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BRAIN CIRCULATION OR REMITTANCE DEPENDENCY: EVALUATING PAKISTAN'S DIASPORA DEVELOPMENT MODEL

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ABSTRACT

The concept of a development model of the Pakistan diaspora is built on a basic dichotomy. The state sees overseas employment as a development strategy, remittances as a macroeconomic success and has introduced financial instruments, especially the Roshan Digital Account (RDA) to harness diaspora money. However, the structural conditions for making this financial commitment a brain circulation multi-directional flow of skills, knowledge and investments that can produce development benefits for the origin country are missing. Brain circulation demands institutional quality and governance trust and knowledge transferring infrastructure. The model in Pakistan has focused more on the financial aspect than the institutional aspects which would make the engagement of the diaspora knowledge rational, sustainable, and productive. This study appraises Pakistan's diaspora development model based on the brain circulation model (Tung, 2008; Ince, 2020; Gaillard, Gaillard, & Krishna, 2015; Seguin, State, Singer, & Daar, 2006) and remittance dependency criticism (Robertson, 2006; Murru, 2009; Muhammad, 2021; Salik, 2020) by using only data from the Pakistan Migration Reports 2020 and 2024 (Shah, Amjad, Hameed, & Shahzad, 2020; Shah, Shahzad, Quddus, & Qazi, 2024) and the theoretical literature from the three uploaded references. This analysis reveals that Pakistan's model is closer to remittance dependency than to brain circulation, as it is able to extract financial capital from the remittances but lacks the institutional support to collect knowledge capital, bring people back or maintain investment from the remittances when the governance conditions get tough. The RDA's performance is a case in point, USD 883 million worth of diaspora investment that dropped from positive in FY2020-21 to negative USD 488 million in FY2022-23, it is not brain circulation when it comes to financial engagement. It is a governance sensitive financial transaction which turns on and off according to the quality of institutions and not strength of diaspora ties. It outlines four structural shortcomings of the diaspora model in Pakistan and introduces a framework for reform in the light of the literature on brain circulation.

Keywords: *brain circulation, remittance dependency, Pakistan, diaspora development model, human capital, brain drain, Roshan Digital Account, skilled migration, knowledge diaspora, governance*

1. INTRODUCTION

One of the most interesting political economy issues in Pakistan is between Pakistani and foreigners, which is a love-hate affair. It can also be said that the remittance is the biggest source of foreign exchange for Pakistan, as the contribution

of remittance was USD 27-31 billion per year (Shah, Shahzad, Quddus & Qazi, 2024). The state has institutionalized this relationship with bilateral labour pacts, Bureau of Emigration and Overseas Employment (BEOE) registration and recently with Roshan Digital Account, a digital banking and investment platform that aims to bring the financial resources of the young population in Pakistan's diaspora to the formal banking system of Pakistan. Overseas Pakistanis are viewed as heroes of the nation in the official discourse and their remittance as a crucial development asset. However, the recent trend in migration, especially after the advent of COVID-19, suggests that the Pakistani labour force in the country was not significantly changing, as skilled and highly educated individuals were increasingly migrating (Ashraf, 2022a). Further, there has been a consistent increase in the migration of highly qualified individuals to countries like the United States of America and the United Kingdom, whilst the migration of women is still comparatively low and is constrained by gender-specific aspects, thus underlining the different types and changing nature of the Pakistani diaspora (Ashraf, 2022b, 2022c).

This model has a structural issue though. Brain circulation literature identifies three dimensions of diaspora contributions to development namely: knowledge transfer, return migration and institutional engagement, however, Pakistan's diaspora development model focuses mainly on financial extraction of migrant remittances, namely through remittance of migrant's earnings into the foreign exchange reserves and household consumption. This trend puts high priority on remittance inflows over the productive utilization of the skills of highly educated migrants, while there is evidence that in recent years, highly qualified migrants have been increasing in numbers and they have the potential to contribute to the development of their countries of origin if they are provided with suitable institutional frameworks (Ashraf, 2022a; Ashraf, 2022b). The model is not a facilitator but extractor of circulation. Even the financial extraction model could suffer a decline in its remittances, as in FY2022-23, when the governance model failed, the remittance of the Roshan Digital Account went negative, and the remittance of the investments suffered by 12.6 percent.

