FORMAN CHRISTIAN COLLEGE
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The Influence of Academic Resilience on Migration Intentions among University Students in Lahore, Pakistan: Understanding the Brain Drain Phenomenon

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Abstract

Migration for better employment opportunities is increasingly common among university students in Pakistan, contributing to brain drain. Academic resilience, the ability to succeed despite challenges, significantly influences these migration intentions. This study investigates the influence of academic resilience on migration intentions among university students in Lahore, examining whether resilient students are more likely to migrate or stay in their home country while also exploring sociodemographic differences. A quantitative cross-sectional survey design was employed, using convenience sampling to recruit undergraduate students from both public and private universities. Data was collected through the Cassidy Academic Resilience Scale (ARS-30) and the Migration Intentions Scale, which was analysed using IBM SPSS version 27. The results revealed that academic resilience negatively predicts migration intentions, suggesting that students with higher academic resilience are less likely to migrate. Additionally, parental migration status and higher household income significantly increase migration intentions, while gender and university type do not have a significant impact, except for male students showing a higher inclination toward entrepreneurship abroad. These findings emphasize the need for policymakers and educators to develop strategies that enhance academic resilience and create local opportunities, helping to retain talent within Pakistan and mitigate the brain drain phenomenon.

Keywords: Academic resilience, Brain drain, Migration intentions, University students, Lahore, Pakistan.

1. Introduction

In today's globalized world, several young adults looking for better opportunities turn to migration as their primary path for employment. This trend can be observed particularly among students in universities who are about to enter the workforce. Pakistan, being a country of the global south, faces significant socioeconomic problems. Hence, the urge to migrate can often be influenced in pursuit of improved living conditions, more favourable employment prospects, and better educational settings. Students' inclination to migrate is influenced by a number of factors, with academic resilience perhaps having a major impact as it tends to influence both professional ambitions and academic achievement (Martin et al., 2022).

The term "brain drain" describes the migration pattern from developing nation to a more developed nation particularly focusing on highly skilled, and educated professionals (Docquier et al., 2007). Originally termed by the British Royal Society, it initially referred to the movement of professionals such as scientists, engineers, and doctors from the United Kingdom to the United States of America (A. M. Khan, 2024). Over time, its definition expanded to include individuals relocating from less developed to more developed countries (A. M. Khan, 2024). This phenomenon sheds light on the migration of talented individuals seeking better financial and career opportunities, which can constrain innovation, economic growth, and societal progress (A. M. Khan, 2024; Shah & Mehmood, 2023). Incentives and opportunities offered by developed destination countries tends to influence the migration decision of highly skilled professionals (Shah & Mehmood, 2023). Since, brain drain effects not only the home country but also the destination country, it has been brought to the attention of scholars and research to investigate both its positive and negative effects. The detrimental effects of the brain drain phenomenon for the growth of developing countries is often brought to attention as it

leads to the loss of investments made in higher education and skills training when individuals do not return back to their home country (Kousar et al., 2020).

A report by Bureau of Emigration and Overseas Work (BEOE) from 2023 showed that 862,625 people from Pakistan looked for work abroad, while during the first quarter of 2024, over 165,457 people actually migrated (BEOE, 2024). Previous records also show similar trends with 839,353 people migrating in 2016 and 832,339 in 2022, however the highest during number of people to migrate during the past 10 years was in 2015 being 946,571 (A. M. Khan, 2024). A further in-depth analysis of the sociodemographic profiles of the 862,625 emigrants that left in 2023 revealed that 22,760 were highly qualified, while over 45,687 were highly skilled (A. M. Khan, 2024).

In addition to economic and political factors that are often researched for their influence on brain drain certain individualistic factors also create an impact. Research shows that the students who posses the psychological trait academic resilience despite facing adversities such as low socioeconomic background consistently achieve high academic performance despite these obstacles. (Rudd et al., 2021; Cassidy, 2015). Therefore, understanding academic resilience can provide a different perspective of looking at the brain drain phenomenon.

1.1 Statement of Problem

In Pakistan, university students who are entering the job market, often consider moving abroad in search of better employment opportunities. Effective strategies need to be developed to retain highly skilled individuals within the country. This requires understanding the factors that influence students' migration decisions.

1.2 Significance of Study

This study is significant as it explores the ongoing issue of brain drain in Pakistan, which continues to result in the loss of highly skilled labour from the workforce. By examining

non-economic and non-political factors, the study aims to explore individualistic factors that motivate students to leave the country.

1.3 Aim of Study

The aim of this research was to investigate whether students who demonstrate have levels of academic resilience are more likely to remain in their home country or pursue opportunities abroad. The effect of sociodemographic factors on the resilience-migration relationship was also examined in order to account for the diversity of the student's population. Hence, the study aimed to address the following research questions:

Research Question 1: Does academic resilience positively predict the likelihood of considering migration abroad for better career opportunities among university students in Lahore, Pakistan?

Research Question 2: Do sociodemographic factors such as gender, age, socioeconomic status, and major influence the relationship between academic resilience and the likelihood of considering migration abroad for better career opportunities among university students in Lahore, Pakistan?

2. Literature Review

2.1 Brain Drain in Pakistan

Brain drain is a significant global issue driven by the migration of highly educated and qualified individuals abroad in search of better opportunities and quality of life (Shah et al., 2023). An inadequate education system has resulted in decline in the field of research, healthcare, and technology, which resulted in worsening economic and social disparities (Shah et al., 2023). Over 30,000 medical graduates leave Pakistan annually, severely impacting the healthcare sector (Shakir et al., 2024). A study on Pakistani neurosurgery trainees brings to attention the differences in training conditions, career advancement opportunities, financial incentives, and intellectual exposure as key factors driving emigration, emphasizing the need for policy changes to retain talent (Shakir et al., 2024).

2.2 Academic Resilience in Developing Countries

Research in India, a developing South Asian nation, reveals that while educational attainment has increased since independence, outcomes remain low compared to similar countries (Das, 2018). Marginalized populations face lower enrolment and higher dropout rates, yet some children persist in their studies despite these challenges. Das (2018) uses data from the Indian Human Development Survey (2005) to explore factors contributing to resilience at individual, household, and school levels, emphasizing that protective factors vary for marginalized groups, with maternal education and poverty as key mediators. These findings emphasize the need for educational policies that enhance schools' roles in fostering academic resilience, especially for students facing significant structural challenges.

2.3 Academic Resilience and Career Opportunities

In today's evolving world, success requires high levels of creativity and resilience to adapt to changing circumstances and persist through setbacks. Fernández-Díaz et al. (2021)

examined traits associated with higher levels of professional success, resilience, and creativity among 200 participants from various Spanish professions, finding that those with high creativity and/or resilience are more likely to achieve career success. The study highlights that success is context-dependent, with subjective success linked to work-life balance and personal contentment, while objective success correlates with salary. Creativity is more common in youth, whereas resilience tends to develop with age (Fernández-Díaz et al., 2021). Pang et al. (2021) studied 666 Chinese college students and found that resilience and career adaptability significantly reduce career decision-making challenges, with adaptability serving as a mediator. The researcher sheds light on the importance of developing resilience and adaptability through educational programs to better prepare students for career challenges (Pang et al., 2021).

2.4 Psychological Factors influencing Migration Intentions

Migration, influenced by structural, psychological, social, and life course factors, involves both pull factors like better career opportunities and push factors such as poor economic conditions (Lee, 1966). Globalization has increased migration, particularly within the European Union, with young adults in Slovakia, especially students, expressing a desire to leave due to economic factors and better opportunities abroad. Hajduch et al. (2019) found that higher emigration intentions are associated with greater emigration self-efficacy and positive migration experiences, suggesting that self-efficacy plays the role of a mediator in the relationship between resilience and migration intentions. Similarly, Kulanová and Orosova (2018) used a modified Health Belief Model to reveal that Slovak students with higher emigration intentions perceived greater threats and benefits, had higher self-efficacy, engaged in more risk-taking, and exhibited lower resilience. Akbar and Preston (2019) reviewed literature on migrant resilience, highlighting its role in overcoming migration challenges and the need for more research on resilience in migration contexts.

2.5 Migration Intentions among Pakistani Students

Medical professionals from Pakistan frequently migrate to higher-income countries, placing Pakistan as the third largest international contributor of medical graduates. A study on 400 senior students and fresh medical graduates from Lahore used a structured questionnaire to examine their post-training intentions and driving forces. A response rate of 68.7%, revealed that the majority (60.4%) intended to pursue training abroad, mainly in the UK and US. A small minority (10%) they did not plan to return to Pakistan, while 14% intended to return back home after completing their training. The main reasons for seeking training overseas were better financial and improved career opportunities (Imran et al., 2011). Similarly, another publication explored the migration intentions of Pakistani students found that majority of the students studying in Chine preferred to stay in there due to better living standards and income (Iqbal et al., 2019).

2.6 Socioeconomic Factors and Migration Intentions

A research study at the University of the Punjab in Lahore, was done to explore factors linked to pursuing further education abroad. (Hussain et al., 2020) The research found students showed a keen interest in high-ranking universities which were not present locally. It also found that personality types, educational opportunities, and sociodemographic factors significantly affect migration intentions. In another research study, Bashir and Wali (2023) also examined migration motives among students in Pakistan. It was found that male students belonging to lower- to middle-class backgrounds are more likely to consider studying abroad due to superior educational systems. Hence, highlighting the gender disparity and with gaps in local educational quality. Tariq et al. (2023) also studied medical students and graduates in Peshawar. Findings showed that 67.5% of the participants intend to migrate, primarily for better training and pay, with the UK as a preferred destination choice. Altaf (2024) analysed the 2017–18 Pakistan Demographic and Health Survey and found that migration decisions are influenced

by household dynamics, with marriage being a major factor of influence, and that education level and economic opportunities dictated by wealth quantiles significantly impact migration likelihood.

