

BRAIN DRAIN TO STATE CAPACITY CRISIS: RETHINKING SKILLED MIGRATION AND POLITICAL ECONOMY IN PAKISTAN (2008–2025)

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Abstract

This study explored the impacts of the sustained brain-drain from Pakistan since 2008 on the country's political and economic dynamics till 2025. It does more than just focus on skilled emigration as a labour market problem, and looks at it as a political economy problem, with the loss of human capital directly affecting governance, institutions and long term development. The study relied on secondary data related to emigration trends and remittance flows from 2008 to 2025, as well as on qualitative analysis of push-pull structures over the same time period, using a mixed-method approach. This study reveals a push-pull effect: high unemployment and low wages, inflation, weak governance and poor career prospects in Pakistan, are driving educated professionals to migrate out of the country, while, higher pay, institutional stability and improved living conditions in the United States, United Kingdom, Canada and the Gulf States are certainly enticing them to go for a better career in other countries. This is a two-way flow of talent, and they are ongoing. This research suggests that much more than skilled workforce is being lost through brain drain and that the loss of the state's ability to govern effectively. There are measurable losses in the healthcare, education, research and public administration sectors due to the loss of qualified personnel. The resulting gaps in policies hinder policy quality, delay institutional reform, and limit productivity. Poor governance leads to emigration and emigration leads to poor governance. The paper calls for a paradigm shift towards 'talent retention,' institutional reform and 'planned brain circulation' instead of the policy emphasis on overseas employment as a development success. It contributes in the field of political economy by directly connecting skilled migration to states' capacity outcomes in a specific span of time.

1. INTRODUCTION

The Pakistani State has been dispatching labourers to foreign countries since 1970s. As of 2023, the total stock of overseas Pakistani workers was more than nine million and remittances to Pakistan amounted to USD 27 to 31 billion annually (Shah, Shahzad, Quddus, & Qazi, 2024). This is considered a development success in the state. The nationals, who are abroad in Pakistan, are termed as

national heroes. The foreign exchange achieved through remittances is considered as foreign exchange achievement. The recent migration trends indicated a recovery in the overseas labour migration since the pandemic; more numbers of skilled labour force migrated out of the country with limited structural changes in the domestic labour market (Ashraf, 2022a).

A framing that is lacking. It's not like when a doctor leaves for the UK. Not like when a doctor leaves for the UK. The working construction man remits some cash at home. The doctor loses his years of training funded by the Pakistani public institutions, his clinical skills developed in Pakistani hospitals and the skills that cannot be replaced by the Pakistani health system. The departure of a software engineer from Pakistan would take out of the country the very same skills required for high productivity growth from the knowledge sector. A civil servant who can be reformed is absorbed by an international organization and eradicates institutional capacity building for governance reform. But recent evidence also indicates that skilled migration to destination countries, like the United Kingdom and the United States, has also continued to swell, and that women account for a comparatively small share of migration, but are far more likely to be skilled than men (Ashraf, 2022b, 2022c).

This is the difference between low-skilled labour emigration, which prevails in the country (Pakistan) and high-skilled professional emigration which has picked up since 2008. The difference between low skilled labour emigration which dominates Pakistan's flows and high skilled professional emigration, which has picked up since 2008 is the focus of this paper. The paper does not deny that there is any migration that is not good. It maintains that unchecked and uninterrupted loss of professionals from the state-sensitive industries (healthcare, education, research and public administration) decreases the capacity of the state to govern. This is a long-term issue. It is a structural political economy issue which magnifies with time as the people who can lead an institutional change are systematically missing, which is indicative of general constraints of the migration and diaspora governance model in Pakistan (Ashraf, 2022a). The paper's time frame is 2008-2025, which is three democratic cycles in Pakistan.

1.1 Research Questions

1. What structural push and pull factors drove skilled emigration from Pakistan between 2008 and 2025?
2. Which state-critical sectors show measurable capacity losses and does the relationship

between skilled emigration and governance quality operate as a vicious cycle?

3. What policy framework can convert unplanned brain drain into planned brain circulation?

2. THEORETICAL FRAMEWORK

2.1 Brain Drain: Classical Arguments and Their Limits

Brain drain became a subject of academic discussion in the 1960s, when it was used to refer to British scientists relocating to the USA (Robertson, 2006; Breinbauer, 2007). It was provided with a formal and theoretical foundation by Bhagwati (1976). He demonstrated that countries of origin of such emigrating professionals experience a net loss of human capital which cannot be offset by "indirect" channels. This was early supported by Van der Kroef (1970) who found that the increase in the United States of America of skilled workers in the fields of engineering, medicine and science from the developing world increased more than fourfold between 1956 and 1967. The focus was on countries of the South Asia region prominently. Portes (1976) reported the costs for Latin America, and set a cost of \$60 million embodied human capital transferred to the USA during 5 years, only for professional emigration.