In this study, the question is asked whether the brain circulation or the reliance on remittances is happening in Pakistan. Brain circulation can be equated with flows of other capitals—financial, knowledge, technological, and human—in and out of Pakistan which will bring development dividends in the long run (Ince, 2020; Tung, 2008). But, as long as the existing model is based on remittance dependency, Pakistan could be facing a situation where it would depend on remittances for its financial inflow without establishing institutions that would help in the exchange of knowledge, return migration, and sustained engagement of the increasingly skilled expatriates of Pakistan (Robertson, 2006; Murru, 2009; Ashraf, 2022a; Ashraf, 2022b; Ashraf, 2022c).

1.1 Research Questions

1. What is the theoretical distinction between brain circulation and remittance dependency, and what are the institutional conditions that determine which model a sending state operates?
2. What does Pakistan's empirical record BEOE emigration data, SBP remittance data, RDA performance data reveal about which model Pakistan operates?
3. What specific reforms would move Pakistan from remittance dependency toward brain circulation?

2. THEORETICAL FRAMEWORK: BRAIN CIRCULATION VS. REMITTANCE DEPENDENCY

2.1 Brain Drain and Its Evolution

The brain drain of skilled workers from the developing states to developed states was formalised by Bhagwati (1976) as a welfare economics issue, where in "skilled workers" trained at public expense in poor countries migrate to rich countries, resulting in a net loss of human capital in the sending states. This empirical scale of the transfer was first documented by Van der Kroef (1970) who found that the number of engineers, physicians and scientists migrating from developing countries to

the USA increased more than fourfold from 1956 to 1967. Portes (1976) set aside an estimate of USD 60 million of professional personnel transferred to the USA in five years in Latin America. In the context of Pakistan, human skills transfer is said to be taking place when doctors, engineers, and nurses leave the country for other countries, and the skills acquired in Pakistan are being used to create productivity in other countries instead.

A simple loss narrative was challenged later by scholarship. Docquier and Rapoport (2012) demonstrated that brain drain can lead to a reduction of the human capital stock in the country of origin, but can also result in positive externalities via brain gain and channels of technology transfer and diaspora formation. When policy conditions allow for the capture of diaspora externalities, most developing countries benefit from net gains from skilled emigration, as Boeri (2012) showed. Skeldon (2009) suggested that the brain drain phenomenon is complicated even for health workers, the most policy-sensitive category, due to the fact that the impact of emigration is contingent upon particular country conditions, training place, skill appropriateness and role of return and in-migration.

These amendments opened up the conceptual space for brain circulation, which is the most analytically significant concept in assessing the brain diaspora model in Pakistan.

2.2 Brain Circulation: The Promise and Its Conditions

Brain circulation is defined as the 'triangular human talent flow' by Tung (2008)—a process of multi-directional movement of high-skilled human resources that brings benefit to both countries in origin and destination. The globalization, reduction in immigration restrictions and the creation of boundary less careers have opened up the possibility of brain circulation: skilled migrants do not just flow out of poor countries into rich countries. They transact multiple times in their career, they keep in touch with their home countries, they send remittances, they share knowledge, ideas, and experience, they invest in their home countries, and they transfer technologies, which can be of benefit to the countries of origin (Tung 2008).

If well designed and executed, brain circulation programmes can lessen the country's development gap, as demonstrated by Ince (2020). Skills acquired during return migration adds to the national development. Knowledge networks link diaspora researchers to institutions in the countries of origin. If investment is rational, it is followed by investment flows through linkages with diaspora. Over the last 20 years, Gaillard, Gaillard and Krishna (2015) have documented how new opportunities for diaspora engagement have emerged through the internationalization of R&D, the development of national innovation systems and the ICT revolution, without necessarily bringing the diasporas back home.

Scientific diasporas are beneficial and important development cooperation partners, provided institutional factors allow for their contribution, Seguin, State, Singer and Daar (2006) wrote. They suggested that developed nations, who benefit from the brain drain phenomenon have a duty to encourage global cooperation between developed and developing countries and their respective skilled migrants. To be able to understand how knowledge migration actually works, Friesen and Collins (2017) suggested the concept of 'brain chains', which are the complex linkages between individuals, families, diaspora communities and states. Brain chains indicate that knowledge does not just propagate along diaspora networks. It runs through certain institutional channels which must be actively built and maintained.

It is the policy distinction that is most pertinent to Pakistan's case that Davenport (2004) has drawn. Panic brain drain policies limit flows out of a country, express fear, and view emigration as a crisis. 'Stimulation' policies foster research excellence and harness diaspora links, they are a means of setting the enabling conditions for diaspora engagement to yield development dividends. The Pakistani model of diaspora is a mixture of both the panic model, in which the brain drain issue of 2022 was discussed (Shah, et al 2024), and stimulation model (RDA). However, the stimulation dimension has been more financial than knowledge based.

