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Rising Interest in Foreign Scholarships in Pakistan: Evidence from Google Trends and the Brain Drain Debate

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Abstract

This study investigates the growing public interest in international scholarship programs among Pakistani students using Google Trends data from 2020 to 2025. Quantitative analysis: The online search behavior analysis used a quantitative approach to compare variations in eliciting online search behavior across five major scholarship programs: Fulbright, DAAD and Erasmus Mundus, Türkiye Bursları, and CSC. A quantitative descriptor was referred to define the relative search volume, mainly because the Elon Publicity indicator commences public awareness and aspirations regarding global higher education. As a result, overall search interest has consistently grown from 2018 to 2022, with seasonal peaks that closely match relevant program application deadlines. At the relative level, Fulbright and DAAD had high search interest among Turkish searches, which remained primarily high after 2021 for Erasmus Mundus students, driven by the 2021 rapid expansion in the number of destinations, a sign of diverse destinations. Regional approximation and an overall strong concentration of interest in Punjab, Islamabad, and Sindh are booming and topic-rich, with Khyber Pakhtunkhwa and Balochistan increasingly joining the topic. The results point to a shift from 'dissipative adaptation' outwards academic mobility from PA "dissipative adaptation,' to a valorization of "creative adaptations," a kind of global academic engagement for the future, emphasizing the bridging role of international scholarships in knowledge exchange and co-creation.

Keywords: Google Trends, Foreign scholarships, Brain drain, Academic mobility, Pakistan

1. Introduction

In recent years, the pursuit of international higher education has become a defining feature of Pakistan's academic landscape (Sain et al., 2025). Domestically, limited research capacity has been unable to meet the demand from increasing numbers of graduates seeking limited advanced opportunities, and scholarships overseas have become a fast-emerging, desirable outlet for the academic panacea of academic power, as well as for worldwide accessibility for many pupils (Haour & von Zedtwitz, 2016; Okolie et al., 2019). The Fulbright of the USA, DAAD of Germany, Erasmus Mundus of the EU, Turkiye Bursları of Turkiye, and CSC of China have become the top comprehensive scholarship options for Pakistani students (Akhtar et al., 2024). Thus, there is a need to understand these outward dynamics of academic migration to balance brain drain and global ambition and appropriately position the Pakistani higher education system (Humayun, 2025).

One such unique and timely source for gauging these patterns is digitized search behavior (Bogaard et al., 2019). The relative volume of scholarly interest and popular consciousness is an instant measure of the data in Google Trends on the relative volume of queries related to scholarship (Mavragani et al., 2018). An example of this, as Figure 1 above revealed, was that since 2020, RSVs in all significant scholarship schemes had an upward trend, with the volume peaks and depression troughs continuing to follow a seasonal pattern until 2025 (Bhatt et al., 2023). This longitudinal trend, in turn, consists of pull and push factors, i.e., the presence of sponsorships, career paths after the study, and the image of global education integration, as well as the shortage of postgraduate seats, financial barriers, and policy uncertainty.

In earlier studies, the migration of education in Pakistan has been debated mainly in terms of economic returns (remittances) and labor-market development, with very little attention paid to the cultural and informational aspects of student mobility (Bossavie & Wang, 2022; Kayani et al., 2015). Based on data from Google Trends, the proposed study will explore how public concern about scholarships has changed over time and across geography and what these changes may mean for Pakistan as a future global education hub. It attempts to answer the question of whether the increasing appeal of scholarships continues to erode human capital or represents a different kind of scholarly commitment with the potential to support national development by conveying knowledge and building diaspora relationships.

1.1. Problem Statement

There are numerous reports describing the rising exodus of Pakistani students, but most lack empirical explanations for the fluctuations in interest rates across international scholarships over the years. Existing data lakes focus on recording and tracking in the post-decisional phase, which affects current migrants. During the pre-decisional stage, potential migrants seek and request opportunities, but these opportunities have not been realized. The article relied on search volumes as an indicator of the seriousness of the growing online attention to foreign scholarships. It focuses on the direct loss of national human capital rather than on changes in global strategy when the country is unable to take advantage of existing education-related alternatives.