This picture was complicated later by the scholarship. Thanks to positive effects via diaspora networks, technology transfer and brain gain (higher emigration opportunities leading to more education at the origin), high-skill emigration can produce positive effects, as shown by Docquier and Rapoport (2012). Kone and Ozden (2017) found that the number of high-skilled migrants has increased by some 75 per cent from 2000 to 2013 and that more than two-thirds of tertiary-educated migrants went to four English-speaking OECD countries: the USA, UK, Canada and Australia. These revisions are of importance in theory. They are not solutions to the political economy problem that this paper discusses. For brain gain, return migration must take place and that needs conditions in the origin country that would make return desirable. Institutional Infrastructure is needed for brain circulation. In the absence of strong

governance and push factors, these are possibilities not realities for countries (Kone & Ozden, 2017).

The brain drain situation is not without complications even for the most policy-sensitive category, the health workers, as argued by Skeldon (2009) who explained that different factors would have an impact on the situation, such as origin, training appropriateness and return patterns. For a discussion of how to distinguish 'panic' from 'stimulation' responses to brain drain, see Davenport (2004). In the last nine years, Pakistan's policy-making has been in panic mode since 2008. There is evidence to stimulate.

2.2 Brain Drain as a State Capacity Problem

The more significant theoretical shift for this paper is to see brain drain not as a labour market issue, but rather as a state capacity issue. Duncan (2009) reported that highly skilled migrants are the most mobile group of international migrants. They will be taken away from sending countries by their selective exit from the sending countries (in accordance with the receiving countries' policies to ensure that the best-skilled immigrants are the ones who remain in the country).

Seguin, State, Singer, and Daar (2006) demonstrated that scientific diasporas in the Global North can be partners in development, although this possibility is rarely realized if scientists do not have intermediaries in the institutions involved. In the context of contemporary skilled mobility, the concept of brain circulation was put forward by Tung (2008), as a more appropriate one instead of brain drain because it is multi-directional in nature, benefitting both origin and destination countries. Gaillard, Gaillard and Krishna (2015) followed the trail of knowledge benefits resulting from return migration and diaspora circulation to origin countries, but noted that this requires a set of governance conditions that most of the developing countries have not maintained.

Ince (2020) pointed out that brain circulation programmes introduced and well-designed can help in narrowing down the development gap between countries if they are well-designed and implemented. Chand (2019) in her study of African diaspora in the United States, identified three types of human, social and financial capital contributions

diaspora professionals can make to origin countries, provided there are institutional conditions that make it possible for them to do so. In his journal article Straubhaar (2000) described the international mobility of highly skilled as "brain gain", "brain drain", or "brain exchange" based on the policy environment of the country of origin. The brain drain phenomenon has always been the result of Pakistan's environment.

2.3 The Push-Pull Framework and Its Political Economy Dimension

Typically, migration is explained by the push-pull model (Murru 2009). Push Factors are conditions that induce people to move away. They are also attracted by pull factors in the destination countries. Chaichian (2011) examined the Iranian emigration to the USA and demonstrated that both internal socioeconomic and external demand for skilled labour factors are interconnected in providing an ongoing flow of professionals. The Iranian situation – which is based on political turmoil and a high demand from the U.S. for technical workers – is similar to the situation in Pakistan.

This paper's approach is unique in focusing on the political economy of push factors. The lack of jobs and low pay, rising prices, and poor governance are not accidents. They embody the structural characteristics of Pakistan's political economy, comprising the ways in which resources are allocated, institutional incentives are created, and government decisions are made, which have endured over the course of the government's existence. Brain drain out of Pakistan can't be attributed to individual decisions to look for better conditions. It is a result of a political economy that, consistently, does not afford the skills-based professional an opportunity to advance their careers at home.

During the COVID-19 period, Salik (2020) made this point clear for Pakistan: The pandemic added to the macroeconomic risks facing Pakistan, as it relies on remittances; the exchange rate and fiscal pressures that ensued further exacerbated the factors driving skilled emigration. Empirically, Muhammad (2021) has found that the COVID-19 had a significant impact upon the migration-remittances-growth nexus in Pakistan and the

adverse GDP impact made the situation worse for migrants. Although Pakistan has not yet allowed its skilled migrants to return through the route of reverse brain drain via remote work, which Bakalova et al. (2021) have called the pandemic period as the possible enabler, this has not been the case to date.

3. DATA AND METHOD

3.1 Research Design

This paper is based on mixed method of research. Quantitative data provides a scale, composition and trajectory of skilled emigration, and make comparisons of skilled emigration capacity indicators within a sector over the 2008-2025 period. Qualitative analysis provides interpretation of the structural push-pull factors, governance implications and policy implications. Mixed-method approach is suitable as the research questions involve documenting the trends, and interpreting the trends politically. The quantitative section is based on the secondary data from three sources available in the uploaded documents: Bilateral Remittance data from State Bank of Pakistan reported in the sources (2020) and (2024); Pakistan Bureau of Emigration and Overseas Employment (BEOE) annual emigration data reported in the sources (2020) and (2024); Pakistan Bureau of Emigration and Overseas Employment (BEOE) Occupational Skill classification data (2014). The qualitative part is ground in the literature that has been reviewed in Section 2 for analyzing push-pull structures.

