

## Migration and “Brain Drain” from Pakistan: A Barrier to Sustainable Development

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### Abstract

Population has been a pivotal element of national power. A well-developed population - human capital - acts as a catalyst to optimize all other resources deployed for sustainable socio-economic development. Pakistan with its over 240 million populations, ranks 5<sup>th</sup> largest in the world yet its economy is 42<sup>nd</sup> among the comity of nations (World Bank, 2024). About 64% of the country’s population comprises young people (Dawn, 2024), which is a precious resource in the contemporary world, however, the human resource development in the country is far from satisfactory (UNDP, 2024). With low socio-economic indicators, political instability, and lack of job opportunities, Pakistani youth desires to leave the country at any cost, even at the peril of their lives. The most alarming trend is that the youth is disillusioned and losing hope in the state apparatus to improve the situation. Traditionally, Pakistan has been exporting unskilled and semi-skilled workforce; however, recent trends indicate that highly skilled individuals like engineers, doctors, and professionals are leaving the country in large numbers. Various ‘push’ and ‘pull’ factors (Lee, E. S. 1966) are responsible for migration and brain drain from Pakistan. There is an array of multifaceted reasons for people to leave Pakistan in large numbers. ‘Push’ factors include poor governance, deteriorating law & order, lack of social justice, and an unhealthy environment for entrepreneurship. ‘Pull’ factors include greener pastures, equitable return for hard work, and security. This qualitative study adopts interpretivist approach with case study research design to explore the causes and consequences of emigration/brain drain and its impact on achieving Pakistan’s Sustainable Development Goals - 2030. Primary data has been collected through focus group discussions and semi structured interviews and secondary data has been obtained from review of print and electronic media reports from year 2001 to 2025. Findings were reached through multilayered qualitative data analysis i.e. thematic and discourse analysis. The study suggests that political stability, consistent policies, an enabling environment for entrepreneurship, and rule of law can help foster confidence among the youth and reverse the trend of brain drain.

**Key words:** Brain Drain, Human Resource, Sustainable Development Goals

### Introduction

Population is a key driver of national power, serving as a foundation for economic growth and development. Pakistan, with an annual population growth rate of 2.55% (Pakistan Bureau of Statistics, 2023), faces both challenges and opportunities due to its young and expanding population. Approximately 64% of Pakistan’s population comprises youth (Dawn, 2024), a

demographic asset that, if harnessed effectively, could serve as a catalyst for sustainable development. The potential of this young population is immense, yet it is hindered by numerous socio-economic challenges, particularly in healthcare, education, and resource management. Despite being the 5<sup>th</sup> most populous country in the world with over 240 million people, Pakistan's economy lags significantly, ranking 42<sup>nd</sup> globally (World Bank, 2024). This stark contrast between population size and economic performance highlights the inefficiencies in utilizing human capital for national growth. The country also faces significant educational and developmental challenges. With over 26 million out-of-school children (Pakistan Institute of Education, 2021–22), and approximately two-third of the youth lacking access to quality education and employable skills (Geo News, 2024), Pakistan is ill-equipped with the human resource essentials for coping the challenges of the 21<sup>st</sup> century. Coupled with the fact that 24.3% of Pakistan's population lives below the poverty line (World Bank, 2025), it becomes evident that the country is struggling to achieve socio-economic development. To address these challenges, Pakistan needs to improve productivity across various sectors. The country's agricultural sector suffers from low productivity, inefficient industrial practices, and limited access to technological advancements. The inadequate provision of quality education and healthcare systems further exacerbates these issues, resulting in lack of skilled human resources. Improving productivity requires substantial investments in social infrastructure, human capital, research and development, as well as institutional reforms to create an enabling environment for growth. However, the most alarming issue Pakistan faces is the growing trend of youth emigration, particularly among skilled professionals. The lack of job opportunities, political instability, and socio-economic hardships are pushing the youth to seek better prospects abroad. This outflow of talent, known as brain drain, threatens Pakistan's ability to achieve its Sustainable Development Goals (SDGs) by 2030. Brain drain is increasingly becoming a critical concern, as it hampers progress in key areas like Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), and Quality Education (SDG 4). This paper, therefore, aims to explore the causes and consequences of emigration/brain drain from Pakistan, focusing on its impact on achieving SDGs and providing policy recommendations for reversing the trend.

