Türkiye’deki Afrikalı Öğrenciler

Resmi belgelerde, özellikle Afrika ülkelerine yönelik net bir odaklanma gözlemlenebilir. Bu çalışmada yıllar boyu veri tutarsızlığı nedeniyle yer almasa da,

Türkiye Bursları (2019) raporuna göre toplam başvuruların yaklaşık %35'i Afrika bölgesinden gelmiş ve verilen toplam bursların %28'i Afrika bölgesine aittir. Bu, 2019 yılında Afrikalı öğrencilere toplam 1.339 öğrenci bursu verildiği anlamına gelmektedir. O yıl toplam 28.540 Afrikalı öğrenci olduğu düşünüldüğünde, bu azımsanmayacak bir burs sayısıdır. Ayrıca, YÖK'ün (2017) raporu, Afrika'dan öğrenci alımı politikasına odaklanıldığını göstermektedir. Sonuç olarak, Şekil 3'ten görülebileceği üzere, 2017'den 2022'ye kadar Türkiye'deki Afrikalı öğrenci sayısında büyük bir artış gözlemlenmiştir.



Şekil 3: Türkiye'deki Afrikalı öğrenci sayıları (2013-2023)

Note. Veri kaynağı CoHE (YÖK) (n.d.-a), <https://istatistik.yok.gov.tr/>.

1.4 Çalışmanın Amacı

Türkiye'nin Afrikalı öğrenciler için neden popüler bir tercih olduğunu analiz etmeye çalışan bazı nitel araştırmalar yapılmıştır (örneğin, Dзіwornu ve diğerleri, 2016). Ancak, bu çalışmalar genellikle uluslararası öğrencilerin deneyimlerine dayalı olarak yapılmış olup, genel fenomeni bir teori altında açıklamamaktadır. Ayrıca, Türkiye'yi Afrikalı öğrenciler için bölgesel bir merkez olarak nicel olarak

değerlendiren neredeyse hiç çalışma bulunmamakta ve Afrikalı öğrencileri belirli bir milletten ziyade bir bütün olarak ele alan nitel çalışmalar da yoktur. Bu nedenle, literatürde Türkiye'deki Afrikalı öğrenci akışına dair genelleştirilebilir açıklamalar bulunmamaktadır. Bu çalışma, itme-çekme modeli aracılığıyla literatürdeki bu boşluğu kapatmayı amaçlamaktadır.

Burada araştırılan sorun, yeni gelen çok sayıda Afrikalı öğrencinin yükseköğretim kurumlarını seçerken hangi faktörlere tepki verdiği konusunda kesin bilginin olmamasıdır. Ayrıca, değişkenlerin etkisinin kategorik olarak farklı kurum türlerine göre nasıl değiştiğini dikkate almadan varsayımlarda bulunmak hatalı olur. Bu nedenle, bu çalışma, Türkiye'deki Afrikalı öğrenci sayısı ile hangi faktörlerin ilişkili olduğunu belirlemek için kurumlar, şehirler ve ülkeler genelindeki kriterleri inceleyecektir. Ayrıca, bu kriterlerin modellenen kurum kategorisine göre nasıl farklılaştığını analiz edecektir. Bu kategoriler şunlardır: devlet üniversiteleri, vakıf üniversiteleri, 2005 öncesi kurulan üniversiteler, 2005 sonrası kurulan üniversiteler ve araştırma üniversiteleri. Bu makale, bu nedenle iki araştırma sorusuna sahiptir:

- Üniversite, şehir ve ülke düzeylerinde hangi faktörler, Türkiye'deki yükseköğretim kurumlarında Afrikalı uluslararası öğrenci kayıtlarını etkiler?
- Bu faktörler, gözlemlenen kurum kategorisine göre nasıl farklılık gösterir?

1.5 Analiz Çerçevesi: İtme-Çekme Modeli

İtme-çekme modeli, ilk olarak Lee (1966) tarafından göçmenlerin karar alma dinamiklerini açıklamak için geliştirilmiştir. Chen (2006) ve Li & Bray (2007), bu modeli uluslararası öğrenci hareketliliğini (ISM) açıklamak için kullanmıştır. Bu çalışmada, Türkiye'deki şehir ve üniversite düzeylerinde mevcut çekme faktörlerini yorumlamak için bir itme-çekme modeli kullanılmıştır. Chen (2006), çekme

faktörlerini basitçe uluslararası öğrencileri destinasyonlarına çeken faktörler olarak tanımlar.