1.2. Research Objectives

1. To examine online search interest trends on five-year (2020-2025) trends in large international scholarship programs (Fulbright, DAAD, Erasmus Mundus, Turkiye Bursları, and CSC) in Pakistan.
2. To explain how differences in these patterns of search are indicative of more general socio-economic, educational, and policy processes driving outside academic mobility.
3. To assess how the growing academic focus on scholarship can indicate an upward trend of brain drain or knowledge flow that is helpful to the Pakistani system of higher education.

1.3. Research Questions

1. How have online search trends for major foreign scholarships evolved in Pakistan between 2020 and 2025, and what temporal or seasonal patterns can be observed?
2. To what extent do these patterns reflect the tension between brain drain and global academic ambition in Pakistan's pursuit of higher education abroad?

2. Methodology

The current research was quantitative and descriptive, using Google Trends data to analyze population interest (Tijerina et al., 2019; Ullah et al.). The research was on foreign scholarships for Pakistani students. In particular, the discussion focused on measuring the propensity to increase international education through online searching.

2.1. Data Collection

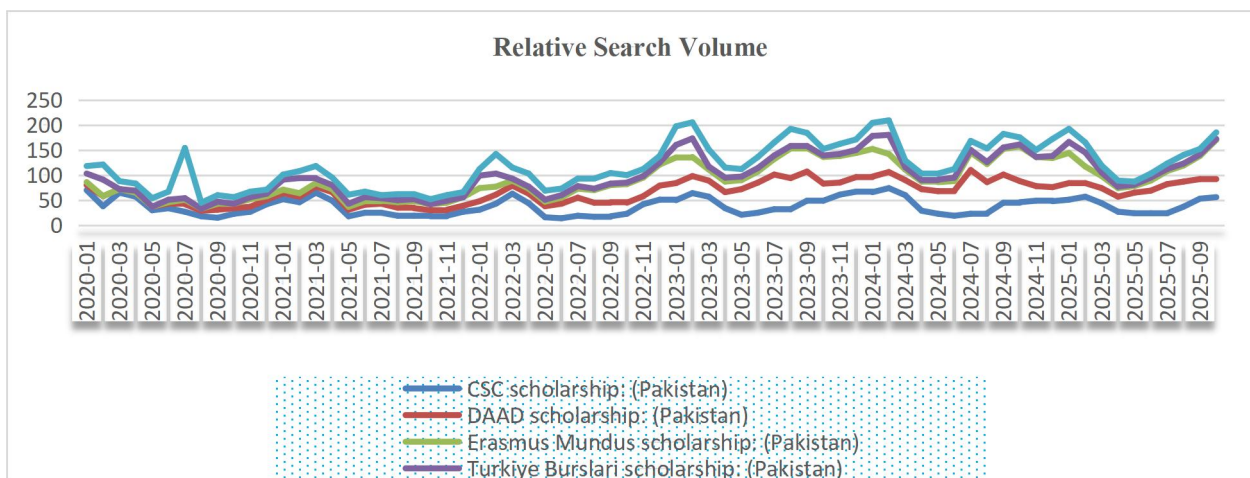
The data were collected from Google Trends (<https://trends.google.com>) by entering five main search terms: *Fulbright scholarship (Pakistan)*, *DAAD scholarship (Pakistan)*, *Erasmus Mundus scholarship (Pakistan)*, *Türkiye Bursları scholarship (Pakistan)*, and *CSC scholarship (Pakistan)*. The study period covered January 2020 to October 2025, and the country filter was set to Pakistan. Google Trends provides a Relative Search Volume (RSV) index (0–100) showing how popular each term is over time (Ullah et al., 2025).

2.2. Data Processing

Afterward, the data was downloaded as a CSV file and imported into Microsoft Excel and Python for cleaning. The “Month” column was reformatted to a date format, and the five scholarship terms were combined into a single table. A 3-month moving average was developed to smooth the trend line and reduce its susceptibility to short-term fluctuations. Similarly, another indicator—the year-over-year percentage change—was computed to indicate whether interest increased or decreased during the month compared to the same month last year.

2.3. Visualization and Analysis

To analyze the results, line charts were used to show the direction of search interest through 2025. As shown in Figure 1, the trendlines for all five combined scholarship programs show growth and a peak during the registration season. Later, to conduct a more in-depth analysis, the “Interest by Subregion” feature in Google Trends was used to examine deviations in interest across provinces or



regions.

