KADİR HAS UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF SOCIAL
SCIENCES AND HUMANITIES
PROGRAM OF ECONOMICS

MOBILITY DIFFERENCES IN UNIVERSITY PREFERENCES AMONG MALE AND FEMALE STUDENTS IN TURKEY

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MASTER OF ARTS THESIS

İSTANBUL, JANUARY, 2026

MOBILITY DIFFERENCES IN UNIVERSITY PREFERENCES AMONG MALE AND FEMALE STUDENTS IN TURKEY

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A thesis submitted to the School of Graduate Studies of Kadir Has University in partial fulfilment of the requirements for the degree of Master of Economics

İstanbul, January,2026

APPROVAL

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DECLARATION ON RESEARCH ETHICS AND PUBLICATION METHODS

I, AYŞE BERFİN FARİSOĞLU;

- that this Master of Arts that I have submitted is entirely my own work and I have cited and referenced all material and results that are not my own in accordance with the rules;
- that this Master of Arts does not contain any material from any research submitted or accepted to obtain a degree or diploma at another educational institution;
- and that I commit and undertake to follow the "Kadir Has University Academic Codes of Conduct" prepared in accordance with the "Higher Education Council Codes of Conduct".

In addition, I acknowledge that any claim of irregularity that may arise in relation to this work will result in a disciplinary action in accordance with the university legislation.

Ayşe Berfin Farisoğlu

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06.01.2026

To my loving parents, Sultan Fidanay and Mehmet Ali Farisoğlu…

Anneme ve babama…

ACKNOWLEDGMENT

A lot of people, who give direction to my life, brighten my way and support me, have a share in the process of this study. Only a little of my appreciation fits in these lines.

Before everything, I present my deepest thanks to my consultant Dr. Gözde Çörekçioğlu İshakoğlu who affected my way of thinking deeply, studying discipline and perspective to the science besides her guidelines on my academic journey. Dr. Gözde Çörekçioğlu İshakoğlu, with her knowledge, elegance, academic posture and humanity, became a name in my life whom I take an example and adopt as a role model in my life. Her approach, the care she is carrying when researching, the value she gives her students and her scientific attitude had left an indelible mark on both my academically and personal development. She taught me not only being a researcher but also being curious, patience and doing my best in every circumstance. It is a very big luck for me to go on this way with her.

Contributing the development of my study with precious contributions during the thesis, orientation and academic approach, I thank Assistant Professor Ulaş Karakoç. His perspectives, which strengthen my way of analytic thinking, are very precious for me.

To my family, who has a great source of power in life, I owe an endless thank to my mother Sultan Fidanay and my father Mehmet Ali Farisoğlu. Their unconditional love, support, trust and to know that they are always by my side became the most fundamental basis which made possible this process. Thanks to the limitless compassion in my mother's heart and her existence which gives me confidence all the time; my father's strong stance, support and encouragement in my every step, I could completed this study. Today, there are their effort, sacrifice and love in every success I reached.

Finally, I sincerely thank my best friend and my sister, Gizem Arsu, who inspired, contributed, and supported me on this journey.

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ABSTRACT

The research conducts an analysis of students in Türkiye moving to another city during the time of higher education entry and defines this procedure as educational mobility. In this case, it is emphasized that mobility should not be considered solely in terms of geographic transfer but in terms of social, cultural, and economic transition. As a main source for this research, the 'Last Placed Student Profile' part in YÖK Atlas, an online platform delivered by YÖK—the Higher Education institution in Türkiye—is being used. With a total of 27,833 student information registered in 2021, 2022, and 2023, it is possible to conduct a comparative analysis concerning students' city of origin and cities where they enrolled in final higher education institutions. They include students' YKS ranking in national exams, a gap in scores among students and institutions' lowest score requests, development distance in terms of city indicators such as average years of schooling and share of female participation in labor force, and political distance in terms of top-vote share in 2018 national elections. A separation concerning institution type/public or private and gender among students were considered. A binary mobility variable is used in this research to examine if each student moved to a different city for higher education. As performance declines in these tests, the more important factor in these considerations is economy—the cost of living in low rent cities, rather than status. Political differences were not a major constraint. Going to which university in Türkiye is not based on preference but rather on academic credentials, financial capabilities, cultural familiarity. Mobility is not entirely a matter of personal choice but is heavily reliant on social structure. Therefore, our need is for a more savvy and equitable higher education policy that can address this reality.

Keywords: Educational mobility, university preference, spatial movement, YÖK Atlas.

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ÖZET

Bu çalışma, Türkiye'de üniversiteye geçiş sürecinde öğrencilerin farklı illerdeki yükseköğretim kurumlarını tercih etme eğilimlerini ve eğitimsel mobilite kararlarını incelemektedir. Üniversite tercihleri, yalnızca fiziksel bir yer değişimini değil; aynı zamanda bireylerin sosyal, kültürel ve ekonomik bağlamda yeni bir yaşam alanına yönelmelerini içermektedir. Araştırmanın temel verisi, YÖK Atlas platformunda yer alan "Son Yerleşen Öğrenci Profili" bilgilerinden elde edilmiştir. 2021–2023 yıllarını kapsayan 27.833 öğrencilik veri setiyle, öğrencilerin mezun oldukları şehir ile yerleştikleri üniversite şehri arasındaki ilişki analiz edilmiştir. Eğitimsel mobiliteyi etkileyebilecek değişkenler arasında öğrencinin YKS başarı sırası, akademik seviye farkı, üniversitenin bulunduğu şehir ile öğrencinin memleketi arasındaki kültürel (ortalama eğitim süresi, kadın iş gücüne katılım oranı) ve politik (2018 genel seçim sonuçlarına dayalı oy oranı farkı) mesafeler, üniversite türü (devlet/vakıf) ve cinsiyet yer almaktadır. Analizlerde, öğrencinin şehir değiştirip değiştirmediğini gösteren ikili bir mobilite değişkeni kullanılmıştır. Bulgular, yüksek başarıya sahip öğrencilerin daha uzak şehirlerdeki ve seçici programlara yöneldiğini; düşük başarı sırasına sahip öğrencilerde ise tercihler üzerinde ekonomik sınırlılıkların daha belirleyici olduğunu göstermektedir. Sonuç olarak, üniversite tercihleri çok boyutlu dinamiklerle şekillenmekte; eğitimsel mobilite hem bireysel özellikler hem de yapısal faktörlerin etkileşimiyle oluşmaktadır. Bu durum, yükseköğretim politikalarının bu çok katmanlı yapıyı dikkate alarak şekillendirilmesi gerektiğini göstermektedir.

Anahtar Sözcükler: Eğitimsel mobilite, üniversite tercihi, mekânsal hareketlilik, YÖK Atlas.

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Adj. R^2 : Adjusted R-Squared

FE : Fixed Effects

F-stat : F-statistic

R^2 : R-Squared

score_diff : Score – Base Score Difference

YÖK Atlas : National Higher Education Placement System (Türkiye)

γ_t : Year Fixed Effects

δ_j : City Fixed Effects

ϵ_{it} : Error Term

1. INTRODUCTION

The factors influencing students' choice of university are test scores, personal interests, career goals, and financial aspects (Koçoğlu & Koçoğlu, 2022). In the fields of gastronomy, tourism, and health sciences, the availability of jobs and the reputation of the department are crucial (Koyuncuoğlu, 2020; Kurnaz, 2019; Üner, Çamalan & Karatepe, 2025). The university's general prestige is also a consideration. Family members' opinions, teachers' recommendations, media reports, and financial situations are other factors influencing this decision. Anatolian students often prioritize practical considerations. These include travel distance to the institution, accommodation costs, and available support (Bardakçı, 2019; Oliveira, Vieira & Vieira, 2015; Dineri & Gölpek, 2021). Similar trends are observed globally. There students balance their needs against what the institution offers (Matsolo, Ningpuanyeh & Susuman, 2018; Mohamadin & Julaihi, 2023). In Türkiye, most students do not live at home while studying. This is termed educational mobility (Üner Çamalan & Karatepe 2025). Test scores are important but do not provide a complete picture. Cultural economic political and gender factors also play a role (Temizkan & Şahingöz 2025; Göktaş et al. 2017).

Recent studies introduce political distance as a new factor. It refers to differences in voting patterns between regions. This may subtly influence migration patterns (Mohamadin & Julaihi, 2023). The patterns of student migration vary by type of institution. Public universities attract students from all regions of Türkiye. Private institutions predominantly found in major cities tend to attract students from nearby areas (Koçoğlu & Koçoğlu 2022). High-scoring students migrate easily to pursue desired programs. Low-scoring students prefer to stay close to home due to financial concerns (Koyuncuoğlu 2020; Matsolo et al. 2018; Dineri & Gölpek 2021). In vocational sectors like gastronomy tourism and health sciences, students consider the name of the department, the availability of internships, and job offers. Temizkan & Şahingöz 2025; Konak & Özhasar 2019 Migration to the university is an expression of a great part of the dynamics of society, culture, and economy in Türkiye. Leaving home as an act is more than a physical move. It requires adjustment to new environments, rules, and customs. It

requires adjustment to new environments, rules, and customs (Temizkan & Şahingöz 2025; Dineri & Gölpek 2021).

This paper aims to analyze how development and political differences between regions, plus some features of universities, affect the academic performance of student mobility. Rich details are drawn from "Recently Placed Student Profile" in YÖK Atlas (Üner Çamalan, & Karatepe 2025). This is a problem of great importance within the borders of Türkiye. The best universities are situated in Istanbul, Ankara, and Izmir. In small cities and towns, there are few alternatives. Thus, mobility here reflects systemic inequalities rather than individual choice. Many students do not move. They are hindered by financial constraints, family obligations, or gender norms. These constraints further entrench regional inequities by narrowing pathways to elite institutions. The data set consists of 27.833 students from 2021, 2022, and 2023 years, with each record containing home province, university city, and institution type-public or private, exam scores (YKS), gender of the student- male/female, field of study opted by the studentengineering/ social sciences, and whether they moved for university- yes/no. Here, mobility is defined as a difference between the high school/home province of a student and the province where he/she goes to study at university. Some other additional variables make this analysis richer.

Development difference is measured using mean years of schooling and female labor force participation rate in each province. Political difference is captured by the share of votes received by the ruling party in the 2018 elections. These variables reflect geographical and social disparities across provinces. The analysis employs Linear Probability Models. The first set includes gender dummy variable(s), exam scores normalized to have a mean of zero and standard deviation of one for each year separately. The second set adds school type dummy variable(s) for public versus private schools in addition to development difference between provinces interacted with gender dummy variable(s) and political difference between provinces interacted with gender dummy variable(s). City fixed effects control for unobserved city-specific factors that may influence mobility decisions. For robustness checks, models are estimated excluding Istanbul and Ankara.

Results are compelling: Approximately 60% of students do not move away from their hometowns to attend university; females move more than males; top scorers exhibit high mobility rates; even after excluding Istanbul and Ankara females continue to move more than males towards culturally dissimilar regions indicating a gender gap in access to universities; large cities attract mobile students with Istanbul followed by Ankara then Izmir then Gaziantep dominating national trends; models confirm that both university location as well as local context matter when it comes to decision-making regarding where one should study next while private school attendees tend not only have lower propensities but also face greater challenges due to concentration within affluent metropolitan areas.A key result stands out on cultural gap. Students pick unlike areas more than expected.

That is to say, they are receptive to new information and do not pick and choose among contexts they have used before. The role of political gap is modest but important, which means vote preferences have a subtle impact on school decisions. Further tests examine students right below and right above admission cut-offs, and these tests show indeterminate results, which means tests are not capturing all margins. Social and cultural considerations are important. The significance of this research is to show how gender dynamics interact and present an argument for a more complete model including culture and politics in researching women's mobility in Türkiye. The structure of this thesis will be: Chapter 2 will present an overview of literature with a discussion of leading mainstream models and international contexts, as well as literature concerning Türkiye. Chapter 3 will describe database, variables, and methods used in this research. Chapter 4 will present descriptions of statistics and model output. Chapter 5 will present an analysis of findings with recommendations for policies. And, finally, Chapter 6 will include a discourse on a series of reflections of this research with a message for future research.

2. LITERATURE REVIEW

2.1. Theoretical Approaches to Student Mobility

Students choose universities for different reasons. Some are determined by individual attitudes and others by the social context and big systems. These choices go beyond academic programs or offerings; they include everyday routines, lifestyle choices, and personal identity. Food choices and health behaviors serve as examples of how these daily factors may predict more accurately the fit of a student into college life, thereby influencing their choice of institution (Almoraie et al., 2024). The infrastructure and social conditions in which the physical campus is situated are very important too. Students invest time, money, and effort in getting a degree; therefore, transport facilities, safety conditions, and general living conditions should be taken into account when choosing an institution (Meesit et al., 2025). Theoretical frameworks help to explain some details here.

2.1.1. Human capital theory

Human Capital Theory views education as an investment strategy with a forward-thinking rationale, where skill and knowledge attainment increases individual productivity and income-earning capacities over a lifetime. Based on this theory, higher education can be viewed as an instrumental rather than developmental necessity, which improves employability and enhanced income-earning capacity (Donald et al., in Baas, 2019). Higher education can be viewed as a type of transferable capital in entering labor markets. However, a critical approach to this theory views these assumptions from a too individualistic viewpoint, which overlooks more macro-economic realities surrounding labor market structures being more important in valuing educational credentials. As a consequence, students not only reflect on their personal ambitions but also on their evaluation of market desire for a given degree and institution at a given time (Kahraman, 2023). Neoliberal views have placed a heavy focus on investment rationale based on Private investment in human capital based on labor market indicators such as employment levels and projected income differentials in analytical rationale such as Edeji in 2024. However, an extension of these views articulates a weakness in solely viewing higher

education in an investment rationale due to relative significance of non-economic considerations such as education in health, trauma, and well-being among others in a conclusive rationale such as Jones Christensen et al. in 2025.

2.1.2. Rational choice and utility maximization

Rational Choice and Utility Maxim Rational Choice Theory holds that people make decisions to maximize their individual utility, which they achieve by weighing available choices and opting for one with which they attribute the most utility. In making a university choice, therefore, students logically try to maximize returns on investment in terms of time, effort, and financial input by weighing factors such as tuition, quality, location, and employability, among others (Raub, 2025). But in most cases, these critical decisions are not purely rational but rather a product of emotional imperatives, information challenges, and other non-ideal circumstances not less ideal in perfecting perfect decisions (de Lara & Dean, 2024; Sher et al., 2025). In addition, apparently trivial considerations will sometimes end up making all the critical difference among otherwise equally preferable alternatives (Sher et al., 2025).