3. Theoretical Framework

Push and pull factor theory: According to the theory of Lee (1966), there are four main types of factors that affect migration decisions: origin and destination, hindering obstacles, and factors specific to an individual. There are pull and push factors in any setting that influence whether individuals stay or go; some of these factors are generally perceived in a similar way, while others differ depending on the specific circumstances. (Bråve, 2019). In this study, the theory is applied to better understand the reason highly skilled people migrate from Lahore, Pakistan. People often migrate from their home countries due to push factors, which can be described as unfavourable aspects of their home nation which make staying there less desirable. These often include political unrest, security threats, income disparities, and a lack of employment possibilities. In Pakistan, brain drain is mostly driven by the country's limited scope in the field of research, limited professional growth prospects, and restrictions in the educational system (Shah et al., 2023; Shakir et al., 2024). On the other hand, pull factors also play a significant role in influencing the decision to migration. These mostly refer to aspects opposite of the push factors for example better employment prospects, improved living standards, and more advanced resources for research and education. For many Pakistani students and professionals, the US and UK stand out as appealing destinations because of the training and employment opportunities they offer (Imran et al., 2011; Iqbal et al., 2019). However, a more holistic view of the migration shows that even though push and pull factors are experienced by the whole nation not everybody choses to migrate indicating that there are some other crucial aspects. Hindering variables that make migration out of question include financial constraints, personal or family obligations, and visa restrictions. These obstacles potentially render the migration process more difficult or at times even impossible. An even deeper understanding of the migration phenomena shows that similar to push and pull factors, even obstacles are experienced by many in similar ways but still it is more likely that some

people pursue migration while other don't even think about it. For this reason, individual factors are studied which shows how people differ from each other even when faced with the same situation with similar conditions. On a personal level, the decision-making process is influence by individual-specific traits which are inherently present can be shaped by the lived experience. These traits include resilience, self-belief, and previous exposure to migration experiences which shape how individuals make important decisions regarding migration. (Hajduch et al., 2019; Kulanová & Orosova, 2018).

4. Methodology

4.1 Research Design

This study aimed to explore the influence of academic resilience on migration intention among university students in Lahore. A cross-sectional survey design was used to collect data, allowing for the analysis of patterns and correlations between variables. A quantitative methodology enabled the identification of trends that could potentially contribute to the development of interventions and policies aimed at reducing Pakistan's brain drain.

4.2 Sample Design

4.2.1 Selection Criteria (Inclusion Criteria)

- Currently enrolled as a student in a university in Lahore, Pakistan.
- Aged 18 years or older.
- Willing to participate in the study by providing informed consent.

4.2.2 Sampling Method

Universities in Lahore were chosen for this study because of their diverse student population, their role as a central hub for higher education in Pakistan, and the logistical practicality they offered, all of which allowed the research to generate meaningful insights that could potentially inform national-level policies while still staying within realistic research limitations. Participants were recruited using convenience sampling from both public and private universities in the city, a method that involved selecting students who were readily accessible and willing to take part in the study.

4.2.3 Sample Size

The study included 12 predictors, namely academic resilience, gender, age, monthly income, major of study, type of university, year of study, parental education, religion, marital

status, previous travel experience, and parental migration status. Hence, a sample size of 200 students was used to ensure reliable and credible findings. The sample included 98 males and 102 females, split between public and private universities, and distributed across various age groups, majors, and socio-economic backgrounds to ensure comprehensive and reliable findings.

4.3 Variables and Measurement Instruments Used (Conceptual and Operational Definitions)

Academic Resilience was the independent variable of the study while the dependent variable was Migration Intentions. Data were collected using an online survey comprising two main instruments:

4.3.1 Academic Resilience Scale (ARS-30) (Cassidy, 2016)

This scale assessed a student's capacity for academic achievement despite challenges. It included three components:

- Persistence: Evaluated students' ability to persevere despite academic challenges. Students with high levels of perseverance continued to work toward their academic goals even when faced with difficulties. This characteristic could influence their decisions regarding staying in their home country or seeking opportunities abroad (Fatima & Nadeem, 2022; Das, 2018).
- Reflecting and Adaptive Seeking Help: This component measured a student’s inclination to seek help externally and reflect on their personal experiences. Pang et al. (2021) argued that students who efficiently identified and utilized resources available to them were more capable of handling challenges and making well-informed professional choices.

- Negative Affect and Emotional Response: This aspect focused on analysing tje emotional reaction of students to academic challenges. Students with effective emotional regulation were more likely to maintain a positive outlook and successfully navigate challenges, whether in academic contexts or when considering migration (Kalaivani, 2021; Fernández-Díaz et al., 2021).

The ARS-30 is attached in Appendix B.

4.3.2 Migration Intentions Scale (Leong & Soon, 2011)

This scale assessed the likelihood of students considering migration for better career opportunities. It included questions measuring students' attitudes toward migration, perceptions of migration advantages, and preparedness for migration.

The Migration Intention Scale is attached in Appendix B.

4.4 Data Collection

4.4.1 Survey Development

The survey was developed using Google Forms and included sections on demographic information, academic resilience, and migration intentions. The questions were structured to collect quantitative data, utilizing validated scales, including the Cassidy Academic Resilience Scale (2016) and the Migration Intentions Scale by Leong and Soon (2011).

4.4.2 Recruitment of Participants

The recruitment process included both online and in-person data collection methods. For the online component, the survey link, along with the consent form and information sheet, was shared via email and social media platforms, specifically targeting university students in Lahore. Particular emphasis was placed on informal university course groups and co-curricular activity groups on WhatsApp. The data from online forms were collected from universities

including, Forman Christian College University, Lahore University of Management Sciences, Kinnaird College for Women University, Punjab University, Beaconhouse National University, and Rashid Latif Medical College. Due to time constraints, some data was also collected in person at Forman Christian College University (FCCU), with the supervisor's permission. Printed copies of the information sheet, consent form, and survey were distributed among students on campus.

4.5 Data Storage and Management

All survey data was securely stored on a password-protected laptop. Additionally, no personally identifying information was recorded to ensure confidentiality. Survey responses remained anonymous, and only aggregated data were presented. Participants' privacy was maintained throughout the study, and data protection measures were strictly adhered to.

4.6 Data Analysis

Data cleaning was performed to ensure the accuracy and completeness of the dataset, including checking for missing cases, missing values, outliers, and inconsistencies. Data were analysed using SPSS (version 27), employing both descriptive and inferential statistical techniques. Normality tests using the Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that the data violated the assumption of normality ($p < 0.001$), necessitating consideration of non-parametric alternatives where appropriate. Pearson correlation analysis examined the relationships between academic resilience, parental migration status, monthly income, and migration intentions. Multiple regression analysis assessed the predictive impact of academic resilience on migration intentions while controlling for sociodemographic variables. Moderation analysis was conducted to determine whether gender moderated the relationship between academic resilience and migration intentions, though no significant moderating effect was found. Additionally, a one-way ANOVA tested whether migration intentions varied by

parental migration status, revealing a significant effect on career-related migration considerations. An independent samples t-test examined gender differences in migration intentions, showing no significant differences except for entrepreneurship-related migration intentions, which were higher among male students. These statistical analyses provided insights into the factors influencing students' migration intentions and the role of academic resilience in shaping these decisions.

5. Results

5.1 Descriptive Statistics

5.1.1 Gender

The study included 200 university students from Lahore, Pakistan. The sample consisted of 98 males (49%) and 102 females (51%). Among them, 164 students (82%) were from private universities, while 36 students (18%) were from public universities.

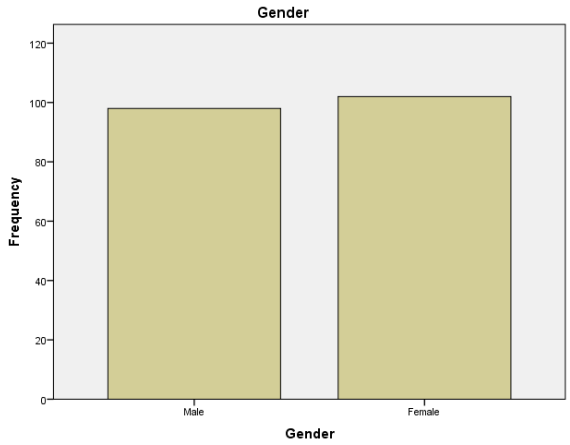

Figure 5.1 - Gender Demographics

5.1.2 Age

The age distribution indicates that most participants (54.5%) are in the 22-25 age group, a critical period when students transition from university to the job market. This aligns with the study's focus on migration intentions, as career decisions and academic resilience are most relevant during this stage.

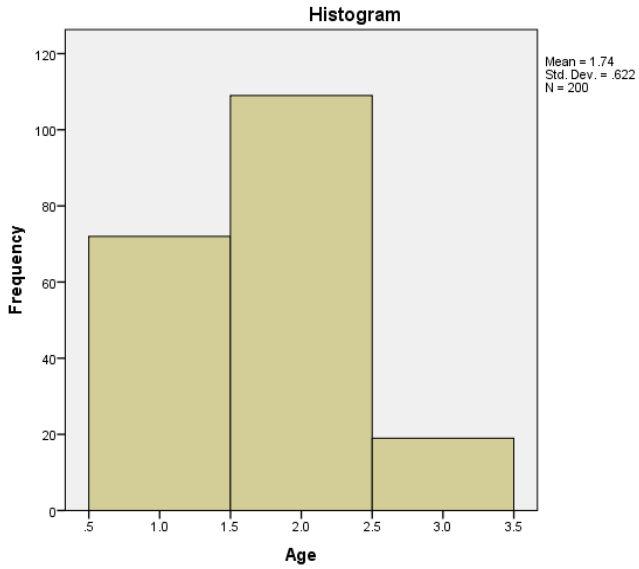

Figure 5.2 - Age Demographics

Table 1 - Age Demographics

Age	Frequency	Percent
18-21 years	72	36.0
22-25 years	109	54.5
26-29 years	19	9.5
Total	200	100.0

5.1.3 Monthly Income

Most students (51%) come from households earning 150,000 PKR or more, while 21.5% have a monthly income of 50,000 PKR or less. This income disparity is relevant to the study's aim of exploring how socioeconomic status influences migration intentions, as students from higher-income families may have greater financial resources to pursue education and career opportunities abroad.