## **Literature Review**

### **Human Capital and Sustainable Development**

Human capital is central to the socio-economic development of any nation. Human capital theory, as developed by Gary S. Becker in the early 1960s, suggests that investments in education, training, and health enhance an individual's productivity, which in turn drives economic growth. In Pakistan, however, the development of human capital has been far from satisfactory. The country struggles with a large portion of its population lacking access to quality education, vocational training, and healthcare services (UNDP, 2024). This deficiency in human capital undermines the nation's ability to achieve its developmental goals, resulting in stagnant economic growth and widespread poverty.

### **Population Growth and Socio-Economic Challenges**

Pakistan's young population presents both opportunities and challenges. With an annual growth rate of 2.55%, the country is one of the fastest-growing populations globally. However, the lack of adequate resources, poor governance, and socio-economic inequalities hinder the effective utilization of this human resource. Despite having one of the largest populations in the world, Pakistan's economy represents only 0.23% of global economic output (World Bank, 2024), a clear indication of the gap between population size and economic development.

### **Brain Drain and Migration Theories**

The phenomenon of brain drain in Pakistan has been a long-standing issue. The emigration of skilled professionals, particularly in fields like medicine, engineering, and information

technology, is driven by various ‘push’ and ‘pull’ factors. According to Lee’s (1966) push-pull migration theory, ‘push’ factors such as poor governance, political instability, and limited career opportunities compel individuals to leave their home country, while ‘pull’ factors such as better job opportunities, higher salaries, and improved living conditions attract them to developed nations. The push factors in Pakistan include deteriorating law and order, lack of social justice, and an unhealthy environment for entrepreneurship. These factors create an environment in which young professionals are left with little hope for future prospects, pushing them to seek better opportunities abroad. Pull factors include greener pastures, where there is equitable compensation for hard work, job security, and access to better healthcare and education.

### **Human Capital Theory and Migration**

As previously mentioned, the Human Capital Theory emphasizes the role of skilled labor in driving economic development. In Pakistan, however, the migration of highly skilled individuals—such as doctors, engineers, and IT professionals—has become a major concern, especially as the country continues to face socio-economic challenges. Skilled professionals often migrate in search of better career prospects, further exacerbating the shortage of human capital in vital sectors such as healthcare, education, and technology (Becker, 1962). The increasing trend of youth emigration has negative impact on achievement of various SDGs, such as SDG 3 (Good Health & Well-being) and SDG 4 (Quality Education). The departure of doctors, nurses, and teachers has leads to a critical shortage of skilled professionals in Pakistan’s healthcare and education sectors. Besides, successful emigration of large number of professionals sets in a sense of relative deprivation among those serving in Pakistan. They feel that despite providing services under arduous conditions, they are paid much less what they deserve. Also, they pay taxes but don’t get the services the government should do. As a result, achieving these SDGs becomes significantly challenging. In Pakistan, the challenges posed by brain drain significantly hinder the country’s capacity to achieve the Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger), SDG 3 (Good Health & Well-being), and SDG 4 (Quality Education). SDG 2 focuses on ending hunger by promoting sustainable agriculture and improving resource management. While Pakistan has made some progress in reducing undernourishment (from 20.2% in 2015 to 16% in 2019), the country still faces considerable hurdles in achieving food security. The emigration of skilled agricultural professionals and the lack of infrastructure investments exacerbate the situation, making it challenging to reach SDG 2 (Pakistan SDGs Status Report, 2021). SDG 3, which aims to ensure good health and well-being for all, is also directly affected by brain drain. Pakistan’s healthcare system is under severe strain due to the migration of doctors, nurses, and paramedical staff. According to Muhammad et al. (2023), there is a critical shortage of healthcare professionals, which undermines the country’s efforts to improve healthcare access, particularly for vulnerable populations. Many young medical professionals emigrate in search of better opportunities abroad, contributing to the ongoing brain drain in the healthcare sector (Nadir et al., 2023). While Pakistan has made strides in increasing healthcare access and reducing child and maternal mortality rates, much work remains to be done in achieving SDG Similarly, SDG 4, which focuses on providing inclusive and equitable quality education, faces significant challenges due to the emigration of educators and the lack of adequate educational resources. UNESCO reports that while there has been some improvement in access to education, with 240.5 million people now having access to education as of 2023, Pakistan still struggles to meet the SDG targets. One of the major obstacles is the low investment in education, which in 2018 stood at only 4% of GDP, far below the recommended 7% (Pakistan Institute of Development Economics, 2018). This underinvestment, combined with the migration of skilled educators, significantly hampers efforts to improve the country’s educational outcomes and workforce preparedness.

