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## **Preventing and Reversing Pakistan's Brain Drain: An Empirical Analysis of Public Sector Universities of Khyber Pakhtunkhwa**

**Fahad Khan Afridi**

*Assistant Professor, CECOS University of Science and Information Technology*

**Qadar Bakhsh Baloch**

*Associate Professor, National University of Modern Languages*

### **Abstract**

*The research study was aimed at investigating the phenomenon of Brain Drain in Pakistani perspective, identifying different factors associated with its outflow and suggesting measures for its prevention and reversal. The research population was Pakistani students pursuing their higher education abroad comprising of students having secured employment at home. A questionnaire was emailed to 152 university teachers of eighteen public sector universities of Khyber Pakhtunkhwa. The surprising outcome of the research was that the brain drain of Pakistan is not substantial rather yielding positive results in the shape of balancing balance of payment. The research recommends that Pakistan needs to take calculated initiative in preventing and reversing its brain drain by applying brain gain and brain circulation strategies on one hand, and initiating specific development projects at home capable to absorb returning skills at home, on the other.*

**Key words:** Brain Drain, Brain Gain, Human Capital

Human capital ranks among one of the most important factors in a nation's development process alongside access to technology, natural resources and level of investment (Berry & Soligo, 1969). It is evident from the literature reviewed that the nation better in human capital grow more rapidly than that deficit of it and deficit human capital is the critical factor which keeps a nation under developed (Stark, 2004). The economic or political migration of manpower from underdeveloped countries to more developed ones is not a recent phenomenon rather in practice since centuries. History is replicated with hundreds of examples where Diasporas of one origin region to other regions in search of better living environment.

Availability of skilled and educated human resource is the lynchpin in the socio-economic and socio-technological development of any sector of the economy. Employees' turnover or flowing out of human resource lowers down productivity and developments. The argument is empirically supported by the various studies such as Baloch (2009) and Ali & Baloch(2009; 2010) argued to keep the employees satisfied and motivated so as to control their intentions to turn over. Turnover turned brain drain from developing to the advance world is continuously drying out their meager human resource from academic and industry such as; university professors, scientists, engineers, and

physicians- having been trained in home country institutions at considerable cost and moving out to benefit already affluent nations.

Pakistan is a developing country which is confronted with the great loss of highly skilled workers to green pastures and for compensating that, government offers high incentives in order to retain a critical number of engineers, scientists, educationists and other professional in their countries. Since the mid of 1970s, Pakistan started experiencing the flight of its human capital; firstly of high skilled labor to the Middle East and lately of highly educated professionals to USA and the Europe (Afridi & Baloch, 2014). According to Pakistan's Bureau of Emigration and Overseas Employment (2014) since 1971 till July 2014 total of 7511582 have immigrated to various parts of the world.

The underlying purpose of the research was to identify and arrest the push and pull factors, though operate in opposite direction but causing brain drain in Pakistan's education sector especially at university level. The higher education is a key to scientific inquiry, technological development and tool to poverty eluviations. Therefore it is broadly acknowledged as the boulevard to socio-economic mobility and prosperity. The universities are considered as centers for creation of knowledge and ideas, development of skills, values and attitudes that help to overcome development challenges of a country. If the university is hit by brain drain than the function of teaching and research is adversely affected and national development is gradually deprived of its human capital needed for the developmental process. Therefore, if a developing country like Pakistan is to put on the path of socio-economic development and at the respectable position amongst the community of nations then the emigration of its academia must has to be stopped and the already migrated have to be attracted back so as to perform their role in country's development.

There is no denying of the fact that a lot of work been has done on the issue of brain drain; however, most of the researches focus on the technical immigrants such as scientists, engineers, doctors and other professionals and ignoring education sector. The human capital flight especially from higher education sector of Pakistan has not been examined so far and especially of Khyber Pakhtunkhwa, Pakistan. The underlying reason for focusing this research on the brain drain of university teachers is because of its multi-dimensional effects on micro and macro level of national development.