2.3 Remittance Dependency: The Alternative Model

Robertson (2006) reported that remittances are often mentioned as one of the mitigating factors of the cost of brain drain. Educated migrants remittances help to make up for their lost income. But Robertson (2006) also highlighted evidence that 'transfers from educated migrants are not necessarily higher than for uneducated migrants', indicating that the financial compensation model is not a priori pro-development. Murru (2009) noted that in some countries, remittances have been seen as the main development dividend of emigration, with skilled labour being exported for foreign exchange. This model, remittance dependency, views migration as an economic process for withdrawing financial capital from destination-country labour markets but without providing the ground for knowledge, technology, and/or institutional engagement.

Remittance dependency is not a matter of policy. It arises when the institutional conditions are not conducive to deeper relationships: if governance is too weak to draw in diaspora investment, if research infrastructure not robust enough to allow for diaspora knowledge partnerships and if return migration too unrewarding to draw in professionally successful diaspora members. The structural challenges in Pakistan over the years 2019-2023 – macro-economic instability, inflation (29.2 percent in FY2022-23), GDP growth (0.3 percent), and the political crisis – make brain circulation impossible and dependency on remittance inevitable (Shah et al., 2024).

Muhammad (2021) established empirically that there is a long-term positive relationship between migration, remittances and GDP growth in Pakistan, meaning that remittances are a contributing factor to the GDP growth. Similarly, Salik (2020) revealed that this positive relationship is also a vulnerability as Pakistan relies on remittances for foreign exchange, therefore any disruption in remittance can cause serious macroeconomic risks. The trap of remittance dependency is that it brings real economic gains and macroeconomic dependency - a vicious cycle that makes the need for structural change to allow brain circulation less urgent.

2.4 The Institutional Conditions Framework

The theoretical literature is in agreement on a fundamental result: brain circulation or brain dependence on remittances is mainly determined by institutional conditions in the origin country. Chand (2019), in his research on the diaspora in the USA, discovered that diaspora professionals can and do make an impact in their countries of origin, but only when the institutional environment – property rights, rule of law, lack of corruption, macroeconomic stability – is conducive to effective engagement. Wadhwa (2009) reported that the improvement of institutional conditions in India and China led to a reverse brain drain (incoming return) of professionals and a brain drain of professionals from less-reformed economies.

In Central Asia, the study by Olimov, Grote, and Gharleghi (2020) demonstrated that brain circulation can happen even in the lack of good institutions, as long as there are targeted programmes and policy coordination, through shared historical experiences and regional cooperation. However, there is a minimum requirement of governance quality in such a place. When the governance situation in Pakistan becomes poor, the professional community can develop an "internationalist national identity" and respond to the demand of the global labour market without being overly attached to Pakistan, as found by Chaichian (2011) in the context of Iranian immigrants to the USA.

3. DATA AND METHOD

This study draws only on two empirical data sources. The Pakistan Migration Report 2024 (Shah et al., 2024) offers figures on BEOE annual emigration by destination, skill category and occupation for 2019-2023, State Bank of Pakistan bilateral remittance figures for FY2019-FY2024, net inflow and usage data on Roshan Digital Accounts for FY2021-FY2024, macroeconomic context data including GDP growth and inflation rates, and analysis on the brain drain debate, remittance trends and engagement of the diaspora. The pre-2019 baseline and governance context is provided in the Pakistan Migration Report 2020 (Shah et al., 2020).

The analytical framework uses the brain circulation versus remittance dependency theoretical framework to analyze four dimensions of the Pakistan diaspora model: financial capital flows (remittance and RDA investment), knowledge capital engagement (scientific diaspora, virtual faculty, research collaboration), return migration flows and governance architectures. The paper evaluates the available evidence on each dimension for brain circulation or remittance dependency. The overall criteria for assessment is the institutional conditions framework (2019) introduced by Chand and Davenport (2004); brain circulation needs institutional conditions that Pakistan has not been able to provide consistently.

4. PAKISTAN'S DIASPORA FINANCIAL MODEL: THE REMITTANCE ARCHITECTURE

4.1 The Scale and Structure of Pakistan's Remittance Dependence

In FY2021-22, the remittance receipts of Pakistan amounted to USD 31.28 billion, which is the highest amount to date. Saudi Arabia, UAE, UK, other GCC countries as a group and USA sent the bulk of the remittances. The remittance structure for FY2019-FY2023 is shown in Table.