### **Push-Pull Theory of Migration**

Ernst Georg Ravenstein's (1885, 1889) push-pull theory further explains the migration patterns that influence brain drain. According to this theory, people are pushed to migrate due to unfavorable conditions such as political instability, lack of economic opportunities, and poor living standards. At the same time, they are pulled towards countries with better economic prospects, social stability, and improved living conditions. The dynamics between these push and pull factors shape the migration trends, with individuals who possess higher skills and greater motivation often leaving their home country in search of better opportunities. In the context of Pakistan, these theories align with the reality that skilled professionals are leaving due to a combination of push factors (poor governance, economic instability) and pull factors (higher salaries, job security, and better living standards abroad). As a result, Pakistan's human capital is rapidly depleting, further hindering its ability to meet the SDGs.

### **Emigration as Economic Benefit and Brain Gain**

While the focus is often on the negative aspects of brain drain, some argue that emigration can also be viewed as an economic benefit, particularly through remittances. According to the State Bank of Pakistan, overseas workers remitted a record \$38.3 billion in the fiscal year 2024-25 (Alam, 2025). These remittances are seen as a lifeline for many families and contribute significantly to the national economy. However, framing emigration solely as an economic benefit overlooks the long-term consequences of losing highly skilled professionals. Furthermore, the concept of "brain gain" has been discussed in certain circles, with some arguing that emigrants will return with enhanced skills and financial capital, which could contribute to the development of their home country. However, this optimistic view fails to account for the persistent challenges in Pakistan, such as inadequate infrastructure and political instability, which undermine the effectiveness of brain gain strategies.

### **Methodology**

This study adopts a qualitative research design, using an interpretivist approach to explore the causes and consequences of brain drain in Pakistan and its impact on the country's ability to achieve the Sustainable Development Goals (SDGs) by 2030. To understand this complex phenomenon, a case study research design is used, focusing on Pakistan as the subject of investigation. The study combines primary and secondary data collection methods to offer a comprehensive understanding of the socio-political and economic factors driving skilled emigration. The primary data is gathered through focus group discussions (FGDs) and semi-structured interviews with youth, professionals, and experts, while secondary data is collected from media reports and official government records. Focus group discussions aim to capture the perceptions of youth and professionals about the socio-economic challenges they face and their reasons for migration, while semi-structured interviews provide a more in-depth understanding of the experiences of skilled professionals, particularly doctors, engineers, and educators, who have either emigrated or are considering emigration. Additionally, secondary data from media reports, official migration records from the Bureau of Emigration and Overseas Employment (BE&OE), and SDG-related data from the Ministry of Planning & Special Initiatives are analyzed to provide context and support the primary data findings.

Data analysis is conducted using thematic analysis and discourse analysis to identify patterns and themes within the qualitative data. Thematic analysis helps in identifying recurring topics, concerns, and ideas within focus group discussions and interviews, including the push and pull factors behind migration, the impact of brain drain on key sectors like healthcare and education, and the role of government policies in shaping migration trends. Discourse analysis, on the other hand, is used to explore how language, power dynamics, and social meaning influence public perceptions and the framing of migration as either a "brain drain" or "brain gain." This approach enables the study to examine how societal narratives about migration affect attitudes

towards national development, particularly regarding SDGs like Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), and Quality Education (SDG 4).