3.2 BEOE Skill Classification

The BEOE categorizes the emigrant workers in five skill levels. Highly qualified means doctors, dentists, engineers, teachers, accountants and managers. Skilled – nurses, foremen, supervisors, technicians, operators, computer analysts, pharmacists, designers, and draftsmen. The classification is completed by skilled, semi-skilled and unskilled. Brain drain analysis is done at the intersection of highly qualified and highly skilled. Another type of migration is associated with semi-skilled and unskilled workers, as they dominate Pakistan's total outflows.

3.3 Period Scope and Limitations

The scope is for 2008-2025, which covers three democratic cycles and allows for cross government comparison. It encompasses the COVID-19 shock (2020-2021) and the post-pandemic rebound (2022-2023) that resulted in the largest single year out-migration in the BEOE record of Pakistan: 832,339 in 2022 (Shah et al., 2024). Three limitations apply. First, causal interpretations of a relationship between emigration and governance outcomes are not readily possible, as the vicious cycle model rests on theoretical coherence and regular patterns of the data but falls short in regard to counterfactual analysis. Secondly, BEOE data does not reflect skilled professional emigration as many skilled professionals enter via visa channels not covered by the BEOE framework, resulting in a potential underestimation of the loss of state capacity (Shah et al., 2024). Thirdly, there is a lack of systematic collection of return migration data which renders estimates of net migration impossible.

4. THE PUSH-PULL STRUCTURE OF PAKISTANI SKILLED EMIGRATION, 2008–2025

4.1 Push Factors: Why Skilled Professionals

Leave search

4.1.1 Graduate Unemployment and Labour Market Failure

The period from 2008 to 2025 has seen high unemployment among the graduates in Pakistan. There was significant growth in enrolments at universities and universities of applied sciences (UAS) – from around one million in 2008 to more than 2.5 million in 2023 – but this was not matched by growth in formal-sector jobs for graduates. What Pritchett (as cited in Duncan, 2009) referred to as a structural trap arises, where countries invest in mass education yet fail to generate productive employment that results in educated unemployed workers who emigrate. This is the trend in Pakistan. The residency positions to which medical graduates apply are long waiting. Engineers come into a field that undervalues formal training. There is a limited number of corporate jobs in urban areas, and management graduates compete with each other for these jobs. International pathways offer better avenues to get into jobs commensurate with their

credentials as compared to the domestic labour market in Pakistan for all categories.

Selective immigration policies of developed countries are a significant factor in this process, according to Duncan (2009). Immigration is explicitly made an attraction for skilled immigration from developing countries in the U.S., U.K., Canada and Australia. Such poaching, in Duncan's (2009) terms, impairs the development of the sending countries, while from the point of view of the receiving country, this is perfectly rational.

4.1.2 Wage Depression and Macroeconomic Instability

The purchasing power of real wages of skilled workers in Pakistan's public sector decreased during much of the period 2008-2025. The annual inflation rate in Pakistan has remained above 10 per cent for long periods of time, reaching 29.2 per cent in FY2022-23, and real GDP growth has been sluggish, with a negative 0.3 per cent in FY2022-23 (Shah et al., 2024). Mid-career professionals' purchasing power decreased significantly, as their salaries did not match the rate of inflation. International compensation in stable currencies not only provided higher wages but also a more stable income which Pakistan's macroeconomic environment failed to offer.

This has been documented by Salik (2020) during the period of COVID-19 when Pakistan's reliance on remittances was even more pronounced since there were no alternate offers in the domestic wage and employment market that were attractive. The study Muhammad (2021) supported that foreign remittances have long-term positive relationship with GDP growth of the receiving country, which demonstrates how foreign remittances influence the development of the receiving country.

4.1.3 Governance Weakness and Political Instability

Chaichian (2011) demonstrated for Iran that political turmoil and low governance are push factors of educated professionals even in the absence of economic factors. It's the same with Pakistan. The educational professionals have a lack of confidence to plan their career due to political crisis, institutional instability and lack of rule of law. This

risk of rupee depreciation, the UK's counterpart in the NHS does not have to deal with, as does a doctor establishing a private practice. The risk of rupee depreciation, the regulatory uncertainty and political uncertainty are not faced by an NHS employed counterpart in the UK.

For educated professionals, poor quality institutions, corruption and nepotism are all strong push factors in the countries of origin, according to Chand (2019), who was investigating the African diaspora in the USA. These are all aligned with Pakistan's performance in governance. BEOE data reveals that both during the three democratic cycles from 2008 onwards, emigration rates sped up under all governments, whether they were of the Left or the Right (Shah et al., 2020; Shah et al., 2024). The structural (as opposed to cyclical) push factors are reflected in this cross-government consistency.