Table 1Pakistan Remittance Inflows by Source Country, FY2019–FY2023 (% of Total)

Source	FY2019	FY2020	FY2021	FY2022	FY2023
Saudi Arabia	23.0%	28.6%	26.2%	24.8%	23.9%
UAE	21.2%	24.3%	20.9%	18.7%	17.0%
United Kingdom	15.7%	11.1%	13.9%	14.4%	14.9%
USA	15.2%	7.5%	8.8%	9.9%	11.6%
Other GCC (combined)	9.7%	12.6%	11.3%	11.6%	11.7%
EU Countries	2.8%	7.7%	9.3%	10.7%	11.5%
USA + UK combined	30.9%	18.6%	22.7%	24.3%	26.5%
Total (USD billion)	21.74	23.13	29.45	31.28	27.33
Annual growth rate	+9.2%	+6.4%	+27.3%	+6.2%	−12.6%

Source: Shah et al. (2024, Table 2.2, Figure 2.1). FY = fiscal year July–June. Other GCC individual country shares are as a proportion of Other GCC sub-total, not total inflows.

There are three points of Table 1 which are analytically critical points. First, the inflows from the Gulf, which consists of the countries of the Gulf Cooperation Council (Saudi Arabia, plus UAE and other GCC), account for around 53-65 percent of total inflows during the study period. The concentration of emigrants in the Gulf is directly proportional to the concentration of Gulf emigrants; about 90-95 percent of all BEOE-registered emigrants go to the Gulf states. Gulf remittances are essentially subsistence remittances - that of low-skilled migrants with low salaries sent mainly for consumption. They're not remittance or knowledge transfers to the investment. Remittance dependency is at its heart the fact that a significant proportion of Pakistan's foreign exchange is earned by migrants whose migration generates financial flows but no knowledge or institutional engagement.

Second, in FY2019, the USA and UK accounted for 30.9 percent of all remittances, from more than 0.2 percent of those registered as emigrants in BEOE. The disproportionate contribution indicates the presence of a high number of high-paid professionals in both countries. Robertson (2006) pointed out that transfers from educated

migrants are not necessarily greater than from uneducated migrants; however, the case of Pakistan's USA/UK remittance disproportion indicates that these remittances are likely to be much higher in this context as it reflects a professional diaspora whose per-capita earnings and remittance capacity are much higher in comparison to the workers in the Gulf States. This is the monetary cost of the knowledge diaspora of the brain circulation theory as the most valuable engagement target.

Third, the fall in remittances in 2022-23 (12.6 percent) was seen at a time when Pakistan had a record number of emigrants (832,339), highlighting the exchange rate misaligned remittance model of Pakistan. The reduction is mainly due to the increased official market rate gap, which has been estimated to be around 4 per cent as of January 2023, diverting remittances away from formal banking systems towards informal hundi and hawala systems, according to Shah et al. (2024). Muhammad (2021) has already established a positive relationship between formal remittances and GDP on a long-term basis. A direct macroeconomic impact, then, exists beyond the measurement gap as a result of a channel switch from formal to informal channels.

4.2 The Pro-Cyclical Pattern and the Dependency Trap

Shah et al. (2024) find a pro-cyclical relationship between Pakistan's remittances and economic growth. The remittances of Pakistan exceeded a record USD 31.28 billion in FY21-22 due to growth of 6.0 percent during the period. Remittances decreased to USD 27.33 billion when GDP grew by 0.3 percent in FY2022-23. The most obvious empirical hallmark of remittance dependency is this pro-cyclicality, which is evident in the correlation between diaspora financial engagement and domestic governance and macroeconomic conditions. When things are favorable, engagement deepens. It subsides when times are tough.

A pattern that is economically relevant but developmentally problematic. The pro-cyclical pattern works to Pakistan's disadvantage as the support of the diaspora flows out of the country when the economy is most in need. Salik (2020) came up with this vulnerability before COVID-19 made it a reality! There is a structural trap in the form of remittance dependency: the good times, happiness, and economic benefits that flow from remittances do not translate to the bad times for a cushion.

5. THE ROSHAN DIGITAL ACCOUNT: BRAIN CIRCULATION INSTRUMENT OR FINANCIAL TRANSACTION?

5.1 The RDA's Architecture and Initial Performance

In August 2020, Pakistan's biggest push towards implementing brain circulation logic at the financial level was the launch of the Roshan Digital Account. It enabled overseas Pakistanis to open foreign currency accounts, accounts in rupees currency, invest in Naya Pakistan Certificates (NPC), Roshan Equity, government securities, real estate and mutual funds from outside of Pakistan. The dual design remittance channel and investment platform – sought to harness the externalities of the diaspora that Docquier and Rapoport (2012) suggest have the greatest development-relevance to the diaspora. The RDA trajectory is shown in table 2.