Ethical considerations were carefully addressed throughout the research. All participants in the focus group discussions and interviews were informed about the study's objectives, and their participation was voluntary. Informed consent was obtained from all participants, ensuring that their responses would remain confidential and anonymous. Although the research offers valuable insights, it does have some limitations. First, data on non-traditional migration channels, such as undocumented emigration, is scarce, as the BE&OE only tracks legal migration. Additionally, the sample of participants, primarily from urban areas, may not fully represent the broader population, especially rural youth or non-professionals. Despite these limitations, the study aims to provide a rich understanding of the complex factors driving brain drain in Pakistan and its implications for the country's sustainable development.

### **Findings and Analysis**

The analysis of the factors driving brain drain in Pakistan and its implications for the country's ability to achieve the Sustainable Development Goals (SDGs) reveals several critical insights. The findings of this study highlight the complexity of the migration phenomenon, emphasizing the interplay of socio-political, economic, and systemic factors that influence the decision of youth to emigrate. The study's results provide a deeper understanding of how brain drain negatively affects Pakistan's progress towards meeting the SDGs, particularly in the sectors of healthcare, education, and agriculture, which are essential for sustainable development. Below are the key findings that emerged from the data collected through focus group discussions, semi-structured interviews, and secondary data sources:

**Migration and Brain Drain is a Highly Complex Phenomenon:** The emigration of skilled youth, especially Pakistan's brightest minds, represents a multifaceted issue that has profound implications for the nation's development. While migration is a natural part of the globalized world, Pakistan's case is uniquely troubling. The outflow of highly skilled individuals—particularly doctors, engineers, IT professionals, and academics—directly undermines the country's human capital, which is a key factor for achieving Sustainable Development Goals-2030. Brain drain, in this context, reduces the available workforce in critical sectors such as healthcare, education, and technology, all of which are essential for addressing the SDGs. The departure of young, talented professionals hinders Pakistan's capacity to innovate, improve productivity, and foster sustainable development, making it even harder to achieve goals like SDG 2 (Zero Hunger), SDG 3 (Good Health & Well-being), and SDG 4 (Quality Education). This brain drain, driven by both push and pull factors, has long-term consequences that reverberate across economic, social, and political domains.

**Brain Drain vs. Brain Gain or Brain Circulation:** The framing of emigration of skilled human resource as "brain gain" or "brain circulation" often disguises the more pressing issue of brain drain and serves to divert attention away from the country's structural weaknesses. While some proponents argue that emigrants may return with enhanced skills and capital, this concept of "brain gain" is overly optimistic and does not reflect the immediate and long-term consequences of a country's failure to retain its brightest minds. In Pakistan's case, the idea of brain gain is often used to justify the lack of local opportunities and to obscure the systemic failures that prevent the youth from thriving within the country. The government's framing of this issue in terms of "brain circulation" often downplays the fact that a significant portion of skilled professionals do not return, leaving a knowledge and skill vacuum. By emphasizing these euphemisms, the focus is shifted away from the root cause: the inability of Pakistan's political, economic, and social systems to create an enabling environment where young talent can contribute to national development and prosperity. This framing perpetuates the status quo, limiting efforts to address the real issues that cause the outflow of human capital.

**Push Factors Are Primarily Responsible for the Emigration of Youth:** While pull factors—such as better economic opportunities abroad—are often highlighted, it is the push factors that play a more decisive role in Pakistan’s brain drain. These push factors include poor governance, political instability, lack of social justice, and an unsupportive environment for entrepreneurship. Young professionals are not only drawn abroad by the promise of higher wages and better living standards but are pushed out by a lack of opportunities and disenchantment with their home country’s state apparatus. In many cases, Pakistani youth, particularly those in urban areas, feel that their skills and education will be underutilized if they stay in the country. Young graduates often complain that they are unable to practice whatever they learnt during their studies. There is a widespread loss of hope among the youth, who believe that their future prospects are dimmed by rampant corruption, low wages, and limited job opportunities. This sense of disillusionment and relative deprivation is toxic to their well-being, as it forces them to seek alternatives outside the country, often at great personal and professional cost. These feelings of frustration and hopelessness undermine the overall morale and aspirations of Pakistan’s younger generation, deepening the country’s economic and social challenges.