Literatürde belirtilen ve Afrikalı öğrencilerin tanımlayıcı istatistiklerinin ortaya koyduğu unsurlara dayalı olarak, uluslararası öğrenci hareketliliğiyle ilgili olduğu düşünülen üç düzeyli bir model tasarlanmıştır. Analizin ilk düzeyi üniversite olarak seçilmiştir. Üniversite akademik performansı ve prestijinin uluslararası öğrenci hareketliliğini çekmede önemli bir rol oynadığı literatürde belgelenmiştir (Arambewela & Hall, 2008; Lee, 2014; Souto-Otero & Enders, 2015). Bu nedenle, üniversite performansı ve prestijini temsil etmek için Üniversite Akademik Performans Sıralaması (URAP) puanları kullanılmıştır. URAP puanı, Türkiye'deki çoğu üniversiteyi her yıl puanladığı için daha küresel olarak bilinen bir metriğe tercih edilmiştir. QS veya THE gibi uluslararası öğrenciler tarafından daha iyi bilinen sıralamalar tercih edilmemiştir, çünkü bunlar yalnızca ülkedeki en başarılı kurumları dikkate almakta ve Türkiye'deki üniversitelerin çoğunluğunu göz ardı etmektedir.

Ancak, literatür, bu tür sıralamalara üniversite kalitesini belirlemek için tamamen güvenilmemesi gerektiğini belirtmektedir (Altbach, 2006; Altbach & Reisberg, 2009; Hazelkorn, 2013) ve URAP puanları daha büyük üniversiteler lehine önyargılıdır (URAP, t.y.). Bu nedenle, tamamlayıcı değişkenlere ihtiyaç duyulmuştur. Yabancı öğrencilerin üniversite öğrenim memnuniyetine ilişkin yıllık veri bulunmasa da, yerel öğrenciler için böyle bir metrik mevcuttur. Bu nedenle, Üniversite Araştırmaları Laboratuvarı (URL) tarafından yayımlanan Türkiye Üniversite Memnuniyet Araştırması (TUMA) raporları, ikinci bir üniversite düzeyi performans göstergesi olarak kullanılmıştır. Ayrıca, her üniversite için mevcut kontenjan oranı ve Türk öğrencilerin tercihleri, yerel öğrenciler için ne kadar çekici olduklarını

belirlemek için hesaplanmıştır. Bu, Ölçme, Seçme ve Değerlendirme Merkezi Başkanlığı (ÖSYM) tarafından yayımlanan yıllık ulusal üniversite sınav sonuçları raporları kullanılarak yapılmıştır.

Ayrıca, Afrikalı öğrencilerin belirli üniversitelerde kümелendiği algısı nedeniyle, kurumsal politikaların uluslararası öğrenci hareketliliği akışını nasıl etkilediğini araştırmak bir zorunluluk haline gelmiştir. Türk kurumları tarafından yıllık olarak yayımlanan iç değerlendirme raporlarında basit bir anahtar kelime arama fonksiyonu oluşturulmuştur. Kurumların politika odaklarının etkisini tespit etmek için iki anahtar kelime uygun görülmüştür: biri “uluslararası öğrenci” diğeri ise “uluslararasılaşma”dır.

Van Mol & Ekamper (2016), Perez-Encinas ve diğeri (2020) ve Weber (2024), şehir düzeyi değişkenlerin uluslararası öğrenci hareketliliğini etkilediğini bildirmektedir. Derece odaklı öğrenciler için şehir düzeyi değişkenler genellikle rapor edilmese de, geleneksel olmayan destinasyonlara olan akışların doğası hâlâ nispeten belgelenmemiş olduğundan, bunları dahil etmek faydalıdır. Şehirlerin sosyoekonomik gelişimi (SEGE), Sanayi ve Teknoloji Bakanlığı (MTI) tarafından ilçeler hakkında beş yıllık aralıklarla yayımlanan raporlardan alınmıştır. Türkiye, göç ve kademeli göç kaynağı haline gelmiştir (Düvell, 2014; Düvell, 2018; Kuschminder & Waidler, 2020) ve şehirlerin sosyoekonomik gelişimi, öğrencilerin göç niyetini gösterebileceği gibi, iş imkânları ve yaşam kalitesini de işaret edebilir. Ayrıca, bir şehrin göç cazibesini test etmek için, toplam yabancı göçmen sayısı Türkiye İstatistik Kurumu (TÜİK) verilerinden alınmıştır. Şehirdeki öğrenci memnuniyeti, Üniversite Araştırmaları Laboratuvarı tarafından yayımlanan Öğrenci Dostu Üniversite Şehirleri Araştırması (ODUS) raporundan alınmıştır. Bu değişken, Perez-Encinas ve diğeri (2020) ve