4.1.4 Limited Research and Career Development Environment

Lack of research infrastructure is a stand-alone push factor for researchers and academics. The information era has created new opportunities for highly trained workers around the world, and improved access for highly trained workers in developing countries to job markets abroad (Teferra, 2005). The low investment in R&D in Pakistan, which is less than 0.3 percent of GDP throughout the study period, is not only faced by researchers as a salary disadvantage, but they also lack the necessary equipment, funds, networks, etc. to conduct credible research in their country.

However, Seguin et al. (2006) suggested that scientific diasporas could be important development partners but that these potential partners need to be engaged through institutional environments in the sending countries. These conditions are not created in Pakistan's research environment and hence the activities of the scientific diaspora play a significant role in the innovation systems of the receiving countries, but not significant enough to Pakistan's own.

4.2 Pull Factors: Why Western Destinations Attract Pakistani Professionals

The pull factors have increased over the 2008-2025 time period, as a result of deliberate policy decisions

by receiving countries. Kone and Ozden (2017) reported that more than two thirds of all tertiary-educated migrants around the world selected one of the four OECD countries - the USA, UK, Canada and Australia - that are all English-speaking. This focus is an expression of current talent competitions. Robertson (2006) has described this as a “race for the best brains” between the states with high incomes. The NHS in the UK are especially highly recruited from South Asian medical labour markets. Pakistan's nurse emigration data show the direct result: from 337 in 2019 to 1,768 in 2022 and 4,880 in 2023 (Shah et al., 2024).

For the U.S. context, Johnson and Regets (1998) demonstrated the wide scientific and engineering differences in stay rates among foreign doctoral recipients, depending on their country of origin and U.S. policy environment. H-1B visa system has been

a continuous attraction for Pakistani IT workers and engineers. Canadian Points-based Express Entry is an explicit selection process for language skills and credentials that Pakistani professionals possess. Some of this flow has turned around and started flowing towards rapidly developing economies such as India and China, but Pakistan hasn't created the domestic economic conditions for such return migration, Wadhwa (2009) remarked.

Even in the era of COVID-19, De Lange (2020) demonstrated how various countries sought to attract international students by implementing visa policy responses, indicating receiving countries' strategic attention for attracting international talents. This policy orientation led to better job prospects for Pakistanis after their academic training in the USA and UK even in the midst of the disruption caused by the COVID-19 pandemic.

Table 1 *Push-Pull Factor Matrix and Skilled Pakistani Emigration, 2008–2025*

Factor Domain	Push Factors (Pakistan)	Pull Factors (USA / UK / Canada)
Labour market	Graduate unemployment; credential-job mismatch; thin formal sector	H-1B sponsorship; NHS recruitment; Express Entry; structured professional pathways
Wages	Real wage decline; public-sector salaries inadequate vs. global benchmarks	Multiples higher in real terms; stable foreign currencies; wage growth
Governance	Institutional unpredictability; corruption; weak rule of law	Rule of law; contract enforceability; institutional stability (Chand, 2019)
Political stability	Three democratic transitions 2008–2025; multiple crises; policy discontinuity	Democratic continuity; policy predictability across governments
Research env.	R&D <0.3% of GDP; limited lab infrastructure; low research funding	World-class universities; competitive grants; global networks (Seguin et al., 2006)
Macroeconomy	Inflation >10% avg.; 29.2% peak FY2022–23; rupee depreciation	Stable currencies; low inflation; real wage growth (Muhammad, 2021)

Factor Domain	Push Factors (Pakistan)	Pull Factors (USA / UK / Canada)
Career development	Seniority-based advancement; limited specialisation pathways	Merit-based promotion; specialisation infrastructure (Teferra, 2005)

Source: Authors' compilation from Shah et al. (2024); Shah et al. (2020); Kone & Ozden (2017); Chand (2019); Seguin et al. (2006); Teferra (2005); Muhammad (2021).

4.3 Emigration Trends across Political Cycles, 2008–2025

Emigration data for each of the political periods of Pakistan is shown in Table 2. The figures reveal a clear trend that the amount of emigrants is significant under all governments. Each crisis results in "acceleration," recovery periods in "modest moderation. There are no significant variations in

the skill composition in all periods, and highly qualified and skilled workers account for 4-8 percent of total outflows (Shah et al., 2024). This stability demonstrates a structural, rather than cyclical, push and pull. No government during 2008 – 2025 implemented the kind of changes that would change the composition of outflows.

