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Abstract: *The phenomenon of brain drain, marked by the migration of skilled professionals from developing countries to more developed regions, poses significant challenges for the socio-economic development of Pakistan. This study explores the impact of brain drain within the Pakistani context, focusing on the challenges faced by the higher education and healthcare sectors, as well as the strategies employed to mitigate this loss. From a social work perspective, the research delves into the socio-cultural implications of this migration, addressing the underlying causes and potential solutions to curb the trend. The review of research studies will be based on an inductive methodology, focusing on various factors fueling the migration of skilled professionals from Pakistan and their temporary settlements abroad. The targeted population will include groups studied in previous research, such as physicians, teachers, technicians, engineers, and Ph.D. scholars. Inclusion and exclusion criteria for the selection of studies will be established. Both quantitative and qualitative data analysis will be included in this review paper. The research and conclusions demonstrate that talented individuals are advantageous to the nation because they have the capacity to improve it. On the other hand, their migration puts their native country's development in jeopardy.*

Introduction

Brain drain is a major phenomenon that has impacted many developing countries, including Pakistan. It is the exodus of highly educated and competent individuals from their home countries to other ones. A multitude of variables, from political and economic unrest to goals both personal and professional, are responsible for this talent exodus. It has significant negative effects on a nation's social structure, technological innovation, and economic prosperity.

Particularly in vital industries like healthcare, education, and IT, brain drain has been widespread in Pakistan. Physicians, engineers, and IT specialists have left the nation in significant numbers in search of better possibilities overseas. As per the Bureau of Emigration and Overseas Employment (2020) study, over 500,000 Pakistanis have left their country in search of employment in the last few years, with a notable proportion of these persons being highly trained professionals. Due to this departure, there is a scarcity of skilled workers in critical areas, which threatens the country's ability to deliver basic services and impedes economic growth (Jalal, 2021).

There is ample evidence to support the push and pull variables that contribute to brain drain. Economic instability, poor healthcare and educational facilities, a lack of career advancement chances, and political volatility are some of Pakistan's push factors. Talented people perceive fewer opportunities for

success and a higher standard of living in the nation due to these circumstances. For instance, Pakistan's healthcare industry suffers from subpar working conditions, low pay, and limited access to cutting-edge medical technologies, which drives many physicians and other medical experts to look for work overseas (Khan & Mahmood, 2019).

Conversely, pull factors in destination nations like the US, Canada, and the UK include better working conditions, access to cutting edge technology, and stable political environments in addition to greater earnings. In addition to financial incentives, these nations provide chances for professional growth and career promotion that are sometimes unattainable in Pakistan. The allure of these advantages has drawn numerous proficient Pakistanis to seek professions overseas, hence intensifying the exodus of talent (Ali, 2020).

The immediate loss of trained labour is not the only effect of brain drain. It affects Pakistan's socioeconomic development in the long run. The exodus of highly educated people narrows the talent pool that can spur economic growth and innovation. One area where the nation is less able to compete in the global digital economy is the IT sector, which is critical to modern economic development but lacks competent professionals (Hussain & Qureshi, 2018). In addition, the exodus of highly qualified workers frequently leads to a "brain waste," in which highly educated individuals labour in lower-skilled occupations overseas as a result of challenges in translating their credentials and expertise (Shah, 2019). From the standpoint of social work, social justice and equity are also impacted by brain drain. Because the remaining population, especially in rural and underdeveloped areas, has inadequate access to high-quality healthcare, education, and other important services, the migration of skilled professionals exacerbates national inequality. Socioeconomic disparities are further entrenched as a result of this circumstance, which widens the gap between rich and poor as well as between urban and rural areas (Nasir & Raza, 2020).

The government of Pakistan has acknowledged the difficulties caused by brain drain and has taken steps to mitigate the problem by introducing a number of policies and initiatives. Among these efforts are scholarship programs designed to keep skilled individuals in the nation, better working conditions in the public sector, and inducements for professionals to come back. But the results of these initiatives have been uneven, frequently hampered by structural problems like political unrest, bureaucratic inefficiencies, and corruption (Aziz & Saba, 2020).