### **Literature Review**

The phenomenon of Brain drain (BD) is the "migration of skilled human resources in search of better living standard and quality of life, higher salaries, access to advanced technology and more stable political conditions in different places worldwide for trade, education, etc" (Sunita & Ronald, 2005). The 19<sup>th</sup> century witnessed "wealth growth in

relocation flows” playing a key role in nurturing income junction between Europe and the United States (O’Rourke et al. 1996). For the first time the world brain drain was introduced by The Royal Society of London to explore the flight of technologists and scientists to Canada and USA in the early 1950s. Since 1950s, the word brain drain has been added in the literature with several synonyms such as human capital and migration of highly skilled educated workers from developing countries to developed countries.

The 1960s observed the movement of skilled people accelerating from the developing to the industrial world. This trend of rising migration was due to the policies of the developed world that were aimed at attracting skilled labor at the cost which was not possible by the developing countries to counter and prevent their people from moving out. This relocation was commonly accepted as it was in accordance with the economic laws of supply and demand. Therefore, it was interpreted that an integrated international labour market mechanism was balancing out the surplus manpower of one area at a location where it was deficient thereby benefitting both of the economies (Heiko, 1999). English dictionary is full of the definition of brain drain. The definitions reported below, in chronological order; show how the language in definition is changing from social to ethical as well as from political towards the economic.

*“Brain Drain is the migration of educated and skilled labour from poorer to richer countries. Education skill, which represents investment in human capital, is usually cheaper to acquire in poorer, labour abundant countries, since its provision is usually a labour intensive activity. Those with the skills or education then move to more developed countries where the return to their human capital is higher. Such migration is often encouraged by laws and institutional factors, as most countries look more favorably on immigration by those with skills than those without” (D. W. Pearce, 1981).*

*According to Kwok & Leland (1982), “The Brain Drain is an expression of British origin commonly used to describe one of the most sensitive areas in the transfer of technology. It refers to skilled professionals who leave their native lands in order to seek more promising opportunities elsewhere”.*

### **Terminologies of Brain Drain**

With the passage of time, enormous terminologies regarding brain drain or brain mobility have arisen. Some of them are described below:

Table 1. *Terminologies of Brain*

Terminology	Definition
Optimal Brain Drain	The theory of optimal brain drain described that some of the developing countries are benefited from exact amount of skilled and educated labor migration.
Brain Waste	The phenomenon of brain waste is occurred when highly skilled and educated individuals are under employed. For example engineer is employed as a clerk. This condition may be created in both countries i.e. sending country and receiving country.
Brain Circulation	The term brain circulation refers to when highly skilled individuals return back to their home country. Their returning back to home country boosts the productivity and source of productivity.
Brain Exchange	The word brain exchange describes the condition when the amount of highly skilled labor is lost by sender countries. As replacement the sender countries also gain the equal amount of labor. In short, countries exchange the labor source with other countries.
Brain Globalization	The circulation or participation of highly skilled worker in today's global economy or in all over the world. In the face of globalization MNCs require mobility of human capital globally.
Brain Export	The phenomena of brain export occurred when a country adopts the strategy to educate their labor force and exports the same to a developed country, in return the country gains financial benefits. The export of skilled labor may be in bilateral condition or in open, but the basic purpose is bound to educate and export the labor as to improve the economic condition and the balance sheet of a country.

According to Salt (1997), the term “Brain Drain” is commonly synonymous to the word “movement of human capital”, or to the transfer of huge amount of skilled and educated individuals toward one direction. The term “brain” refers to the individual potential, competency or skill and the term “drain” refers to the condition when a vast majority of individuals outflow as compared to the normal condition. According to Bushnell and Choy (2001), the combination between the two terms describe the condition when highly skilled or educated individuals outflow at a high rate, which is called brain drain.

### **Brain Drain and Brand Gain**

Researchers conducted studies in 1990s and concluded that brain drain does not always have the adverse impact on home countries; it also has positive impact on home countries. Studies revealed that the term brain drain may be called brain gain. Researchers like Stark and Helmenstein (1997), Streaubhaar (2000), Streaubhaar and Wolburg

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(1999), Stark and Wang (2002) vetted the same terminology of brain drain to brain gain from Eastern Europe to Germany.