Table 2 *Pakistani Labour Emigration Across Political Periods, 2008–2025*

Political Period	Years	Approx. Annual Outflow	Key Driver
PPP Government	2008–2013	350,000–500,000	Gulf demand recovery; domestic energy crisis
PML-N First Term	2013–2018	480,000–946,571	Gulf boom; peak 946,571 in 2015 (Shah et al., 2020)
PTI Government	2018–2022	382,000–832,339	COVID collapse 2020–21; 2022 rebound to 832,339
PML-N/PDM Coalition	2022–2024	832,000–862,625	Record post-COVID emigration; economic crisis
Projected 2024–2025	2024–2025	Est. 850,000+	Sustained push factors; IMF austerity; instability

Source: BEOE dataset as synthesised in Shah et al. (2024) and Shah et al. (2020). The 14-year average (2010–2023) was approximately 569,260 per year.

5. SECTORAL STATE CAPACITY EFFECTS OF SKILLED EMIGRATION

5.1 Healthcare: The Nurse and Doctor Deficit

The brain drain effects are most clearly evident in the healthcare sector in Pakistan. Nurse emigration shows a clear structural break: 337 in 2019, 599 in 2021, 1,768 in 2022, and 4,880 in 2023 (Shah et al., 2024). This is termed 'a cause for concern' by Shah et al. (2024) during and after COVID-19, when the world faced a shortage of nurses. Not to mention that every nurse leaving the job means a loss of clinical mentorship capacity for new generation to train in Pakistan.

Raghuram (2009) set this in the context of postcolonialism. Nurses from Pakistan have been brought into the NHS for years, and a history of interconnections between the Global North and the Global South has created a health services labour market in which the UK is dependent on nurses from Pakistan. Raghuram (2009) asked how we should think ethically about health worker migration when it is a conflict of the right to mobility of health workers, with the right to health of those who are left behind. For Pakistan this tension is quite real. It is functional: facilities in the rural areas and public sector are most impacted by not being able to compete with international offers. In fact, the evidence isn't simple even for health workers, where the developmental case for brain drain is the strongest, as Skeldon (2009) demonstrated. Outcomes are influenced by: place of training, appropriateness of skills, return patterns. There is no systematic data available on the nurse's emigration to Pakistan with regard to return and the domestic nurse training chain to Pakistan. This lack of data itself is a failure of governance: A state can't evaluate the impact of nurse emigration on their health system if they don't have the data to make the assessment.

5.2 Education: The Teacher and Researcher Deficit

Pakistan has a structural issue in its higher education system and the issue of brain drain has aggravated the situation. The best academic produce in terms of those who complete PhD Degree from foreign Universities does not come back at any number to be filled in Pakistan Universities.

Gaillard, Gaillard and Krishna (2015) followed the path of the return of highly-educated migrants to generate knowledge benefits for the origin country, but also the consequences of the 'never-ending brain drain' if return conditions are not provided. Pakistan's scholarship programmes have seen a diaspora of internationally trained academics working in the universities of the UK, the US, Canada and Australia, instead of in Pakistan's universities.

The reason this failure is not individual is that it is a structural one. In his study of Latin American skilled migration, Pellegrino (2001) wondered if what seemed like brain drain is really brain exchange, the flow of knowledge, not just to the richer nations. This will only happen if institutions in the host country can take part in the exchange. The research institutes in Pakistan, for their part, are uncompetitive, underfunded and that offer non-competitive terms and cannot engage in the real exchange. They become less capable without getting equal knowledge inputs.

5.3 Research Productivity and the Critical Mass Problem

Ince (2020) demonstrated that brain circulation programmes are most effective when there is a critical mass of skilled professionals who are still in the origin country to create networks of skilled professionals. Once this critical mass drops below a certain level, research productivity goes out the window. The R&D share of Pakistan's GDP (which remained under 0.3 percent of GDP during the study period) is an indicator of this. The consequence is that Pakistan continues to rely on outside experts and the input of foreign consultants when it comes to policy analysis and programme design, thereby limiting the possibility of building local expertise.

Based on this, Seguin et al. (2006) suggest that scientific diasporas can be supported as partners in development cooperation if the institutions are put in place in the sending country. Tung (2008) demonstrated that brain circulation, the 'triangular human talent flow', brings benefits to both the origin and destination countries, and, therefore, requires political policies that engage the diaspora and institutional conditions that allow the return

and engagement to be rational. To engage with the Pakistani diaspora, Pakistan has tried to use means such as Roshan Digital Account. Results - engagement without governance quality does not lead to prolonged brain circulation - demonstrate that this is the case.

5.4 Public Administration: The Reform Capacity Deficit

The most indirect, but probably most important state capacity impact of brain drain is through public administration. These professionals are drawn out of the institutions in three ways: through international organizations; through bilateral donor programmes, with international level salaries; and

by simply emigrating. All three pathways bring individuals out of systems that they need the most. Chand (2019) demonstrated that African diaspora professionals in the USA have robust networks with their countries of origin and are able to make contributions towards institutional development, which needs to be embedded in formal structures and processes of engagement. These mechanisms are not the result of the efforts for the reform of civil service in Pakistan. The cumulative effect of the reform deficit is that with each passing generation of reformist cadre, the institutional knowledge and change capacity is lost from the governance system in Pakistan.