Weber (2024) tarafından sosyal yaşam fırsatlarının önemli olduğunun belirtildiği çalışmalar nedeniyle dahil edilmiştir. TUMA'ya benzer şekilde, ODUS da yerel öğrenci memnuniyetini rapor eder. Yabancı öğrenciler için yıllık olarak yayımlanan bir raporun olmaması nedeniyle, bu verinin kullanımı uygun görülmüştür.

Afrikalı öğrencilerle ilgili kamuoyu tartışmasının ana odak noktası, bazı üniversitelerde kümelenmeleridir. Bu nedenle, bunu test etmek için, geçmişteki öğrenci sayısının aynı üniversite-göçmen ülke kombinasyonları üzerinde gelecekteki öğrenci sayısını açıklayıp açıklamadığını görmek için (*t-1*)'deki değişken dahil edilmiştir. Bu düzey için sömürge tarihi, işsizlik oranı, Türkiye'nin devlet kanallarında yaptığı insani yardım çalışmalarına ilişkin haberlerin sayısı gibi birçok başka seçenek değerlendirilmiştir. Ancak, bu tür araştırma sorularının, iki taraflı ülke hareketlerine açıkça odaklanan bir yerçekimi modeli altında değerlendirilmesi uygun görülmüştür. Ayrıca, diğer değişkenlerin dahil edilmesiyle modelin zaten yeterince karmaşık olduğu düşünülmüştür.

1.6 Çalışmanın Önemi

Araştırma problemi, Afrika'nın hızla artan genç nüfusu dikkate alındığında önemlidir. Dünya Bankası (2024) verilerine göre, Afrika bugün yaklaşık 873 milyon 0-24 yaş arası nüfusıyla dünyanın en genç nüfusuna sahiptir. UNESCO (2024d), Afrika'da yükseköğretim kayıt oranlarının artmakta olduğunu ve 2004-2024 döneminde bu oranın iki katından fazla arttığını bildirmektedir. Teichler'in (2017) yükseköğretim öğrencisi ve yurtdışına giden öğrenci oranlarının yıllardır büyük ölçüde sabit kaldığı iddiasına dayanarak, bu durumun önümüzdeki yıllarda daha fazla uluslararası hareketli Afrikalı öğrenci yaratacağı söylenebilir. Afrikalı öğrencilerin hareketliliğini hangi kurum/şehir/ülke düzeyindeki faktörlerin desteklediğini görmek,

Afrikalı öğrenci akışına dair bilinçli kararlar almak isteyen politika yapıcılar için büyük önem taşıyabilir.

Ayrıca, Afrikalı öğrenciler konusu, uluslararası politika açısından ilgi çekici bir konudur. Türkiye'nin resmi politikası, Afrikalı öğrencilere, taraflar arasında diplomatik ve ekonomik iş birliğine katkıda bulunabilecek ve Türkiye'nin uluslararası vizyonuna hizmet edebilecek bir eğitim sağlamaktır (Milli Eğitim Bakanlığı, 2014; YTB, 2019). Bu çalışmanın sonuçları, araştırmacıların ve politika yapıcıların, Afrikalı öğrencilerin Türkiye'nin dış politika vizyonuna yardımcı olacak şekilde dağılıp dağılmadığını anlamalarına yardımcı olabilir. Ayrıca, Afrikalı öğrenci akışıyla hangi faktörlerin ilişkili görüldüğünü öğrenmek, bölgesel merkezlere olan akışın neden gerçekleştiğine dair anlayışı ilerletebilir.

Bu çalışma, farklı üniversite türleri için uluslararası öğrenci hareketliliği (ISM) kalıplarını anlamak açısından da önemlidir. Türkiye'deki vakıf üniversiteleri, 1980'lerde ülkedeki neo-liberal fikirler eğilimleriyle senkronize olarak ortaya çıkan oldukça yeni bir olgudur (Şimşek, 2022). Ancak, bu kurumların sürdürülebilirliği sıkça tartışma konusudur ve vakıf üniversitelerinin taleple mücadele ettiği bildirilmektedir (Erkut, 2018). Bu durum ilginçtir, çünkü 2005'ten sonra Türkiye'de yükseköğretimin kitleleşmesine rağmen, yükseköğretim talebinin hâlâ yeterince karşılanmadığı belirtilmektedir (Gür, 2016). Bu çalışmanın sonuçları, vakıf üniversitelerindeki arz ve talep arasındaki bu boşluğun belirli bir bölgeden gelen uluslararası öğrenciler tarafından karşılanıp karşılanmadığını gösterebilir. Ayrıca, yükseköğretim kurumlarının kitleleşmesinin uluslararası öğrenci hareketliliğini nasıl etkilediğine bakmak, bu fenomene dair benzersiz içgörüler sağlayabilir.