### **Reversing Brain Drain**

Return migration of skilled laborers has been recognized as one of the sources that could lead to a brain gain effect. Several well-known works are worth noting. Borjas and Bratsberg (1996) constructed a model to allow for individual self-selection. Their finding is that most of the average skilled workers have a tendency of return migration. As the economic environments of the sending countries improve over time, they would find it appealing to migrate back to their countries. Hence, it is the average skilled labor that returns to the sending country. As they return to the sending country, the overall human capital stock expands and a brain gain effect occurs. Stark et al. (1997) presented a model that allowed for heterogeneous ability individuals. All individuals are allowed to choose the level of human capital accumulation. Under these assumptions, relatively lower ability individuals could acquire more human capital and migrate to the receiving country.

### **Push and Pull Factors**

More recent studies of international physician migration from developing to developed countries identify multiple causal factors, including several factors that push physicians out of their home country and several other factors that pull physicians toward other countries (Muula, 2005). The main push factors stimulating physicians and other health care workers to emigrate include low pay, poor economic conditions, and the risk of contracting HIV infection and AIDS, and concerns about personal security in areas of conflict. Pull factors, encouraging migration of physicians, include a shortage of physicians in developed countries, recruitment efforts from developing countries, new and more attractive living conditions for physicians and their families, family or social connections in developed countries, political stability, good public services such as schools and health care facilities, and more job satisfaction. There is, in fact, a kind of inverse relationship between push and pull factors related to the relative levels of pay, career prospects, and working environments available in donor and recipient countries. Most recent literature about the brain drain focuses on the pull factor of active recruitment of physicians by developed countries (Dauphinee, 2005; Hooper, 2008; Scott, Whelan, Dewdney & Zwi, 2004; Watkins, 2005). The study found that personal safety is a major push factor--physicians want to escape from areas of high criminal activity (Klein et al., 2009). Major pull factors were new opportunities for employment, new places to live for spouses and families, and family or social connections. The plant factors identified in this Canadian study

included a good quality of life and good public services like schools and universal health insurance (Klein et al., 2009).

**Objectives of the Research:** The following are the main objectives of the research study:

- To review the relevant literature on brain drain, and to identify the factors responsible for the brain drain of human capital.
- To describe the mosaic of Pakistan's emigrants with reference to their numbers, destinations, occupations, and environmental factors feeding the brain drain phenomenon with special reference to the flight of teachers of higher education sector of Khyber Pakhtunkhwa, Pakistan.
- To suggest strategies for prevention of the human capital flight out of Pakistan and measures to reverse the drained out human capital back to Pakistan.

### **Research Hypotheses**

H<sub>1</sub>: There is a significant influence of Political factors on brain drain

H<sub>2</sub>: There is a significant influence of Academic factors on brain drain

H<sub>3</sub>: There is a significant influence of Economic factors on brain drain

H<sub>4</sub>: There is a significant influence of Social factors on brain drain

H<sub>5</sub>: There is a significant influence of Cultural factors on brain drain

### **Research Methodology**

The aim of this research was to identify determinants of brain drain in Pakistan and suggest measures for its prevention as well as reversal strategies. The research conducted is a combination of descriptive and co-relational in nature. The research describes the prevailing level of brain drain from Pakistan in general and its education sector (limited to the public sector universities of Khyber Pakhtunkhwa) in particular. Out of 19 public sector universities six newly raised universities (Khushal Khan Khattak University, Swat University, Bacha Khan University, University of Sawabi, Hari Pur and Shaheed Benazir University Sheringal) were excluded from the population and 40% sample of rest of the twelve (N) universities was taken by applying simple random method which came to n=5. Owing to the nature of research the data collected was of secondary and primary both following combination of qualitative and quantitative approach. The primary data was collected through questionnaires served to the 152 Faculty members' pursuing their higher education abroad on various scholarship schemes and Pakistani students (non-faculty members) studying enrolled abroad. Out of the 152 respondents 126 responded to the questionnaires, which were analyzed by using SPSS-17. The data was analyzed by using statistical tools.