Table 3 Evidence of Sectoral State Capacity Effects Pakistan, 2008–2023

Sector	Indicator of Capacity Effect	Source
Healthcare	Nurse emigration: 337 (2019) → 4,880 (2023); 1,352% increase	Shah et al. (2024)
Healthcare	Doctor emigration: 0.4% of total outflows in 2022; lower than 2018 level	Shah et al. (2024)
Research	R&D expenditure <0.3% of GDP across 2008–2025 period	Referenced in Shah et al. (2024)
Remittances	Total inflows: USD 21.74bn (FY19) → USD 31.28bn (FY22) → USD 27.33bn (FY23)	Shah et al. (2024)
RDA investment	Diaspora investment: 58.2% of net inflows FY2020–21 → negative (-USD 488m) by FY2022–23	Shah et al. (2024)
Skilled emigration	Highly qualified + skilled: 4.1% (2019), 3.9% (2020), 4.8% (2021), 4.7% (2022), 8.0% (2023)	Shah et al. (2024)
Total outflow	Annual emigrants: 625,876 (2019) → 225,213 (2020) → 832,339 (2022) → 862,625 (2023)	Shah et al. (2024)

Sector	Indicator of Capacity Effect	Source
Migration desire	37% of Pakistanis wish to emigrate; 49% males; ~ 50% of more educated group	Shah et al. (2024); Durr-e-Nayab (2022)

Source: Shah, Shahzad, Quddus, & Qazi (2024). RDA = Roshan Digital Account. All BEOE figures are for registered emigrants only; BEOE undercount of skilled professionals through non-registration pathways means actual skilled outflow is higher.

6. THE VICIOUS CYCLE: MECHANISM AND EVIDENCE

6.1 How the Cycle Operates

This paper argues there are three connected mechanisms to this vicious cycle. One is that governance shortcomings and economic ills drive qualified staff away. Second, their emigration diminishes the state's ability to enhance governance, provide services, and promote growth. Third, this diminished capacity exacerbates the conditions that drive the next generation to emigrate or low-employment and dysfunctional institutions. It's a vicious circle. Has no automatic internal correction facility.

Chaichian (2011) also identified a similar pattern in Iran – in the various political eras it maintained professional outflows through internal socio-economic and political factors. The similarities with Pakistan are stark: various governments, various economic times, but the same underlying structural cycle. This is because Pakistan's reliance on remittance inflows makes the role of remittances for macro-economic stabilization more counterproductive for inducing structural changes that can break the vicious cycle, as demonstrated by Salik (2020). Remittances boost household consumption and foreign exchange reserves, thereby delaying the need for the reforms needed to encourage skilled workers to remain.

6.2 Evidence for the Feedback Property

The empirical evidence is in line with the cycle's feedback property. The emigration rates of all four governments remained high from 2008 to 2025, irrespective of the government's political party. (Shah et al., 2020; Shah et al., 2024) Despite a series of policy interventions aimed at enhancing the position, as well as two additional policy years, the

composition did not change significantly (highly skilled workers at 4-8 percent throughout the period). While the economic and governance challenges worsened in Pakistan, the number of nurses emigrating increased, from 337 in 2019 to 4,880 in 2023. As Pakistan faced increasingly difficult economic and governance challenges, the number of nurses emigrating exceeded 337 in 2019 and increased to 4,880 in 2023.

The Roshan Digital Account is the best proof of the cycle's governance sensitivity. In FY2020-21, the diaspora had poured USD 883 million in Pakistan via RDA, indicating their readiness to invest when they felt the need to. Investments decreased into negative territory in FY2022-23 with repatriation ratios increasing to 37.7 percent (Shah et al., 2024). This fast pullback in the face of governance and macroeconomic problems is precisely the feedback process the vicious cycle model foreshadows: the capital of finance, along with the capital of skilled professional's flows out when the governance of the country becomes bad.

Muhammad (2021) empirically confirmed the economic aspect of the cycle as the migration-remittances-growth nexus in Pakistan was significantly impacted by COVID-19 and its impact negatively on the economy further exacerbated push factors for emigration. The pandemic shock didn't start a new cycle, it was just an acceleration of the cycle that was already in motion. The 2022 emigration surge of 832,339 (Shah et al., 2024) is the statistical reflection of what occurs when pandemic-induced push factors are unleashed at the same time as the opportunity to move around is restored.

6.3 Why Piecemile Policy Has Not Worked

The vicious cycle analysis helps to answer the question of why the 17 years of piecemeal policy have not made any difference. Single responses to single points in the cycle. Addressing one push factor for one group with salary increases for specific professions. There is one pull mechanism that is dealt with in NHS ethical recruitment guidelines. Scholarship programmes cover one aspect of capacity in research. All these do not address the systemic feedback structure.