Figure 1. Relative Search Volume (RSV) for major international scholarship programs in Pakistan, 2020–2025. **Source:** Google Trends <https://trends.google.com> (data extracted October 2025; values normalized 0–100).

3. Results

3.1 Temporal Trends in Scholarship Searches (2020–2025)

Firstly, as shown in Figure 1, all five major scholarship programs—Fulbright, DAAD, Erasmus Mundus, Türkiye Bursları, and CSC—showed a rising trend in RSV from January 2020 to October 2025. The aggregate interest grew almost linearly, with recurring seasonal peaks closely aligning with the scholarship program deadlines for application submission. To illustrate, the most intense inflex points for Fulbright and DAAD RSV tended to fall between February and April. At the same time, Türkiye Bursları manifested the most explosive trajectory in January-February, presumably coinciding with an annual open call. Erasmus Mundus and CSC also showed periodic peaks in RSV growth around September-November, which closely aligned with the European and Chinese intake periods. Thus, we can affirm that Pakistani students increasingly understand the global RSV timelines and regularly inquire about programs before and on the critical measures.

3.2 Comparative Popularity of Scholarships

Among the five programs, Fulbright and DAAD have the highest average RSV values, indicating their long-term presence on the market and established opportunities in Pakistan. Erasmus Mundus stays in the middle range, with stable but slow growth after 2022, which might be related to the ongoing EU enlargement process in South Asia. Türkiye Bursları has shown a sharp positive trend in the RSV indicator since 2021, suggesting growing interest in regional destinations with English-language instruction and native culture. CSC searches are at a relatively low level but stable, indicating moderate growth potential and a narrow niche target in the market, primarily in science and technology.

Scholarship Program	Average RSV (2020–2025)	Peak Period (Typical Application Months)	Overall Trend	Observation Interpretation
Fulbright (USA)	High	February – April	Stable to slight increase	Consistently the most searched program; reflects strong prestige and long-term trust.
DAAD (Germany)	High	December – March	Gradual increase	Strong upward trend due to expanding postgraduate and research links with Germany.
Erasmus Mundus (EU)	Moderate–High	September – November	Rapid increase	Growing awareness of EU opportunities and consortium-based degrees.
Türkiye Bursları (Türkiye)	Moderate	January – February	Sharp increase	Significant rise after 2021; regional and cultural proximity attract more applicants.
CSC (China)	Low–Moderate	March – May	Stable	Limited but steady interest, mainly in science and engineering disciplines.

Table 1. Summary of Google Trends results for major scholarship programs in Pakistan (2020–2025)