Table 2. *Sample Frame & Response Rate*

University	Total Faculty members Studying Abroad	Served with Questionnaires	Responses Received	Response Rate
University of Peshawar	43	43	38	88.4%
Agricultural University Peshawar	14	14	09	64.3%
Islamia College Peshawar	16	16	12	75.0%
Gomal University, D.I. Khan	13	13	10	76.9
Abdul Wali Khan University, Mardan	66	66	57	86.4%

### Motivational Factors

The responses to the investigations designed for knowing the major motivational factors for the immigrants to return to their homeland were found as:

$$M.F = \frac{\text{Highest Motivational Score}}{\text{Total Motivational Score}} \times 100$$

$$M.F = \frac{(3+4+5)}{(1+2+3+4+5)} \times 100$$

Table 3. *Responses regarding motivational factors for immigrants return to homeland*

	Least	To	-----	-----	Highest
Family	13	08	11	29	65
Cultural or Religion	21	17	54	09	25
Social Integration Problems in Host Country	49	37	13	06	21
Reverse Brain Drain Problem	21	10	35	18	42
Job Placement / Promotion	02	23	10	14	77
Knowledge and Experience Transfer	11	31	07	48	29
Capacity Building in Pakistan	27	16	34	27	22
Investments	82	09	18	14	03

Source: Field Survey-2014

The responses tabulated above in table. 1.1 indicate on average that majority (83%) respondents considered family as one of the most leading factors which acts as a motivator for their long term return to Pakistan. The major influencer predicted is the socio-cultural value system of Pakistani society having joint family system and sacrificing for the family as a common norm.

Respondents also point out that Job Placement and opportunities of carrier Promotion is one of the dominant factor for staying in any country abroad (80% responses).

75 % respondents were found in favour of reversing brain drain and strongly advocated for the need of addressing problems / removing irritants to facilitate immigrants return back to their homeland and served their own country.

66 % respondents opined that Capacity building and human development in Pakistan would help to prevent flow out of brain drain and also facilitate reversing brain drain as well. Social Integration Problems in Host Country (32%) as well as rising investment at home (28%) are the factors which help cultivating environment in favor of reversing brain drain and brain gain. Graphical representation in graph no.4.8 further crystallized the responses indicating strength of various motivators in favor of reversing brain drain.

### Major Constraints for long-term return to Pakistan

The responses tabulated in Table 4, clearly indicate that the 87% respondents considered that job opportunity and job satisfaction were vital reasons for Pakistani immigrants to stay abroad and not return to their homeland. 66 % consider questionable quality of living standard and political instability (68%) back home were pre-dominant constraints for their returning home therefore, they continue staying abroad. Some of the other constraints meriting special attention when planning for creating environment soothing for reversing brain drain are:

- Education - 56%
- Health -58% and the
- Financial problems-51%

Table 4. *Constraints on Reversing Brain Drain to Pakistan*

	Least-----To-----Highest				
Family Abroad	61	16	09	13	27
Financial Constraints	49	13	21	37	06
Health Sector in Pakistan	35	18	42	21	10
Political Instability	29	11	48	31	07
Standard of Living	27	16	34	22	07
Social Integration Problems	25	54	09	21	17
Education	31	24	06	45	20
Job Opportunity and Satisfaction	14	02	23	10	77

Source: Field Survey

### Incentives Available in Host Country that Encourages Stay

The investigations intended to know the key incentives that encourage Pakistanis to stay in their host country for long term received following responses as shown in the table 5 below

Table 5. *Incentives Available in Host Country Encouraging Prolong Stay*

	Least-----To-----Highest				
Income	21	07	12	67	19
Education	13	20	10	30	53
Health Care	18	26	35	27	20
Social Security	04	17	41	39	25
Job Satisfaction	21	12	02	31	60
Job Opportunities	17	20	34	46	09
Political Stability	11	32	07	23	53
Standard of Living	15	10	24	32	45

Source: Field Survey

The results indicate that all the factors are playing significant role as incentives for extending their living stay in their respective host country. Income incentive has got 78% favorable response while education facilities 74% and health care 65% of response in favor of available incentives in host country. Social security with 83%, of highest comes as the most attractive incentive in the ranking. In addition, other incentives such as quality living standards, political stability and job opportunities are also in the list of the incentives which respondents feel as encouraging factor in their long stay in the host country.