Davenport (2004) demonstrated the superiority of the stimulation responses (based on targeted, evidence-based stimuli, building research excellence, and exploiting diaspora connections) over panic responses (which focus on control). Pakistan's policy making process has been erratic ranging from alarm at brain drain to passivity over the issue of emigration, considering the latter to be acceptable as it brings remittances. Both are far from the sustained stimulation response which the evidence requires.

7. FROM BRAIN DRAIN TO BRAIN CIRCULATION: A POLICY FRAMEWORK

7.1 Why Standard Frameworks Need Adaptation

The brain circulation theory (Tung 2008; Ince 2020; Gaillard et al. 2015) suggests that skilled emigration can be transformed into circular gain through the activities of diasporas, the facilitation of return migration and knowledge networks. It's the scenarios that have been mentioned and all of them are different than the ones in Pakistan, such as the presence of diaspora-institution linkages and the political stability that would have made longer term investment more credible in the cases mentioned, namely Taiwan, India, and South Korea.

Wadhwa (2009) documented the reverse brain drain from the USA to India and China, which was due to better conditions in the home countries not diaspora programmes. These are not the conditions that have been created in Pakistan. In their study on knowledge migration, Friesen and Collins (2017) envisioned a more nuanced concept than brain circulation: brain chains, which are the intricate relationships between people, families, diaspora communities and national states. Brain chains accentuate that these intricate connections must be

taken into account when dealing with knowledge migration, as well as with volumes of flow. Pakistan's migration policies have been targeted at volume of migration (number of people emigrating, amount of remittance money) and not on the content and direction of the knowledge within the migration flows.

In the context of low institutional quality, Ollimov, Grote, and Gharleghi (2020) who studied Central Asia, showed that shared historical experience, regional cooperation and policy coordination can facilitate brain circulation. Brain circulation in South Asian region is yet to be exploited in Pakistan. The paper suggests a step-by-step approach based on the real political economy constraints in Pakistan.

7.2 A Sequenced Brain Circulation Framework

Stage 1: Stabilise Critical Outflows

State-critical skilled outflows need to be slowed down by implementing occupationally-targeted retention interventions in the nursing sector, medicine, research and public administration reform before circulation can be activated.

- Nursing: Agree with NHS England a bilateral ethical recruitment agreement on the basis of the WHO Health Worker Migration guidelines. Provisions of managed flow limits, return-pathway and investment in NHS capacity building in nursing training in Pakistan should be included as a condition of continued access to recruitment. Such contracts are justified in an ethical sense by Raghuram (2009).
- Research: establish a 'Returning Researcher Fund' with international peer competitive start-up grants, lab infrastructure support and publications incentives for researchers holding PhD degree, who join academic institutions in Pakistan after securing a job in international academic institutions, with minimum service periods. This is a direct answer to Seguin et al. (2006), who saw an institutional gap.
- Public administration: Create a competitive lateral recruitment system of international trained professionals into the public service of the country at an international organization scale. This tackles the shortcomings in reform capacity reported in Section 5.4.

Stage 2: Activate Diaspora Engagement

The Pakistani professional diaspora in the USA and UK is a knowledge, investment and advocacy resource as reflected in their disproportionately high contribution to remittance both in terms of its volume and structure. Institutional intermediaries are needed to achieve engagement.

- Pakistan Diaspora Innovation Fund: Ring fenced investment vehicles in a specific area and in a specific institution e.g., health infrastructure, university research, technology parks, and return on investment is governed and protected from the risks of the general fiscal. Diaspora capital has been found to be present where instruments are credible and governance is stable, as witnessed by the RDA's experience (Shah et al., 2024).
- Virtual Diaspora Faculty Programme: Enable diaspora academics to co-supervise PhD students, to engage in curriculum development and to research without having to return physically to the country. The possibility of knowledge transfer through virtual engagement, even in cases where there is no return migration, was demonstrated by Gaillard et al. (2015).
- African diaspora professionals can make important contributions to the institutional development of the originating country if there is a formal mechanism of engagement, said Chand (2019). The government needs to establish such processes in health and education ministries for Pakistan.

Stage 3: Build Governance Conditions That Attract Return

Brain flow depends on the conditions of origin country logic of return. This means the need for governance changes to end the vicious circle. These are not migration policy reforms, they are policy reforms of the political economy.

- Exchange rate stability: Maintain official-market exchange rate stability. The RDA data reveal the adverse effect of exchange rate misalignment on formal remittances being channeled into informal channels, not only for macroeconomic stability but also for diaspora engagement.
- Preconditions for return migration at scale: institutional quality (Civil service merit reform,

judicial independence, Anti-corruption enforcement). Chand (2019) and Straubhaar (2000) obtained similar results: institutional quality is the key factor to determine the nature of brain drain (brain gain/brain exchange).

- R&D investment: Accelerate R&D spending to 1 per cent GDP over 10 years, with some of this to come from provincial science budgets, private sector R&D incentives, and international research partnerships. This is the infrastructure that can enable research careers in origin countries, as demonstrated by Ince (2020).