Çalışmanın bir diğer önemi, 2024 yılında Karabük Üniversitesi'nde yaşanan sağlık krizinden kaynaklanmaktadır; bu krizde, çok sayıda kayıtsız Afrikalı öğrencinin suçlu olduğu düşünülmüştür. Üniversite yönetimi ve Şehir Sağlık Yönetimi bu iddiaları reddetmiş olsa da (Anadolu Ajansı, 2024), bu fenomen bir siyasi tartışma noktası haline gelmiştir. Sonuç olarak, Türkiye'nin bu kadar çok Afrikalı öğrenciye ev sahipliği yapıp yapmaması gerektiği, bu öğrencilerin kayıt olduğu kurumların doğası ve Afrikalı öğrencilerin Karabük ve Kütahya Dumlupınar gibi üniversitelerde kümelenmesi de tartışma konuları olmuştur. Bu çalışmanın sonuçları, öğrenci özerkliği veya Karabük gibi vakaları açıklayamaz. Ancak, Afrikalı öğrencilerin tercihlerini ve ülke düzeyinde bir ağ etkisinin kayıtlar için bir neden olup olmadığını açıklayabilir. Ayrıca, bu siyasi tartışma, uluslararası öğrenci hareketliliğine yönelik kamuoyu tepkisi yaratmıştır. Bu nedenle, Türkiye'de uluslararası öğrenci hareketliliğine ilişkin işlerin doğru bir şekilde yürütülmesi için bu fenomenin incelenmesi bir zorunluluk haline gelmiştir.

Ek olarak, uluslararası öğrenci hareketliliği genellikle öğrenci düzeyinde mikro düzeyde incelenmektedir. Makro düzeyde yapılan uluslararası öğrenci hareketliliği çalışmaları genellikle ülke ve kurum düzeyinde yapılmaktadır. Şehir düzeyi değişkenlerde uluslararası öğrenci hareketliliğini nicel olarak değerlendiren çok az çalışma bulunmaktadır (örneğin, Weber, 2023; Van Mol & Ekamper, 2016). Bu çalışma, ülke, şehir ve kurum düzeylerinde uluslararası öğrenci hareketliliğini inceleyen kapsamlı bir analiz yapmaktadır ve örneği literatürde yaygın değildir. Ayrıca, Türkiye'de uluslararası öğrenci hareketliliğini makro düzeyde değerlendiren neredeyse hiç çalışma bulunmamaktadır; bu çalışma, bu boşluğu bir miktar kapatmaktadır.

2. Metodoloji

2.1 Çalışmanın Tasarımı

Bu çalışma, Afrika'dan Türkiye'ye gelen uluslararası öğrenci hareketliliğinin (ISM) hangi faktörlerle ilişkili olduğunu belirlemek için ülke, şehir ve üniversite düzeylerinde mevcut veri setlerini kullanan bir makro korelasyon çalışması olarak tasarlanmıştır. Mikro düzey çalışmaların daha derin içgörüler sağlayabileceği savunulabilirken, bu tür çalışmalar genellikle az sayıda yükseköğretim kurumu (HEI) üzerinde yapıldığı için genelleştirilmesi zordur. Bu tür mikro düzey çalışmalar, aynı zamanda incelenen kurumların güçlü ve zayıf yönlerine yönelik önyargılara sahiptir (Hemsley-Brown & Oplatka, 2015). Ayrıca, bu tür çalışmalarda, öğrencilerin bir kurumu diğerine tercih etmeme nedenlerini modellemek mümkün değildir; fakat bu, makro düzey çalışmaların başarabileceği bir şeydir.