### Factors Encouraging Long-Term Return to Pakistan

The investigations intended to know the key incentives and factors that can encourage Pakistanis to return back to their home country for long term stay. Responses considering / weighing the incentives available in home country for the purpose include:

Table 6. *Incentives in Pakistan Encouraging Returns*

	Least-----To-----Highest					
Accommodation during your stay	44	21	37	19	05	48
Travel Expenses covered	16	32	08	44	27	63
Cover living expenses during stay	25	11	27	24	39	71
Salary for Experience & allowance	09	33	18	46	20	67
Choice of job placement	36	24	41	07	18	52
Maintain current salary	32	16	44	27	08	63
Tax Facilitation	05	44	37	21	19	61
Investment Facilitations	11	39	24	32	20	60
Pre-Departure / On-Arrival Orientations	16	34	40	10	26	60

Promotion Possibilities	02	10	14	77	23	90
Maintain Pension Programmes from host country	61	12	05	22	26	42

Source: Field Survey

The results indicate that Promotion Possibilities (90%) because of their higher education acquired abroad is the most important incentive that can encourage immigrants to come back Pakistan.

**Correlation Analysis:** The correlation between the two variables X and Y is  $\rho$ , to be significant at 0.000 levels, hence proving the hypothesis right.

### Regression Analysis

Table 7. ANOVA

	Sum of Squares	df	F-statistics	Sig
Regression	12	1	65	.000
R = 0.860		R <sup>2</sup> = 0.793		

Table 8. Regression Coefficients

	$\beta$ Coefficient	T	Sig; level
Constant $\alpha$	2.14	14.42	.000
Job Opportunity	0.168	8.075	.000
Living standard	0.123	7.05	.000
Health and education facilities	1.58	5.26	.000
Political stability	0.165	5.62	.000
Income	1.120	6.02	.000

b = Immigrants return (at confidence interval= .05)

$\alpha$  = constant

The regression analysis of the study is given in the tables 4.37 and 4.38 using the econometric model as follow:

$Y = f(X_1, X_2, X_3, X_4, X_5)$  where,

Y = Immigrant return to Pakistan

X<sub>1</sub> = Job opportunity

X<sub>2</sub> = Living standard

X<sub>3</sub> = Health and education facilities

X<sub>4</sub> = Political stability

X<sub>5</sub> = Income

In the analysis of the Variance (ANOVA), the coefficient of determination (R<sup>2</sup>) is equal to 0.793 (or 79.3%) indicates that the variation or change in the immigrant return response is 79.3% explained by the predictors given in the function at sig. level 0.000 and degree of freedom=1. the result indicates the good enough correlation among the

predictors and also the correlation between predictors and dependant variable

The empirical results of the regression equation using econometric model will be:

$$Y = f(A, B, C, D, E)$$

$$HE = 2.14 + 0.168A + 0.123B + 1.58C + 0.16D + 1.12E$$

The  $\beta$  Coefficient of Job opportunity is 0.168 with t-statistic 14.42 at sig. level 0.000 shows the highly significant results.

The  $\beta$  Coefficient of Living standard is 0.123 with t-statistic 8.075 at sig. level 0.000 shows the significant results.

The  $\beta$  Coefficient of Health and education facilities is 1.58 with t-statistic 5.26 at sig. level 0.000 shows the significance of results again.

The  $\beta$  Coefficient of political stability is 0.16 with t-statistic 5.26 at sig. level 0.000 shows the significance of results again.

## Recommendations

Keeping in view the research findings and the conclusion, the research makes following recommendations:

**Converting Brain Drain in to Brain Gain:** Since 1950s it was widely accepted belief in the field of human capital flight or migration research that the emigration of highly qualified employees from developing to developed world is a socio-economic loss thereby called as brain drain. The argumentation was based on the rationale that:

- This transfer of human capital across national frontiers is assumed to have a negative effect on the domestic economy because of the loss of individual contribution in social welfare and missing effect of per capita in national economy.
- The loss of highly qualified people is loss of national investment without any return in the shape of their contribution in socio-economic development of its country. The state invests to enhance its capacity for development by arranging to provide knowledge, education, skills and attitude to its people. Once this raw human material is developed in to human resource than this human resource has to return to society by contributing in its socio-economic development. The flight abroad of this human capital results in to net loss the country of origin.
- The developed and trained mind can innovate to develop by using scarce resources but the emigration of highly qualified mind leads to alleviation of innovation and development in the country of origin.
- The migrants, planning to go for good, take their money and asset along thereby resulting in to financial loss as well.