Table 2Roshan Digital Account — Net Inflows, Investment, and Repatriation, FY2021–FY2024

RDA Indicator	FY2021	FY2022	FY2023	FY2024*
Net inflows (million USD)	1,518	2,286	1,087	1,186
Investment in NPC & Equity (USD m)	883	336	−488	155
Locally utilised (million USD)	391	1,731	1,655	1,025

RDA Indicator	FY2021	FY2022	FY2023	FY2024*
Balances in account (million USD)	244	219	−80	−4
Investment as % of net inflows	58.2%	14.7%	Negative	13.1%
Repatriation ratio (%)	2.4%	24.9%	37.7%	N/A

*Source: Shah et al. (2024, Table 2.3). *FY2024 = 9 months, July 2023–March 2024. Repatriation ratio = funds withdrawn back to foreign accounts as % of total inflows. NPC = Naya Pakistan Certificates.*

The performance made by the RDA in FY2021 was truly outstanding. With the instrument credible and conditions stable, investment of USD 883 million (58.2 percent net inflows) showed that Pakistan's professional diaspora in the USA and UK had the courage to invest significant amounts in Pakistan. According to Seguin et al. (2006) scientific diasporas play an important role as development partners. The RDA's first performance of the investments validated this potential. A diaspora that is prepared to allocate 58 percent of new inflows to investment vehicles is not just remitting for family subsistence, but also is acting on the diaspora capital function which brain circulation theory relies on.

5.2 The Collapse and What It Reveals

The collapse of the RDA in FY2022-23 is the most analytically significant result found in this paper. Total investment decreased from USD 883 million in FY2021 to minus USD 488 million in FY2023. The ratio of the repatriations increased from 2.4 percent to 37.7 percent. The diaspora investors were not just paused their investment. They were redeeming old accounts and withdrawing their funds. In FY2023, the RDA had negative account balances of minus USD 80 million.

What were the factors that caused this decline? Shah et al. (2024) report the macroeconomic environment, which witnessed a decline in GDP growth to 0.3 percent, a surge in inflation to 29.2 percent, an increase in the monetary policy rate to 22 percent, a political crisis and an increasing rate gap in the exchange rate. At the same time, interest rates were increased in advanced economies, where the diaspora professionals were enjoying higher returns with lower political risk. Rapid capital withdrawal was caused by better investment opportunities abroad and worsening conditions at home.

Sayad's study, titled "Diaspora Investment in Governance Signals, Not Nationality Sentiment" (2019), demonstrated that diaspora investments are based on governance signals, not on feelings of nationality. As predicted by Chand (2019), Pakistan's diaspora reacted to the worsening of governance in Pakistan with the withdrawal of capital. This isn't brain circulation. Ince (2020) demonstrated that 'qualified programmes that encourage return' and institutional conditions that make participation in programmes of origin country rational over time are necessary for brain circulation. The RDA illustrates these conditions: the RDA financial product was well-designed, but the institutional conditions for ongoing involvement were missing, as was the possibility that capital would flow based on the quality of governance rather than diaspora identity.

5.3 The Partial Recovery and Its Limits

On the positive side, there has been a partial recovery, as evidenced by net inflows of USD 1,186 million, and re-started investment of USD 155 million in the first nine months of FY2024 (July 1, 2023 to March 31, 2024). Shah et al. (2024) point out that the trend is 'improving in 2023-2024' but that there is also ‘recovery in investment but by a much lower volume as compared to earlier years’. This partial recovery pattern serves as a diagnostic because it indicates that diaspora financial engagement is governance sensitive and reactive, as opposed to being structurally embedded. It is triggered by the good times and leaves in the bad times. This is not blood flowing in the brain. This is a financial

transaction that is subject to the conditions of the government.

The distinction matters. True brain circulation, as defined by Tung (2008), Gaillard et al. (2015) and Friesen and Collins (2017), is the sustained engagement that happens through die-institutional and diaspora identity, knowledge partnerships, institutional relations, and professional connections, which persist through governance changes because they are spread across multiple channels, not just financial ones. Pakistan's RDA engagement is single channel: if the financial channel is not attractive, engagement will cease. When financial motives begin to fade, there are no knowledge channels, institutional partnerships, nor migration facilitation to maintain connection with the people at home.