One major shortcoming of a Rational Choice Theory, therefore, is when decisions are reduced by considerations far removed from social, cultural, and organizational contexts in an attempt to influence decisions in strategic but misleading ways (Kydd, 2024; Kobiyh & El Amri, 2024). Other considerations, such as family pressure, social pressure, or social culture in most cases end up being critical in making such decisions in universities, where a purely strategic mathematical choice for institutions in terms of utility considerations is not feasible. Rational Choice Theory, therefore, despite such flaws, remains a reliable tool when appropriately adjusted in accordance with non-ideal realities of making decisions in decisions in real life.

2.1.3. The concept of student mobility

Student mobility can be described as a phenomenon where individuals travel across national borders in search of higher education opportunities, including both short-term and long-term educational programs. In Italy and Europe, student mobility has become

increasingly important because of global trends in migration, access to higher education, and internationalization in education (Aiello, Attanasio, & Priulla, 2020). Although an increasing number of international students enrolling in higher education institutions in Italy is a positive contribution to higher education because of multilingualism and diversity awareness, students from migrant families face linguistic barriers, lack support within families, have financial difficulties, and experience social exclusion despite being academically ready to go to higher education institutions (Bertozzi, 2018). However, it is important to note that student mobility is not limited to international students; rather, second-generation migrants, including those raised in Italy but experiencing different socio-cultural environments in Italy, face institutional and structural barriers when joining higher education institutions in Italy because of different transitions and socio-cultural dynamics in Italy (Conti, Rottino, & Di Patrizio, 2020).

Students from different countries have different paths in higher education compared to students in Italy because of different educational systems, social class, and informal learning networks such as teachers and friends in Italy, according to Giudici & Priulla, 2022. Giudici, Trappolini, and Priulla in 2023 state that students from migrant families have a higher dropout rate in higher education institutions during the transition stage from secondary education to higher education institutions, which underlines the need for these students to have different support systems in higher education institutions. In addition, differences in academic performance among students in higher education institutions in Italy based on students from Italy and students from migrant families can be reduced in higher education institutions with different programs such as mentoring and tutoring, based on a case study at Sapienza University of Rome, Italy, according to Giudici, Trappolini, & Vicari, 2021. Strozza in 2015 underlined the important role of early educational inclusion based on early education performance, which leads to poor performance in all forms of higher education in Italy because disadvantages are early in education for students in Italy.

2.1.4. Gender and educational inequalities

Gender is another important dimension of differentiation which continues to have a profound impact on students' participation in and experience of higher education, where

increasing parity may mask deep-seated inequalities (Gür, 2022; Park et al., 2010). Student pathways in different sociocultural settings remain deeply influenced by gender roles in education, where concerns for safety, reputation, and honor have impeded female access to better or far-off institutions (Taş & Türkan, 2016; Tekin, 2022). As a consequence, parents prioritize female students' proximity or gender-specific campuses, thus denying higher education freedom irrevocably. Meanwhile, males face pressure to major in 'male-dominated' subjects such as engineering and business, despite personal preference for other disciplines (Busari et al., 2019 ; Yılmaz & Güçlü, 2021).

Such a trend is further deepened by soci-economic inequalities, where girls in lower-income households tend to discontinue studies because girls' education is deemed less necessary since boys' education brings better financial dividends in an 'interest-bearing' economy (Khalil, 2015; Lipowski, 2014). Such a trend reinforces 'horizontal inequaity,' where too many females dominate non-sc/te and non-med studies and remain underrepresented in sc/te, medicine, and allied subjects (Kahraman, 2023 ; Ballarino et al., 2022). Such sociocultural factors influence students' self-concepts which advise girls not to join 'science,' where boys are funneled into high-income jobs without considering their actual interest (Narh & Buzzelli, 2022; Yazgan, 2015). At higher education institutes, 'glass ceilings' impede females from entering faculty and research positions in sufficient numbers despite high numbers in all-India courses in institutes of higher learning (Sulis et al., 2023). A lack of 'visible role models' in institutions impedes 'aspiration levels' in females, but 'presence' lifts 'academic performances' in girls (Devlin & McKay, 2018 ; Bingöl & Çavlin, 2022). While online learning platforms raise access for geographically or sociculturally disadvantaged girls, imbalances in access to technology have worsened inequalities. Although gender-sensitive policies have enhanced participation, such endeavours remain undue without deep-seated 'structural and sociocultural interventions.' Thus, achieving gender equity in education beyond mere statistics means transforming institutions to overcome stereotypes, achieve inclusive representation, and allow all students to achieve their educational goals without being constrained by gender stereotypes.

2.1.5. Geographical, political, and development distance

While academic quality and tuition costs remain pivotal in higher education decision-making, dimensions such as geographic, political, and development distance exert equally substantial influence—particularly on students from conservative or low-income backgrounds (Baas, 2019). Geographical remoteness presents immediate logistical and emotional barriers: the burden of long travel, separation from familial support systems, and increased living costs disproportionately discourage women from relocating for educational purposes (Zaman et al., 2023). In many conservative households, daughters are implicitly or explicitly expected to remain close to home, resulting in gendered patterns of immobility and exacerbating regional inequalities. Political distance, manifested through restrictive visa policies, diplomatic tensions, and perceptions of instability, can further constrain student flows, particularly for women whose mobility is already restricted by familial and sociocultural expectations. Structural barriers such as complex migration regimes often disproportionately affect students from less privileged contexts. In addition, development distance—including language barriers, religious divergence, and unfamiliar social norms—can severely impact students' perceptions of safety and belonging, with female students from traditional backgrounds frequently forgoing prestigious opportunities due to concerns about modesty, discrimination, or social exclusion (Donald et al., in Baas, 2019).

The COVID-19 pandemic has amplified these vulnerabilities: many students, especially women, delayed or abandoned international education plans due to fears of isolation and familial resistance. Consequently, factors such as cultural compatibility, linguistic familiarity, diaspora presence, and gender-sensitive environments increasingly outweigh conventional push-pull determinants in mobility decisions (Khalil, 2015). Moreover, information asymmetry worsens spatial inequalities: students in urban centers benefit from career counseling and digital access, while those in rural or underserved areas often rely on limited informal networks, leading to risk-averse choices and under-mobility (Işık & Uğraş, 2018; Ballarino et al., 2022). Peer networks compound this effect, as many students tend to follow the educational trajectories of friends, relatives, or community members. Without adequate institutional support, inclusive policies, housing opportunities, or financial aid, students—particularly rural and low-income women—

remain disproportionately rooted in place. Therefore, while geographical distance remains a critical factor in student mobility, its effects are deeply interwoven with gender, cultural identity, and socioeconomic conditions, demanding holistic, equity-focused interventions from both educational institutions and public policy makers.

2.2. International Evidence on Student Mobility

Student mobility and migration background have increasingly gained attention in equity and access debates in higher education institutions. Traditionally, this matter is considered a personal choice related to academic and geographical migration, but in reality, it can mirror social structures such as gender, class, and cultural expectations. In relation to various settings, enrolling in, through, and out of higher education institutions is profoundly inequitable in terms of both visibility and lived realities. One major challenge in being informed about this is related to the nature of data infrastructure in higher education institutions, in which most do not have complete demographic markers, making invisible the scale and nature of inequity in migration background in higher education institutions. In fact, using advanced analytical methods to estimate hidden populations in these institutions have shown that substantial populations have remained invisible in official statistics, with approximately 15% of students in Università degli Studi di Milano-Bicocca having a migration background, which remained invisible in their institutions' data systems altogether (Giammei et al., 2025). In this way, being blind to these invisible populations in institutions bears a double analytical challenge in being unaware of how institutions can direct support schemes towards under-targeted social groups.

Aside from the issue of visibility, which will be highlighted later on, another factor which affects student mobility is a mix of academic, economical, and sociocultural elements. Often these ambitions for better educational and work opportunities come into conflict with economical support, institutional barriers, and sociocultural principles. Even when academic ambitions are a priority, mobility is generally hampered by non-academic elements. The student and, most particularly, female students' freedom/mobility is limited by a variety of frictional elements which go from safety worries to commitments of a family nature (Geddie, 2013).

These tendencies indicate both a broad level of inequity and a micro-social everyday reality which defines which students shall attend which institution. In addition to this national framework, regional inequalities cross into mobility issues. In Italy, for example, students with better grades moving from the Southern part of Italy to Italy's Northern regions are searching for better educational opportunities; however, gender disparities do exist, especially among people arriving from more conservative environments where sociocultural requirements concerning female mobility are more tightly framed (Tosi et al., 2025). Cross-border mobility, in addition, portrays these considerations. The case in Bangladesh, evident in this research study, manifests a distinct impact of cross-border movement decisions based on academic quality, safety, and political instability (Hossain et al., 2025). Although gender can be considered an overlooked dimension, it arises once again in other dimensions as a structuring dimension. For example, affordability can be indicated as a consideration from a male student angle, but for women, it is a function of safety and emotional closeness (Usman, Hasan, & Alam, 2025).

Mobility is also in connection with everyday city and technology settings. In Budapest, support for new transport technology differs based on income and gender, with variations in support explained by safety and cost considerations (Kriswardhana & Esztergár-Kiss, 2025). In Nigeria, transport mode preferences among university students mirror gender roles in transport choice, with male students walking or biking and female students consistently rating shuttle transport above other options because of safety reasons (Busari et al., 2019). Additionally, these are not purely logistical cities dealing with mobility, but they raise important considerations pertaining to safety in transport technology. In all matters pertaining to higher education access, it can be noted that class continues to make a big difference in all selections and experiences. A preference for private universities is presented with regards to lower income and female students in a setting where safety is considered a priority in India. In Australia, female students in regional universities in rural settings face a distinct challenge concerning safety in connection with dwelling insecurity in addition to other pre-existing disadvantages in their current setting. In situations where students travel from afar, stress and homesickness can be common emotional experiences among females and lower income students.

Mobility decisions affect not only where a student would go but also with which barriers they will work and interact with in this process. In South Korea, for instance, social factors have historically influenced the partiality of women to not go far from home in pursuit of education, with more affluent students, regardless of gender, being more likely to gain an international education. In Canada, for instance, since inter-provincial migration is common among students, gender, regional affiliations, and safety considerations have historically influenced student migration decisions. Although a gap in numbers may be decreasing in significance, qualitative integration in student migration experiences remains a reality.

The online discipline and regional location have historically influenced student mobility outcomes in Italy. Although a broad significance may be minimal, in some disciplines and regions, women students are less mobile, thus reinforcing an idea of student mobility being a gendered factor in institutions where equity is considered a reality (Sulis et al., 2023). Yet, a positive significance in terms of outcomes is apropos. Students have largely demonstrated better labor participation outcomes if they were mobile, especially in a profession such as engineering where demand in the labor force is high. A Polish case, for instance, has demonstrated this characteristic (Rocki, 2022). However, this benefit remains imbalanced and less accessible when cultural and personal barriers for access within institutions make an impact. Individually, these studies suggest a need to diversely and in-depth address student migration studies. Although a tool such as scholarships and transportational aid has demonstrated effectiveness, a most impenetrable level of barriers resides in a socially, structurally ingrained construct of social norms and in a non-existent level of aid systems. Student mobility can thus be considered a reality of freedom, with a space which remains patterned with gender, class, geographic, and cultural realities where simple solutions are not feasible.

2.3. Evidence from Türkiye

Recent literature on student mobility in Turkey reflects a complex interaction of geographic, socio-economic, and gendered factors, with a growing emphasis on internal and international movements of students. In the studies reviewed, mobility emerges as something more than a logistically complex issue, related to deeply socio-spatial

phenomena touching on issues of inequality, safety, and opportunity. A key determinant of mobility is proximity. Spatial data analysis, including GIS and university entrance metrics, attests that a large proportion of students prefer to stay within fairly short distances from their place of origin. For instance, almost half of the university entrants study within 100 kilometers of their high school, where proximity proves to be a highly decisive factor for students from economically backward regions. This tendency to stay closer to home reveals the larger structural issues, like income disparities and unequal regional development, which are at play here. While interprovincial mobility is indeed substantial, the major metropolitan cities of Istanbul, Ankara, and Izmir continue to dominate as educational hubs, highlighting the urban centers' magnetism and the limited opportunities elsewhere (Kahraman, 2023; Gür, 2022).

Moreover, it appears that university-era mobility can have implications for life paths in other regards. Qualitative research shows that early experiences with geographic mobility increase students' predisposition to future relocation and career mobility in other cities and countries (Yazgan, 2015; Günder, 2018). The long-term consequences of educational migration, therefore, extend into realms such as career planning, social integration, and regional planning. Availability with accommodations is a different prism through which mobility and gender interact. Students make a sequence of decisions pertaining to accommodation alternatives, which in most cases include a series of trade-offs concerning cost, autonomy, and security. Government-funded dormitories may be cost-effective and safe, especially for female students, but they allow the students more autonomy and comfort in private accommodation rentals, thus highlighting the trade-off decisions most students make in such circumstances (Taş & Türkan, 2016). In this context, all literature surveys undertaken emphasize a need for a struggle through which policies of equity and inclusivity can impact the nature of student mobility. Such policies include investment in walkability and transport systems, an increased focus on scholarship programs, increased access to safe and affordable accommodation, and a gender-responsive support service structure. Otherwise, existing inequalities will continue to influence student mobility in terms of duration and opportunities available.

Spatial and cultural inequities have shaped access and participation in higher education in Turkey, with regional inequities, especially the ‘east-west divide, representing deep-

seated imbalances in educational infrastructure, with access to the most esteemed and well-equipped institutions in Istanbul, Ankara, and Izmir in the West. (Tekin, 2022). Student migration from less developed or non-urban regions typifies the route available for ‘social mobility, but this mobility remains grossly inequitable, especially for girls from conservative regions where parents are more likely to deny daughters access to travel, based on safety, status, and propriety considerations associated with an ‘unmarried, unmarried, and unveiled life in a non-urban setting when girls have academically excelled. Bingöl ve Çavlin (2022), son migration to education symbolizes ‘independence,' where ‘education remains a symbol of independence for males in conservative regions where patriarchal social views have entrenched gender roles with greater preference given to males rather than females.