Table 2 - Monthly Income Demographics

Monthly Income Range	Frequency	Percent
50,000 PKR	43	21.5
50,000-99,999 PKR	27	13.5
100,000-149,999 PKR	28	14.0

Monthly Income Range	Frequency	Percent
150,000-199,999 PKR	45	22.5
200,000 PKR or more	57	28.5
Total	200	100.0

5.1.4 University Type

Most participants (82%) were from private universities, while only 18% were from public universities, allowing for a comparative analysis of how university type influences academic resilience and migration intentions.

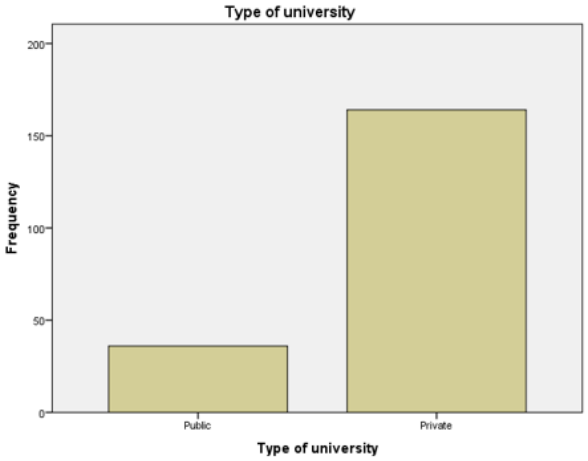

Figure 5.3 - University Type

5.1.5 Major of Study

The survey included students from various academic disciplines, with the majority from Social Sciences (35.5%), followed by Health Sciences/Medicine (19.5%) and Business Administration (18.0%). This diversity allows for examining whether migration intentions vary across different fields of study.

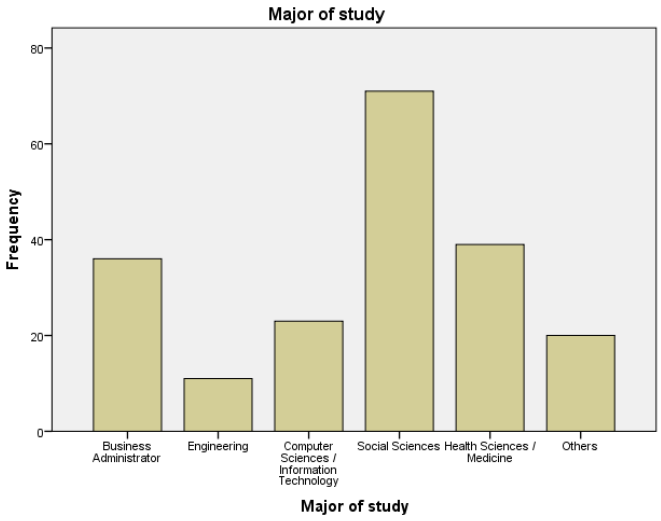

Figure 5.4 - Major of Study

5.1.6 Current CGPA

The survey results show a mean CGPA of 3.83 (SD = 0.953), with most students (45.5%) falling within the 3.0–3.49 range. This suggests that the participants generally have strong academic performance, which may influence both academic resilience and migration intentions.

Table 3 - Current CGPA

CGPA Range	Frequency	Percent
Below 2.0	6	3.0
2.0-2.49	10	5.0
2.5-2.99	45	22.5
3.0-3.49	91	45.5
3.5-4.00	48	24.0
Total	200	100.0

5.1.7 Parents' Education Level

The majority of students' parents had a bachelor's degree (45.5%), followed by a master's degree (23.0%). In terms of travel experience, 52.5% had never traveled abroad, whereas 47.5% had some travel experience.

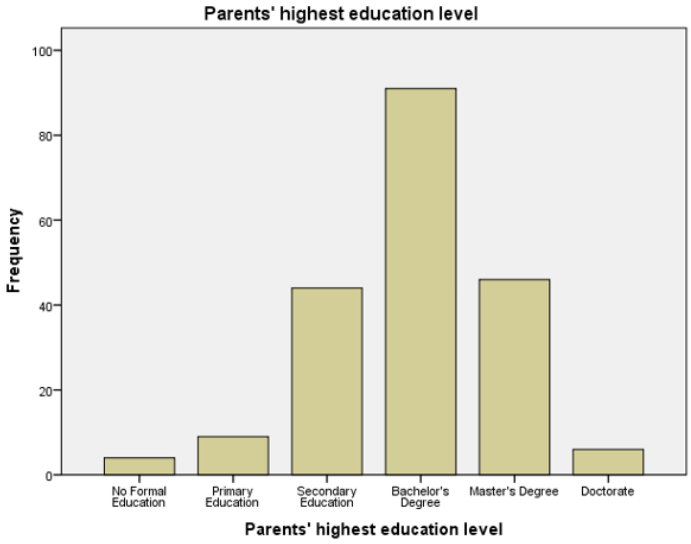

Figure 5.5 - Parents Education

5.1.8 Marital Status

The survey revealed that most participants (93.5%) were single, while only 6.5% were married. This reflects a predominantly young, unmarried student population, which is relevant as marital status may influence migration decisions.

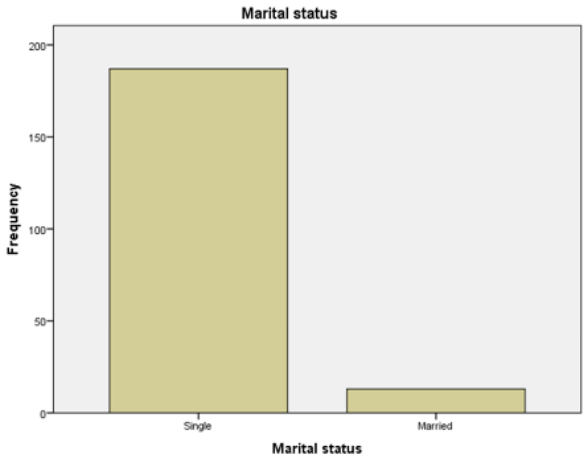

Figure 5.6 - Marital Status

5.1.9 Travel Experience Abroad

The survey showed that 52.5% of students had never traveled abroad, while 47.5% had some international experience. This factor is crucial as prior travel exposure may influence students' migration intentions and perceptions of opportunities abroad.

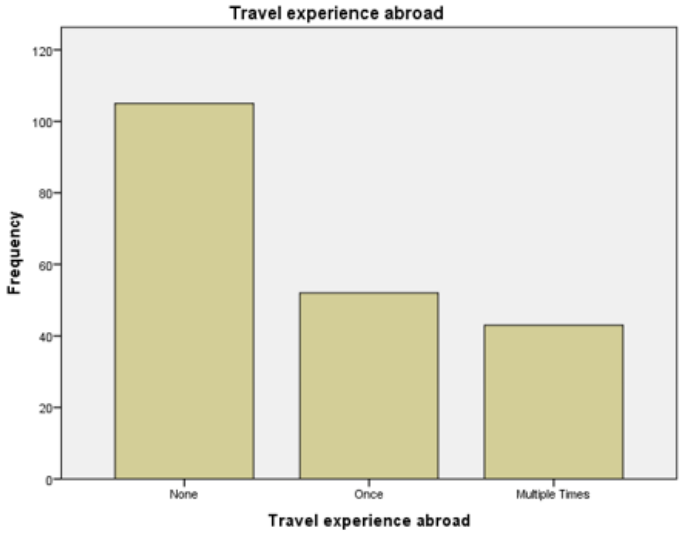

Figure 5.7 - Travel Experience Abroad

5.1.10 Parents' Migration Status

The survey found that 67.5% of students had no parental migration history, while 32.5% had at least one parent who migrated. This is significant as parental migration experience may influence students' own migration intentions and perceptions of opportunities abroad.

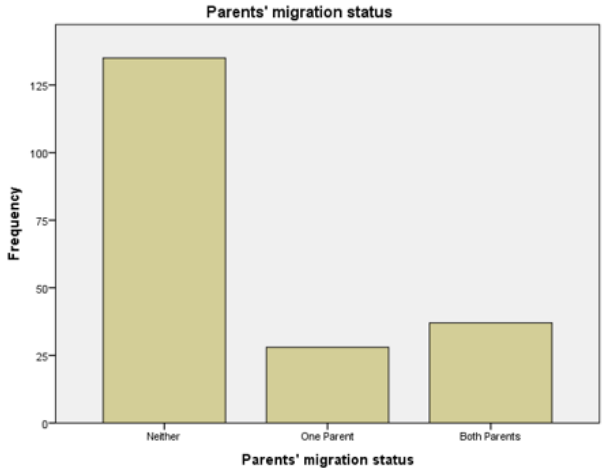

Figure 5.8 - Parent's Migration Status

The results indicate a nearly equal gender distribution among participants, with a higher proportion from private universities (82%), suggesting potential differences in academic resilience and migration intentions based on university type. A majority of students (52.5%) had never traveled abroad, while 32.5% had parents with migration experience, which may influence their desire to migrate. Additionally, students from higher-income families (28.5%

earning 200,000 PKR or more) and those in social sciences (35.5%) were the most represented, indicating socioeconomic and academic background variations that could impact migration decisions.

Table 4 - Student Demographics by Gender, University Type, and Major

Gender	Total	University Type		Major						
		Private	Public	Business	CS/IT	Engineering	English Literature	Health Sciences / Medicine	Social Sciences	Others
Female	102	84	18	10	3	-	1	25	52	11
Male	98	80	18	26	20	11	1	14	19	7
Total	200	164	36	36	23	11	2	39	71	18

The table provides a detailed overview of 200 students categorized by gender, university type, and major. Out of the total, 102 are female and 98 are male. A significant majority of students, both male and female, are enrolled in private universities, with only 36 attending public institutions. In terms of academic majors, Social Sciences is the most popular field, especially among female students (52), while male students are more inclined toward Business (26) and Computer Science/IT (20). Health Sciences and Medicine attract more female students (25) compared to males (14). Engineering is exclusively chosen by male students in this dataset. Other less common majors include English Literature, and a range of unspecified fields grouped under "Others." Overall, the data highlights noticeable gender-based trends in academic choices and preferences for university type.