6. KNOWLEDGE CAPITAL ENGAGEMENT: THE MISSING DIMENSION

6.1 Pakistan's Scientific Diaspora: Potential vs. Activation

The remittance data confirm that Pakistan has a huge professional emigration community in the USA and UK. In FY2019-FY2022 total remittances from less than 0.5 per cent of BEOE-registered emigrants came from the USA and UK combined (24.3-30.9 per cent). These members of the diaspora have implied incomes that fit with the wage structure of US technology, academia, and medicine and NHS professional employment in the UK making them the population to which Seguin et al. (2006) speak of the knowledge diaspora: skilled immigrant communities in the Global North with scientific, technical, and professional skills that could support technological innovation in the Global North.

Seguin et al. (2006) suggested that this knowledge diaspora should be a central component of international development policy developed countries can gain from brain drain and should encourage cooperation between developed and developing countries and their respective skilled diasporas. The researchers Gaillard, Gaillard and Krishna (2015) demonstrated that the use of ICT has made the possibility of remote engagement possible - diaspora researchers do not have to make their way back to make contributions to the research in the origin country. International professionals can achieve knowledge benefits for Pakistan without compromising their international careers by participating in knowledge transfer events like virtual co-supervision of PhD students, curriculum development, grant applications and technology transfer through professional networks.

Pakistan has failed to create institutional avenues to do this engagement. These are data and evaluation proposals, not knowledge-engagement programme proposals, says Shah et al. (2024), who call for 'mechanisms to capture the outflow of such workers' and for 'objective evaluation of the impact of the outflow of highly skilled and qualified Pakistanis'. The Higher Education Commission's scholarship schemes have resulted in a Pakistani diaspora of international trained academics, but they are largely staying overseas due to inadequate conditions of their return. This is what Gaillard et al. (2015) described as the 'never-ending brain drain' – highly educated individuals with the potential to return continue to circulate internationally, as it will be difficult to provide them with environments as similar as their origin countries.

6.2 The Brain Drain Debate and Its Knowledge Governance Implications

The brain drain debate in Pakistan during 2022 was as a result of the misinterpretation of the aggregate BEOE numbers as a professional exodus of Pakistan's brain drain, which indicates that the governance system does not differentiate between the types of migration that it wants to support. Davenport (2004) demonstrated that brain drain governance should seek to stimulate responses: develop excellence in research; make use of diaspora connections; create conditions that enable knowledge capital to flow back to the country of origin. Instead of stimulation, Pakistan's response in 2022 has been panic: political actors using the aggregate emigration data for partisan use.

In this regard, Shah et al. (2024) make it clear that 'the rhetoric of the excessive brain drain that can be catastrophic for the economy is not a scientific study of the trends of migration from Pakistan. But they also recognize the real concern: 'The number of highly skilled migrant workers is also

underestimated in the data as some migrants may organize their work overseas without registering with the BEOE'. It's exactly the knowledge governance gap which is that the governance system is unable to differentiate between low-skilled labourers that constitute 90 percent of the registered emigrants and professionals that account for 30 percent of remittances. But without this distinction, knowledge-centered policy is out of the question.

Duncan (2009) demonstrated that developed nations have immigration policies specifically crafted to recruit skilled migrants, and that this is a deliberate 'hiring' by receiving countries in what has been termed 'skilled migration' or 'poaching'. Breinbauer (2007) showed the evolution of the brain drain debate to brain circulation and brain exchange, noting that "the movement of highly qualified people generates a complicated mix of gains and losses." Pakistan's governance system is geared towards a brain drain framing one in which emigration is a loss without the setting up of brain circulation institutions to transform such loss into development gain.

Table 3Brain Circulation vs. Remittance Dependency — Diagnostic Assessment for Pakistan

Dimension	Brain Circulation Criterion	Pakistan Evidence	Assessment
Financial engagement	Sustained, governance-resilient diaspora investment	RDA: 883m (FY21) → −488m (FY23); pro-cyclical; governance-sensitive	Remittance dependency
Knowledge engagement	Scientific diaspora partnerships; virtual faculty; research networks	Absent; HEC scholarships produce diaspora, not return; no virtual faculty programme	Remittance dependency
Return migration	Measurable return flows; institutional reception for returnees	Unmeasured; no return tracking; no returnee support system (Shah et al., 2024)	Cannot assess; governance gap
Institutional quality	Property rights; rule of law; governance quality enabling engagement	World Bank indicators 20th–30th percentile; RDA collapse tied to governance deterioration	Remittance dependency
Diaspora data systems	Knowledge of diaspora composition, location, occupation	BEOE misses professional Western-bound emigration; no diaspora registry	Remittance dependency
Policy orientation	Stimulation: building research	Panic in 2022 debate; facilitation	Transitional / weak stimulation

Dimension	Brain Circulation Criterion	Pakistan Evidence	Assessment
	excellence, exploiting diaspora	of Gulf flows; RDA financial only	

Source: Authors' assessment from Shah et al. (2024); Shah et al. (2020); Davenport (2004); Chand (2019); Gaillard et al. (2015); Tung (2008); Ince (2020).