Apart from accessibility, cultural dissonance is a factor in how students are placed in an institution. Students from a traditional or rural setting may experience dislocation in a liberal institution based on language usage, behavior, fashion, and/or religious behavior. As a consequence, students always prefer institutions on grounds of cultural affinity rather than reputation because they do not want to attend institutions where they will be socially excluded. The challenge therefore is a closed reproduction of inequality with a façade of equal access. Furthermore, inequality in space is not solely confined to accessibility but information asymmetry. Urban students have access to better therapy sessions, access to the internet, and information pertaining to higher opportunities compared to students in rural settings, who largely rely on information provided by their families and limited local knowledge (Burbidge & Finnie, 2000). Moreover, mainstream media in education represent secular urban culture, which may lead to disaffection among students with a more conservative culture or religion (Yazgan, 2015). Although government intervention in terms of scholarships and residence allocation aims to address economic inequalities in higher education access, they do very little to address these cultural inequalities, which affect female participation in higher education most. Culturally and spatially, inequalities in education need a good understanding according to Günder in 2018, in order to make education inclusive in higher settings. Institutions need not merely address access but make spaces within institutions to empower students socially and culturally. Unless these barriers are removed, inequalities in higher education will not be structurally dealt with.

3. AN ANALYSIS OF STUDENT PLACEMENT DATA AND EDUCATIONAL MOBILITY BASED ON YÖK ATLAS PROFILES

3.1. Data Set

Data used in this analysis were derived from raw datasets accessible in the "YÖK Atlas – Higher Education Programs and Quotas Guide," with a particular emphasis on the 'Last Placed Student Profile' available in 2021, 2022, and 2023. The Turkish Council of Higher Education YÖK is considered to be primarily involved in ensuring higher education quality and implementation in the Turkish higher education network via the online platform of YKS. Additionally, YÖK Atlas being an online publicly available platform provides in-depth information on university programs, quotas, base scores, ranks of success, and college graduates in a simplified manner (YÖK, n.d.). One of the most important additional components of this online platform available for consideration in each analysis is 'Last Placed Student Profile.' The "Last Placed Student Profile" in each analysis serves as an empirical cut-off marker in defining the selectivity and accessibility of each program. Some of these cut-off markers include gender, high school information, province of high school, and score usage status.

The analytical horizon of this research is narrowed down to these "Last Placed Student" typologies because they are the only ones which provide systematic origin-destination information with regards to geographic location, a problem existing in the larger dataset. In this way, a micro-level investigation is facilitated concerning interprovincial educational migration in Türkiye. Data preprocessing and standardization have been used in order to organize and standardize this information, especially in regard to standardizing city names and missing information in a systematic way. The final dataset consists of 27,833 placement entries, each referring to a student's allocation in a different university. A binary mobility variable is constructed in order to highlight intercity migration, which is measured based on a student's province of high school graduation and province of university location.

The significance of this research lies in its usage of an original administrative dataset in contrast to self-reported surveys conducted in previous studies such as Geddie (2013) and Pisco Costa et al. (2017), and qualitative research in other studies such as in Devlin & McKay (2018) and in Günder (2018). The "Last Placed Student" profiles provide markers tin terms of educational thresholds and regional migration, covering shortcomings in previous studies in reference to subjective or partial findings. Additionally, this research utilizes constructed variables such as development and political distance using TÜİK and electoral statistics with mathematical methods such as Euclidean distance and absolute differences in accordance with Euclidean distance and aims to redefine abstract indicators in sociopolitical studies based on Tosi et al. (2025) and Ballarino et al. (2022).

Further, this study can be considered an addition to existing literature in terms of gender and mobility patterns. Although literature recognizes gender as a critical factor in access to higher education institutions (Ballarino et al., 2022; Busari et al., 2019), this study not only validates gender but uses a big dataset to better understand gender as a mediator factor in access to higher education. Moreover, this study combines gender with proven origin-destination mobility, thus emphasizing how gender intersects with culture, government, and institutional variables in designing regional inequity in access to higher education. Furthermore, this study focuses on a binary mobility variable to highlight not just inequality in higher education but brings mobility into focus.

3.2. Methodology

3.2.1. Key variables

Dependent Variable: Intercity Mobility: The first dependent variable in the dataset is a binary variable, which identifies if a given individual moved from their province of residence to another province for educational purposes. The main focus of this research work will be on intercity educational mobility. To achieve this, a series of explanatory variables will be used across research work.

Political Distance: Political distance can be measured using the absolute difference in vote shares of the two most popular political parties in a student's province of origin and

province of university location based on data from the 2018 General Elections. The above measurement is meant to offer a quantified proxy of a student's origin and destination political distance. The measure above highlights students moving into an area with a different prevalent political setting, an emerging variable in studying how a political setting affects students in making a choice concerning university participation.

$$Political\ Distance_{it} = \left| VoteShare^{TopParty}_{HomeCity,it} - VoteShare^{TopParty}_{UniversityCity,it} \right| \quad (1)$$

Development Distance: Development distance was created based on the annual "average education period" and "female labor force participation rate" data at the city level published by the Turkish Statistical Institute (TUIK). Both indicators were calculated based on the differences between the city where the student came from and the city where they settled and were combined with the Euclidean distance method to transform them into a continuous variable representing development distance. This calculation was carried out separately by year.

$$DevelopmentDistance = \sqrt{(Education_{HomeCity,it} - Education_{UniversityCity,it})^2 + (FemaleLabor_{HomeCity,it} - F_{UniversityCity,it})^2} \quad (2)$$

Academic Level Comparison: The student's YKS score was compared with the average base score (minimum entrance score accepted by a program that year) of the university-faculty program they were placed in. Thus, the relative academic selectivity of the programs preferred by the students was checked and the match between individual competence and institutional level was made analyzable.

Success Rank: Success rank refers to the student's national placement ranking in the university entrance exam (YKS). This variable directly reflects the relative academic performance of each student compared to all exam takers each year. Unlike raw scores, which are not fully comparable across different score types, the ranking system provides a standardized measure of student achievement. Integrating success rank into the data set

allows for a more precise evaluation of how students' relative academic standing influences their mobility decisions and the selectivity of the programs they attend.

3.2.3. Data summary

Table 3.1. Descriptive Statistics for Numerical Variables

Variable	Count	Mean	SD	Min	Q1	Median	Q3	Max
SuccessRank	27833	279.10	240.3	1	76.25	223.65	417.13	999.82
DevelopmentDistance	29628	1.99	2.8	0	0.00	0.43	3.56	19.84
Mobility	29628	0.60	0.4	0	0.00	1.00	1.00	1.00

The numerical summary gives a first impression of the distribution and dispersion of the major continuous variables in the data. The SuccessRank variable, representing students' performance in the national exam, has a mean of 279.10. Yet, the presence of a high standard deviation of 240.3 with a very wide range of 1 to 999.82 shows a wide variation among students in terms of performance. Moreover, the presence of a median of 223.65, which is lower than the mean, shows a right-skewed distribution where students with lower ranks or less performance in the national exam are a minority among those with higher ranks. Such variation enables a consideration of students' varying levels of performance in influencing their mobility choice.

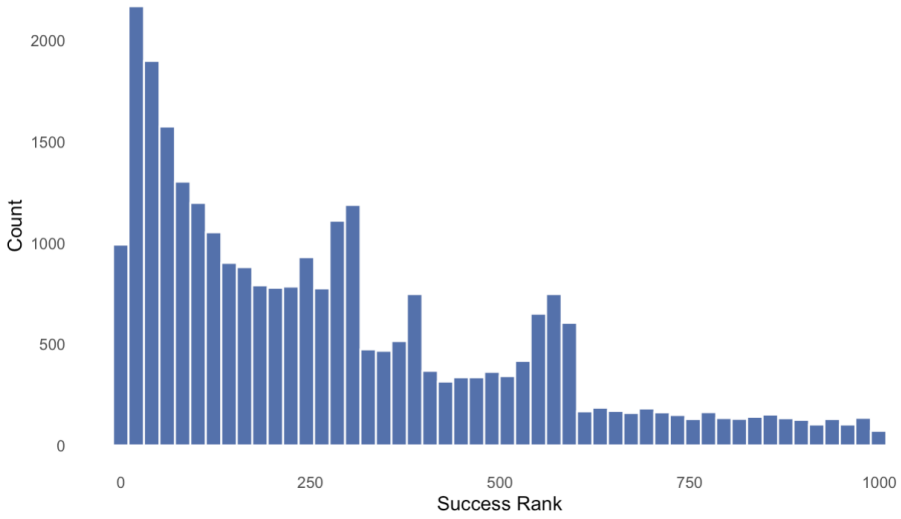

Figure 3.1. Distribution of Success Rank

The graph of Success Rank (Figure 3.1.) shows a mostly right-skewed distribution, with most students concentrated in lower ranks. The skew shows most students being placed in comparatively competitive ranks, with a smaller fraction being allocated to better ranks, thus illustrating a wide range of performance among students.

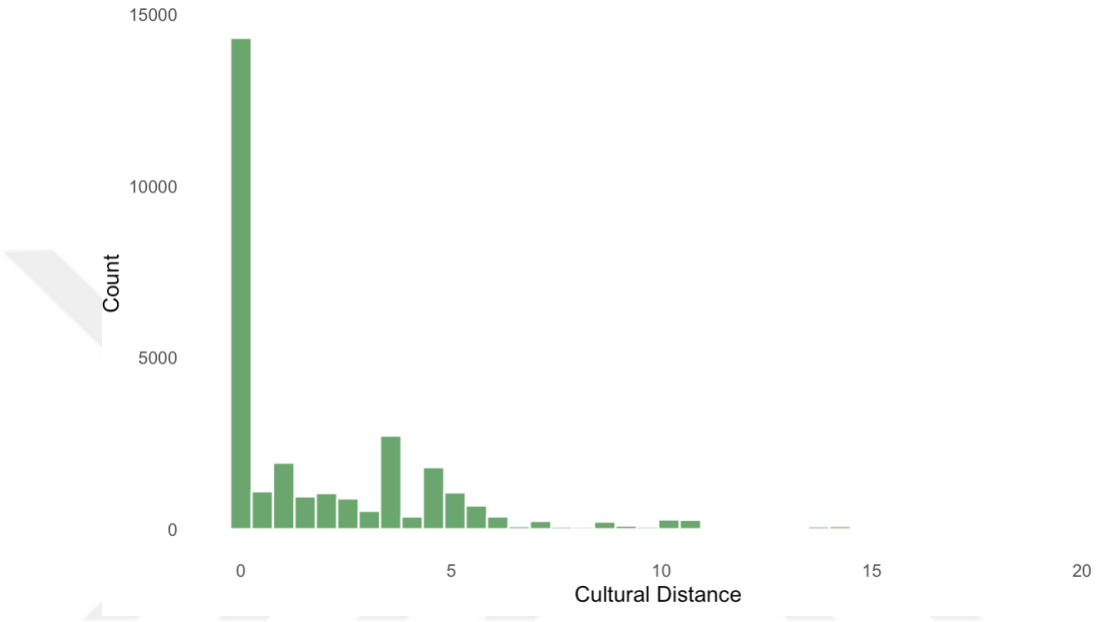

Figure 3.2. Distribution of Development Distance

Development Distance (Figure 3.2.), calculated using Euclidean distance based on education levels in each province and female participation in the labor force, has an average of 1.99. While it is true that a median of 0.43 is much lower, reflecting a sufficient number of students relocating to culturally similar cities, this distance attains a maximum of 19.84. Here, a sufficient number of students undergo a dramatic culture change when moving between cities, which can perhaps be attributed to their personal motives and/or imperatives in college selection. The mobility variable, which is used as the key dependent variable in this analysis, shows an average of 0.60. What this means is that 60% of students in this study moved to another city to further their education. Such a high percentage is a good illustration of inter-city mobility during the transition to higher education and manifests the importance of carrying out this research work.

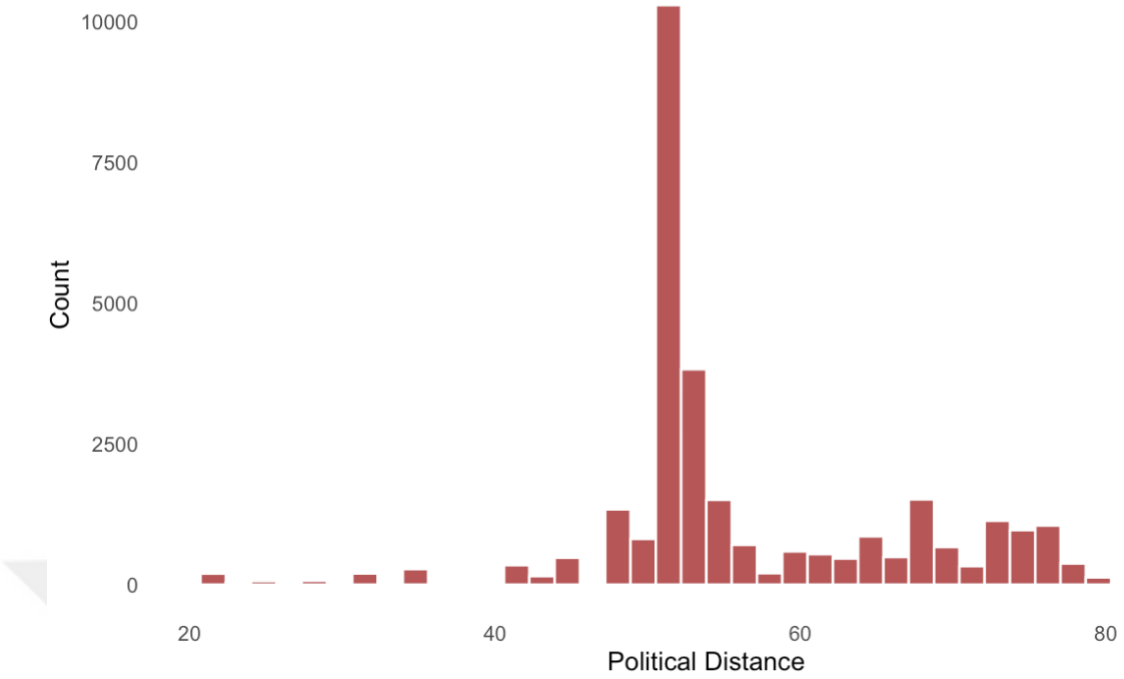

Figure 3.3. Distribution of Political Distance

The Political Distance is scattered around the middle of the range with a focus around the mean. This implies that, despite varying levels of political similarity between origin and destination cities, endpoints are not very common (Figura 3.3.).