With the turn of new millennium the negative side of the brain gain is being subdued by the idea of ‘brain gain’ that determines some

positive aspects of brain drain for the country of origin (Hunger 2000; Van Hear 2003; Thränhardt 2005). The phenomenon of Brain gain can be very much operative in Pakistani context of human capital flight yielding benefits to the country. The Migrants, once gain high position in their occupational hierarchy and financial possessions, the Pakistani Diaspora contribute positively in the socio-economic development of their country of origin:

Transferring knowledge and investing in the establishment of educational institutions, entrepreneurs and businesses. Peshawar Medical College, Shifa International Islamabad, Quaid-e-Azam International Hospital Islamabad and so many others are shining examples in this regard. Pakistani professional brains residing abroad can directly contribute to their country of origin by giving their professional diagnoses and consultancies by using video conferencing or other electronic media.

The members of Pakistani Diaspora on their occasional visits for family reunions or on re-partition can bring along lot of new knowledge, skills, investments, modern practices and ideas which can transform the country of their origin. Indian IT sector is most encouraging lesson from Diaspora's contribution to learn because today half of the companies in India were wither founded by Indians or managed by them in the USA. Today nearly than two third of their gains or more are generated in the US market (Hunger 2004). Indian Government, having realized the gains, has created a Ministry of Overseas Indian Affairs to facilitate and coordinate the gains from their Diaspora.

Members of the Pakistani Diaspora may facilitate to initiate collaborative conferences and research initiative; students sponsor schemes, lobby issues of national interests and cultivate friendly relations, build soft image of the nation and use personnel network in extending poverty alleviation and social development programs of different outlook.

### **Financial Gains from Brain Drain**

Country like Pakistan which is experiencing consistent trade deficit and short of balance of payments since 1957 can treat their Diaspora as an opportunity to balance their balance of payment by encouraging them to increase rate of their remittances. According to Migration and Remittances report 2014 of the World Bank, Pakistan is ranked on 7th largest recipient of officially recorded remittances in the world and second largest recipient of remittances in South Asian region after India (Economic Survey, 2014). Foreign remittances in Pakistan is the second largest financial inflow/ it augments the purchasing power, help alleviate poverty by financing in social infrastructure including; education, health and entrepreneurships.

The rising scale of remittance makes Pakistan one amongst 20 countries of the world where remittances are generally equivalent to over

30 percent of its exports and pays for more than 20 percent of its imports. A cursory glance over following tables reveals that how foreign remittances are filling the gaps of our current account deficit and balancing out the substantial need of our foreign reserves. Realizing criticality of its importance in Pakistan's economy the government is constantly struggling to discover new markets for the export of manpower, declare incentives and initiate active policies to stimulate its drained brain to enhance its volume of remittances further. Hence, the human capital in Pakistan is now being traded like goods and services industry. For this Pakistan can learn lesson from Indian Ministry of Overseas Indian Affairs by making inroads in its off shore population, develop network with the intent of stimulating their patriotism, building partnership for undertaking different socio-economic development initiatives in Pakistan. Pakistan should legislate for various rights and incentives for Non Resident Pakistani such as; special privileges card, investment appreciation medals, dual citizenship right, right to contest election of constituent assembly.

**Brain Gain through Brain Circulation:** Furthermore, Pakistan should benefit from the European strategy of "Brain Circulation" as a substitute to the brain drain. Brain circulation includes the permission of highly qualified migrants to enter the EU for different purposes: further training, education, and temporary employment – including the idea to stay there for a limited period of time and then to return to their country of origin with their gathered know-how, capital and networks. Brain circulation would help Pakistan if policies are developed in a way that its human capital instead draining out is circulated then outcome would be manifold. At the same time Pakistan should create Diaspora friendly conducive environment so that intending to come back to Pakistan should find better growth opportunities, advanced research infrastructure, availability of funds and job security. Return and active engagement of Indian, Morocco, and Iraqi Diasporas offer success stories of brain gain that Pakistan can take as reference points in number of areas. In short, Brain gain is an optimistic valuation of negatively perceived brain drain which connects migrations with the socio-economic development of Pakistan.