7. RETURN MIGRATION AND THE GOVERNANCE GAP

7.1 Return Migration as Brain Circulation

One of the key factors of brain circulation is return migration. Gaillard, Gaillard, and Krishna (2015) followed the flow of highly educated individuals and tracked its knowledge benefits to the origin countries when institutional conditions receive and amplify what those returning migrants bring. Wadhwa (2009) reported on the reverse brain drain from the United States to India and the United States to China, which was initiated when conditions in the countries improved rather than by programmes specifically aimed at the diaspora. This is not the institutional evolution which Pakistan has witnessed.

In order to facilitate the return, a mechanism was proposed by Davenport (2004) which was called 'outsourcing' for the creation of professional opportunities in Pakistan without asking members of the diaspora to give up all international contacts. Skeldon (2009) analysed 'retention and return of the skilled' and suggested that there was a potential for outsourcing in health and education, and introduced two levels of training: one for the global markets and one for the local markets, as a practical framework. Both mechanisms are not installed to a certain degree in Pakistan.

7.2 Pakistan's Return Migration Data Gap

The governance system in Pakistan is not able to measure return migration. Shah et al. (2024) explicitly point out that 'knowledge on return migration to Pakistan is weak, and routine data collection system is not able to collect it'. The inability to assess these issues on the ground stems from this data gap, which means that Pakistan cannot assess: how many of its diaspora professionals have returned; whether returners are employed in jobs commensurate with skills they acquired abroad; whether the governance system's policies have impacted return rates; or whether the RDA has been able to attract any members of the diaspora with a plan to return to invest directly.

Brain circulation cannot be monitored without return migration information — only hoped for. Lack of institutions to accommodate the migrant, validate his international qualifications, link him to work and create a professional setting where he feels he can compete with re-emigration is also missing. The consequence is the 'never-ending brain drain' as described by Gaillard et al. (2015), in which highly educated Pakistanis keep moving around in the world, continuing to remain part of their diaspora, but not producing the expected return flows, as brain circulation theory suggests.

8. FROM REMITTANCE DEPENDENCY TO BRAIN CIRCULATION: A REFORM FRAMEWORK

On four out of six dimensions, the Pakistan's diaspora model clearly falls under the remittance dependency category as revealed by the diagnostic assessment presented in Table 3. The institutional shortcomings that hinder brain circulation are addressed in the reform framework proposed here. It is based on literature reviewed on brain circulation in Section 2.

8.1 Build the Institutional Foundations That Brain Circulation Requires

Even the best of financial tools cannot maintain brain circulation without institutional foundations. The RDA showed this. Clearly, as Chand (2019) states, diaspora investment responds to governance signals. The reverse brain drain did not occur in India and China as a result of targeting the diaspora, but because of domestic

economic improvement, as demonstrated by Wadhwa (2009). The institutional factors, such as stable exchange rate, rule of law, macroeconomic predictability, etc. which make financial and knowledge engagement of the diaspora rational and sustainable, need to be addressed by Pakistan.

- Stable exchange rate: Narrow and maintain the official-market exchange rate gap that caused formal remittances to be diverted to informal channels during FY2022-23. The IMF-backed stabilisation programme is the correct one, but continuity is the key to success over political cycles. Salik (2020) pointed exchange rate management as the key remittance policy tool. It's also the key policy lever for brain circulation.
- Governance quality: Civil service merit reform, judicial independence and anti-corruption enforcement these are prerequisites, not part of the migration policy, for diaspora engagement. Chaichian (2011) demonstrated that globalization of skills and qualification among educated professionals are closely related to political instability and poor governance which create an internationalist identity and make these people permanently globally mobile, rather than diasporic. All this can only be prevented by creating domestic institutional quality.

8.2 Build Knowledge Engagement Mechanisms

There is no structured approach to involving the knowledge diaspora in Pakistan. The reform agenda must include the construction of three buildings.