Table 3.2. Categorical Variables Descriptives

Variable	Category	Frequency	Percentage
UniversityType	Government	17900	60.42%
Gender	Female	16063	54.22%
Year	2021	8891	30.01%
Year	2022	10101	34.09%
Year	2023	10636	35.9%

The bar chart of categorical variables (Table 3.2.) gives a better idea of the composition of this sample. A proportion of more than 60% are in state universities, and a proportion of just over 40% attends foundation universities. However, this shows that, despite being the major route into higher education, a not insignificant proportion of students attend foundation universities and therefore these institutions must not be overlooked in research focused on mobility behavior. With regards to gender balance, most students are female with 54.2% of the total sample. A good balance has therefore been achieved in this

selection, which will enable analysis of city-changing behavior divided into gender categories to be achieved. As regards analysis by year, a progressive increase in observations can be noted in 2021 to 2023. Most students are in 2023, and therefore this gives a better representation of recent placement. This will increase the relevance of this analysis with regards to current city-changing behavior.

4. FINDINGS AND ANALYSIS OF STUDENT MOBILITY PATTERNS

4.1 Descriptive Results

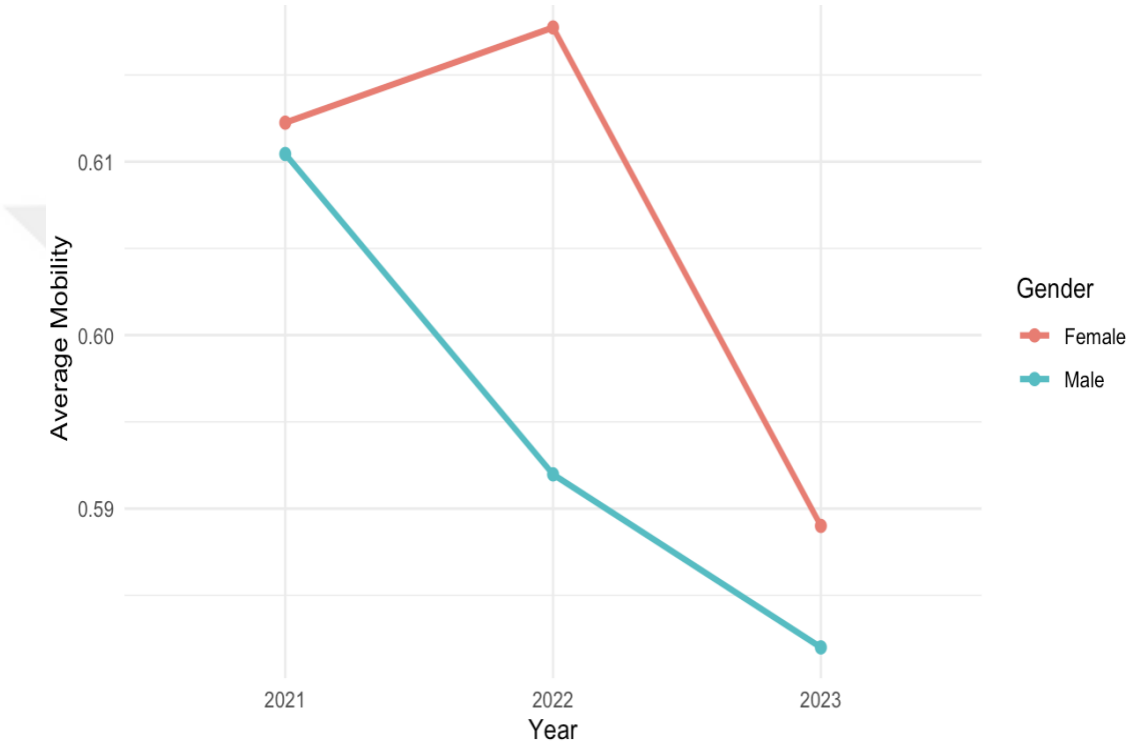

Figure 4.1. Mobility Trends by Year and Gender

Figure 4.1. depicts the graph of the average change in mobility over years, split on the basis of gender. Female students have consistently higher mobility over 2021-2023. The mobility of female students rises marginally from 2021 to 2022 but drops significantly in 2023. Conversely, the male students have a steady drop in the mobility trend over all three years. Although over a year, it appears very nominal, but it clearly shows in the graph a distinction in the mobility trends of both male and female students.

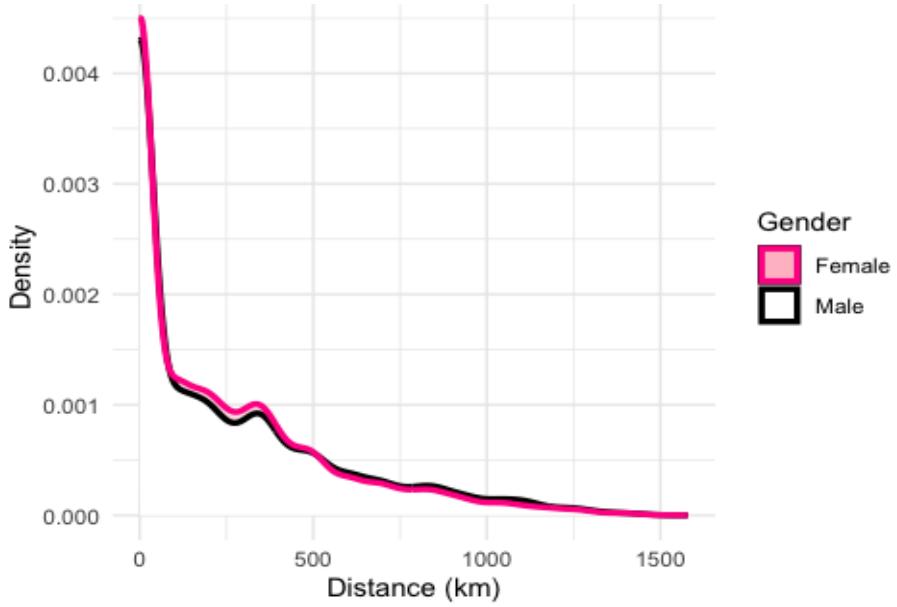

Figure 4.2. Gender Mobility by Distance

Figure 4.2 depicts students' intercity mobility based on gender and distance to university. Generally, it can be seen in this graph that both males and females have a preference for universities which are geographically closer to where they grew up. However, an observation can be made in this graph regarding a slightly higher concentration of females in the 0-200 km distance bracket compared to males. The disparity is evident in the 0-200 km bracket, where it can be noted in this graph that the concentration of students in this graph is higher compared to males.

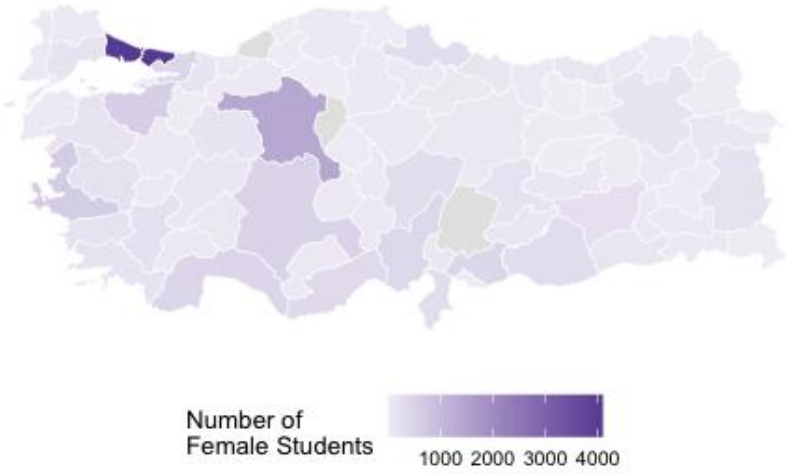

Figure 4.3. Cities Female Students Come From (2021-2023)

Figure 4.3 shows the distribution of towns from where female freshmen students were admitted to university between 2021 and 2023. Istanbul is the most outstanding among these cities in terms of numbers, far higher than any other city. Istanbul is followed by major cities such as Ankara, İzmir, Antalya, and Gaziantep. "This density clearly indicates that the number of students entering university is higher in a region with a higher population and better opportunities in education. The number is quite lower in Eastern and Central Anatolian cities."

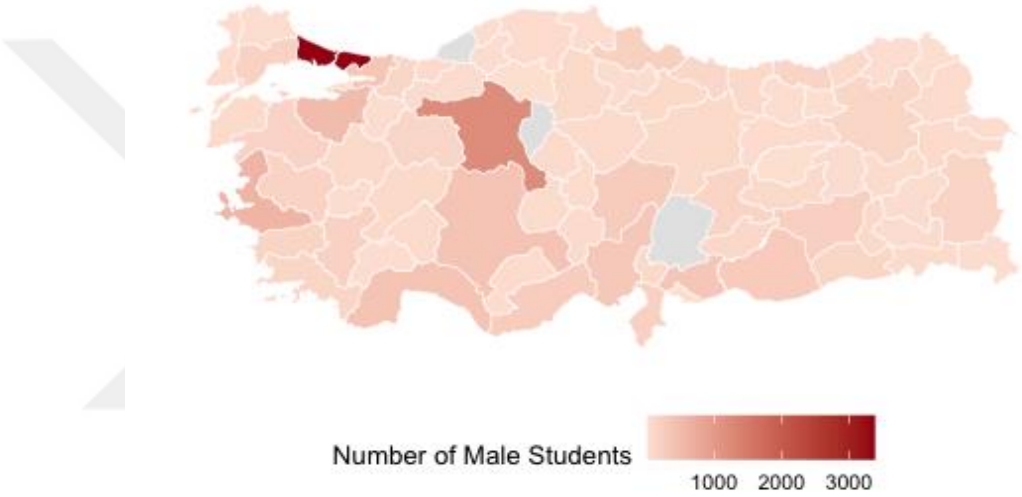

Figure 4.4. Cities Male Students Come From (2021-2023)

Figure 4.4 shows cities of origin of male students entering university between 2021 and 2023. Similar to the case of female students, Istanbul is observed to be the primary source city for male students. Following Istanbul, cities with a large population such as Ankara, Konya, and Gaziantep can be seen. Although a similar pattern can be observed with a focus on female students, it can be noted that in some provinces, the concentration of male students is a little more impressive, such as the case in Konya. Istanbul, Ankara, and Konya have emerged as major source cities for students, but in terms of preference for destinations, Istanbul, Ankara, and Izmir have emerged as leading cities with a high number of universities in them, which attract a major chunk of students entering universities.

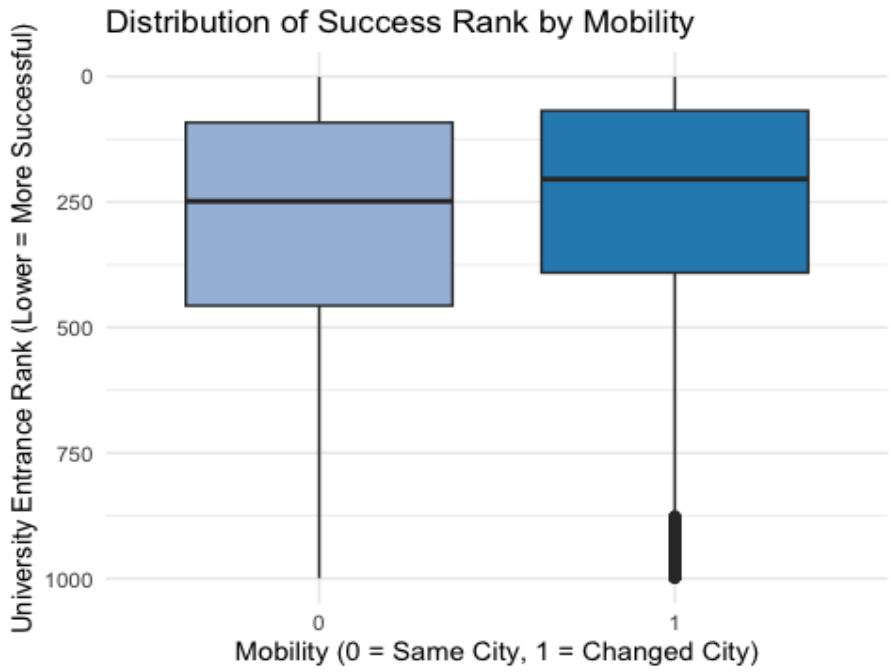

Figure 4.5. Distribution of Success Rabk By Mobility

Lower-ranked students in college admission (higher achievers) seem to have a higher chance of moving cities on average. Students with higher median achievement ranks have moved cities. Higher achievers seem to be more receptive to out-of-town options in college admission.

Table 4.1. T-test Results for Success Rank by Mobility

Mean (Mobility=0)	Mean (Mobility=1)	Mean Difference	t-value	p-value	95% CI Lower	95% CI Upper
296.18	267.90	28.27	9.60	0	22.50	34.04

Table 4.2. Group Means of Success Rank by Mobility

Mobility	Mean	Median	N
0	296.18	248.72	11840
1	267.90	204.55	17788

The outcome of the t-test indicated (Table 4.1. and 4.2.) that the ranks of academic success follow a significantly different pattern among mobile and non-mobile students; $t = 9.60$, $p < 0.01$. The mean score of students who moved from their hometown to another city in search of education indicated a better performance in the ranks of the entrance exam

compared to non-mobile students in their hometown, with an average score of M = 267.90 and M = 296.18 respectively. A mean difference of approximately 28 ranks not only proved to have significance in tests but in practical terms, since it indicated a marked improvement in academic performance standards among mobile students.

4.2 Empirical Methodology and Findings

This topic describes the empirical strategy used to investigate the influence of a set of factors on students' decisions to undertake higher education in another city. The dependent variable in all equations is a dummy, which takes a value of 1 if a student moved to a different city to attend university and 0 otherwise (Mobility=1 or Mobility=0). The basic equations primarily examine individual traits such as gender, university national ranking, and time fixed effects. The basic specifications mainly attempt to distinguish the individual and time-related characteristics in students' mobility decisions. Other equations include additional variables such as university type, development and political distance, origin/destination fixed effects, and interaction terms to evidence which students benefit or are detrimented by gender or time. In this topic, results will be presented for the whole dataset, including students allocated to major cities such as Istanbul and Ankara. The strategy in this topic aims to create an inclusive beginning point prior to imposing additional restrictions on the dataset. Then, all equations will be estimated using OLS with robust standard errors. Although in all equations the dependent variable takes a binary form, linear probability models are used due to their advantages when interaction terms and fixed effects appear in equations.