The idea of "brain circulation," which promotes the temporary migration of highly qualified individuals with the goal of their return to support the growth of their home nation, is one promising strategy to counteract brain drain. This idea entails fostering an environment that is conducive to expatriates returning, such as competitive pay, chances for research and development, and solid professional networks. Pakistan can gain from the knowledge and experience gained elsewhere by allowing qualified professionals to return, boosting its human capital and encouraging innovation (Zaidi, 2018).

The problem of brain drain is intricate and multidimensional, and it presents serious obstacles to Pakistan's socioeconomic advancement. A comprehensive strategy is needed to address this problem, one that prioritises strengthening the nation's political and economic stability, raising the standard of healthcare and education, and fostering possibilities for professional advancement. Pakistan can lessen the negative effects of brain drain and maximise the potential of its highly qualified workforce for the country's growth by addressing the underlying causes of the phenomenon and creating an atmosphere that recognises and keeps talent.

The increasing trend of brain drain in Pakistan must be addressed. The long-term effects on the nation's socioeconomic development get worse as it continues to lose highly qualified professionals to more

developed countries. The purpose of this study is to investigate workable methods for reversing the trend of brain drain and to offer a comprehensive knowledge of the elements causing it. The study aims to draw attention to the larger societal repercussions of brain drain by concentrating on the views of social work. Additionally, it proposes complete remedies that consider Pakistan's socio-cultural and economic context. The goal of this research is to offer information that can help guide policy choices and talent retention tactics used nationally, ultimately promoting sustainable development. The emigration of competent professionals from Pakistan is a phenomenon known as "brain drain," as it results in a shortage of qualified workers in critical areas. The overall socioeconomic development of the nation and the quality of services are negatively impacted by this loss. A vicious cycle of underdevelopment and increased emigration is brought about by the absence of adequate retention methods. With an emphasis on the higher education and healthcare sectors, this study aims to investigate the reasons behind brain drain as well as the difficulties and solutions to address it.

OBJECTIVES

The present paper focuses on the following key objectives:

1. To review the occurrence of migration of skilled workers from developing countries.
2. To analyze the causes of brain-drain in the Pakistani context.
3. To find out the effects of brain drain in society.
4. To know about the policies to stop fueling talented, skilled men from the country.
5. To give suggestions for controlling fueling of brilliant minds from the country.

RESEARCH QUESTIONS

1. What are the places where people's migration occurred in the world?
2. Why does the brain drain mainly occur in Pakistan?
3. What are the effects of brain drain in society?
4. Which type of policies are there to stop recruiting talented, skilled men from Pakistan?
5. What are the suggestions to control the fueling of brilliant minds from the country?

LITERATURE REVIEW

According to the Oxford Dictionary (2021), brain drain refers to the exodus of highly skilled or educated individuals from a specific nation. The phrase "brain drain" refers to significant individual emigration or movement that happens as a result of unrest and uncertainty within a country. Salt (1997) described the term "Brain Drain as "movement of human capital", or the transfer of a huge amount of skilled and educated individuals toward one direction. The term "brain" indicates 'individual's potential or skill and the term "drain" indicates condition when a vast majority of individuals outflow instead of the normal situation.

According to Bushnell and Choy (2001), the combination of the two terms brain and drain describes the state when the outflow of highly skilled or educated individuals occurs at a high rate called brain drain. The British Royal Society coined the phrase "brain drain" to describe the exodus of highly qualified individuals, such as scientists and technologists, to the United States and Canada in the 1950s and early 1960s. It has also been termed a group of Human capital that is moved heavily in only one direction. Lowell and Findlay stated the terminologies that have been applied for many years in various research studies for brain drain are as follows

Optimal Brain Drain: It is used when any country gets benefits with the exact number of skilled workers needed.

Brain Waste: This term is used when a highly skilled person is working in a place that is not suitable for him; for example, an engineer is helpless to drive an auto to survive his family.

Brain Circulation: This term is used when native people of any country return to their home country after an extended stay abroad. Such people will effectively increase the productivity of the country.