5.2 Reliability and Validity Testing

Table 5 - ARS Reliability and Validity Testing

Cronbach's Alpha	N Of Items
.887	30

The high reliability (Cronbach's alpha = 0.887) of the Cassidy Academic Resilience Scale (ARS-30) confirms that it is a consistent and reliable tool for measuring academic resilience among university students in Lahore. The Exploratory Factor Analysis (EFA) identified eight components, explaining 60.3% of the total variance, indicating that the scale effectively captures different aspects of resilience. These findings support the study's aim of examining the role of academic resilience in migration intentions, ensuring that the measured construction accurately reflects students' ability to overcome academic challenges and its potential influence on their migration decisions.

Table 6 - MIS Reliability and Validity Testing

Cronbach's Alpha	N Of Items
.855	5

The Migration Intention Scale (MIS) demonstrated strong reliability (Cronbach's Alpha = 0.855), indicating high internal consistency among the five survey items. The analysis will explore whether higher academic resilience correlates with stronger migration intentions among university students in Lahore. Findings will also assess sociodemographic variations, such as differences between male vs. female students and public vs. private university attendees, to understand the broader implications of brain drain. The results will provide insights for policymakers to enhance academic resilience and develop retention strategies to mitigate migration trends.

5.3 Normality Tests

A normality test was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests to assess whether the data followed a normal distribution. Both tests produced significant p-values ($p < 0.001$) for all variables, indicating that the data violates the assumption of normality. Additionally, the skewness and kurtosis values for most variables deviated from the standard

normal range (-2 to +2 for skewness and -7 to +7 for kurtosis), confirming that the data is not normally distributed. As a result, non-parametric tests may be more appropriate for certain analyses, or transformations may be needed for parametric tests to ensure valid results.

Table 7 - Normality Test

	Kolmogorov-smirnov[a]			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	Sig.
Gender	.346	200	.000	.636	200	.000
Age	.305	200	.000	.766	200	.000
Monthly income	.203	200	.000	.850	200	.000
Major of study	.244	200	.000	.884	200	.000
Type of university	.500	200	.000	.466	200	.000
Year of study	.177	200	.000	.897	200	.000
Current CGPA	.268	200	.000	.852	200	.000
Parents' highest education level	.248	200	.000	.891	200	.000
Marital status	.539	200	.000	.265	200	.000
Travel experience abroad	.329	200	.000	.740	200	.000
Parents' migration status	.416	200	.000	.634	200	.000
Accept tutor’s feedback	.149	200	.000	.889	200	.000
Use feedback to improve	.292	200	.000	.748	200	.000
Give up	.242	200	.000	.820	200	.000
Motivate myself	.247	200	.000	.820	200	.000
Change career plans	.202	200	.000	.877	200	.000
Get annoyed	.190	200	.000	.902	200	.000
Think chances of success are poor	.202	200	.000	.880	200	.000
See the situation as a challenge	.253	200	.000	.874	200	.000
Stop negative thoughts	.244	200	.000	.860	200	.000
See the situation as temporary	.231	200	.000	.865	200	.000
Work harder	.269	200	.000	.745	200	.000
Get depressed	.208	200	.000	.894	200	.000
Think of new solutions	.261	200	.000	.815	200	.000
Feel disappointed	.168	200	.000	.900	200	.000
Blame the tutor	.175	200	.000	.895	200	.000
Keep trying	.274	200	.000	.757	200	.000

Keep long-term goals	.238	200	.000	.824	200	.000
Use past successes for motivation	.249	200	.000	.823	200	.000
Think job chances are poor	.198	200	.000	.906	200	.000
Monitor and evaluate efforts	.245	200	.000	.854	200	.000
Seek help from tutors	.192	200	.000	.876	200	.000
Encourage myself	.261	200	.000	.798	200	.000
Stop panicking	.225	200	.000	.863	200	.000
Try new study methods	.260	200	.000	.803	200	.000
Set personal achievement goals	.256	200	.000	.795	200	.000
Seek encouragement from family/friends	.248	200	.000	.802	200	.000
Reflect on strengths / weaknesses	.233	200	.000	.831	200	.000
Feel everything is ruined	.194	200	.000	.892	200	.000
Self-impose rewards / punishments	.203	200	.000	.894	200	.000
Look forward to improving grades	.301	200	.000	.756	200	.000
Think about overseas education	.191	200	.000	.898	200	.000
Think about better job prospects abroad	.193	200	.000	.900	200	.000
Think about starting a business abroad	.203	200	.000	.891	200	.000
Think about working / living abroad long-term	.169	200	.000	.909	200	.000
Think about immigrating permanently	.192	200	.000	.885	200	.000

5.4 Correlation Analysis

Table 8 - Correlation Analysis

Correlations

	Think About Overseas Education	**Think About Better Job Prospects Abroad**	**Think About Starting a Business Abroad**	**Think About Working/living Abroad Long-term**	**Think About Immigrating Permanently**
Think About Overseas Education	1	r = .691**, p = .000, n = 200	r = .291**, p = .000, n = 200	r = .635**, p = .000, n = 200	r = .476**, p = .000, n = 200
Think About Better Job Prospects Abroad	r = .691**, p = .000, n = 200	1	r = .440**, p = .000, n = 200	r = .672**, p = .000, n = 200	r = .537**, p = .000, n = 200

	Think About Overseas Education	Think About Better Job Prospects Abroad	Think About Starting a Business Abroad	Think About Working/living Abroad Long-term	Think About Immigrating Permanently
Think About Starting a Business Abroad	r = .291**, p = .000, n = 200	r = .440**, p = .000, n = 200	1	r = .486**, p = .000, n = 200	r = .456**, p = .000, n = 200
Think About Working/Living Abroad Long-term	r = .635**, p = .000, n = 200	r = .672**, p = .000, n = 200	r = .486**, p = .000, n = 200	1	r = .740**, p = .000, n = 200
Think About Immigrating Permanently	r = .476**, p = .000, n = 200	r = .537**, p = .000, n = 200	r = .456**, p = .000, n = 200	r = .740**, p = .000, n = 200	1

Note. **. Correlation is significant at the 0.01 level (2-tailed).

The correlation results reveal strong and statistically significant relationships between various aspirations related to going abroad. Most notably, there is a very strong positive correlation between thinking about working or living abroad long-term and thinking about immigrating permanently ($r = .740$, $p < .01$), indicating that individuals who consider staying abroad for an extended period are highly likely to also consider permanent immigration. Additionally, there is a strong correlation between thoughts of pursuing overseas education and seeking better job prospects abroad ($r = .691$, $p < .01$), suggesting that many view international education as a pathway to improved employment opportunities. Moderate positive correlations also exist between the desire to start a business abroad and other variables such as working abroad ($r = .486$) and immigrating permanently ($r = .456$), reflecting an entrepreneurial interest among those considering long-term relocation. Overall, these findings highlight interconnected motivations for international mobility, where education, career, business, and immigration are closely linked in the minds of prospective migrants.

5.5 Multiple Regression Analysis

A multiple regression analysis was done to examine whether academic resilience predicts migration intentions while controlling for sociodemographic factors (gender, monthly household income, university type, and parental education level). The overall model was statistically significant ($F(5, 194) = 4.57$, $p < 0.01$), explaining 18% of the variance ($R^2 = 0.18$) in migration intentions.

Academic resilience was found to be a significant negative predictor ($\beta = -0.217$, $p < 0.05$), indicating that students with higher resilience levels were less likely to consider migration. This supports the study's hypothesis that resilience influences migration decisions, as more resilient students may feel better equipped to navigate challenges and succeed within Pakistan. In contrast, parental migration status ($\beta = 0.309$, $p < 0.01$) was a significant positive predictor, suggesting that students whose parents have migrated are more likely to consider moving abroad, possibly due to existing family networks or perceived advantages of migration. Additionally, monthly household income ($\beta = 0.255$, $p < 0.05$) was a significant predictor, indicating that students from higher-income families were more inclined to migrate, likely due to greater financial means to support international education and relocation.

However, gender and university type were not significant predictors, meaning that migration intentions did not significantly differ between male and female students or between those studying in public vs. private universities.

Table 9 - Regression Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.299[a]	.090	.031	1.00456	2.073

Note. a. Predictors: (Constant), Parents' migration status, Marital status, Type of university, Major of study, Monthly income, Year of study, Resilience_Score, Travel experience abroad, Current CGPA, Parents' highest education level, Gender, Age; b. Dependent Variable: Migration_Score

ANOVA[a]

Model		Sum Of Squares	Df	Mean Square	F	Sig.
1	Regression	18.570	12	1.548	1.533	.115[b]
	Residual	188.710	187	1.009		
	Total	207.280	199			

Note. a. Dependent Variable: Migration_Score; b. Predictors: (Constant), Parents' migration status, Marital status, Type of university, Major of study, Monthly income, Year of study, Resilience_Score, Travel experience abroad, Current CGPA, Parents' highest education level, Gender, Age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.899	.586		3.238	.001		
	Resilience_Score	.275	.135	.148	2.043	.042	.930	1.075
	Gender	.086	.160	.042	.540	.590	.791	1.264
	Age	.206	.162	.126	1.274	.204	.500	1.999
	Monthly income	-.025	.049	-.038	-.525	.600	.929	1.077
	Major of study	-.021	.051	-.032	-.412	.681	.817	1.224
	Type of university	.438	.196	.165	2.235	.027	.890	1.124
	Year of study	-.033	.075	-.044	-.437	.662	.486	2.056
	Current CGPA	-.070	.082	-.065	-.844	.400	.821	1.217
	Parents' highest education level	-.006	.082	-.006	-.073	.942	.811	1.233
	Marital status	-.225	.301	-.055	-.749	.455	.917	1.090
	Travel experience abroad	.122	.095	.096	1.281	.202	.864	1.157
	Parents' migration status	.093	.095	.072	.979	.329	.902	1.109

Note. a. Dependent Variable: Migration_Score.