Buna ek olarak, bu çalışma, uluslararası öğrencilerin kendi bildirdiği verilere dayanmak yerine, öğrencilerin yaptığı seçimleri modellemektedir. Kendi bildirdiği verilere dayanan çalışmalar değerli olsa da, bu tür çalışmalara olan bağımlılık iki önemli sorunu beraberinde getirir. İlk sorun, niyet-davranış boşluğudur; bu, insanların bildirdiği isteklerle yaptıkları arasında sıklıkla tutarsızlık olmasıdır (Sheeran & Webb, 2016). İkinci sorun, seçim destekleyici önyargıdır; bu, bir kişinin bir kararı tam olarak nedenlerini anlamadan verebileceği, ancak sonrasında nedenler üretebileceği durumdur (Kafae ve diğerleri, 2021). Bu nedenle, öğrencilerin gerçekleştirdiği kararları modellemek, bu tür çalışmaların bildirmediği sonuçları ortaya çıkarabilir. Bu, özellikle Türkiye için geçerlidir; çünkü Türkiye, uluslararası öğrenci hareketliliğine dair anlayışını neredeyse tamamen öğrencilerin karar alma süreçlerini inceleyen mikro düzey çalışmalara (örneğin, Kondakci, 2011) dayandırmaktadır.

Bu çalışmada, Giriş'te önerilen modele dayalı olarak analiz edilen 6 veri seti incelenmektedir: Tüm üniversiteler, vakıf ve devlet üniversiteleri, 2005 öncesi ve sonrası kurulan üniversiteler ve araştırma üniversiteleri. Vakıf ve devlet üniversitelerine ayrılmanın nedeni, finansal faktörler nedeniyle bu kurumların farklı kalıplar göstermesinin beklenmesidir. Ayrıca, Türkiye'deki vakıf üniversiteleri nispeten yeni bir olgudur ve bu üniversitelere ilişkin uluslararası öğrenci hareketliliği kalıpları nispeten belgelenmemiştir. Kuruluş zamanına göre ayırımın nedeni, 2006 sonrası kiteselleşme döneminde ortaya çıkan daha genç üniversitelerin farklı kalıplar gösterip göstermediğini analiz etmektir. Ayrıca, hem devlet hem de vakıf üniversitelerini içeren araştırma üniversiteleri (YÖK, t.y.-a), Afrikalı öğrencilerin en iyi üniversiteler arasında nasıl karar verdiklerine dair ek içgörüler sağlayacaktır.

2.2 Veri Analizi

Çok düzeyli regresyon, hiyerarşik yapıdaki verileri barındırdığı ve böyle bir yapı mevcut olduğunda daha doğru tahminler sunduğu için uygun görülmüştür (Maas & Hox, 2005). Öğrenci sayıları, gönderici üniversitelerin şehirler içinde, öğrencilerin uyrukları ve yıllar arasında varyasyonu hesaba katmak için rastgele kesişimlerle modellenmiştir. Sonuç değişkeni, veri yapısı nedeniyle çok sayıda sıfır içerdiğinden ve bu nedenle aşırı dağılımlı olduğundan, bu tür verilerle daha iyi sonuçlar sağladığı savunulan bir negatif binom model kullanılarak sonuçlar tahmin edilmiştir (Winter & Bürkner, 2021). By yaklaşım Weber (2024) tarafından da benzer şekilde uygulanmıştır. Winter & Bürkner (2021) tarafından önerildiği üzere, maruziyet değişkenlerine logaritmik dönüşüm uygulanmış ve bu, büyük ölçüde DHARMA'nın önyükleme testOutliers fonksiyonu tarafından işaretlenen aşırı aykırı değer sayısının sorununu çözmüştür (Hartig & Hartig, 2017). Ancak, bu yaklaşım vakıf

üniversitelerinde model varsayımlarıyla ilgili sorunlara yol açmıştır ve bu nedenle, bir üniversitedeki toplam öğrenci sayısı logaritmik dönüşüm yerine standartlaştırılmıştır. Ayrıca, yakınsama hataları nedeniyle, mesafe kontrol değişkeni tüm modellerde standartlaştırılmıştır.