Model1

$$\text{Mobility} = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{SuccessRank}_i + \sum \gamma_t \text{Year}_t + \epsilon_i$$

Model2

$$\text{Mobility} = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{SuccessRank}_i + \beta_3 \text{UniversityType}_i + \sum \gamma_t \text{Year}_t + \epsilon_i$$

Model3

$$\text{Mobility} = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{SuccessRank}_i + \beta_3 \text{UniversityType}_i + \beta_4 \text{DevelopmentDistance}_i + \sum \gamma_t \text{Year}_t + \epsilon_i$$

To model the factors impacting student mobility, a set of regression models have been estimated using cross-sectional data over a series of years. The response variable is specified by Mobility_it, which is a dummy variable taking a value of 1 if student ‘i’ has moved to another city for higher education in year ‘t’, and 0 otherwise. Here, ‘i’ stands for individual students and ‘t’ represents the years. Model 1 adds gender and success rank to examine the basic interaction between gender differences and student mobility. Model 2 adds University Type to control for differences in institutions, because different institutions (public or private universities) can have different placement tendencies. Model 3 adds Development Distance, which measures the sociocultural disparity between a student’s hometown and the city where the university is located, using differences in average education attainment years and participation of females in the labor force. The addition of control variables tries to isolate how gender affects student mobility net of performance and other sociocultural differences. Year fixed effects (γ_t) were added in all models to control for economy-wide shocks such as government policies or generational differences. The error term (ϵ_{it}) represents other factors not controlled for in individual mobility decisions.

Table 4.3. Determinants of Student Mobility (Full Sample)

	Model 1	Model 2	Model 3
GenderMale	-0.010	-0.022***	-0.025***
	(0.006)	(0.005)	(0.005)
SuccessRank	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
UniversityTypePrivate		-0.374***	-0.270***
		(0.006)	(0.005)
DevelopmentDistance			0.091***
			(0.001)
Num.Obs.	27833	27833	27833
R2	0.004	0.141	0.401
R2 Adj.	0.003	0.140	0.400
F	24.656	912.992	3107
Year Fixed Effects	Yes	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Model 1 focuses on individual characteristics such as gender and academic achievement (Table 4.3.). The negative but insignificant coefficient for males indicates an ñno effectî in this early stage. A small but significantly negative effect is observed in academic

achievement, where higher-ranked students (or lower numerical values) have a slightly higher chance of staying within their cities of origin. A one-unit increase in ranking decreases the odds of moving by 0.01 percentage points. Although the effect is statistically significant, given an average mobility rate of 60 percent, its magnitude can be considered small. Model 2 adds an institutional characteristic ecking in which type of university they attend. The output shows a very large and significant effect, where students in private institutions have a 37.4 percentage point lower chance of moving to other cities compared with students in public institutions.

Model 3 includes two context variables, students' origin and university cities, with measures of development and political distance. Development distance shows a strongly positive and significant relationship to mobility, with a one-unit increase in development distance leading to a 9.1 percentage point higher chance of intercity mobility. This shows that students prefer to move to regions with a different culture, perhaps for diversity or exposure to a new setting. On the other hand, political distance shows a very small negative relationship, which is however strongly significant but not very meaningful. In all models, the adjusted R^2 statistics show an increasing trend. The statistics show an increment from 0.0034 in Model 1 to 0.4060 in Model 3. The trend shows that institution and context factors have an important explanatory role in understanding student mobility.

Model 4

$$Mobility_{it} = \beta_0 + \beta_1 Gender_{it} + \beta_2 SuccessRank_{it} + \beta_3 UniversityType_{it} + \beta_4 DevelopmentDistance_{it} + \beta_5 PoliticalDistance_{it} + \sum \delta_j UniversityCity_j + \sum \gamma_t Year_t + \epsilon_{it} \quad (3)$$

Model 5

$$Mobility_{it} = \beta_0 + \beta_1 Gender_{it} + \beta_2 SuccessRank_{it} + \beta_3 UniversityType_{it} + \beta_4 DevelopmentDistance_{it} + \beta_5 PoliticalDistance_{it} + \sum \delta_j UniversityCity_j + \sum \gamma_t Year_t + \epsilon_{it} \quad (4)$$

Model 6

$$Mobility_{it} = \beta_0 + \beta_1 Gender_{it} + \beta_2 SuccessRank_{it} + \beta_3 UniversityType_{it} + \beta_4 DevelopmentDistance_{it} + \beta_5 PoliticalDistance_{it} + \sum \delta_j UniversityCity_j + \beta_6 (Gender_{it} \times SuccessRank_{it}) + \sum \gamma_t Year_t + \epsilon_{it} \quad (5)$$

In these models, Gender_it accounts for gender differences in student mobility, while SuccessRank_itaccounts for individual educational achievement. UniversityType_itcaptures differences based on public and foundation universities, representing a level of university heterogeneity which might affect a student's chances of moving. The inclusion of DevelopmentDistance_it and PoliticalDistance_it enables an investigation into how an individual's sociocultural and ideological differences in the student's hometown and university city affect their mobility. The city fixed effects (δ_j) are used to control for variables such as infrastructure, security, and economic opportunities that are not accounted for. The year fixed effects (γ_t) explain shocks in each time period. The error term (ϵ_it) explains individual-level variation.

Model 4 represents the baseline model with basic individual and context variables. Model 5 is similar in structure to Model 4 but assesses the robustness of city effects. Model 6 adds an interaction variable of gender and academic success, Gender_it * SuccessRank_it, to see if there is a different impact of success on mobility for males and females. This stepwise approach will allow for a better understanding of how individual, institutional, and space-culture factors interact in making university mobility decisions in Turkey. In Model 4, only year fixed effects are considered. Then, in Models 5 and 6, city fixed effects are added into the model to control for regional differences. The addition of city fixed effects in Model 5 and Model 6 will allow the model to control for all unseen regional differences in university cities by capturing characteristics such as local economy, infrastructure, culture, and institutional differences. The interaction term of gender and success, Gender_it × SuccessRank_it, will appear in Model 6. In this way, it will be possible to see if academic success affects mobility in a gender-specific manner among males and females. Academic competition, for instance, may affect decisions to move in different ways among males and females.

Table 4.4. Fixed Effects Models (Full Sample)

	Model 4	Model 5	Model 6
GenderMale	-0.023***	-0.019***	-0.013**
	(0.004)	(0.007)	(0.007)
SuccessRank	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
UniversityTypePrivate	-0.248***	-0.140***	-0.140***
	(0.004)	(0.006)	(0.006)
DevelopmentDistance	0.091***	0.093***	0.093***
	(0.001)	(0.001)	(0.001)
PoliticalDistance	0.004***	0.009***	0.009***
	(0.000)	(0.001)	(0.001)
GenderMale × SuccessRank			-0.000
			(0.000)
Num.Obs.	27833	27833	27833
R2	0.406	0.459	0.459
R2 Adj.	0.406	0.457	0.457
F	2719,14	273.9	270,7
Year Fixed Effects	Yes	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** $p < 0.01$, ** $p < 0.05$, *$p < 0.1$.*

The results of robustness tests with stepwise city fixed effects are presented in Table 4.4. Model 4 contains control variables without city fixed effects. Higher achieving students pose a negative effect on mobility. The better students, the less mobile they are. Being in a foundation (private) university decreases mobility by 24.8 percentage points. This is an enormous effect. Development distance has a positive effect on mobility with very high significance-a one-unit change in development distance is associated with a 9.1 percentage point increase in moving-on the other hand, political distance remains a positive predictor of mobility but with a very small effect of approximately 0.3 percentage points. Model 5 adds fixed effects for university city. The strength of the foundation university effect weakens to -14.0 but remains highly significant. Development distance retains a strong positive effect, and a one-unit increase boosts mobility chances by 9.3 percentage points, with political distance lifting mobility by approximately 2.2 percentage points. The model fit improves greatly after controlling for city fixed effects in destination cities.

Model 6 adds the additional city fixed effects and a gender interaction with academic success rank. The interaction term is incorporated in order to examine if the relationship between success ranks and mobility differs between males and females. In other words,

this interaction term assists in examining if gender moderates the relationship between success ranks and the probability of mobility. The significance of this interaction is not statistically significant, and this implies that gender does not have a significant impact on the negative relationship between success ranks and mobility. The main effects are all robust and significant. Through both Models 4 and 6, the adjusted R^2 rises from 0.406 in Model 4 to 0.459 in both Model 5 and Model 6. The F-statistics make evident the joint significance of the include variables. Taken together, these findings make evident the significance of institutional and regional characteristics, in particular development distance, as a determinant of student mobility independent of city-specific variation and gender differences in academic achievements.

Table 4.5. Interaction Effects (Full Sample)

	Model 7	Model 8
GenderMale	-0.021**	-0.020*
	(0.005)	(0.009)
SuccessRank	-0.000***	-0.000***
	(0.000)	(0.000)
UniversityTypePrivate	-0.356***	-0.249***
	(0.006)	(0.005)
DevelopmentDistance		0.091***
		(0.001)
DevelopmentDistance	0.003***	0.004***
	(0.000)	(0.000)
GenderMale × SuccessRank		-0.000
		(0.000)
Num.Obs.	27833	27833
R2	0.144	0.406
R2 Adj.	0.144	0.406
F	782.1	1903.401
Year Fixed Effects	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Table 4.5. above shows the results of regression models with interaction effects to examine the heterogeneity in gender and academic success in intercity mobility of students. The inclusion of interaction effect Gender_it × SuccessRank_it in the regression model accounts for the possibility of a different relationship between academic performance and the chances of intercity mobility among males and females. In this way, this model will be able to examine if a behavioral gap in higher education institution choice in terms of gender exists, in other words, if the better-performing female students have a higher possibility of moving to another city for higher education compared with

better-performing males. While Model 7 portrays a basic model without considering development factors, Model 8 adds Development Distance and the interaction term to model the role of a sociocultural setting in shaping gender and success relationships.

The addition of Development Distance in Model 8 substantially adds to explanatory power over Model 7, since R2 rises from 0.144 to 0.406. However, this high R2 figure confirms a great capacity to establish regional development differences in Turkey to adequately explain students' decisions pertaining to educational mobility. Overall, in incorporating an interaction term, this model enhances forecast capability in exposing detailed gender variations in mobility decisions, with all aspects considered. Through these methods, further manifest improvements in model dimensions have established different individual and environmental factors interactively influencing educational mobility decisions in Turkey. Table 4.5. depicts two additional models (Model 7 and Model 8) with interaction terms in assessing if gender/academic success affects mobility in a different way based on individual parameters or over a different time dimension. In these models, they utilize a full model spec with additional investigations into conditional relationships in maintaining core explanatory variables in earlier models.

Model 7 specifies an interaction term of gender and academic success ranks. In this specification, main effects include prior model indications of lower intercity mobility among males relative to female students with a depth of reduced intercity college enrollment of 1.8 percentage points. Higher educational success remains negatively associated with this intercity mobility, with very small econonmic significance. Attending a founding university continues to show a substantially reduced intercity mobility of approximately 24.9 percentage points. Meanwhile, development distance demonstrates a strong positive influence of 9.1 percentage points in intercity college enrollment. Political distance demonstrates a small but significantly negative influence. What matters most in Model 7 is an interaction not being significantly different among gender and academic success, which validates expectations of negligible differences in these dimensions among gender. Model 8 adds an additional interaction dimension within gender in which gender affects intercity college enrollments through different time paths. However, this interaction effect does not alter the pattern of results. The interaction effect of gender and success rank continues to be insignificant, and no new interaction effects become

significant in specifications with time-varying gender effects. Both models show that important structural and contextual factors, particularly university type and development distance, remain significant regardless of interaction effects. The adjusted R-square remains constant at approximately 0.406 in both specifications, which shows that interaction effects do not improve model fit but do not harm the robustness of basic relationships either. Overall, Table 3 shows that although gender and academic success are important in their own right, their joint effects or time-varying effects do not have a large impact on mobility outcomes.

4.3 Robustness Analysis: Excluding Istanbul and Ankara

To verify and ensure the validity of the key results, another series of analysis is performed with the students in Istanbul and Ankara universities excluded. The logic of this restriction is based on the different role these two major cities have in the Turkish higher education system. Istanbul and Ankara are hubs for a broad array of top-ranked universities, which in turn attract a considerably large population of high-achieving students. Students from other regions, being from Istanbul and Ankara, have a tendency to stay in their own region because of the presence of major universities in their hometowns, which leads to underestimation of mobility despite strong performance. With Istanbul and Ankara excluded from analysis, this analysis provides a way to check if the general relationships obtained from the baseline analysis will continue to exist in a different setting where local educational opportunities are not as major a factor in influencing mobility.

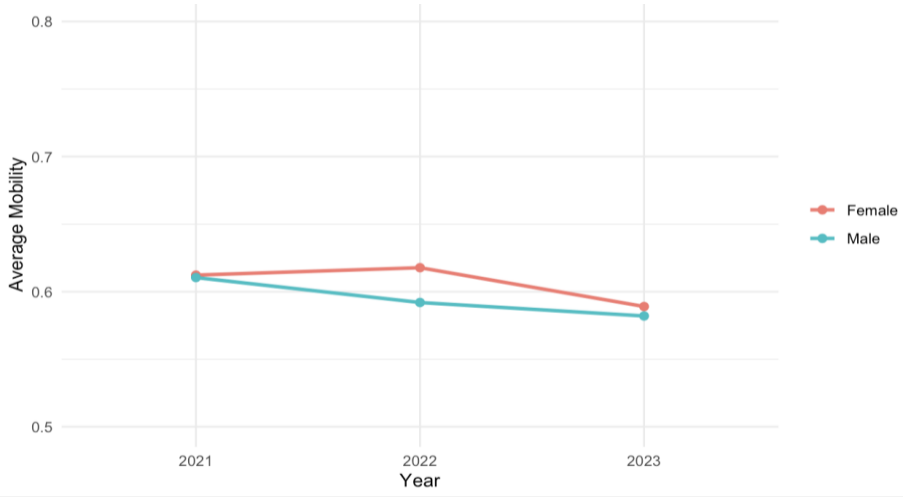

Figure 4.6. Mobility Trends By Year And Gender

Figure, after removing Istanbul and Ankara, shows a marked variation in the mobility trend compared to the old graph. The mobility rate of both male and female students in the old graph showed a gradual decline with time. This can be attributed to increased chances of enrolling in university offered by metropolitan cities such as Istanbul and Ankara. In the new graph, when Istanbul and Ankara are removed, the mobility rate shows an increase. Women are still leading in mobility, with an increase in men over time. Ironically, this shows an increased desire among students to leave cities when metropolitan cities are considered in the analysis.