Brain Exchange: This term is used when a country face loss of native skilled men and an equal inflow of highly qualified human is made to overcome the offset caused by the outflow of brilliant minds. The source country exchanges skilled migrants from a single or a group of countries.

Brain Globalization: This term is used for skills that can easily be applied globally at the international level. A skilled man participates in the global economy.

Different faces of human capital flight or brain drain occurred in various eras it was described by the research studies presented in another time period these faces can be explained in the following,

Phase-1 (the 1950s to 1960s) Grubel and Scott recognized creating and creating nation advantage within science and innovation. Pier Paolo, Giannopoulos (2004) clarified that with the overwhelming outpouring of competent specialists, the domestic nation causes the deficiency of brilliant individuals socially and financially. The brain depletes researchers and talented men from Europe at an introductory level from the UK to the USA and Canada's joined together. For occasion, surveys of the impact of the migration Act of 1965 on the statistic characteristics of USA Kannappan expressed overwhelming surge of talented labor from destitute nations their financial possibilities were losing particularly when tuning to the efficiency levels. Concurring to Ports at first brain deplete was considered exceptionally destructive for the local countries. They claimed that the circumstance exists since of the advancement of North and backwardness of South.

Phase-2 (the 1970s-1990s) Audits of most researchers concluded that the term brain deplete isn't advantageous for the local nation, whereas have nation pick up benefits from the influx of qualified, talented specialists. In this association, the arrangement recommended is to implement migration approaches to form and invigorate the part of the Universal Organizations and Educate on the administration of the relocation flows. In the middle of the 1970s, the BD was named North/South, creating an issue. Writing appears that BD is breaking down calculate to the welfare of the nations. As per circumstances, Bhagwati proposed a "Brain Deplete Tax". It ought to decrease the tall out pouring, and from the other viewpoint, nations pay to the LDCs for depleting their logical and temperate elites. The investigations on Bhagwati's proposition we discover wrangle about which come full circle within the "Bellagio Conference on the Brain drain and wage taxation in Italy.

Sajjad (2012) highlighted the causes of brain drain in his study as political instability and life security issues were the primary causes, due to which 33% of the respondents wanted to leave their homeland. Khan et al. (2012) expounded on the factors that contribute to the exodus of skilled labourers overseas, including concerns about life security, inflation, unemployment, and inadequate job possibilities in rural areas. They recommended that the government, particularly for rural communities, offer infrastructure, life security, and luxuries of living. A research study by Sajjad (2008) collected data through primary sources. It indicated the causes of skilled man flow from Pakistan were job dissatisfaction, professional isolation, poor wages and lack of proper planning for human resources. Akram et al. (2008) indicated unemployment and inflation as the causes of brain drain from home country. The time-series data technique was used to find out the outcomes of the research problem. The study analyzed the determinants of migration in Pakistan. A positive relationship between immigrants and unemployment and inflation was observed. Whereas inverse relationship with real wage rate by using co-integration & vector error correction model

Haider & Hussain (2006) studied the causes of brain drain; they applied an extended linear regression model to study the brain drain occurrences between 1980- 2005, and they found unemployment in the home country was the major factor among others that causes flow out skilled people from the home country. Winter et al. (2004) indicated small economics as the victim of brain drain instead of significant economics in their study. Eggert et al. (2007) described after research on 'the relationship among education, unemployment and migration' calculated two-region model first one was poor and the other one was rich. The study indicated that unemployment and low wages were the main cause of outflow of skilled men. The study stated that poor regions exhibit low wages and higher unemployment rates for which skilled labor moves to the affluent areas. And at rich areas, the skilled force was the cause of low wages for the semi-skilled labor force.

The study of Johanson (n.d) during 1980-2013 focused on influences of brain drain in Pakistan as remittances, unstable political situations, and unemployment. In that study, the Co-integration technique was used and annual time series data was used over the time period between 1980- 2013. Brain depletion is the significant point of all social aspects of a country due to the astounding outpouring of competent and talented, skilled minds. Thriving Countries continuously center on human development and improvement. Still, the problem of creating a nation is the relocation of progressed and exceedingly gifted people like researchers, specialists and IT professionals to creating and developing countries with an expanding slant. Pakistan is additionally a casualty of these unbearable and harmful phenomena. Numerous discourses display the impacts of brain drain on the economy of Pakistan. We have been rethinking about few observational perspectives about appearing clues of brain drain in Pakistan.