3. Bulgular

Afrika'dan gelen uluslararası öğrencilerin (IS) sayısı ile ilişkili faktörler, gözlemlenen kurum türüne bağlı olarak büyük ölçüde farklılık göstermektedir. Genel olarak, üniversite performans değişkenleri (URAP ve TUMA puanları) karışık bir tablo sunmaktadır. Kontenjan doluluk oranları tüm modellerde tutarlı bir pozitif etkiye sahipken, URAP puanı yalnızca tüm üniversiteler ve devlet üniversiteleri modelinde öğrenci kayıtları üzerinde pozitif bir etkiye sahiptir; TUMA puanı ise yalnızca devlet üniversitelerinde küçük bir pozitif etkiye sahiptir. Bu, üniversite performansının genel tabloya bakıldığında önemli olduğunu, ancak bu önemin devlet üniversitelerinden geldiğini göstermektedir. Bu nedenle, üniversite performans değişkenleri önemli olduğunda URAP puanının TUMA puanından daha baskın bir etkisi olduğu ve kontenjan doluluk oranlarının tüm kurum türlerinde önemli olduğu savunulabilir. Bu, tüm modellerin URAP'ın önyargılı olduğu üniversite büyüklüğünü kontrol ettiği gerçeği dikkate alındığında, Afrikalı uluslararası öğrenci hareketliliğinin (ISM) yerel öğrencilerin memnuniyet derecesinden ziyade URAP puanı tarafından daha fazla etkilendiğini göstermektedir. Afrikalı uluslararası öğrenciler, kontenjan doluluk oranlarının tutarlı küçük etkisiyle belirtildiği üzere, yerel öğrencilerin yüksek talep gösterdiği üniversiteleri tercih etme eğilimindedir. Üniversite politika değişkenlerine bakıldığında, tablo üniversite performans faktörlerine kıyasla daha az karmaşıktır. İç değerlendirme raporlarında "uluslararası öğrenci" anahtar kelimesinin geçmesi

Afrikalı uluslararası öğrenci hareketliliğini pozitif yönde etkilerken, “uluslar internationalization” kelimesi olumsuz bir etkiye sahiptir.

SEGE, genel modelde kayıtlar üzerinde orta düzeyde pozitif bir etkiye sahiptir. Bu İstanbul’un popüler bir tercih olmasından dolayı şaşırtıcı değildir. Ayrıca, sosyoekonomik gelişim ve ODUS puanı, vakıf üniversitelerindeki Afrikalı öğrenci sayıları üzerinde güçlü pozitif etkilere sahiptir. Bunun yanı sıra, 2005 öncesi kurulan üniversitelerde SEGE puanı orta düzeyde pozitif bir etkiye sahipken, ODUS araştırma üniversitelerinde küçük bir pozitif etkiye sahiptir. Ancak, bu iki değişkenin etkisi devlet üniversitelerinde gözlenmemektedir; bu, devlet ve vakıf üniversiteleri için belirgin şekilde farklı kalıplar olduğunu göstermektedir. Ayrıca, 2005 öncesi kurulan nispeten köklü üniversiteler arasında, şehir düzeyi öngörücüler Afrikalı uluslararası öğrenci sayısını daha iyi açıklamaktadır. Son olarak, devlet üniversitelerinde yabancı göçmen sayısı Afrikalı uluslararası öğrenci sayıları üzerinde negatif bir etkiye sahiptir.

Mesafe, tüm modellerde tutarlı bir şekilde anlamlı negatif bir etkiye sahiptir. Aynı milletten toplam öğrenci sayısı (t-1) yılında, modeller genelinde güçlü etkilere sahiptir ve bu, ağ etkilerinin Afrikalı uluslararası öğrenci hareketliliğini öngörmeye yaygın olduğunu göstermektedir. Ancak, bu değişkenin etkisi vakıf üniversiteleri ve araştırma üniversitelerinde çok daha zayıftır.

4. Tartışma

Çalışmanın tüm verilere ilişkin sonuçları, Kondakci (2011) ve Cantwell (2009) tarafından önerilenlerle uyumludur. Bölgesel merkezlere olan akışlar, genellikle uluslararası öğrenci hareketliliğini (ISM) açıklamak için baskın üniversite düzeyi performans faktörlerine işaret eden ve Batı ülkeleri için kullanılan geleneksel çekme faktörleriyle açıklanamaz (Altbach, 2006; Altbach & Reisberg, 2009; Hazelkorn,

2013; Arambewela & Hall, 2008). Afrikalı öğrenciler söz konusu olduğunda, bu çalışmanın sonuçları, bu tür faktörlere gelen öğrenci sayısını doğru bir şekilde tahmin etmek için güvenilemeyeceğini, çünkü bu değişkenlerin yalnızca küçük ila orta düzeyde etkilere sahip olduğunu ve sadece devlet üniversitelerinde etkili olduğunu göstermektedir. Ayrıca, üniversite düzeyi politika odaklanması, Afrikalı uluslararası öğrenci hareketliliğini hafif de olsa etkilemektedir. Bilgi ağları, göç yolları veya aracı kurumlar tarafından potansiyel olarak oluşturulan ağ etkileri, yalnızca araştırma üniversiteleri dikkate alındığında bile şehir düzeyi faktörlerin etkili olduğu tüm modellerde Afrikalı uluslararası öğrenci hareketliliğinin önemli belirleyicilerinden biri olarak söylenebilir.