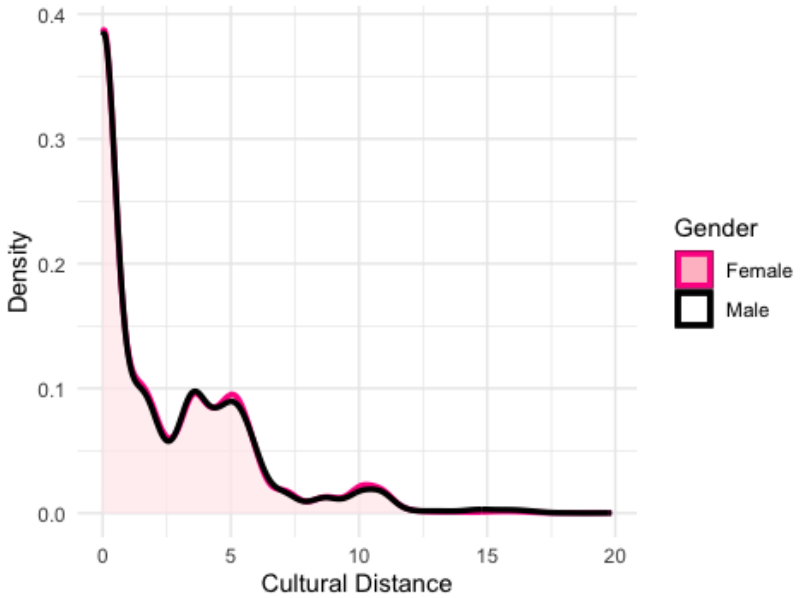

Figure 4.7. Gender distribution by development distance

Figure 4.8 above shows how, without Istanbul and Ankara, gender differences in mobility become very distinct. Women appear to be more ready than men to move both in terms of distance and development environments. Although in previous figures no major differences were evident, it is evident in this analysis how women prefer moving to distant cities not only in terms of distance but in terms of culture too.

Table 4.6. Determinants of Student Mobility (Excluding Istanbul and Ankara)

	Model 9	Model 10	Model 11
GenderMale	-0.033***	-0.038***	-0.038***
	(0.007)	(0.007)	(0.006)
SuccessRank	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
UniversityTypePrivate		-0.375***	-0.300***
		(0.011)	(0.010)
DevelopmentDistance			0.063***
			(0.001)
PoliticalDistance			0.002***
			(0.000)
Num.Obs.	15214	15214	15214
R2	0.014	0.080	0.269
R2 Adj.	0.014	0.080	0.269
F	53.296	265.190	801.029
Year Fixed Effects	Yes	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Table 4.6 above shows a robustness check without Istanbul and Ankara, two cities which have a disproportionately high concentration of university students and can be considered a distinct social class. The removal of these cities will enable a better assessment of national mobility. Model 9 considers gender and performance as important variables. The model finds that males have a 3.3 percentage point lower incidence of mobility than females. Although performance is also a factor in mobility, this model accounts for a very small part of variance with an R-squared of 0.0136.

Model 10 incorporates university type, and results show a significant negative effect of foundation university status on mobility, with a 37.5 percentage-point decrease in mobility, which can be attributed to these institutions being based in large urban centers, making relocation unnecessary. Including this variable greatly improves model explanatory power (Adjust. $R^2 = 0.0799$). Model 11 brings in development and political distance, both of which are positive predictors of mobility. Development distance takes a

major prominence in this model, resulting in a 6.3 percentage-point increase in relocation chances. Political distance is not less important, but it is of smaller significance. These variables improve model explanatory power greatly (Adjust. $R^2 = 0.2691$).

Table 4.7. Fixed Effects Models (Excluding Istanbul and Ankara)

	Model 12	Model 13	Model 14
GenderMale	-0.038***	-0.030***	-0.024**
	(0.006)	(0.005)	(0.009)
SuccessRank	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
UniversityTypePrivate	-0.300***	-0.218***	-0.218***
	(0.010)	(0.010)	(0.010)
DevelopmentDistance	0.063***	0.065***	0.065***
	(0.001)	(0.001)	(0.001)
PoliticalDistance	0.002***	0.010***	0.010***
	(0.000)	(0.001)	(0.001)
GenderMale × SuccessRank			-0.000
			(0.000)
Num.Obs.	15214	15214	15214
R2	0.269	0.361	0.361
R2 Adj.	0.269	0.357	0.357
F	801.02	111.83	100.63
Year Fixed Effects	Yes	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

The fixed effects models in Table 4.7 can be used to conduct a series of additional tests of robustness. Model 12 adds controls for baseline characteristics and year fixed effects. Gender remains a significant predictor, with males 3.8 percentage points less likely to move. Development and political distance have positive effects, and movement to a foundation university is strongly negatively associated with mobility (-30 points). The model accounts for a small but non-insignificant amount of variance in mobility outcomes (Adjusted R-squared=0.269).

Model 13 adds university city fixed effects to adjust for unobservable regional traits, for instance, local infrastructure and local labor markets. This adds a small mitigation effect on both gender differences (-3.0 points) and the foundation university impact (-21.8 points) but enhances effects of culture and political distance. The fit of this model improves (Adjusted R-Squared = 0.358), reflecting an important influence of city characteristics. Model 14 incorporates an interaction term for gender and academic success to examine if these interact in terms of mobility. The interaction is not significant,

and it implies a standard influence of academic success on students of both sexes. Main effects areguaranteed, with minimal influence on fit statistics, in this case, adjusted R-squared of 0.357.

Therefore, gender influence remains a determinant of mobility, but an interaction with academic success lacks significance. Conclusion of Robustness Checks "These robustness tests thus show that gender differences in student mobility remain significant when controlling for institution-level, culture, and political differences, and when excluding Istanbul and Ankara from analysis. One dimension which emerged strongly in these tests is ‘development distance’, a consideration which goes beyond purely educational or financial imperatives in terms of students' decisions. Fixed effects models improve these results by accounting for cross-sectional regional differences, but do not show a gender-success interaction term to be significance, which confirms equal mobility effects for both gender dimensions.

Table 4.8. Interaction Effects (Excluding Istanbul and Ankara)

	Model 15	Model 16
GenderMale	-0.029**	-0.042**
	(0.010)	(0.013)
SuccessRank	-0.000***	-0.000***
	(0.000)	(0.000)
UniversityTypePrivate	-0.300***	-0.301***
	(0.010)	(0.010)
DevelopmentDistance	0.063***	0.063***
	(0.001)	(0.001)
PoliticalDistance	0.002***	0.002***
	(0.000)	(0.000)
GenderMale × SuccessRank	-0.000	-0.000
	(0.000)	(0.000)
Num.Obs.	15214	15214
R2	0.269	0.270
R2 Adj.	0.269	0.269
F	701.066	561.150
Year Fixed Effects	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Table presents the robustness results for the interaction models after excluding Istanbul and Ankara. The exclusion of these two metropolitan cities aims to verify whether the observed interaction patterns between gender and academic success remain consistent in

the rest of the country, where the higher education landscape is less affected by the unique demographic, institutional, and economic characteristics of the largest urban centers.

Table 4.8 shows the output of interaction models assessing the robustness of gender mobility differentials outside Istanbul and Ankara. The two major metropolitan cities in Turkey were excluded in this analysis to focus on distinct structural mobility trends in less centralized regions. Model 15 and Model 16 both include an interaction term of gender and academic success (Gender_it × SuccessRank_it). In both models, this interaction term is not statistically significant, which confirms that academic success matters equally for male and female students in non-metropolitan regions. The significance of the main gender term persists, which confirms again that male students are less mobile than their female counterparts.

The explanatory capability with respect to the models (Adjusted $R^2 \sim 0.270$) is not affected, which confirms that not much additional explanatory capability is added with respect to including the interaction term in the model. However, consistent results obtained in different model specifications reinforce the validity of results obtained with regard to gender differentials in mobility. Willingness to move is driven by more structural and contextual factors rather than gender differentials in performance. The two models tested in this table examine how gender, academic success, and context parameters interact with each other in impacting student mobility. Model 15 reveals that being male decreases the chances of mobility by 2.94 percentage points ($p < 0.01$), with increased academic success measured by lower ranks increasing mobility. Attendance at a foundation university decreases mobility by 30.2 percentage points.

Development and political distance have a positive impact on mobility with a coefficient of 6.3 and 0.18 points, respectively, thus revealing that students are not discouraged by sociocultural differences in participating in mobility. Model 16 repeats these findings with very small deviations: gender differences widen by −4.18 points, with all other parameters maintaining their significance. The two models relate to student mobility with a goodness of fit of about 27%, thus establishing the significance of structural parameters operating in this context.

Basic models using individual variables such as gender and success ranks have negligible explanatory capability (Adjusted $R^2 = 0.0136$). Including university type strengthens the model marginally ($R^2 = 0.0799$) because of organizational variations. Addition of development and political distance significantly enhances explanatory capability ($R^2 = 0.2691$) because sociopolitical considerations in these regions largely influence mobility. While gender-success interaction is not significant, it helps in understanding the role of achievement differentially by gender. Fixed Effects Models and the Use of City-Level Fixed Effects Fixed-effects models allow for a better understanding of how origin and destination city characteristics not observed in the model influence mobility. Including fixed effects for university cities (Adjusted R-squared = 0.3576) and origin cities (Adjusted R-squared = 0.3892) leads to a dramatic increase in model fit. The results indicate rather that students make decisions based more on their own cities' characteristics—whether related to education, capacity, or social pressure—than on whatever lies in their destination cities in higher education in Türkiye. While individual merit and gender matter, therefore, in this way, being geographically based matters far more in terms of understanding student mobility.

4.4 Difference Between Student Score and Base Score

In order to examine students' decisions with respect to their willingness to change cities in their university preferences, a hypothesis is established based on the gap between students' score and the base score of the university they are assigned to in a given year. Based on this hypothesis, being assigned to a university with a rather high or low score in relation to the base score of the department they are assigned to might influence flexibility with respect to choice and hence city changeover behavior. For instance, a student with a very high score but assigned to a department with a rather lower base score can easily be assigned to a department with a high degree of similarity in the city they reside in, but in contrast, students in other cities might not see a need to change cities if they do not have an option in their city suitable for their score; hence, opting for other cities might fit students better. In this case, analysis was performed based on three different years in order to establish if students' scores in relation to the base score of the department they are assigned to is a substantial determinant in their decisions with respect to city changeover behavior (Table 4.9).

Table 4.9. Determinants of Student Mobility – Score Differences

	Model 17 2021	**Model 18 2022**	**Model 19 2023**
score_diff_2021	-0.000***		
	(0.000)		
genderMale	-0.001	-0.001	0.005*
	(0.002)	(0.002)	(0.002)
success_rank	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)
university_type_private	0.005*	-0.004	-0.005*
	(0.002)	(0.003)	(0.002)
development _distance	-0.010***	0.049***	0.057***
	(0.002)	(0.003)	(0.003)
political_distance	0.094***	0.075***	0.064***
	(0.001)	(0.001)	(0.001)
score_diff_2022		0.000*	
		(0.000)	
score_diff_2023			0.000
			(0.000)
Num.Obs.	2150	2330	2558
R2	0.916	0.876	0.841
R2 Adj.	**0.916**	**0.875**	**0.841**

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Table shows the estimations of three different models in which I investigate how far the difference between a student's real university entrance score and the base score of a program to which a student got admitted has an impact on intercity mobility. Every model tests a different year (2021, 2022, and 2023) with exactly the same set of control variables: gender, success rank, type of university, development distance, and political distance.

In Model 17 (2021), the score difference variable (puan_farki_2021) is negative and statistically significant. A one-unit increase in the score-base score gap leads to a 0.000 percentage point decrease in the chance of mobility. This implies that students with scores much higher than the base score of the department they were enrolled in have a small chance of mobility to other cities. Even though this factor is highly statistically significant, it is not very important in economic terms. The other control variables follow expectations: development distance is negatively related (contra to previous models), and political distance is strongly and positively related to mobility. The model fits very well, with an Adjusted R^2 of 0.9155. In Model 18 (2022), the score difference variable becomes positive and statistically significant. Higher scores compared to the base score raise the chances of mobility by a small margin. However, this margin is small in economic terms, at 0.005 percentage points. Development and political distance are strongly and positively

related to mobility, consistent with previous models. The model shows a good fit, with an Adjusted R^2 of 0.8754.

In Model 19 (2023), the coefficient of the score difference variable remains positive but loses statistical significance. This means that in 2023, a student's relative score status vis-à-vis the base score of an institution fails to impact mobility in a significant manner. The control variables continue with their signs and significance unchanged. Of interest, the impact of development and political distance remains strongly and significantly positive. The model fit, though slightly lower than in other years, remains excellent (Adjusted R^2 = 0.8409). Overall, the outcome fails to present a unified message concerning the role of score-base differences in mobility. Although it is strongly significant in both 2021 and 2022, with opposite signs, it fails to do so in 2023. Such a pattern reveals an unstable role for relative score differentials in improving mobility. Alternatively, contextual variables such as development and political distance remain strongly associated with mobility in all three years (Table 4.10).

Table 4.10. Logit and Probit Estimates

Variables	Logit	Probit
Gender (Male)	-0.016***	-0.016***
	(0.003)	(0.003)
Success Rank	-0.000***	-0.000***
	(0.000)	(0.000)
University Type (Private)	-0.202***	-0.166***
	(0.007)	(0.004)
Development Distance	1.466***	1.304***
	(0.162)	(0.180)
Political Distance	0.002***	0.002***
	(0.000)	(0.000)
Observations	27,833	27,833
Pseudo R^2	0.771	0.772
Year Fixed Effects	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Logit and probit models that have been presented in Table 4.10, are presented as robustness check for the purpose of testing validity of LPM which is used in main analyses of study. Considering binary shape of dependent variable, these models are important in terms of showing whether the results are responsive or not for modern preference. The estimated coefficiencts of probit and logit models show high level

consistency with each other and the base linear models. Gender variable has negative coefficient and %1 significant in both models. This result, when the other factors are kept steady, shows that comparing to female students, log odds of out-of-town mobility of male students is approximately %1.6 lower. Similarly, negative and statically significant coefficient of university types confirms that compared to state universities, the log odds of mobility of the students who prefer private universities is lower than the students who preferred state universities (according to the Logit model, approximately %20, according to the Probit model %16.6 lower).

The variables of distance, political and development distance have an important and significant effect on mobility. Especially high coefficient of development distance presents that difference of socio-economic developments between city of origin and city of university have a strong driving force for the determination of student mobility. As a result, findings, which were obtained from predictions of logit and probit, support the main hypothesis of the study and prove that obtained results are statically robust (Table 4.11.).