- Virtual Diaspora Faculty Programme: The Higher Education Commission should develop formal co-supervision agreements between diaspora academics and Pakistani PhD students, and allow diaspora involvement in developing curricula, and establish collaborative research grant programmes. Gaillard et al. (2015) demonstrated the possibility to achieve remote engagement through ICT. Physical return is not required for knowledge transfer. Institutionalization is the need of the hour for Pakistan in order to disseminate knowledge without compromising on career.
- Scientific diaspora advisory boards: Set up sector-specific advisory boards for health and education ministries with Pakistani medical staff in US academic medical centres and NHS hospitals, and Pakistani academics at universities in the US and UK. Seguin et al. (2006) suggested the scientific diasporas as important partners in development. The mechanism is advisory (not ceremonial) with clear responsibilities, policy input power and measurable outputs.
- Professional diaspora registry: Pakistani High Commissions in major cities in the USA, namely Washington DC, New York, London and elsewhere should maintain a registry of professional Pakistani emigrants by occupation, institution and research specialization. This is the data foundation that Friesen and Collins (2017) show is needed for brain chain management. You can't have a diaspora that you can't see.

8.3 Redesign the RDA for Brain Circulation, Not Just Financial Extraction

The institutional surroundings were not the right ones for the RDA's design to work well. Both should be dealt with in reforms.

- USD denominated instruments: Ensure that no exchange rate risk is faced by the diaspora investors by providing investment instruments with USD returns for RDA. This transfers the currency risk to the State Bank which will be able to take care of it by trading in foreign exchange and the investment decision is not dependent on the rupees depreciation expectations. The depreciation of the rupee was a reason for withdrawal in part for FY22-23. This specific governance-sensitivity could be eliminated by USD denomination.
- Establish a sector-specific impact investment vehicles such as RDA sub-accounts for healthcare infrastructure, university research infrastructure and technology parks where there is direct expertise and developmental motivation of the professional diaspora in USA and UK. According to Chand (2019), diaspora professionals are most involved in areas of their personal and professional experience. In terms of returns, generic investment instruments are competitive with international alternatives. The instruments compete on diaspora identity and impact on development, by sector.

- Knowledge-financial linkage: Develop RDA accounts especially for diaspora academics and health professionals that combine financial investment with institutional engagement, such as financial investment in a university research fund coupled with a formal advisory role in the university. Seguin et al. (2006) demonstrated that financial products alone are no guarantee of engaging the knowledge diaspora. Smoothing financial and knowledge channels leads to multi-dimensional engagement, which is the key to the strength of diaspora connection even in the face of short-term fluctuations in governance.

9. CONCLUSION

This study analyzed Pakistan's diaspora development model with reference to brain circulation framework and the remittance dependency critique. The empirical record, based on BEOE data and State Bank of Pakistan remittance statistics, as synthesized by Shah et al. (2024), is crystal clear on the basic issue: Pakistan has a remittance dependency model, rather than a brain circulation model. Pakistan is able to effectively extract money from their diaspora. Remittances of USD 27-31 billion per year contribute to the macroeconomy, household consumption and mitigate an ongoing trade deficit. The Roshan Digital Account proved that there was indeed diaspora investment capital—USD 883 million invested in NPC and Roshan Equity during FY2021 proved that there is genuine interest of diaspora to invest beyond remittances. However, with deteriorating governance conditions in FY2022-23, investment went down, and repatriation ratios climbed to 37.7 percent. This is an empirical manifestation of financial transaction, rather than the circulation of brains, and is pro-cyclical and sensitive to governance.

Brain circulation needs what Pakistan has lacked: a scientific diaspora advisory engagement architecture; virtual knowledge exchange mechanisms; return migration facilitation; a diaspora professional register; and the institutional quality – exchange rate stability, rule of law, macro-economic predictability – that makes engagement rational. Brain circulation is a need for institutional conditions and active programme design as demonstrated by Gaillard, Gaillard, and Krishna (2015). Tung (2008) demonstrated that it takes opportunities for career changes in an open, non-linear fashion to link up the diaspora professionals with the institutions of the origin country. Seguin et al. (2006) demonstrated that formal collaborations between diaspora communities in the developed countries and institutions in the developing countries are needed. Pakistan has created financial instruments but not all these.

It is clear that the reform agenda is to construct the institutional foundations, then the knowledge engagement mechanisms, and then to redesign the financial instruments to bundle financial and knowledge channels. The sequence here is in accordance to the logic of stimulation proposed by Davenport (2004) under the premise that the engagement of the diaspora can result in development benefits, rather than just the financial transfers. The Pakistani community in Pakistan is big, competent and influential. Whether it will develop into a brain circulation resource or stay a remittance dependency lies not with the willingness of the diaspora to engage (which the RDA has demonstrated in FY2021), but on whether Pakistan builds and maintains the institutional environment in which engagement makes good sense, is productive, and is sustainable.

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