Another research paper that was reviewed was the study done at higher levels at Khyber Pakhtunkhwa; it was studied by Afridi, & Baloch, (2014). It was done in Pakistani phenomena that identified different factors associated with its outflow. It also focused on the prevention and reversal of brain drain. The majority of the population was Pakistani students having secured employment at their homes. Questionnaires were asked to fill with 152 university teachers of KPK. The result showed that brain drain could be stopped by the balance of payment and applying brain gain and brain circulation strategies in a single hand. This issue can also be solved by initializing various projects at the home country to absorb the skills of skilled minds returning to their country.

The literature on brain drain encompasses a wide range of studies across disciplines such as economics, sociology, public policy, and migration studies. This review explores the causes, effects, and possible solutions to brain drain, particularly focusing on the context of Pakistan. It examines both the theoretical frameworks and empirical findings related to the phenomenon.

Social Work Perspective

From the standpoint of social work, brain drain has significant effects on social justice and equity. Because the remaining population frequently has poorer access to high-quality services, the emigration of trained professionals exacerbates inequality (Jones, 2015). This viewpoint highlights the necessity of comprehensive strategies that take into account the effects of migration on both the individual and the community. On the other hand, the work of foreign social workers has an impact on Pakistani social workers (Farooq & Rauf, 2024).

Comparative Perspectives

Comparative research on brain drain in other developing nations provides insightful information. For example, China and India have successfully employed measures to entice its expats back, utilising their knowledge and experience to promote innovation and economic growth (Wang & Xu, 2019). These

tactics consist of setting up centres for research and development, paying competitive wages, and encouraging entrepreneurship. In order to fully utilise the potential of its skilled diaspora, Pakistan can take similar steps and learn from these instances (Naseer & Rahman, 2018). meanwhile, because of ongoing political and economic unrest, many African nations still have a great deal of difficulty combating brain drain. To address this challenge, the African Union has underlined the necessity of regional cooperation and outside assistance (Okeke & Nnaji, 2020). These incidents show how crucial a steady and encouraging work environment is to drawing and keeping qualified experts.

The literature previously stated points to a more noteworthy tendency of migration to other nations, mostly for economic reasons. To comprehend the vast range of social, political, and economic variables causing the brain drain the exodus of highly qualified and educated human resources from Pakistan, research and empirical studies are necessary. A thorough plan may be created to counteract the brain drain trends after the key causes have been determined.

RESEARCH METHODOLOGY

This study is based on the systematic review method of previous research studies comprising inclusion and exclusion criteria. The steps of the systematic review are as follows:

1. Review Protocols/Check for existing review:

This step illustrates the necessity of review. Before reviewing papers, the following questions have been kept in mind: 1- Is the review essential? 2- Is it possible to change a question to answer a different altered question? 3- Was the review done effectively? 4- What was the time duration in which the study was done? 5- Have any development been seen after that review?

2. Identification of Research Question:

The next step of the review method is to formulate clear and well-defined research questions keeping view appropriate problem in mind definition of terms and finding the existing review in the topic for the understanding of developing a research question.

3. Defining of Inclusion and Exclusion Criteria:

In the next step, we have explained the criteria of critical aspects included and excluded in the study population, gender, group, study design, and the results.

4. Search for Related Studies:

It is necessary to search for the relevant studies regarding the research problem that has been identified and selected for the review. Search engines and libraries have been helpful for us to collect the required research. The references acquired after searches, whether online or physical, have been recorded and secured that are useful at the end of the study.

5- Selection of Inclusion Based Studies on Pre-defined Criteria.

Studies that are selected abstract screening of such studies were helpful which one will be removed and are clearly related to the chosen problem. Inclusion/Exclusion criteria helped screen the full text of different studies selected for the review paper.

6- Data Extraction from Included Studies:

Critical information informing the study was color coded and then arranged into patterns.

7- Risk and bias assessment.