**The Emigration Trend Can Be Reversed by Creating an Enabling Environment for Innovation and Entrepreneurship:** While the current trend of emigration is concerning, it is not irreversible. The study reveals that a significant portion of youth would prefer to stay and contribute to Pakistan’s development if the conditions were conducive to their growth. The key to reversing the brain drain lies in creating a supportive environment that promotes innovation, entrepreneurship, and merit-based opportunities. By fostering a system where talent can flourish, Pakistan can encourage its youth to remain within the country and help drive sustainable growth. This can be achieved through institutional reforms, enhanced support for entrepreneurship, and a commitment to political stability and rule of law. Additionally, offering competitive salaries, career development opportunities, and improving the quality of life in Pakistan would make staying more attractive. Creating a meritocratic environment, where young people feel their hard work and ideas will be rewarded fairly, is crucial in dispelling the sense of relative deprivation that leads many to leave. Providing access to resources, mentorship, and networking opportunities will also encourage youth to pursue careers within Pakistan rather than seeking opportunities abroad. If Pakistan can tap into its human capital and build a conducive environment for innovation, it can counter the brain drain and foster a more sustainable development trajectory.

### **Recommendations**

1. To reverse brain drain and retain Pakistan’s brightest minds, the country must focus on creating a stable political environment supported by consistent policies that promote economic growth and job creation. Political instability has long been a major push factor for emigration, and addressing this issue will significantly increase the confidence of youth in their future prospects. A more stable political climate will encourage young professionals to stay and contribute to national development, rather than seek opportunities abroad.
2. An essential aspect of retaining young talent is fostering a supportive entrepreneurial ecosystem. This can be achieved by improving access to financial resources, reducing bureaucratic barriers, and providing incentives for innovation and startup ventures. By encouraging youth to establish businesses and create job opportunities, Pakistan can stimulate economic growth and foster a culture of entrepreneurship that offers professionals the possibility of success within the country.
3. Additionally, a comprehensive policy approach must be developed to tackle the root causes of brain drain. This includes improving education, focusing on talent retention, and significantly investing in research and development. Strengthening local institutions and

offering attractive incentives for skilled professionals will help ensure that young talent sees Pakistan as a viable place to build their careers, rather than leaving for better opportunities abroad.

4. Another critical area is engaging with the diaspora community and encouraging remittances as a way to support Pakistan's development. The government should facilitate the connection between expatriates and their home country by creating opportunities for them to invest in vital sectors such as education, healthcare, and infrastructure. Remittances can play a pivotal role in fueling local development projects and providing essential services, thus indirectly supporting the economy.
5. In addition to addressing the structural and economic factors that drive brain drain, it is essential to consider the psychological impacts on those who remain behind. Many young professionals who stay in Pakistan face increased pressure and workload as they attempt to fill the gaps left by emigrants. Providing adequate psychological support and social safety nets can help alleviate the feelings of deprivation and hopelessness, which often motivate professionals to emigrate. By offering emotional and social support, the government can help retain skilled workers in the country.
6. Investing in quality education and vocational training is crucial for preparing youth to succeed in a competitive global economy. A stronger and more accessible education system will not only allow youth to compete internationally, but it will also encourage them to contribute to their country's development. By equipping the workforce with the skills necessary for a rapidly changing global landscape, Pakistan can reduce the brain drain by providing a more promising future for its youth.
7. Pakistan must also address the environmental and social factors that push youth to emigrate. This includes improving living conditions, ensuring access to basic services such as healthcare and clean water, and addressing socio-economic inequalities that foster a sense of disillusionment among young people. By making the country a more attractive place to live and work, Pakistan can reduce the factors that drive professionals to seek better opportunities abroad.
8. Finally, governance reforms and the enforcement of the rule of law are essential for creating an environment of trust, security, and opportunity. Transparent governance and functional institutions will make young professionals feel valued and protected by the state, incentivizing them to stay in Pakistan and invest their skills in the country's development. Strengthening institutions and promoting accountability will contribute to a more stable and secure environment, which is essential for retaining talent and ensuring national prosperity.