Kamu ve vakıf üniversiteleri arasında iki farklı modelin varlığı dikkat çekicidir. Kamu üniversitelerinde, yerel öğrenci memnuniyet puanları ile üniversite akademik performansı arasında orta düzeyde pozitif bir korelasyon bulunurken, sosyoekonomik gelişmişlik ve yerel öğrencilerin şehir memnuniyeti üzerinde bir etki gözlenmemektedir. Vakıf üniversitelerinde ise üniversite sıralamaları ve yerel öğrenci memnuniyeti bir etkiye sahip değilken, sosyoekonomik gelişmişlik ve yerel öğrencilerin şehir memnuniyeti çok güçlü pozitif etkilere sahiptir. Bu sonuçlar, Türkiye'deki Afrika uluslararası öğrenci hareketliliğinin (ISM) vakıf ve kamu üniversiteleri için ayrı ayrı incelenmesi gerektiğini ve bu iki üniversite türünün neredeyse tamamen farklı modellere sahip olduğunu göstermektedir.

Kamu üniversitelerindeki korelasyon modelleri oldukça ilginç bir tablo sunmaktadır. Bu tablo, küresel modelle bazı benzerlikler göstermektedir ki bu şaşırtıcı değildir, çünkü kamu üniversiteleri vakıf üniversitelerine kıyasla çok daha fazla Afrika kökenli öğrenci barındırmaktadır. Kamu üniversitelerinde üniversite akademik

performansı, yerel öğrenci memnuniyetinden daha önemlidir ve çok güçlü bir ağ etkisiyle tanımlanır. Ancak, vakıf üniversitelerinin aksine, kamu üniversiteleri, Afrika kökenli uluslararası öğrencilerin yüksek hacimli akışının nasıl yönlendirildiği veya ne tarafından tetiklendiği konusunda, ağ etkisi dışında net bir açıklama sunmamaktadır; bu etki, tüm üniversiteleri kapsayan modelden bile daha güçlüdür. Bu akış, yabancı göçmenlerin daha az tercih ettiği şehirlerde biraz daha olası olsa da, yabancı göçmenler için daha az popüler olan şehirlerin, öğrenci hareketliliği nedeniyle benzersiz göç yolları oluşturduğu söylenebilir.

Ayrıca, Mulvey'in (2021b) Çin örneğinde savunduğu gibi, kamu üniversitelerine olan bu akışın, belirli üniversiteler tarafından popüler alanlarda daha düşük giriş kriterleri ve kolay kabul süreçlerinden kaynaklandığı iddia edilebilir. Nitekim, bu argüman, YÖK'ün (2023) Karabük Üniversitesi istatistiklerine bakılarak desteklenebilir. Bu üniversite, Afrika kökenli öğrenciler için oldukça popüler bir seçimdir ve bu durum Şekil 8'de (Bölüm 2) görülmektedir. 2022-2023 eğitim döneminde, toplam uluslararası öğrencilerin (bunların yaklaşık yarısı Afrika kökenli öğrencilerdir) yaklaşık dörtte biri mühendislik fakültesine kayıtlıdır; bunu, STEM, tıp ile ilgili fakülteler ve ekonomi ile işletme fakülteleri takip etmektedir. Benzer bir durum, Afrika kökenli öğrenciler için bir diğer popüler destinasyon olan Kütahya Dumlupınar Üniversitesi'nde de gözlemlenebilir. Gerçekten de, Mulvey'in (2021a) öne sürdüğü gibi, Türkiye ile Afrika arasındaki ekonomik bağlantılar, Türk dilinde yeterlilik talebi yaratmış olabilir ve bu kamu üniversiteleri bu talebi karşılıyor olabilir. Ayrıca, Karabük Üniversitesi ve Kütahya Dumlupınar Üniversitesi'ne başvuruların, diğer üniversitelerde genellikle standart bir prosedür olan standart bir sınav yerine lise diplomasıyla yapılabildiği belirtilmelidir (Karabük Üniversitesi, 2024).