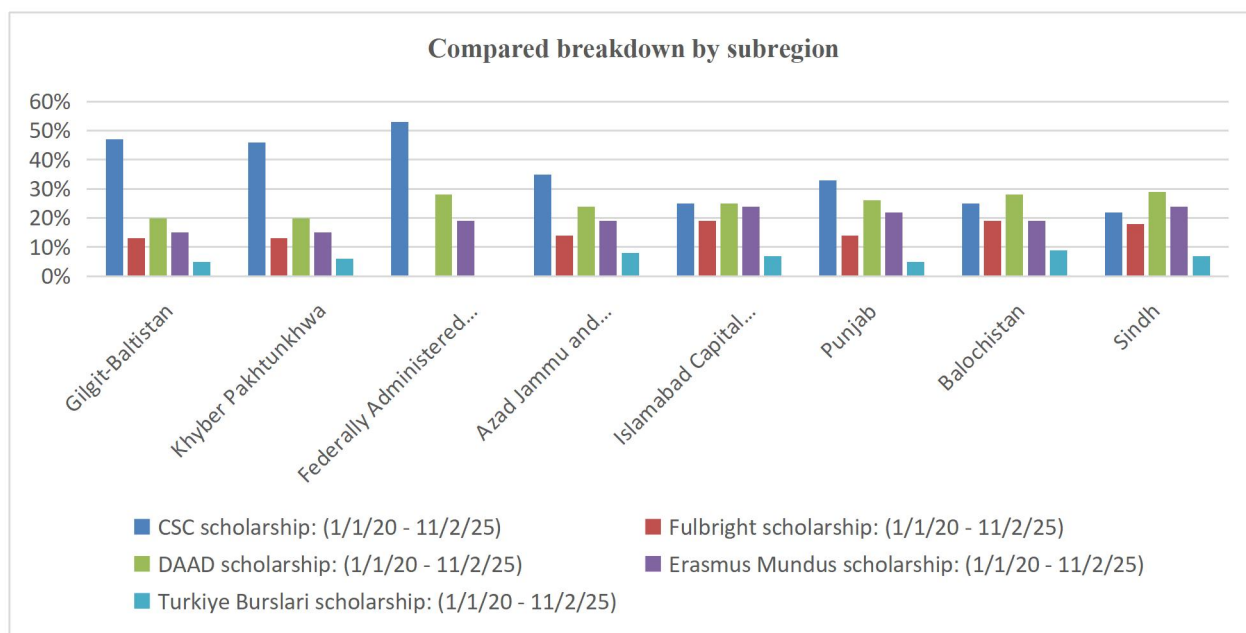
3.3 Growth and Change in Interest

Overall, comparing the RSV average between 2020 and 2025 revealed an increase of more than 40% year over year. There were more individuals willing to study abroad in nearly all segments, indicating that this trend is not a mere increase in student yearning. Türkiye Bursları and Erasmus Mundus have been experiencing the highest growth rates, and Fulbright entered the top with a slightly higher, but more stable, growth curve. The trend suggests that Pakistan's scholarship dreams may be moving beyond traditional Western markets into new Asian and European markets.

3.4 Regional Variations in Search Interest

It can be seen based on the sub-region comparisons that the major scholarly-related searches are clustered around the major scholarly-related hubs in Pakistan. The most robust interest is in the Islamabad Capital Territory (ICT) and Punjab, which is quite expected, as these sub-regions host the most significant number of universities, test centers, and advising services. In Sindh, where Karachi is located, there is consistent mid-level interest in all schemes. Khyber Pakhtunkhwa and Balochistan have a significantly lower yet non-zero interest, indicating that the populations of the other regions are becoming familiar with the scholarship schemes and are not dependent on the most significant metropolitan areas. The smaller jurisdictions, such as Gilgit-Baltistan, Azad Jammu & Kashmir, and the Federal/tribal areas, exhibit the most selective engagement; most schemes draw some interest in these areas, although several appear more appealing than others. The overall image indicates that the urban populace currently has easier access to scholarship information, while the public in other regions is gradually becoming more interested, likely due to increased connectivity and outreach.

Figure 2. Regional distribution of Google Trends search interest for five scholarship programs in Pakistan



(average RSV, 2020–2025). Source: Google Trends <https://trends.google.com> ; Region = Pakistan; Terms = Fulbright, DAAD, Erasmus Mundus, Türkiye Bursları, CSC.

4. Discussion

The results of the current study suggest a strong upward trajectory in online search interest for international scholarship programs among Pakistani students from 2020 to 2025. Since this pattern

may also reveal an increasing awareness of global educational possibilities, a more profound change in Pakistan's youth aspirations is likely (Ali, 2023). This data indicates that other countries' higher education opportunities are increasingly considered transnational and that students situate their activities within global learning, research, and work networks (Rienties et al., 2013).

4.1 From Brain Drain to Global Engagement

Constitutionally, the term "brain drain" has long described the exodus of high-performing individuals to other countries (Agbana, 2024). Lots of skilled human capital is lost to richer countries. Regardless, this analysis indicates a more accurate hypothesis. The growing, increasingly diverse evolution of scholarship-related searches indicates that current outbound mobility is focused on fostering learning and cooperation, acquiring information, and enhancing job mobility rather than simply abandoning these goals (Collins, 2019). Many scholarship programs, including Fulbright and DAAD, require their recipients to resign and assist in the functioning of all educational institutions for men. Thus, one may have faith that such paths also lead to information sharing rather than just one-way absorption.

4.2 Diversification of Scholarship Preferences

The trend toward greater attraction of Türkiye Bursları and Erasmus Mundus may be considered an essential shift in destination choice. Before that, most students focused on North American options; the post-2020 generation prefers exploring non-traditional yet affordable paths, especially to Europe and Asia. These developments are associated with the global shift towards the democratization and studentification of higher education and can bring the emerging economies into the limelight as an academic hub as Pakistan builds the geopolitical and cultural connections with the region-specific scholarships (Kheir, 2020).