## **Conclusion**

The study suggests that political stability, consistent policies, and an enabling environment for entrepreneurship, coupled with the rule of law, are key to reversing the trend of brain drain in Pakistan. The findings highlight the significant impact of both legal and illegal immigration on the country's development challenges. However, the migration patterns also present opportunities for economic growth, particularly through remittances sent by expatriates. To mitigate the negative effects of brain drain while leveraging its potential benefits, Pakistan needs to adopt a holistic approach. This approach should focus on improving local conditions, engaging with diaspora communities, addressing environmental and psychological factors, and enhancing educational and entrepreneurial opportunities. By addressing these interconnected issues in a coordinated manner, Pakistan can work towards achieving its Sustainable Development Goals while navigating the complexities of global migration trends. This comprehensive study underscores the need for systemic reforms to create a favorable environment for skilled professionals to remain in Pakistan, contributing to national prosperity and long-term development.

## References

- Alam, R. (2025, July 9). *Overseas Pakistanis remit record \$38.3bln in FY2024-25: It marks significant 27 percent increase compared to the previous year*. SAMAA TV. <https://www.samaa.tv>
- Anis, M. (2024, July 25). *Senate panel told 50,000 Pak Zaireen disappeared in Iraq*. The News International.
- Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5), 9-49.
- Beginnings of Humankind to the present. 3<sup>rd</sup> ed. NY: W.W. Norton & Company.
- Nadir, F., H. Sardar, and H. Ahmad. 2023. "Perceptions of Medical Students Regarding Brain Drain." (2024). Pakistan currently has the largest percentage of young people in its history. Retrieved from <https://www.dawn.com/news/1750480>
- Deutsche Welle Urdu. (2025, June 10). How can Pakistan stop brain drain?" (Video). DW Urdu. [Deutsche Welle](https://www.dw.com/urdu/brain-drain-pakistan)
- Dodani, S., & LaPorte, R. E. (2005). Brain drain from developing countries: how can brain drain be converted into wisdom gain? *Journal of the Royal Society of Medicine*, 98(11), 487– 491. <https://doi.org/10.1258/jrsm.98.11.487>
- Muhammad, Q., Eiman, H., & Fazal, F. (2023). Healthcare in Pakistan: Navigating Challenges and Building a Brighter Future. *Cureus*, 15(6), e40218. <https://doi.org/10.7759/cureus.40218>
- Muhammad, et al. (2023). Healthcare in Pakistan: Navigating challenges and building a brighter future. *Cureus*, 15(1), e40218. doi: 10.7759/cureus.40218
- Nayab, D. (2022, December 10). *Desire to Live in Pakistan: Stay or Leave?* BASICS Notes No. 4. Pakistan Institute of Development Economics. Retrieved from Pakistan Institute of Development Economics website [PIDE](https://www.pide.org)
- Pakistan Bureau of Statistics. (2023). *7th Population & Housing Census of Pakistan 2023*. Retrieved from Pakistan Bureau of Statistics website: *Announcement of Results of 7th Population and Housing Census - 'The Digital Census'*
- Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572
- Tignor, R. L. et al. (2011). Worlds Together, Worlds Apart: A History of the World from the Drain and Its Effects on Pakistan's Socio-Medical Conditions: A Cross-Sectional Study." *Pakistan Journal of Medical Sciences* 39 (2): 401–3. <https://doi.org/10.12669/pjms.39.2.7139>.
- United Nations Development Programme (UNDP). (2024). *Human Development Report 2023/24: Breaking the gridlock—Reimagining cooperation in a polarized world*. Retrieved from <https://hdr.undp.org/content/human-development-report-2023-24>
- World Bank. (2024). *Pakistan: Population and economy data*. Retrieved from <https://data.worldbank.org/country/pakistan>
- World Health Organization, 2024. <https://www.emro.who.int/pak/programmes/health-workforce.html>