A comprehensive risk and bias assessment were carried out for the papers and sources included.

8- Presentation of Results and Assessing the Quality of Evidence:

Findings have been arranged into themes, and themes have been explained with reference to the data sources.

POPULATION

Studies comprising of outflow of skilled people from Pakistan towards abroad because of their higher degrees and different skills such as Teachers, Physicians, Engineers, Technicians, Social workers, Ph. D. holders in various fields etc. all are eligible for inclusion in this review paper.

STUDY SELECTION

The research study will consist of inclusion and exclusion criteria.

Inclusion criteria

- Quantitative, qualitative and mixed-method studies are included in the study.
- Papers focusing on brain-drain from Pakistan between 2009 to 2024.
- Articles that discuss the root causes and solutions for the brain drain from Pakistan.

Exclusion criteria

Gender has been excluded from this review paper because the majority of the gender that is fueled from the country are male dependent. It has been discussed in many studies that brain drain occurs in the age of 30-45 because the majority of the countries usually welcome and encourage younger and active laborer in their countries to increase the efficient workforce; that's why men older than 45 years age are not included in the study. Opinions of the people or raw data collected in the studies; such surveys were excluded where there was no other evidence to answer a review question.

RESULTS AND FINDINGS

The created and prepared intellect can benefit from using rare assets, but the displacement of profoundly qualified minds leads to a lightening of advancement within the root country.

Causes of Brain Drain

The causes of brain drain are usually a mix of pull and push influences. Pull factors are the favourable features of the destination nations that draw migrants, whereas push factors are the unfavourable circumstances in the home country that force people to leave. Political unpredictability, economic difficulty, and a lack of suitable career possibilities are important push factors in Pakistan (Qureshi & Shah, 2017). Professionals with advanced degrees who migrate overseas in search of safety and stability have done so mostly because of political unrest and security concerns (Abid, 2019). Economic theories that offer a framework for comprehending migration decisions include the push-pull model. This model proposes that people are drawn to nations with greater incomes and better living standards and are pushed out of their own countries by conditions like unemployment and poor earnings (Bhatti & Saleem, 2018). Pay disparities are a major factor in professional migration from Pakistan, according to empirical research like that of Haider and Safdar (2019).

Apart from the political and economic aspects, social issues also come into play. Strong pull factors include social security, access to improved healthcare and educational institutions, and a greater standard of living in wealthy nations (Jafar, 2020). Pakistani students and professionals find the United States and Canada to be appealing locations due to their high standard of living and availability of advanced educational possibilities (Naeem & Khurram, 2018).

There are several factors contributing to Pakistan's brain drain. Major push reasons include political unpredictability, poor salary, a lack of opportunity for professional advancement, and economic volatility (Mahmood, 2017). However, wealthy nations have compelling pull factors like improved living standards, greater pay, and cutting-edge work settings (Zaidi & Bukhari, 2019). Professionals are also encouraged to move because they believe that there are superior educational and healthcare options

abroad (Hussain, 2018).

Global Context of Brain Drain

A widespread problem that impacts many developing nations is brain drain. Research has indicated that the exodus of highly qualified professionals may result in a decline in creativity, a loss of intellectual capital, and a slowdown in economic expansion (Docquier & Rapoport, 2012). Professional migration is frequently impacted by things like increased incomes, greater work opportunities, and better living conditions in developed nations (Beine, Docquier, & Rapoport, 2008).

Effects of Brain Drain

Brain drain has wide-ranging, significant effects. The loss of skilled labour is one of the biggest effects, impeding the advancement of important industries like technology, healthcare, and education. For example, Pakistan's healthcare system faces a scarcity of trained physicians and nurses, which affects the standard and accessibility of medical care (Iqbal & Ali, 2017). The migration of medical personnel to nations with superior healthcare systems and greater incomes is exacerbating this shortfall (Khan & Abbas, 2019).

Brain drain also poses problems for the educational sector. The quality of education and research output declines as a result of the departure of seasoned educators and researchers, which has an impact on the nation's overall knowledge base and ability for innovation (Malik & Sadiq, 2018). Lack of qualified workers can also result in "brain waste," a condition where highly educated people work in jobs that do not fully utilise their abilities because of mismatched skills or qualifications that are not recognised abroad (Ahmad & Tariq, 2019).