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions												
				(Constant)	Resilience_Score	Gender	Age	Monthly income	Major of study	Type of university	Year of study	Current CGPA	Parents' highest education level	Marital status	Travel experience abroad	Parents' migration status
1	1	11.529	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.365	5.617	.00	.81	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00

3	.226	7.148	.00	.03	.02	.00	.10	.02	.00	.00	.00	.00	.00	.05	.58
4	.204	7.512	.00	.06	.04	.07	.00	.06	.00	.17	.00	.00	.00	.02	.02
5	.189	7.810	.00	.02	.03	.00	.41	.14	.00	.01	.00	.00	.00	.19	.00
6	.135	9.226	.00	.00	.00	.00	.29	.00	.00	.01	.00	.00	.00	.65	.26
7	.107	10.376	.01	.00	.04	.00	.12	.58	.02	.03	.01	.01	.07	.05	.01
8	.066	13.222	.00	.05	.62	.00	.04	.07	.10	.04	.04	.08	.00	.02	.04
9	.055	14.496	.00	.00	.02	.19	.00	.11	.00	.13	.30	.01	.24	.00	.04
10	.040	16.914	.00	.01	.09	.00	.01	.02	.00	.00	.26	.70	.11	.00	.00
11	.038	17.346	.00	.00	.10	.27	.02	.00	.28	.08	.00	.15	.37	.01	.00
12	.033	18.774	.00	.01	.00	.44	.00	.00	.32	.53	.30	.04	.02	.00	.00
13	.012	30.518	.98	.02	.05	.02	.01	.00	.26	.00	.07	.01	.18	.00	.03

Note. a. Dependent Variable: Migration_Score

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0395	3.9829	2.9400	.30548	200
Residual	-2.07172	2.01550	.00000	.97380	200
Std. Predicted Value	-2.948	3.414	.000	1.000	200
Std. Residual	-2.062	2.006	.000	.969	200

Note. a. Dependent Variable: Migration_Score.

5.6 Moderation Analysis

A moderation analysis was conducted to examine whether gender moderates the relationship between academic resilience and migration intentions among university students in Lahore. The regression model was not significant ($F(1, 198) = 0.00$, $p = 0.941$, $R^2 = 0.000$), indicating that the interaction term (Moderator_Centered) did not explain any variance in migration intentions.

The regression coefficients further confirmed this, as the interaction term was not significant ($\beta = -0.005$, $p = 0.941$). This suggests that gender does not moderate the relationship between academic resilience and migration intentions, meaning that the effect of resilience on migration intentions is similar for both male and female students. The results align with the

study's objective of examining sociodemographic influences on migration, indicating that gender does not play a significant role in shaping students' decisions to migrate. These findings suggest that interventions to enhance academic resilience should target all students equally, regardless of gender, to help retain talent within Pakistan.

Table 10 - Moderation Analysis

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Moderator_Centered[b]	.	Enter

Note. a. Dependent Variable: Migration_Score.; b. All requested variables entered.

Regression Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-watson
1	.005a	.000	-.005	1.02315	2.066

Note. a. Predictors: (Constant), Moderator_Centered; b. Dependent Variable: Migration_Score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	p
1	Regression	0.006	1	0.006	0.006	0.941[b]
	Residual	207.274	198	1.047		
	Total	**207.280**	**199**			

Note. a. Dependent Variable: Migration_Score; b. Predictors: (Constant), Moderator_Centered

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.956	0.226		13.073	.000		
	Moderator_Centered	-.007	.090	-.005	-.074	.941	1.000	1.000

Note. a. Dependent Variable: Migration_Score.

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Moderator_Centered
1	1	1.947	1.000	.03	.03
	2	.053	6.087	.97	.97

Note. a. Dependent Variable: Migration_Score

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.9324	2.9492	2.9400	.00539	200
Residual	-1.94584	2.06423	.00000	1.02058	200
Std. Predicted Value	-1.408	1.707	.000	1.000	200
Std. Residual	-1.902	2.018	.000	.997	200

Note. a. Dependent Variable: Migration_Score.

The results presented in Table 8 reflect a moderation analysis conducted to examine whether the centered moderator variable (Moderator_Centered) significantly influences the dependent variable (Migration_Score). The Model Summary indicates that the regression model has a very low R value (.005), with an R Square of .000, meaning that the model explains virtually none of the variance in Migration_Score. The negative Adjusted R Square (-.005) further suggests a poor model fit. The Anova table supports this conclusion, as the F-value is extremely low (0.006) and the significance level ($p = .941$) is far above the conventional threshold of .05, indicating that the model is not statistically significant.

In the Coefficients table, the regression coefficient for the Moderator_Centered variable is -.007 with a high p-value (.941), demonstrating that this variable does not significantly predict Migration_Score. The collinearity statistics (Tolerance = 1.000, VIF = 1.000) indicate no multicollinearity, which confirms that the predictor variable is not correlated with other independent variables in the model. The Collinearity Diagnostics further support this with a low condition index and minimal variance proportions spread across dimensions.

Finally, the Residuals Statistics show that the residuals are approximately normally distributed with a mean of zero, but the predicted values vary only slightly, confirming the weak explanatory power of the model. Overall, these findings indicate that the moderator variable does not significantly moderate or explain variation in Migration_Score, and the model lacks both statistical significance and predictive power.

5.7 ANOVA

A one-way ANOVA was conducted to examine whether migration intentions differ by parental migration status**.** The results showed a significant effect of parental migration status on thinking about better job prospects abroad ($F(2,197) = 3.487$, $p = 0.033$)**.** Post-hoc Tukey tests revealed that students whose parents migrated ($M = 3.87$, $SD = 0.89$) had significantly higher migration intentions than those in Engineering ($M = 2.95$, $SD = 0.77$). This suggests that parental migration experience increases students' likelihood of considering career opportunities abroad, likely due to exposure to migration networks or family support.

For other migration-related variables (thinking about overseas education, starting a business abroad, long-term migration, and permanent immigration), no significant differences were found across different fields of study ($p > 0.05$). This suggests that while career-related migration intentions may vary by major, general migration intentions do not significantly differ**.** These findings align with the study's objectives by highlighting the influence of sociodemographic factors, particularly parental migration history, on students' migration decisions**.** They emphasize the role of family migration background in shaping students' aspirations to work abroad and suggest that policies addressing brain drain should consider family migration history as a key factor in migration intentions.

This table presents the results of a one-way ANOVA examining whether students' thoughts about migration (for education, job prospects, business, long-term stay, and permanent immigration) vary based on their parents' migration status. A statistically significant difference was found only in the variable "Think about better job prospects abroad" ($p = .033$), suggesting that parental migration status may influence students'

consideration of job opportunities abroad. No significant differences were found for other migration-related thoughts.

Table 11 - Anova

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig
Think about overseas education	Between Groups	.509	2	.255	.162	.850
	Within Groups	309.366	197	1.570		
	Total	309.875	199			
Think about better job prospects abroad	Between Groups	10.678	2	5.339	3.487	.033
	Within Groups	301.677	197	1.531		
	Total	312.355	199			
Think about starting a business abroad	Between Groups	2.811	2	1.406	.887	.414
	Within Groups	312.344	197	1.586		
	Total	315.155	199			
Think about working / living abroad long-term	Between Groups	5.251	2	2.626	1.692	.187
	Within Groups	305.769	197	1.552		
	Total	311.020	199			
Think about immigrating permanently	Between Groups	4.295	2	2.147	1.100	.335
	Within Groups	384.580	197	1.952		
	Total	388.875	199			

This table (table 10) shows post-hoc comparisons between different parental migration status groups (Neither parent, One parent, Both parents) on migration-related thoughts. A significant difference was observed between students with both migrant parents and neither

migrant parent regarding better job prospects abroad (p = .027), with those having both migrant parents rating it more favorably. No other pairwise comparisons reached statistical significance.

Table 12 - Multiple Comparisons

Tukey HSD							
Dependent Variable	(I) Parents' migration status	(J) Parents' migration status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Think about overseas education	Neither	One Parent	-.146	.260	.840	-.76	.47
		Both Parents	-.004	.233	1.000	-.55	.54
	One Parent	Neither	.146	.260	.840	-.47	.76
		Both Parents	.142	.314	.894	-.60	.88
	Both Parents	Neither	.004	.233	1.000	-.54	.55
		One Parent	-.142	.314	.894	-.88	.60
Think about better job prospects abroad	Neither	One Parent	-.244	.257	.610	-.85	.36
		Both Parents	-.597*	.230	.027	-1.14	-.05
	One Parent	Neither	.244	.257	.610	-.36	.85
		Both Parents	-.353	.310	.491	-1.09	.38
	Both Parents	Neither	.597*	.230	.027	.05	1.14
		One Parent	.353	.310	.491	-.38	1.09
Think about starting a business abroad	Neither	One Parent	.054	.261	.977	-.56	.67
		Both Parents	-.292	.234	.425	-.84	.26
	One Parent	Neither	-.054	.261	.977	-.67	.56
		Both Parents	-.347	.315	.516	-1.09	.40
	Both Parents	Neither	.292	.234	.425	-.26	.84
		One Parent	.347	.315	.516	-.40	1.09
Think about working / living abroad long-term	Neither	One Parent	.079	.259	.950	-.53	.69
		Both Parents	-.398	.231	.200	-.94	.15
	One Parent	Neither	-.079	.259	.950	-.69	.53
		Both Parents	-.477	.312	.280	-1.21	.26
	Both Parents	Neither	.398	.231	.200	-.15	.94
		One Parent	.477	.312	.280	-.26	1.21

Think about immigrating permanently	Neither	One Parent	-.238	.290	.690	-.92	.45
		Both Parents	-.355	.259	.359	-.97	.26
	One Parent	Neither	.238	.290	.690	-.45	.92
		Both Parents	-.117	.350	.940	-.94	.71
	Both Parents	Neither	.355	.259	.359	-.26	.97
		One Parent	.117	.350	.940	-.71	.94

This table (table 11) presents group means for each parental migration status group across the five migration-related thoughts, categorized into homogeneous subsets. While the results suggest some trends (e.g., students with both migrant parents tend to rate migration-related thoughts slightly higher), only the mean differences in better job prospects abroad approach significance (p = .068). All other groupings showed non-significant differences, supporting the ANOVA findings that most migration attitudes do not significantly differ based on parental migration background.