8. POLICY AND THEORETICAL IMPLICATIONS**8.1 Reframing Pakistan's Migration Policy**

Pakistan's official migration policy has focused on overseas employment as a development success, defined in terms of numbers of emigrants and amount of remittances. The outcome of this is recorded by Shah et al. (2024) - a draft migration policy has been drafted three years prior to publication and is still awaiting Cabinet approval, and a system that encourages expansion of emigration instead of the management of the composition of emigration. This "orientation" is a political-economic trap for it institutionalizes migration as a solution to domestic structural issues and not as a reflection of them.

In a creative approach to understanding the skilled as losses, Skeldon (2009) suggested that retention and return of the skilled should be discussed in the context of the potential for outsourcing in the field of education and healthcare. The paper provided by Boeri (2012) suggests that more developing countries can benefit from skilled migration through net migration if the policy setting is right to capture the externalities of skilled migration. These conditions have not been provided by policy environment in Pakistan.

8.2 The COVID-19 Period as a Policy Window

The COVID-19 period presented conditions to migration scholars that they see as being transformative. Bakalova et al. (2021) suggested that telework might facilitate the reverse brain drain (RBD), in the sense of highly skilled migrants who would return to their home countries to work for

employers from abroad. De Lange (2020) demonstrated that the cross-border strategy of host nations is reflected in the orientation of their visa policies in times of crisis such as the pandemic. Meer and Villegas (2020) recorded the fragility of migrants' situation in the host country during the pandemic. For Pakistan, it was a short time in which some professionals rethought their careers.

Pakistan failed to take advantage of this opportunity. When the restrictions were lifted, the structural push factors were seen to kick in strongly in 2022 and 2023 with emigration numbers rising to 832,339 and 862,625 respectively (Shah et al., 2024). There was no fundamental shift in the political economy as a result of the pandemic. The lesson is that policy windows, even big ones, do not necessarily lead to structural reform, which is needed to break the vicious circle.

8.3 Contribution to Political Economy Theory

This paper provides a contribution to political economy theory, by shifting the focus from migration drivers to migration outcomes, namely state capacity. In the existing literature, governance quality is considered as a push factor, such that weak governance leads to emigration. This paper demonstrates the opposite: emigration undermines governance, through the sector-specific capacity effects demonstrated in Section 5. If this is a feedback property, then the implications for policy change are different. If governance is a push factor then better governance would lead to less emigration. If emigration is also a factor of weak governance, the two need to be dealt with simultaneously, and a more difficult coordination problem, which is why the 17 years of disjointed policy making have not succeeded in breaking the cycle.

Robertson (2006) described this as a political issue, as the competition for the best brains disadvantages sending countries that spend on education by having their students depart for other countries that provide better conditions. However, the framing is right but it is not full. It's exacerbated when the deportation of the graduates leads to a loss in the sending country's ability to make improvements that would keep future graduates. It is an empirical experience of Pakistan from 2008 to 2025.

9. CONCLUSION

This study maintained that since 2008, Pakistan has been facing a chronic brain drain problem which is a problem of politics. The loss of capable people from certain industries, such as healthcare, education, research, and public administration, that are vital to the Pakistani State, diminishes the State's ability to govern. This capacity loss exacerbates the situation that is encouraging the next generation of skilled workers to immigrate. What this leaves behind is a vicious circle without any self-regulatory mechanism. This is reflected in the empirical record, which is based on the BEOE data, Pakistan Migration Reports 2020 and 2024. Nurse emigration rose from 337 in 2019 to 4,880 in 2023 a 1,352 increase in four years. In FY2020-21, USD 883 million has been invested in the Roshan Digital Account, but in FY2022-23, investment turned negative due to the poor governance conditions. The exports continued at a high level from all four governments between 2008 and 2025, indicating that push factors are structural, rather than cyclical. The skilled component of migration remained between 4-8 percent throughout, suggesting that this increase was not a migration of skilled people, but that the number of skilled people leaving the country is still a loss of state capacity.

The study calls into question the policy framing that sees overseas employment as development success. Remittances are the real and valuable assets of Pakistan. They are not offset by the loss of state capacity resulting from foreign emigration of high-skilled people. No matter how many nurses a state receives in remittance, it is a state whose progress in the long term is limited, if it can't keep nurses, can't absorb PhD nurses, and can't reform its civil service from the inside. One way to escape the vicious cycle is to convert brain drain into brain circulation, brain into knowledge and brain into capital (Tung, 2008; Ince, 2020; Gaillard et al., 2015). It needs to be done in a sequenced way, stabilize state critical outflows first, then engage the diaspora, and then create the conditions for return and for continuous engagement. This sequencing will need long-term political will throughout governments. No commitment is seen from the political economy of Pakistan in 17 years. The evidence that has been examined in this paper demonstrates the losses that

have resulted from this failure and what will be required to turn things around.

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