4.3 Regional Disparities and Digital Inclusion

The regional differences in search behavior and the dominant position of Punjabis support the hypothesis that educational opportunities continue to be provided in metropolitan centers. It does not take much more than that. Pakistan and Punjab have traditionally had more English-speaking institutions and more extensive internet connectivity, whereas Khyber Pakhtunkhwa, Sindh, and Balochistan have been less pleasant experiences (Abbas et al., 2025). As more children gain internet access as they grow, the internet infrastructure is likely to bring more applicants to the table, thereby being a positive sign for international education and equality in participation.

4.4 Implications for Policy and Higher Education

Increasing domestic interest in foreign scholarships also underscores the need for greater focus on governmental and institutional intervention. For example, the Higher Education Commission could leverage digital responsiveness to schedule scholarships more effectively, reduce overlapping application support systems, and implement more comprehensive integration schemes for returnee scholars. Universities could add scholarship information, language training, and proposal-writing workshops to student resources (Coley et al., 2021). Finally, the Bullet Programs and Crossing Studies can change outbound mobility from a long-term problem to reciprocal movement.

4.5 Broader Educational Significance

The rising interest in scholarship searches perhaps symbolizes more than anything else: the generations that seek connection with the world through education, rather than expansion within the nation (Nussbaum, 2017). It is a hopeful indicator reflecting the generation's adaptability and tolerance of integrated global education systems (Ul Hassan et al., 2025). The arc transitions from narrow isolation to intense and extensive integration, which, while not perfect, indicates progress toward significant advances in the state's comprehensive strategy to establish a stable educational foundation (Popescu, 2025). This external openness, under the right policies, infrastructural development, and collaboration among institutions, speaks to human capacity and scientific collaboration development.

5. Conclusion

To sum up, the Google Trends time series from 2020 to 2025 supports the claim that first-time Pakistani students' online interest in five-year scholarships is increasing: Fulbright, DAAD, Erasmus Mundus, Türkiye Bursları, and CSC online. The data points form a cluster along the equilibrium curve, indicating a seasonal peak at the optimal application time. Hence, the majority of searches shifted exactly to Punjab, Islamabad, and Sindh, while the volume of requests from other provinces increased. In this regard, the trend was once again evidence of the increasing access to digital international education outside physical boundaries.

To conclude, the results suggest that Pakistan's outward academic mobility is transitioning from brain drain to global academic involvement. The more common use of international scholarships is not migration to a better place but instead securing research experience, a better career, and continued collaboration. In such circumstances, scholarship providers and universities should improve

scholarship orientation, language support, and reintegration programs to ensure that study-induced benefits become a significant share of national human capital.

Limitations of the Study

Firstly, the limitations refer directly to the vocabulary, which, however, correctly reflects the actual search frequency nationwide. Despite this, Google Trends presents relative, rather than exact, numbers of users or applicants, which is why it only indicates actual awareness and interest, not actual applications or enrollments. Secondly, digital access and competency vary between different parts of Pakistan. The significance of this issue is that rural areas and smaller provinces could be underrepresented. Moreover, the scope of the analysis could be extended; narrowing it to five principal programs neglects other emerging opportunities or academic disciplines. Nevertheless, despite the limitations mentioned, the current study suggests a solid approach to the principles underlying the country's interest in education. Its dimensions provide grounds for the more in-depth analysis, which may combine digital data with survey or institutional evidence.

Author Contributions

Conceptualization, S.U. and A.U.; Methodology, S.U.; Data curation and analysis, S.U.; Visualization, S.U.; Writing – original draft preparation, S.U.; Writing – review and editing, A.U. and M.Z.; Supervision, A.U.; Project administration, M.Z.

All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

Not applicable. The study did not involve humans or animals.

Informed Consent Statement

Not applicable. No human participants were involved in this study.

Data Availability Statement

The data used in this study were obtained from **Google Trends** (<https://trends.google.com>), publicly accessible at no cost. Processed data supporting the findings are available from the corresponding author upon reasonable request.

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