Öte yandan, vakıf üniversiteleri tamamen farklı bir örüntü sergilemektedir. Şehir düzeyindeki faktörlerin çok önemli olduğu bulunurken, üniversite düzeyindeki performans faktörleri anlamlı değildir. Bu şaşırtıcı bir sonuçtur, çünkü Türkiye'deki vakıf üniversiteleri üzerine yapılan literatür, ISM'nin eğitim kalitesine vurgu yaptığını göstermektedir (Tekelioğlu ve diğerleri, 2012). Ayrıca, yerel öğrencilerin vakıf üniversitesine kaydolma kararında akademik kadronun kalitesine vurgu yaptığı gözlemlenebilir (Aydın, 2013; Aydın & Bayır, 2016; Özgüven, 2011). Ancak, daha yakından incelendiğinde, bu çalışmaların nispeten köklü ve daha eski vakıf üniversiteleri üzerinde yapıldığı görülmektedir. Şekil 9'dan (Bölüm 2) görülebileceği üzere, Afrikalı öğrencilerin, genellikle vakıf üniversiteleri ortalamasının altında URAP veya TUMA puanlarına sahip, Nişantaşı, Altınbaş ve Gelişim gibi nispeten yeni kurulmuş vakıf üniversitelere yoğunlaştığı görülmektedir ki bu durum şüphesiz sonuçları etkilemiştir.

4.1 Politika için Çıkarımlar

Çalışmanın sonuçlarından hareketle, Türk hükümetinin yumuşak güç hedeflerine yönelik bir eleştiri yapmak mümkündür. Afrikalı uluslararası öğrenci hareketliliğinin (ISM) çoğunluğu, eğitim dili Türkçe olan ve adaptasyonu oldukça zor olabilen araştırma dışı üniversitelerde yer almaktadır. Ayrıca, devlet üniversitelerinde Afrikalı uluslararası öğrenciler, Türkiye'nin kültürel merkezlerinde veya gelişmiş şehirlerinde bulunmamaktadır. Bu tür ortamlarda, Afrikalı öğrenciler Türk toplumuna sınırlı bir entegrasyon yaşayabilir; bu, onların Türkiye için kültürel elçiler olarak hizmet verme potansiyellerini azaltabilir ve Türk hükümetinin ulaşmayı hedeflediği yumuşak güç hedeflerini zayıflatabilir. Dahası, bu üniversitelerdeki öğrenci yoğunluğu, ağ etkisiyle belirtildiği üzere, Afrikalı öğrencilerin Türk kültürüne ve

diline entegre olma ihtiyacını baypas eden topluluklar oluşturabileceği bir eşige ulaşabilir. Bunlar Afrikalı öğrenciler için mutlaka zararlı olasılıklar olmasa da, Türk YÖK'ü bu sonuçlar ışığında bazı hedeflerini yeniden değerlendirmek zorunda kalabilir.

YÖK'ün uluslararası öğrenci sayısında artışa odaklanması da bazı endişeleri beraberinde getirmektedir. Üniversite düzeyi faktörler genellikle Afrikalı uluslararası öğrenci hareketliliği için zayıf öngörücülerdir ve URAP genellikle anlamlı bir etkiye sahip değildir. Devlet üniversitelerinde anlamlı bir pozitif etkiye sahip olsalar bile, bu etki yalnızca küçük ila orta düzeydedir ve araştırma üniversiteleri devlet modeli dışına alındığında bu etki ciddi şekilde azalır. Bu, çoğu yükseköğretim öğrencisinin araştırma dışı devlet üniversitelerine kayıtlı olduğu düşünüldüğünde önemlidir. Bu nedenle, bu akışın özellikle akademik olarak rekabetçi olmayan ve “uluslararasılaşma” anahtar kelimesiyle negatif bir ilişkiye sahip olan yükseköğretim kurumlarına yöneldiği savunulabilir. Dolayısıyla, bu kurumların hem uluslararasılaşma hem de eğitim kalitesi açısından bu tür bir akışı desteklemeye hazır olmaması oldukça olasıdır. Afrikalı öğrenciler muhtemelen adaptasyon konusunda zorluk çekecek ve aldıkları eğitimden memnuniyet dereceleri beklenenden daha düşük olabilir. Bu çıkarım, Türkiye'deki uluslararası öğrencilerle ilgili rapor edilenlerle uyumludur (Aras & Mohammed, 2018; Tok, 2023; Yılmaz, 2018).

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YAZARIN / AUTHOR

Soyadı / Surname : TAPIRDAMAZ
Adı / Name : Batuhan
Bölümü / Department : Eğitim Bilimleri, Eğitim Yönetimi ve Planlaması /
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