- It is recommended that at government level new projects, Diasporas networks must be encouraged to compensate the loss of qualified workers residing abroad. Good practices in human resource planning and management is very important. Step for facilitation of educated persons at their right place is required to be taken on emergent basis.
- To retain and maintain highly qualified and highly skilled manpower with in the country the government shall initiate schemes to provide them technical and financial assistance for

their career development and job absorption. Career services provide guidelines in knowing inner capabilities and a tool for adjusting in surroundings. Counseling services help qualified people in selecting appropriate field and a direction in every crucial problem of life. Career guidance & counseling services in educational institutions has a major role in choosing best suited profession and lessening brain drain rate.

- Presently none of Pakistani department maintains a data base showing qualifications, education and their present status with location which made us handicapped to initiate any meaningful plan of absorbing and gaining from drained brain. Therefore, it is strongly recommended that destination wise data showing number and qualification and competency of each Pakistani migrated abroad is recorded. This data can help us in planning for brain gain, brain circulation, Diaspora network and capacity building initiatives.
- Government at all levels; community networks and civil society shall initiate an awareness campaign, using all channels and mediums, in strengthening pluralism of our society. The pluralism which signifies the value of family, relatives and friends in individual life. The campaign and the initiative will go a long way in preventing human capital from flying abroad on one hand and facilitate/ motivate brain gain, brain circulation and brain reversal back to Pakistan.
- Since married life and siblings back home serve as magnet for the people abroad therefore, it is suggested that while offering scholarships / government sponsorships for study abroad, the married students shall be given preference over bachelor ones.
- Pakistan Government shall create job opportunities by accelerating industrial and developmental process in home which can in turn help to absorb our qualified and skilled man power at home thereby preventing their flight. The recent investments in pipelines from China and other part of the world especially in energy sector and infra-structure development seem to accelerate job demand. These projects once completed would create spiral effects for following demands and job market.
- Government human resource planning agencies at national and provincial level shall coordinate with national planning department and universities/ training center in order to correctly identify the areas of education/ training having future demand. The coordination would prevent passing out of graduate in unwanted field / disciplines and produce more graduates in the desired fields / disciplines having future demand for labor market.
- Government shall speed up its efforts to complete its energy projects well before the target date so as to revive industrial

development and enhance production level thereby generating employment opportunities to absorb our unemployed manpower. This step would serve three dimensional; boost economy for future development, absorb new graduates and create better job opportunities for Pakistani expatriate interested for long return.

- Brain Return is an inherent part of the brain drain. Therefore, it is also recommended institutions, colleagues and relatives may be counseled that they continue motivating and encouraging their students abroad through personnel communications, email and text messages to complete their study within given time and return to Pakistan as early as possible.
- According to available data majority of talented individuals intended to stay abroad for better future as well as job opportunities and placement. It is recommended that strict merit policy may formulate and followed, job may be offered on qualification / experience basis instead of reference basis.
- Government's attentions / resolve for developing all sectors of economy such as industry, education, agriculture and service sectors with equal priority will be helpful in creating job market, curbing of unemployment which will ultimately prevent brain drain on one hand and facilitate / motivate the Pakistani expatriate for their long term return back to Pakistan on the other.
- Trade openness accelerates economic activities, generate employment and facilitate economic growth thereby preventing/ lowering the degree of brain drain. Therefore, research recommends government to devise comprehensive policy to exploit prevailing trade opportunities at the platforms like SAARC, ECO, Shanghai Cooperation, and WTO etc. Special attention to neighbor countries such as, Afghanistan, Central Asia and India would yield better fruits in short span of time. Expansion of trade tentacles / creations would enhance employments opportunities for all types of skilled and un-skilled / educated and un-educated manpower.
- It is suggested to improve the quality of education, for which government required to take steps regarding qualified teachers, adequate facilities, proper funding, comprehensive curriculums, affordable tuition fees and the availability of scholarships, research facilities and proper educational support. This can be reinforced by incorporating brain gain and brain circulations.
- Establishment of institution of high quality standard, hiring of highly qualified faculty on merit, creating and funding research organizations, improving research infrastructure, labs, libraries etc would provide better learning facilities to Pakistani students with in Pakistan. Hence controlling flow out of our brain and attracting

our brain located outside to fall back and contribute in these institutions for capacity building and research. .

- Bilateral student exchange programs, foreign aids, scholarships and fellowships offered by international organizations should be utilized fully for such trainings. This would help in converting brain drain in brain gain through brain circulation.

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