Table 13 - Tukey HSD

Tukey HSD Test for Think About Overseas Education

Parents' Migration Status	N	Subset For Alpha = 0.05
		1
Neither	135	3.10
Both Parents	37	3.11
One Parent	28	3.25
Sig.		.852

Note. Means for groups in homogeneous subsets are displayed; a. Uses Harmonic Mean Sample Size = 42.766; b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Tukey HSD Test for Think about better job prospects abroad

Parents' Migration Status	N	Subset For Alpha = 0.05
		1
Neither	135	2.97
One Parent	28	3.21
Both Parents	37	3.57

Parents' Migration Status	N	Subset For Alpha = 0.05
Sig.		.068

Note. Means for groups in homogeneous subsets are displayed; a. Uses Harmonic Mean Sample Size = 42.766; b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Tukey HSD Test for Think about starting a business abroad

Parents' Migration Status	N	Subset For Alpha = 0.05
		1
One Parent	28	2.46
Neither	135	2.52
Both Parents	37	2.81
Sig.		.412

Note. Means for groups in homogeneous subsets are displayed; a. Uses Harmonic Mean Sample Size = 42.766; b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Tukey HSD Test for Think about working / living abroad long-term

Parents' Migration Status	N	Subset For Alpha = 0.05
		1
One Parent	28	2.93
Neither	135	3.01
Both Parents	37	3.41
Sig.		.182

Note. Means for groups in homogeneous subsets are displayed; a. Uses Harmonic Mean Sample Size = 42.766; b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Tukey HSD Test for Think about immigrating permanently

Parents' Migration Status	N	Subset For Alpha = 0.05
		1
Neither	135	2.73
One Parent	28	2.96
Both Parents	37	3.08
Sig.		.469

Note. Means for groups in homogeneous subsets are displayed; a. Uses Harmonic Mean Sample Size = 42.766; b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

5.8 Independent Samples T-test

An independent samples t-test examined gender differences in migration intentions among university students in Lahore. The results showed no significant difference between males and females in thinking about overseas education ($p = 0.553$), better job prospects abroad ($p = 0.553$), long-term migration ($p = 0.898$), or permanent immigration ($p = 0.698$). This suggests that both genders equally consider migration for education and career opportunities.

However, a significant gender difference was found in thinking about starting a business abroad ($p = 0.002$), with males being more likely than females to consider entrepreneurial opportunities overseas. This indicates that business-related migration intentions are stronger among male students.

These findings align with the study's objective of examining sociodemographic influences on migration intentions. While academic resilience may impact migration decisions, gender is not a strong predictor except in the case of entrepreneurship. This insight is valuable for policymakers in developing equitable strategies to retain talent in Pakistan.

Table 14 - T-test Group Statistics

T-test Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Think about overseas education	Male	98	3.07	1.237	.125
	Female	102	3.18	1.262	.125
Think about better job prospects abroad	Male	98	3.06	1.291	.130
	Female	102	3.17	1.219	.121
Think about starting a business abroad	Male	98	2.85	1.287	.130
	Female	102	2.29	1.174	.116
Think about working / living abroad long-term	Male	98	3.08	1.257	.127
	Female	102	3.06	1.249	.124
Think about immigrating permanently	Male	98	2.79	1.357	.137
	Female	102	2.86	1.442	.143

Table 15 - Independent Samples Test

		Levene's Test for Equality of Variances		T-test For Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Think about overseas education	Equal variances assumed	.007	.931	-.594	198	.553	-.105	.177	-.454	.244
	Equal variances not assumed			-.594	197.916	.553	-.105	.177	-.454	.243
Think about better job prospects abroad	Equal variances assumed	.212	.645	-.594	198	.553	-.105	.178	-.455	.245
	Equal variances not assumed			-.593	196.152	.554	-.105	.178	-.456	.245
Think about starting a business abroad	Equal variances assumed	.848	.358	3.176	198	.002	.553	.174	.210	.896
	Equal variances not assumed			3.170	194.615	.002	.553	.174	.209	.897
Think about working / living abroad long-term	Equal variances assumed	.007	.935	.129	198	.898	.023	.177	-.327	.372
	Equal variances not assumed			.129	197.571	.898	.023	.177	-.327	.372
Think about immigrating permanently	Equal variances assumed	.264	.608	-.389	198	.698	-.077	.198	-.468	.314
	Equal variances not assumed			-.389	197.913	.698	-.077	.198	-.467	.313

To sum up the results, the study found that academic resilience negatively predicted migration intentions, indicating that more resilient students were slightly less likely to consider migrating abroad. Factors parental migration status and higher household income significantly increased migration intentions. Gender and university type did not have a statistically significant impact migration intention. An exception was found for entrepreneurship, where males showed a higher inclination to migrate.

6. Discussion

The study aims a provide a sociological perspective to the influence of academic resilience on migration intentions among university students in Pakistan. In addition to examining the push and pull factors, the research focused on individualistic factors which included academic resilience along with the influence of sociodemographic variables on the students' intentions to migrate. This fresh perspective for the brain drains issue, especially in the higher education context, showed that individualistic traits rather than economic or structural traits significantly impact migration intentions. Since this finding of academic resilience aligns with existing literature it tends to bring forth contextual factors that shape students' decision-making processes. (Lee, 1966; Shah & Mehmood, 2023; Kousar et al., 2020).

More specifically, the study revealed that academic resilience negatively predicted migration intentions which indicates that resilience fosters adaptability and persistence during challenging times. (Rudd et al., 2021; Cassidy, 2015) This personal trait of students has a communal role as it can be said that academic resilience may act as a protective factor against the decision to migrate. This is consistent with earlier research which noted that resilient people cope with adversities better and make rational career choices (Cassidy, 2015; Pang et al., 2021). Since students with greater academic resilience are more likely to deal with socioeconomic challenges in their home country and work towards its development, it is essential to foster and build resilience from a young age. Higher education institutions should offer career counselling so that viable options within Pakistan are available to university students which will eventually decrease the likelihood of migration dependency. However, it is important to note that while resilience can be linked to a lesser intention to emigrate in this study, the decision may vary depending upon contextual conditions as several other external factors come into play.

Analysis of migration intentions shows how interconnected these thoughts are; particularly those who consider thinking about working or living abroad also consider settling permanently. Similarly, those considering overseas education often also plan to look for better job prospects abroad which suggests that international education is not just about academic improvement but is closely linked to broader goals such as career development and lifestyle changes. Additionally, the moderate correlations involving entrepreneurial ambitions indicate that business aspirations play a role in migration intentions, though to a lesser extent than employment and education. There is a overlap between the desire for education, better job prospects, and permanent relocation, indicating that these ambitions are interconnected rather than isolated.

The study also found that parental migration status positively predicted migration intentions, suggesting that students with migrant parents were more inclined to move abroad (Imran et al., 2011; Kousar et al., 2020). The link between having parents who live and work abroad with their children's migration intentions supports Bandura's social learning theory, which theorizes that people learn behavior by observing around them. (Bandura, 1977). It becomes normative for university students to follow their parents' footsteps and move abroad after pursuing education in Pakistan. Additionally, having a migrant parent has certain perceived advantages which adds to their social capital as they have more advanced social networks in destination countries which adds to the overall likelihood of them migrating option (Imran et al., 2011). This intergenerational transmission of migration patterns from one generation to another, reinforcing the influence of family background in shaping students' mobility intentions. This finding fits perfectly into the push and pull theoretical framework where prior migration exposure shapes emigration intentions (Hajduch et al., 2019; Kulanová & Orosova, 2018).

Higher household income was a significant predictor of migration intentions, implying that wealthier students had greater mobility options (Bashir & Wali, 2023; Tariq et al., 2023). The positive relationship found between higher income and migration intentions brings attention to the inherent economic disparities in mobility access. Students having wealthier families are more privileged in the sense that they can afford overseas education and relocation costs. (Yousaf, Tauni, & Xiucheng, 2020) The migration of these students is the epitome of brain drain as it disturbs the harmony of society by creating an unequal and unnatural split in society. These findings add to the existing literature, of economic disparity and social division that are linked with migration of highly skilled professionals (Shah et al., 2023; Tariq et al., 2023

Although gender did not have significant overall effect on migration intentions, the finding of entrepreneurship overseas is of grave importance where male students exhibited a greater inclination to start businesses abroad. Past research on gender differences specifically entrepreneurship, suggests that men are more likely to take financial and professional risks associated with business ventures. (Fisher & Yao, 2017) This finding illustrates the potential imbalance of gender within Pakistan among skilled professionals if more males migrate. Therefore, it is crucial for policy measures to be put into place that encourage domestic opportunities to retain talent.

Since university type (public vs. private) did not significantly influence migration intentions, institutional factors alone may not be strong enough to shape students' decisions regarding migration. Instead, personal experiences and familial factors appear to play a more dominant role.

6.1 Theoretical and Practical Implications

The study supports the Push-Pull Theory by identifying resilience as a mitigating factor against push factors and expands migration decision models by integrating academic resilience and family migration history as key variables (Lee, 1966; Bråve, 2019). To address the brain drain phenomenon, it is crucial that universities enhance academic resilience programs to help students succeed in their home country (Das, 2018). Improving local job markets and research opportunities can aid in retaining skilled graduates. Higher Education Commission in Pakistan took note of the growing brain drain and has taken steps to curtain it which includes setting up a digital library under Pakistan Education and Research Networks (PERN) for the Reverse Brain Drain (RBD) Program. (Sajjad, 2011) Additionally, HEC also offers financial support to researchers through the National Research Program for Universities (Nrpu). Furthermore, offering achievement-based scholarships and other incentives can help mitigate the brain drain effect, while diaspora communities engaging in remote work and research collaborations can lead to reverse-migration opportunities.