Brain drain has societal repercussions in addition to professional and financial ones. Skilled and educated people leaving their native nation might make social injustices worse. The socioeconomic divide is growing because those left behind, especially in underdeveloped and rural areas, sometimes have inadequate access to high-quality services (Yusuf & Ali, 2020). This disparity has the potential to exacerbate social conflicts and undermine societal cohesiveness.

Brain Drain in Pakistan

Pakistan's unique brain drain situation is influenced by a number of push and pull variables. Mahmood (2017) identifies low salary, insufficient possibilities for professional progress, and political instability as push factors. Conversely, in industrialised nations, pull factors include improved living conditions, greater professional opportunities, and higher incomes (Zaidi & Bukhari, 2019). Pakistan's healthcare and education sectors have been particularly hard hit, with many physicians and academics leaving the country to work in the US, Canada, and the UK (Hussain, 2018).

CONCLUSION

The economic, political, and societal push factors that contribute to the brain drain from developing nations like Pakistan, as well as the allure of better chances elsewhere. A multimodal strategy involving policy reforms, financial incentives, and diaspora participation is required to address this problem. Retaining qualified professionals can be facilitated by creating a human resources database, improving skills, offering training, career counselling, and job placement. Reversing brain drain can also be facilitated by programs like career counselling with an emphasis on entrepreneurship and brain circulation. Overall, a combination of job creation, human resource development, job satisfaction, and compensation regulations is essential to manage the migration of skilled workers.

RECOMMENDATIONS

After analysis of some research papers included in this review paper, these recommendations can be considered:

- Quality education must be provided in our educational institutions.
- Adequate facilities, proper funding resources, capable and qualified teaching staff, advanced curriculum, and scholarships, especially at a higher level.
- If the Government is serious about providing financial support, the migration process of skilled people can be discouraged. Support should be provided mainly for such people who are talented and economically weak.
- Research facilities must be necessary with quality education.
- Manpower Arranging: As said in UNESCO 127th official conference, creating nations arranging in instruction division should be characterizing in congruity with the social methodology, financial needs, and structure of capabilities. Labor arranging has not been a tremendous victory in a number of nations influenced by brain drain. In conjunction with instruction preparing approaches, substance and educational modules need to be planned to guarantee proceeds assimilation of individuals requested by specific social orders and branches of its economies.
- Retention through financial/ formative, recreational/instructive programs. Instructive openings and subjective enhancement of the preparation can decrease the thinking ideas regarding overseas reciprocal remote help programs and partnership.
- There must be a fair system of merit; skilled and talented people should be given opportunities for development in their home countries. Recreational activities should be arranged for the exploration of their talents.
- Peaceful and secure working and educational environment must be provided as well, as the country's political conditions shouldn't influence the social life of the general people.
- Brain drain could be reversed into brain gain; in other words, talented Pakistanis could be returned to their homeland by initiating attractive projects. Applying restrictions of a few years of providing services for their home country. Give them business opportunities and offer attractive salaries and bonuses.
- There must be a facility at every institution to provide students with career guidance and counselling.
- Another suggestion is that countries can work together at the national and international level for compensation and maintain a balance of qualified, skilled workers in their countries.
- One more step could be taken to develop a network with overseas diaspora in the home country and get benefits with their skills and experiences by providing them incentives and benefits. It will encourage them to work for their homeland, and it may cause their return to Pakistan.
- Pakistan must take initiatives to prevent and reverse the brain drain of capable and skilled people by applying brain gain and brain circulation strategies.
- Specific development projects will be significant initiatives to use the skills of brilliant minds in the home country.
- If the skilled individuals are scientists by profession, they migrated from their homeland for better lifestyles; they are recoverable assets which are the best to act their significant role in

developing opportunities at their land. Developing countries must try to open up diverse channels for transmitting and distributing.

- Various facilities and services, such as advanced health education, must be provided to skilled men to maintain their skills efficiently.

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