Table 4.11. Controlling for Physical Distance and Interaction Effects

Variables	**Model 20**	**Model 21**
Gender (Male)	-0.029***	-0.020***
	(0.004)	(0.005)
Success Rank	-0.000***	-0.000***
	(0.000)	(0.000)
University Type (Private)	-0.199***	-0.199***
	(0.004)	(0.004)
Development Distance	0.051***	0.051***
	(0.001)	(0.001)
Political Distance	0.003***	0.003***
	(0.000)	(0.000)
Physical Distance	0.001***	0.001***
	(0.000)	(0.000)
Gender (Male) × Physical Distance		-0.000***
		(0.000)
Observations	27,833	27,833
R^2	0.552	0.552
Year Fixed Effects	Yes	Yes

*Notes: Robust standard errors are clustered at the province level. *** p < 0.01, ** p < 0.05, *p < 0.1.*

Aiming to test the reliability of main findings of the study and examining the impact of physical distance on gender in details, model 20 and model 21 are estimated and presented in Table 4.11. In these analysis, psychical distance between the city where the student located and the university city is included as a control variable. Results of Model 2 shows that mobility in university preferences has a significant relationship with a positive and statically significance. Descriptive power of the model rose 0.552 level by adding this variable. However, more importantly, even physical distance is controlled, gender male, which is our main descriptor, continued remaining negative and significant in terms of statically. This finding, independent from distance factor, confirm that comparing to female students, male students have smaller possibility to prefer to move out of their own city.

In model 21, an interaction term (Gender × Physical Distance) is added to the model for the purpose of analyzing the relationship between gender and distance. As a result, I find that coefficient of the interaction is negative and significant in %1 proportion. This result shows that the positive effect of physical distance on mobility varies by gender; for male students, comparing to female students, the tendency of mobility depends on the distance occurs to smaller degree. As a result, the inclusion of the physical distance in the model has not changed the main hypothesis that female students are more mobile than male students.

5. DISCUSSION

This study investigates the determinants of intercity mobility among university students in Türkiye by usiung a unique dataset constructed from the official YÖK Atlas records for the years 2021–2023. The findings offer nuanced insights into how individual characteristics, institutional structures, and regional contextual factors interact to shape students' mobility decisions during the transition to higher education. The descriptive results reveal consistent patterns: female students exhibit higher mobility rates than males, and students with higher entrance exam success are more likely to pursue education in a different city. These initial findings point to the existence of structural inequalities and gender-based differences in opportunity and mobility preferences. Regression models further reinforce these observations. Initial models based solely on individual characteristics demonstrate limited explanatory power, suggesting that mobility decisions cannot be fully understood through personal attributes alone. The introduction of institutional variables—particularly university type—greatly enhances model performance and highlights the significance of structural constraints. Students placed in foundation (private) universities are consistently less likely to relocate, likely due to the urban concentration of these institutions and associated tuition costs.

The addition of development and political distance metrics provides strong evidence for the role of regional context. Development distance, in particular, emerges as a robust and positive predictor of mobility, suggesting that many students are willing to cross sociocultural boundaries in pursuit of higher education. Political distance also shows consistent but smaller effects, indicating that ideological differences between regions may influence student preferences, albeit to a lesser extent. Robustness checks with city fixed effects reveal that unobserved local characteristics—such as economic conditions, labor markets, and social norms—play a considerable role in shaping mobility behavior. The stronger model fit in specifications that include origin city fixed effects confirms the importance of students' hometown contexts in determining their likelihood of moving. This finding aligns with broader sociological perspectives on spatial inequality and opportunity structures. Interaction models examining the conditional effects of gender

and academic performance reveal that these relationships are stable across time and consistent across subgroups. The lack of significant interaction effects suggests that the mechanisms driving mobility are broadly similar for male and female students, and across different years. These results reinforce the interpretation that institutional and contextual variables—rather than individual-specific dynamics—are the dominant forces shaping educational mobility.

Using micro-data of YÖK Atlas, this study examines the intercity mobility of students who have enrolled in universities in Türkiye between 2021 and 2023. The goal is to explain how individual-level factors like gender and exam ranking, institutional characteristics such as university type, and contextual circumstances in terms of development and political distance shape the migration decision of students to move to other cities for higher education. While the descriptive findings suggest that female students are more likely to migrate than male students, students with higher levels of academic performance are more likely to study outside their hometown. Empirical findings present that these individual-level variables cannot solely account for the mobility decisions of students; rather, it is the structural and regional-level variables-particularly university type and development distance-that yield stronger impacts. Robustness checks excluding Istanbul and Ankara verify these results as not driven by the impact of major metropolitan centers. Secondly, the present study addressed the gap between a student's score and the admission threshold of their chosen department. This variable, however, yielded inconsistent results across years and contributed little to explaining patterns of mobility. Findings of the present study imply that decisions of students to be mobile stem not only from their choices but also from regional inequalities and differences in opportunities given by various institutions.

Gender-based student mobility in Higher Education

These findings are in line with Gür (2022), who, while stating that the rate of higher education participation by women was 48.5% as opposed to 40.5% for men, also showed higher intercity mobility. The above results show a desire among women to join higher education circles, which also shows their readiness to move to different places. Kahraman (2022) believes this can be part of a larger social change observed in Türkiye. As women

are becoming more prominent in society, especially with education, their choice of universities and willingness to move have altered. The increased mobility in 2022 among females can be attributed to this change, and a slowdown in 2023 can be attributed to financial woes or a pandemic hangover.

Moreover, it is not only a matter of whether women are mobile but how they are mobile. Therefore, Bingöl & Çavlin (2022) highlighted that in Istanbul, the average distance female students migrated for educational pursuits was 121.8 km shorter than males. Although female students migrate for education, they appear to migrate over smaller distances. Such migrations appear to be driven by considerations associated with security, parents' wishes, and social culture. In this case, the nature of migration is equally important as the rate of migration. Such gender dynamics are common in most countries. Sulis et al. in 2023 found that students in Southern Italy were less likely to go to another city for college, and this phenomenon proved to be much more pronounced in females. In contrast, in Northern Italy, where social behaviors are not driven by such expectations, gender differences were not very marked. Such results have indicated how local culture affects these trends. Applying this to Türkiye, differences in female mobility can therefore include local factors such as this. Being an academic institution alone is not a consideration most females have in common; security, female presence, and familiarity with local culture are equally relevant considerations in their choice (Yazgan, 2015; Taş & Türkan, 2016).

The lower levels of female mobility in 2023 might in part be attributable to students being in advanced years of their studies and electing to remain in the location in which they are already colocated. A further important consideration is the nature of higher education programs which women are observed to prefer. Rocki (2022), for instance, highlighted in her research that in Poland, women have a preference for non-technical programs such as social sciences and humanities, which in Poland are linked with a distinct migration trend among these students. For instance, in Türkiye, programs linked with education, health, and social sciences have become a favourite among women in almost all provinces, which have programs accessible in nearly all provinces, and in such circumstances, women were less likely than men to migrate over a distant geographic space.

Gender determines the family's approach toward pursuing higher education. For example, in India, Veena and Rao (2018) found that women had a 70% likelihood of joining private universities compared to men, since such environments were considered safe for the families. Similarly, in Türkiye, while female students do seem to be overall more mobile, their choices are nonetheless determined by family control and safety concerns, or development expectations related to distance. These gender differences in education do not stop with university graduation; they also extend into later life. For example, Tosi et al. (2025) show that women are less likely to migrate than men after university completion. This international trend was mirrored in the decline of women's mobility in Türkiye in 2023. Social expectations and community norms often urge women to stay closer to home, even when their academic performance does well. In other words, increased women's mobility in 2021-2022 and their decline in 2023 cannot be an issue of mere personal choice. These emerging contours reflect a complex interplay of social expectations, safety concerns, family influence, and economic difficulties. Among male students, the linear decline in mobility does appear more induced by financial compulsions, the need to start working earlier, and inequality of opportunities.

Generally, female students tend to migrate with more purpose and caution. Their choices are constrained by considerations related to safety, family acceptance, and cultural expectations. Consequently, even though they may migrate more often, they tend to do so over shorter and more cautiously chosen distances. What that suggests is that mobility has deep roots in gendered experience and social organization, not in academic or personal choice.

Distance, then, plays a key role in the choice of university, and gender influences this distance. In general, both male and female students prefer to go to university fairly close to home, but it is among the female group of students that the largest number is concentrated within 0-200 km. However, male students tend to stay relatively close to home, though a higher share of them do travel from longer distances. This could indicate that for many female students, choosing a nearby university is not only a matter of convenience but is closely related to much deeper concerns, such as safety, family oversight, and social expectations. Staying close may reflect a need for security and

cultural familiarity, fostered by norms that shape women's educational choices differently from men's.

Istanbul, Ankara, Konya, and Gaziantep were the most common cities of origin among male students. It is possible to suggest that the presence of large educational centers indicates that men are more willing to leave their hometowns or migrate to regional centers in order to obtain university educations. A case example of this would be the high number of male students from Konya. In contrast, among female students, the most common places of origin were Istanbul, Ankara, Izmir, Antalya, and Gaziantep. These are metropolitan areas with better living conditions, more services, and safer environments-factors which explain why many women are retained within these regions. At the same time, the number of female students from Eastern and some Central Anatolian provinces remains very low, indicating how regional inequality, limited local opportunities, and strong cultural expectations have constrained the mobility of women. This corresponds to findings on how women, compared to men, travel an average shorter distance for higher education (Bingöl & Çavlin, 2022). Similarly, in Southern Italy, young women preferred not to change cities to study at university because of family restrictions concerning safety (Sulis et al., 2023). The important point that Ballarino et al. (2022) make is that even while female students are often very successful academically, the choices of university tend to be closer to their home.

Such tendencies are a result of structural factors rather than individual choice. In Türkiye, Šenol (2020) and Yazgan (2015) state that most young women tend to prefer universities in their proximity in terms of economic reasons and family pressure, especially in matters concerning safety. As can be anticipated, a similar trend is observed in most abroad countries too. For example, in Bangladesh, Usman et al. (2025) observed that in the case of female international students, safety and life in college were dominant selection criteria, but for males, financial considerations were paramount. For South Korea, authors Park et al. (2010) observed that conventional gender roles greatly reduced the chances of female migration for higher studies. In India, authors Veena & Rao (2018) established using statistics that female students have a proclivity towards selecting local private universities because of their family's safety support and nurturing environment. Likewise, in Canada, Geddie (2013) established a connection to find a trend amongst female

students to prefer local studies in universities in terms of proximity in order to escape safety dangers and avoid binding family obligations at a safe and calculated distance.

In Türkiye, we observe that female students come mainly from large metropolitan cities, but those from Eastern and Central Anatolia are a significantly smaller percentage. This is in line with Gür (2022), which observed a high local enrollment rate of women in Istanbul (67.5%), Ankara (54.4%), and Izmir (42.9%) but less than 15% in provinces such Ordu and Hakkari. The relevant detail emerging is thus that in large cities, females are better represented, but in Eastern provinces, they are less mobile in terms of access and mobility. Kahraman (2023) adds further detail, stating that in provinces which can be considered socio-economically less developed, such as Batman, Elazig, and Siirt provinces, students prefer staying in their own province, thus restricting their intercity mobility. While it appears initially that female mobility is higher, this mobility index is in fact largely influenced by regional imbalances. Şenol (2020) also underlines the fact that in Eastern Anatolia, rigid cultural restrictions have formed the basis for underrepresentation of female students coming from those regions. Sulis et al. (2023) make an interesting comparison with Italy: the low female mobility characterizing Southern Italy resembles very well the situation characterizing Eastern Türkiye, while higher mobility characterizes Northern Italy, parallel to mobility across Western Turkish cities. The same contrast underlines how cultural norms and family control combine with geography to shape women's mobility.

Yazgan (2015) identifies a safe and familiar place and parental monitoring as major preferences among female students when considering migration to pursue university education. These feelings are strong among students coming from eastern provinces of Türkiye because of the more traditional values and family structure being very protective. Tekin also shares a similar view on the basis of international student mobility: it is the perceived safety concerns and cultural expectations that obstruct the mobility of women, especially from developing countries. These views can also be useful to explain the mobility trends within Türkiye. Ballarino et al. (2022) show that in Italy, academically qualified women from less developed regions, such as Southern Italy, do not necessarily move for study, quite similar to the situation observed in Eastern Türkiye. Işık and Uğraş (2018) identify safety, housing, and social support as important dimensions shaping the

choices of female students and explain why metropolitan cities like Istanbul and Izmir would be more attractive to women with their better infrastructure and stronger support networks.

Overall, university mobility for female students depends on many intermingled factors: distance, geography, safety concerns, cultural norms, family control, and regional inequalities. Compared to male students, women tend to opt for universities closer to home and in larger and safer cities. These choices should not be viewed as personal preferences alone but also in relation to deeper levels of social and cultural structure. The low participation of females from Eastern and Central Anatolia testifies very clearly to these structural hindrances.

Gendered Patterns of Student Mobility

Such evidence shows that gender has a strongly significant influence on student mobility, in the sense that, everything else being equal, males have a 2.3% lower chance of moving to another city for higher education compared with females. Student mobility is lower when the cut-off scores in entrance exams decrease, meaning when their performance declines. The above results highlight an important message in conducting research on mobility, which is not to overlook gender and academic achievement simultaneously. Evidence supporting this argument is presented in a study conducted by Sulis et al. in Italy in 2023, in which Southern Italy females were less likely than males to move to university in another city because of traditional gender roles, safety issues, and culture constraining them to stay in their hometown. Evidently, this holds true in South Korea too. A study carried out by Park, Koo, & Oh in 2010 discovered a reluctance exhibited by females in South Korea to attend higher education in a city other than their hometown because of gender roles in their society.

However, a new trend can be observed in Türkiye. As cited in Gür (2022), the enrollment rate in universities among women is higher than among men, with 48.5% and 40.5%, respectively, making them morevisible and mobile in higher education institutions. As stated in Kahraman (2023), being mobile in universities is more equal among both men and women, and this will soon reach an equal level. However, based on Bingöl & Çavlin

(2022) research, female students have a tendency to come from provinces which are an average of 121.8 km closer to their institutions compared to males in institutions. Perhaps this shows that despite being mobile, females have a preference to go to institutions which are not too far, taking into consideration safety concerns and family sentiments. Moreover, this view finds support from international research. For example, studies carried out by Geddie (2013) and Ballarino et al. (2022) have portrayed female students in more reserved roles compared to males due to concerns for personal safety and a strong sense of commitment to family, hence resulting in lower mobility among intercity students. Furthermore, Tosi et al. (2025) have noted among university graduates that females are less likely than males to have undergone mobility after completing their university education. In summary, these findings highlight how gender both prefers and structures individual mobility.