6.2 Limitations and Future Research

There were several limitations in the study. Firstly, its geographic scope was confined to Lahore, a major metropolitan city in Pakistan. While Lahore provides valuable context due to its diverse student population and academic infrastructure, the findings may not be generalized to students from smaller cities or rural areas, where access to education, exposure to international opportunities, and socioeconomic conditions can vary greatly. Secondly, the overrepresentation of private university students and higher-income groups may limit the generalizability of the findings. Additionally, the cross-sectional nature of the study poses limitations in understanding how migration intentions evolve over time. Since data were collected at a single point, it captures only the current perceptions and aspirations of students. However, intentions to migrate are dynamic and may shift in response to academic experiences,

personal development, political climate, or global economic changes. Cross-sectional design prevents establishing causality, necessitating longitudinal studies for a more in-depth understanding. Moreover, social desirability and potential response bias in self-report online surveys is another limitation. Furthermore, the data collection process was constrained by time limitations, with some of the data being gathered in person. Future research should focus on longitudinal studies tracking students' actual migration decisions post-graduation, conduct qualitative interviews to explore the personal narratives underlying migration choices, and comparative studies across different Pakistani cities or other Global South nations (Iqbal et al., 2019; Altaf, 2024).

6.3 Ethical Considerations

Throughout the research process, ethical considerations were adhered to which meant that participants' privacy and confidentiality were strictly maintained. So, in order to ensure that responses could not be linked back to participants, their identities were anonymized. Participants were provided with an information sheet detailing the study's objectives, methodology, potential risks, and anticipated benefits. Alongside this, a consent form was shared, which included a checkbox to indicate voluntary agreement to participate. Participants were required to read the information sheet thoroughly before indicating their consent. The consent form explicitly stated that participation was voluntary, that participants had the right to withdraw from the study at any time without any consequences, and that anonymity and data confidentiality would be strictly maintained. The information sheet and informed consent form are included in Appendix A.

6.3.1 Ethical Approval

Approval was obtained from the Institutional Review Board (IRB) at Forman Christian College University (FCCU) which ensured that all research procedures were carried out in compliance with established ethical standards and guidelines.

6.3.2 Permission to Use Instruments/Scales

Permission to use the Academic Resilience Scale (ARS-30) (Cassidy, 2016) and the Migration Intentions Scale (Leong & Soon, 2011) were sought from their respective authors via email which are attached in Appendix C.

6.3.3 Budget

The research study was a self-funded project. The primary costs of the project included internet and electricity bills. These costs totaled approximately PKR 10,000 per month, amounting to around PKR 100,000 over ten months. Additionally, PKR 10,000 was used for transportation to university for the in-person data collection and meetings with supervisor. Hence, the total budget amounted to approximately PKR 110,000.

6.4 Conclusion

This study aimed to explore the influence of academic resilience on migration intentions among university students in Lahore, Pakistan, using the theoretical frame of Lee's Push and Pull Theory (1966). While the results show that academic resilience is present among students, it did not emerge as a significant standalone predictor of emigration intentions. This suggests that while students may demonstrate perseverance and adaptability in the face of academic challenges, these attributes alone do not necessarily influence the decision to seek opportunities abroad.

However, the study contributes to the existing body of literature by exploring how internal individualistic psychological traits, such as academic resilience, interact with external

socio-demographic factors like gender and parental migration status. The moderation analysis revealed that these factors play a significant role in shaping migration intentions, highlighting that the desire to migrate is a complex interplay of personal, familial, and societal dynamics rather than the result of a single variable. In doing so, it provides a fresh perspective on the push and pull dynamics typically associated with economic or political motivators.

These findings have implications for both academic institutions and policymakers. For educators, the results emphasize the importance of fostering resilience not just for academic success but also for helping students navigate a range of life decisions. Policymakers must address both individual level factors such as resilience-building and systemic factors such as job creation and education reform to retain talent and foster national development. Through targeted interventions, Pakistan can mitigate brain drain and create an environment where skilled individuals perceive viable career prospects within their home country.

In conclusion, while academic resilience can provide students with the necessary tools to navigate challenges, it does not function in isolation. The decision to migrate is shaped by a wide array of factors, both personal and external, which interact to influence students' intentions. This emphasizes the importance of adopting a multi-faceted approach to better understand and address the complexities surrounding the brain drain phenomenon in Pakistan.

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Appendix A: Information Sheet and Consent Form

Information Sheet

Title of the Study: The Influence of Academic Resilience on Migration Intentions among University Students in Lahore, Pakistan: Understanding the Brain Drain Phenomenon

Researcher: Khadeeja Humayun

Institution: Forman Christian College University (FCCU)

Dear Participant,

Thank you for considering participation in our study on the relationship between academic resilience and migration intentions among university students in Lahore, Pakistan. Below is an overview of the study and what your participation will involve.

Purpose of the Study:

The purpose of this study is to understand how students' academic resilience impacts their likelihood of considering migration for better opportunities abroad.

Participant Involvement:

If you choose to participate, you will be asked to complete an online survey. The survey will include questions about your demographic information, academic resilience, and migration intentions. The survey will take approximately 15 minutes to complete.

Benefits of Participation:

Your participation will contribute to understanding the factors influencing migration decisions among university students in Lahore, Pakistan. This knowledge can inform policies and interventions aimed at retaining talent within the country.

Risks:

There are minimal risks associated with participating in this study, mainly related to potential discomfort from reflecting on personal experiences related to academic challenges and migration intentions.

Confidentiality:

Your responses will be kept strictly confidential. All data will be anonymous and stored securely on a password-protected computer.

Voluntary Participation:

Participation in this study is entirely voluntary. You have the right to withdraw from the study at any time.

Contact Information:

If you have any questions or concerns about the study, please contact Khadeeja Humayun at 253073985@formanite.fccollege.edu.pk

Informed Consent Form

I have read the information sheet provided for the study titled "The Influence of Academic Resilience on Migration Intentions among University Students in Lahore, Pakistan: Understanding the Brain Drain Phenomenon." I understand the study's purpose, procedures, potential risks, and benefits. I agree to participate voluntarily in this study.

Principal Investigator: Khadeeja Humayun, Forman Christian College University (FCCU)

By ticking the box at the end of this section, you confirm that you have read and understood the information provided, agree to participate in this study willingly, and acknowledge that you can withdraw your consent at any time.

☐ By selecting this checkbox, I consent to participate in this study.

Participant's Signature: _____

Date: _____

Appendix B: Instruments Used

Section A: Sociodemographic Information

This section aims provide a comprehensive picture of the participants' backgrounds and characteristics, which can be valuable for analysing their migration intentions in relation to academic resilience.

1. Gender
    - Male
    - Female
    - Other
2. Age
    - 18-21 years
    - 22-25 years
    - 26-29 years
    - 30 and above
3. Monthly Income
    - Below PKR 50,000
    - PKR 50,000-99,999
    - PKR 100,000-149,999
    - PKR 150,000-199,999
    - PKR 200,000 or more
4. Major of Study
    - Business Administration
    - Engineering
    - Computer Science / Information Technology
    - Social Sciences
    - Health Sciences / Medicine
    - Other
5. Type of University
    - Public
    - Private
6. Year of Study
    - 1st year
    - 2nd year
    - 3rd year
    - 4th year
    - Postgraduate
7. Current CGPA
    - Below 2.0
    - 2.0-2.49
    - 2.5-2.99
    - 3.0-3.49
    - 3.5-4.00
8. Education Level of Parents
    - No Formal Education
    - Primary Education
    - Secondary Education
    - Bachelor's Degree
    - Master's Degree
    - Doctorate
9. Marital Status
    - Single
    - Married
    - Divorced
    - Widowed
10. Previous Travel Experience Abroad
    - None
    - Once
    - Multiple Times
11. Parental Migration Status
    - Neither Parent
    - One Parent
    - Both Parents

Section B: Academic Resilience Scale (ARS-30)

This section includes questions related to academic resilience. Please select the option that best reflects your experience.

- I would not accept the tutor’s feedback.

    1. Likely

    2. Somewhat Likely

    3. Neutral

4. Somewhat Unlikely

5. Unlikely

- I would use the feedback to improve my work.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would just give up.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would use the situation to motivate myself.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would change my career plans.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would probably get annoyed.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would begin to think my chances of success at university were poor.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would see the situation as a challenge.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would do my best to stop thinking negative thoughts.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would see the situation as temporary.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would work harder.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would probably get depressed.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would try to think of new solutions.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would be very disappointed.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would blame the tutor.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would keep trying.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would not change my long-term goals and ambitions.
  1. Likely
  2. Somewhat Likely
  3. Neutral
  4. Somewhat Unlikely
  5. Unlikely
- I would use my past successes to help motivate myself.
  1. Likely
  2. Somewhat Likely

3. Neutral

4. Somewhat Unlikely

5. Unlikely

- I would begin to think my chances of getting the job I want were poor.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would start to monitor and evaluate my achievements and effort.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would seek help from my tutors.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would give myself encouragement.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would stop myself from panicking.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would try different ways to study.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would set my own goals for achievement.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would seek encouragement from my family and friends.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

5. Unlikely

- I would try to think more about my strengths and weaknesses to help me work better.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would feel like everything was ruined and was going wrong.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would start to self-impose rewards and punishments depending on my performance.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

- I would look forward to showing that I can improve my grades.

  1. Likely

  2. Somewhat Likely

  3. Neutral

  4. Somewhat Unlikely

  5. Unlikely

Section C: Migration Intentions Scale
This section includes questions aimed at measuring different aspects of migration intentions. Please indicate your agreement with each statement on a scale from 1 to 5, where 1 is never and 5 is all the time.

- How often do you think about pursuing an overseas education?

  1. Never
  2. Once in a while
  3. Frequently
  4. Very Frequently
  5. All the time

- How often do you think about searching for better job prospects abroad?

  1. Never
  2. Once in a while
  3. Frequently
  4. Very Frequently
  5. All the time

- How often do you think about setting up a business in another country?

  1. Never
  2. Once in a while
  3. Frequently
  4. Very Frequently
  5. All the time

- How often do you think about working and living in another country for an extended period of time?

  1. Never
  2. Once in a while
  3. Frequently
  4. Very Frequently
  5. All the time

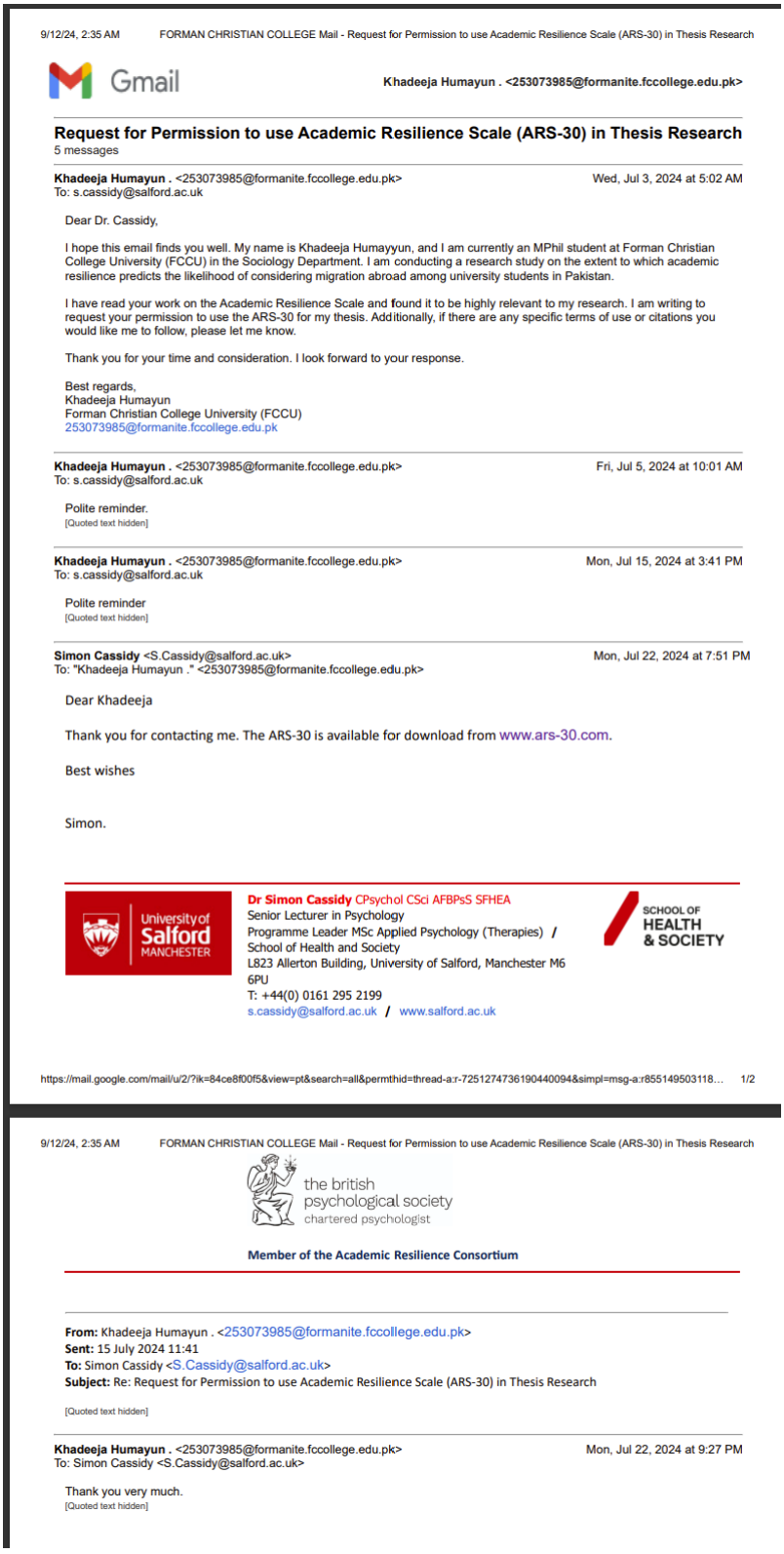
- How often do you think about immigrating to another country to live there permanently?

1. Never
2. Once in a while
3. Frequently
4. Very Frequently
5. All the time

Thank you for your time and participation!

Appendix C: Approval for Instruments Used

Approval for ARS-30



9/12/24, 2:35 AM FORMAN CHRISTIAN COLLEGE Mail - Request for Permission to use Academic Resilience Scale (ARS-30) in Thesis Research

Gmail Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk>

Request for Permission to use Academic Resilience Scale (ARS-30) in Thesis Research
5 messages

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Wed, Jul 3, 2024 at 5:02 AM
To: s.cassidy@salford.ac.uk

Dear Dr. Cassidy,

I hope this email finds you well. My name is Khadeeja Humayyun, and I am currently an MPhil student at Forman Christian College University (FCCU) in the Sociology Department. I am conducting a research study on the extent to which academic resilience predicts the likelihood of considering migration abroad among university students in Pakistan.

I have read your work on the Academic Resilience Scale and found it to be highly relevant to my research. I am writing to request your permission to use the ARS-30 for my thesis. Additionally, if there are any specific terms of use or citations you would like me to follow, please let me know.

Thank you for your time and consideration. I look forward to your response.

Best regards,
Khadeeja Humayun
Forman Christian College University (FCCU)
253073985@formanite.fccollege.edu.pk

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Fri, Jul 5, 2024 at 10:01 AM
To: s.cassidy@salford.ac.uk

Polite reminder.
[Quoted text hidden]

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Mon, Jul 15, 2024 at 3:41 PM
To: s.cassidy@salford.ac.uk

Polite reminder
[Quoted text hidden]

Simon Cassidy <S.Cassidy@salford.ac.uk> Mon, Jul 22, 2024 at 7:51 PM
To: "Khadeeja Humayun ." <253073985@formanite.fccollege.edu.pk>

Dear Khadeeja

Thank you for contacting me. The ARS-30 is available for download from www.ars-30.com.

Best wishes

Simon.

University of Salford MANCHESTER

Dr Simon Cassidy CPsychol CSci AFBPsS SFHEA
Senior Lecturer in Psychology
Programme Leader MSc Applied Psychology (Therapies) /
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SCHOOL OF HEALTH & SOCIETY

https://mail.google.com/mail/u/2/?ik=84ce8f00f5&view=pt&search=all&permthid=thread-a:r-7251274736190440094&simpl=msg-a:r855149503118… 1/2

9/12/24, 2:35 AM FORMAN CHRISTIAN COLLEGE Mail - Request for Permission to use Academic Resilience Scale (ARS-30) in Thesis Research

the british psychological society
chartered psychologist

Member of the Academic Resilience Consortium

From: Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk>
Sent: 15 July 2024 11:41
To: Simon Cassidy <S.Cassidy@salford.ac.uk>
Subject: Re: Request for Permission to use Academic Resilience Scale (ARS-30) in Thesis Research

[Quoted text hidden]

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Mon, Jul 22, 2024 at 9:27 PM
To: Simon Cassidy <S.Cassidy@salford.ac.uk>

Thank you very much.
[Quoted text hidden]

Approval for Emigration Intentions Scale

Gmail Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk>

Request for Permission to use Emigration Intention Scale in Thesis Research
3 messages

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Wed, Jul 3, 2024 at 5:12 AM
To: Chanhoong Leong <nus.chanhoongleong@gmail.com>, ischanhoong.leong@ntu.edu.sg

Dear Dr. Leong,

I hope this email finds you well. My name is Khadeeja Humayyun, and I am currently an MPhil student at Forman Christian College University (FCCU) in the Sociology Department. I am conducting a research study on the extent to which academic resilience predicts the likelihood of considering migration abroad among university students in Pakistan.

I have read your work on the Emigration Intentions Scale and found it to be highly relevant to my research. I am writing to request your permission to use the 5-item intention to emigrate scale for my thesis. Additionally, if there are any specific terms of use or citations you would like me to follow, please let me know.

Thank you for your time and consideration. I look forward to your response.

Best regards,
Khadeeja Humayun
Forman Christian College University (FCCU)
253073985@formanite.fccollege.edu.pk

Leong Chan Hoong (Dr) <ischanhoong.leong@ntu.edu.sg> Wed, Jul 3, 2024 at 6:47 AM
To: "Khadeeja Humayun ." <253073985@formanite.fccollege.edu.pk>

Sure Khadeeja, go ahead.

The citation (APA format) is:

Leong, C. H., & Soon, D. (2011). *A Study on Emigration Attitudes of Young Singaporeans, 2010*. Institute of Policy Studies.

LEONG Chan-Hoong, PhD
Senior Fellow, and Head (Social Cohesion Research Programme)

S. Rajaratnam School of International Studies

Nanyang Technological University, Block S4, Level B4, 50 Nanyang Avenue, Singapore 639798

Tel: +65 6790-4340 | Email: ischanhoong.leong@ntu.edu.sg | Website: www.rsis.edu.sg

RSiS S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES Nanyang Technological University, Singapore

Ponder the Improbable since 1996

From: Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk>
Sent: Wednesday, July 3, 2024 8:12 AM
To: Chanhoong Leong <nus.chanhoongleong@gmail.com>; Leong Chan Hoong (Dr) <ischanhoong.leong@ntu.edu.sg>
Subject: Request for Permission to use Emigration Intention Scale in Thesis Research

[Alert: Non-NTU Email] Be cautious before clicking any link or attachment.

[Quoted text hidden]

Khadeeja Humayun . <253073985@formanite.fccollege.edu.pk> Wed, Jul 3, 2024 at 7:45 AM
To: "Leong Chan Hoong (Dr)" <ischanhoong.leong@ntu.edu.sg>

Noted with thanks.
[Quoted text hidden]