Relationship Between Academic Achievement and University Mobility

Results have shown that the higher the academic achievement-a proxy for entrance exam rankings-the more likely students are to migrate into another city to attend university. Indeed, it has emerged that mobile students display better average entrance scores compared to students in their hometowns. This points to a clear relationship between academic success and geographic mobility. The pattern is thus reflective both of individual motivations and of the unequal distribution of opportunities in the higher education system. In fact, a similar study conducted by Tosi, Impicciatore, and Rettaroli (2025) in Italy found evidence that the more academically successful students were also mobile. Many high-scoring students who originated from Southern Italy remained in Northern cities after graduation, while lower-scoring ones often went back to the home region. Hence, it appears that academic achievement does have an impact on the choice of university and subsequent settlement. Evidence from Poland also points in the same direction. According to Rocki (2022), after graduation, the students who migrated to another city received an 18% higher salary than those who did not move. The mobile students were predominantly graduates from competitive fields of engineering and technical sciences.

Academic achievement thus seems related to mobility and better economic outcomes. Similarly, Gür (2022) finds that students with higher academic scores in the western provinces of Türkiye are more likely to study in another city. With these pieces of information, the signs are that mobility is linked with regional inequality, economic condition, and students' quality. Internationally, this again is reinforced by Hossain et al. (2025), where it has been found that academically high-achieving students have more chances to study abroad in Bangladesh. While these choices take into consideration opportunities for research and social norms, academic achievement remains a core driver. Similarly, Park, Koo, and Oh (2010) find in South Korea that high-achieving and high-income students were more open to studying outside their hometowns, some of them even abroad. Although such movements may not appear in national enrollment statistics, they certainly show that achievement leads to mobility.

Regarding international student mobility, Tekin (2022) recorded that many students enter Turkiye with high academic ambitions. While academic quality, living conditions, and student support services are all of real significance for these achievement-oriented students, there would seem to be an indirect yet meaningful relationship between academic performance and mobility. Veena and Rao (2018) noticed that the age group of 20–25, generally a very performing age group, is attracted by private universities often located in metropolises. Yazgan 2015 presents a case study at Sakarya University from a long-term perspective. He established that mobile students were readier for taking academic risks, had wider social horizons, and showed greater cultural flexibility. The mobile students tended to remain mobile after graduation. This seems to show that academic achievement shapes not only access to university but later life strategies.

Overall, research in and outside of Türkiye supports the finding that higher academic achievement leads to greater mobility. Such students usually want to pursue better educational or living conditions and so study in cities outside of their hometown or even abroad. Therefore, mobility should not be understood merely as physical relocation but rather as a spatial expression of the pursuit of opportunity driven by academic success. From the analysis, it is shown that among all numerical variables, correlations were generally low. The highest was between Entrance Score and Political Distance, but even this was only $r = 0.12$. This is not strong enough to suggest a meaningful relationship,

indicating that most variables function independently. These findings show that in complex social datasets—especially those involving individual choices—it is common to see weak correlations.

This interpretation finds indirect support in the results of Giammei, Terzera, and Mecatti (2025), conducted on students with migrant backgrounds. The authors pointed out that constructing regular relationships between demographic variables (e.g., gender, nationality, and citizenship) was difficult due to data limitations and selection bias. These structural problems make strong correlations more difficult to observe-a finding that agrees with those of the current study. A similar limitation has been reported by Rocki (2022) in Poland. Due to incomplete data regarding gender, systematic analysis of variable correlation was not possible, and no strong relations have been observed. The main message here is that the structure of the dataset directly shapes the results of correlation analysis-which corresponds to what has been found in this study.

Another example is the study of Kriswardhana and Esztergár-Kiss (2025) in Hungary. While they divided students into behavioral clusters such as "MaaS Lover," "Avoider," and "Opponent," even in their analysis, the correlations between variables such as gender, income, and technology attitude proved weak. This is a proof that the behavior of an individual is complex and that the various variables operate on their own. Tekin (2022) refers to the fact that mobility might be influenced by economic conditions, cultural proximity, and political factors; however, each one influences mobility differently. With this kind of fragmented structure, strong correlations are almost impossible, and once again, it brings into relief the mobility decision as dynamic.

A similar situation is observed in Türkiye, where Gür (2022) considers that student mobility between provinces in most cases is driven by economic issues, but gendered differences vary greatly according to the region and sometimes disappear or even reverse. These patterns illustrate that demographic variables are not fixedly or universally related to mobility. Weak correlations are also observed in the research by Geddie (2013) conducted in Canada. All variables, such as cultural experience, personal freedom, and quality of academics, influence student mobility, but none of them dominates. This explains why levels of correlation usually remain low in multidimensional social systems.

In all, the "low correlation values between numerical variables" that this study presents coincide with the findings of several international contexts. Strong and simple correlations are very seldom found in social science research, particularly in investigations pertaining to personal choices, cultural norms, and structural inequalities. It follows that low correlation values should not be understood as a methodological weakness but rather as testimony to the complexity of the dataset and multidimensionality of social reality.

Impact of University Type on Student Mobility

Results show that the probability of relocation to another city is 25% to 37% lower for students who attend foundation-private universities. One possible explanation is that most private universities are located in the central parts of urban areas with better social infrastructure. Because these higher educational institutions are located in accessible and safe parts of the city, there would be fewer reasons to migrate to another city for higher education. Evidence from India supports this interpretation as well. Veena and Rao (2018) suggest that women students were 70% more likely than their male peers to enroll in a private university. As noted above, private universities are often perceived as much safer and more centrally located; this may reduce mobility-especially for women. Kahraman (2023) indicates that local enrollment rates tend to be higher in low-income areas, with the urban concentration of private universities often reinforcing this pattern.

Meanwhile, Gür (2022) points out that economic condition and university capacity are the structural factors based on which decisions not to migrate are made. Private universities tend to be more expensive and enjoy greater institutional resources; consequently, student preferences for them are developed in relation not only to their location but also to issues of affordability and financial aid. Taken together, the findings support the idea that private universities are important agents in limiting the mobility of students due to their specific combination of urban access, perceived safety, and economic considerations.

Effect of Development and Political Distance

The other important finding of the study is that students are more likely to move to another city as development distance increases. The same effect happens with increasing political distance, but the relationship is much weaker. From these results, it follows that different levels of cultural and ideological belonging affect student mobility, not only academic or financial purposes. Yılmaz and Güçlü (2021) point out in this respect that a student would choose a particular city or country because of cultural affinity or familiarity with an environment. This points to the relevance of development distance in shaping a location preference. Tekin (2022) similarly explains that international student mobility is driven mainly by cultural closeness, financial opportunities, and quality of life. Cultural difference might even attract some to explore new environments. Another decisive factor in this relationship is gender. According to the findings obtained by Usman et al. (2025), female students pay more attention to the sustainability of lifestyle and cultural compatibility, whereas male students rely more on financial considerations. This may indicate that women are more sensitive to cultural factors in their further mobility decisions than men, which shapes not only where they choose to study but also how comfortable they will feel in a new environment.

Home City and Fixed City Effects: A Key Factor in Spatial Decisions

Indeed, the fixed effects related to the home city turned out to be among the strongest factors of explanation of student mobility. Even though this variable alone is able to provide an R^2 of 0.59 within the model, one should interpret such a figure with care. Generally, when including many fixed effects, the model incorporates a lot of dummy variables-a fact that inherently inflates R^2 and can make the model seem much stronger than it actually is. Without the control of the city of residence, keeping all other factors constant, the core influence of geographic context becomes clear. In fact, the characteristics of the home city of a student, including economic conditions, transportation access, socio-cultural environment, and availability of universities, deeply shape students' decisions about moving to another city in pursuit of higher education.

This is supported by evidence from Türkiye. For example, through a case study on Çanakkale, Işık and Uğraş (2018) show that universities can change a city's migration profile, and that differences between cities are strong determinants of student behavior.

Another relevant recent example is Gür (2022), who identifies higher local enrollment rates for cities such as Istanbul, Ankara, and Izmir, as well as strong rates of outward mobility in provinces like Ordu and Hakkâri. Likewise, Günder (2018) supports the explanation that students staying close to their families are less likely to move, showing how geographic and social ties can limit mobility.

These results also find support in the international literature. Narh and Buzzelli (2022) demonstrate, for Canada, how economic conditions and linguistic identity shape whether a province is an origin of students who decide to migrate. This again indicates how important the origins are in shaping patterns of mobility. Tekin (2022) also points out how students come in large numbers to university cities such as Karabük and Eskişehir, reinforcing the idea that the geographical foundations are firmly linked to student mobility. In sum, the four main findings of this study-that is, gender-based differences in mobility, the influence of university type, the role of development and political distance, and the strong impact of the home city-are corroborated by both national and international studies. The results indicate that the factors which shape student mobility are individual in nature, such as gender, academic success, and development fit, but also structural, including characteristics of the city, university type, and regional economic conditions. Student mobility thus results not from personal choice alone; rather, it is shaped by spatial, cultural, and institutional forces combined. It is a dynamic and multi-dimensional process.

Change Over Time in the Relationship Between Score–Minimum Score Gap and Student Mobility (2021–2023)

The findings in 2021 indicate a negative but statistically significant relation of students' entrance scores with the possibility of students changing cities. Students who had higher scores were less likely to relocate in this year. One explanation could be that students who were academically strong had good university options in their home cities, therefore they did not need to relocate. Furthermore, 2021 was still a year affected by the COVID-19 pandemic. Health and safety concerns, plus the issue of traveling, probably encouraged many students to stay closer to home and choose universities in their hometown. This is an argument that can be supported by Gür (2022), where it is claimed that capacity and

regional differences are sometimes influential in forcing even high-achieving students to be local since options for relocation are too limited. Likewise, Yazgan claims in 2015 that students do not base their decisions on academic success alone but also take into consideration safety, financial comfort, and social support. All of these can explain why the results of 2021 reflect not only individual preferences but greater environmental pressures, even on high-performing students.

By 2022, this relation flipped. The high-scoring students became somewhat more likely to move to another city. This turning point coincides with the return to normal campus life after the pandemic, as universities reopened fully and students enjoyed more freedom in choosing where to study. However, the correlation still remained rather weak and thus confirmed that academic achievement cannot explain mobility decisions on its own. Other reasons continued to be central. On this note, Tosi, Impicciatore, and Rettaroli (2025) found evidence in Italy that students with higher achievements are more mobile, though not every one of them migrates after finishing university. Some remain in cities where they finished university, whereas others return to the hometown.

This flexible pattern illustrates that the link between achievement and mobility may strongly depend on personal motivation and life circumstances. Similarly, Rocki (2022) identified in Poland a positive effect of linking academic success with mobility but noticed that this effect is subject to a strong variation between individuals and regions. These findings agree with the weak but positive effect identified in 2022. It follows that results from 2023 show a more significant change in the dynamics of mobility. A very strong earlier predictor of relocation was the difference between the entrance exam score of a student and the minimum score required by a department. This relationship lost much explanatory power in 2023. Academic performance alone no longer provides a statistically meaningful explanation for the mobility of students. Instead, their decisions on movement seem to be determined by a far more complex interplay of social, cultural, and economic influences.

Of these, contextual factors—development and political distance—are the stronger predictors of whether students move. This is aligned with the trend that has been observed across international contexts. Hossain et al. (2025) noticed that, although academically

successful students in Bangladesh tend to be more mobile than their less successful peers, this pattern does not hold up every year or in different social contexts. Their relocation options do depend on situational factors that are much wider than academic success. Tekin (2022) goes along these lines of arguing that students indeed rely heavily on infrastructure, economic conditions, and cultural compatibility in making their mobility choices.

Because these influences shift over time, they help explain why the predictive power of exam score gaps weakened in 2023. Another perspective, which comes from Park, Koo, and Oh (2010), suggests a belief that many highly achieving students choose to study abroad, and this immediately takes them out of domestic mobility statistics and thus can skew the relationship observed between achievement and internal mobility. Overall, these findings suggest that educational mobility is no longer driven primarily by academic metrics. As students face increasingly complex personal and social environments, non-academic factors have become more influential. In other words, the score-minimum score gap has not had a stable effect on student mobility between 2021 and 2023. While there was a negative and statistically significant relationship in 2021, it became weakly positive in 2022 and by 2023 had lost its statistical significance altogether.

This fluctuation specifies that the association between academic attainment and geographic mobility is not linear but, rather, complex and multidimensional. It is shaped by changing socioeconomic conditions, temporary circumstances, cultural norms, and personal life strategies. Thus, this relationship cannot be interpreted strictly according to measurable academic scores, and instead, each year within the context of wider social and political developments should be understood.

6. CONCLUSION

In this study, this research aims to examine the factors which influence university students' mobility in Türkiye using detailed "placement" data from YÖK Atlas in 2021, 2022, and 2023. The students' movement from their original city to their future city of higher education in Türkiye is focused on in this investigation. As this research used "Last Placed Student Profiles," the information gathered proved to be systematic and detailed, providing a precise insight into students' mobility. The findings suggested individual characteristics such as gender and performance do have an impact on students' mobility, where female students were more likely to move to a different city to study in university compared to their male counterparts, where higher students in terms of performance in the entrance exam were more flexible in relocating. Nevertheless, individual variables were unable to clarify why or which students were likely to move or not. Institutional and regional factors were more profound in this case and proved to have a far more potent impact. Foundation university students were less likely to move, which may relate to where these institutions are geographically based, spread in big cities which can be easily accessible. Development distance between the hometown of a student and the city where the university is located had a very strong positive impact on mobility, which shows that students are eager to move from a culturally known setting into a new social environment. Political distance is another factor which affects mobility, but its magnitude is smaller compared to other factors.

The robustness tests, which did not include students from İstanbul and Ankara, demonstrated that these results were not driven by these major metropolitan areas. Moreover, in smaller regions, differences in gender and regional-specific aspects were again important factors. The addition of city fixed effects further improved model fit and indicated that local factors not accounted for in this analysis, such as local infrastructure and safety, influence mobility decisions. Interaction models did not support significant differences between the sexes, either in the effects of academic success or in mobility. Although there was greater female mobility, the effects of academic performance on mobility did not differ by gender. The variable for the gap between the student's score

and a department's cut-off also behaved erratically across years. It had some predictive power for the earlier periods but did not hold constant; in partial support of the idea that the student's relative academic fit was less salient than broader structural and regional influences.

Overall, this study has shown that student mobility in Türkiye is driven not only by the exam success or personal preferences of students but reflects a combination of institutional access, regional inequalities, and social context. These findings indicate that higher education policies toward equity should avoid focusing solely at the level of the individual student but should instead be oriented toward the structural issues, enhancing institutional capacity, and expansion of opportunities within less-developed regions so that students hailing from different parts of the country may have the chance to access quality education without their geography being an obstacle.

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