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BRAIN DRAIN: FACTORS AFFECTING STUDENT MIGRATION FROM BANGLADESH

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Abstract

Human capital is an integral source for a country's development, but due to the massive emigration of the intelligent and highly skilled students, Bangladesh is experiencing a brain drain. The objective of the paper is to determine the push-pull factors responsible for student migration from Bangladesh. An online survey has been conducted to find the intention of the students about their graduation and their intention to return/not return to Bangladesh after completion of education. Respondents enrolled in local and international universities have been part of the online survey. Quantitative analysis like Pearson Chi-Square test has been conducted to find the association between migration decision and socio-economic factors responsible for migration. Lack of research centers, limited programs, and job opportunities are the significant contributions to brain drain. Binomial logit regression has been conducted to detect if there are any other factors (gender, educational background, and household income) influencing migration decision. Certain policies have been recommended to improve the radical transfer of human resource. Thus, an analysis of student migration behavior, as well as strategic policies to prevent brain drain can be perceived from this paper.

Keywords Brain Drain, Push-pull factors, Online survey, Qualitative data, Quantitative analysis

Introduction

'Brain Drain,' is the departure of educated, highly skilled, talented individuals or professional people from one country, economic sector, or field for another usually for better pay or living conditions. Due to the brain drain phenomenon, developing countries like Bangladesh are unable to deploy its human capital effectively.

- **Background**

The term 'Brain Drain' was coined by the British Royal Society to describe the migration of scientists and technologists to North America from post-war Europe in the 1950s and early 1960s. (Cervantes and Guellec, 2002¹). According to Spring (2009),² the term was used to describe the

¹ Cervantes, Mario; Guellec, Dominique (January 2002). "The brain drain: Old myths, new realities". OECD Observer. Retrieved 2011-02-28.

² Joel Spring. Globalization of Education: an introduction. First published 2009, by Routledge, 270 Madison Ave, New York, NY 10016, pp185

migration of Indian scientists and engineers to the UK. Rapoport (2008)³ agreed with Cervantes & Guellec (2002) and stated that the term 'brain drain' originated in the 1950s and referred to the emigration of scientists from countries such as the UK, Canada or the former Soviet Union to the US. During the 1980s, Australia and Canada joined the international competition and allured highly skilled and educated brains from the developing countries for a better standard of living. Although brain drain initially referred to only emigrating technology workers, it now comprises IT professionals, Engineers, Physicians Scientists, Economists and Post-graduate students.

Brain drain was first explained by Ravenstein 1889 through the push-pull theory and later elaborated by Lee in 1966⁴. Differences in economic, political and social aspects between developed and developing countries render this brain drain. Push factors relate to the country of origin like weak economic conditions, political instability and a lower standard of living. These factors stimulate the qualified people to leave the country. On the other hand, pull factors like better education, career and higher standard of living attract the migrants to the developed countries (area of destination).

Brain drain was considered mostly to have adverse effects on the origin countries. Jagdish Bhagwati stated that brain drain is a zero-sum game which aggravates the inequality between the developed and developing countries and a tax should be levied by the countries of origin to compensate for their losses. However, this negative perception on brain drain has changed, as many developing countries have successfully converted brain drain into brain circulation, i.e., the highly skilled/educated migrants return to their country of origin after completing their training/education. India has been an exemplary model which has turned brain drain into brain circulation by initiating new policies. Hence, it was said that many developing countries have experienced social gain from the brain drain (Rapoport, 2004). Thus, whether a state gains or losses from brain drain depends on the public policies implemented by the developed and developing countries.

³ Michel Beine, Frédéric Docquier, Hillel Rapoport (2008, March). Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers. Volume 118, Issue 528

⁴ Hein de Haas (2008). Migration and development. A theoretical perspective

- **Brain Drain and Bangladesh**

Bangladesh's enrollment in tertiary education has reached to 3.2 million students in 2017 from 31,000 in 1972. However, less than 2 percent of the GDP is apportioned for education, and 2 percent of that 2 percent goes to higher education. It is the lowest in all of South Asia. Such low budget proportion is unable to improve higher education or promote technical and vocational learning. Around 23 percent of the total number of students pursue higher education as stated by the 32 public universities and 84 private universities.

With increased globalization, students of Bangladesh can experience easy mobility and opportunities abroad. Lack of technical capacity and resources, nepotism, inequality in the job market and unfavorable socioeconomic situation induce thousands of students to leave Bangladesh and settle abroad. The ones remaining are also in constant search of opportunities to leave. Moreover, with the economy improving, parents have greater affordability to send their children abroad. As a result, student migration from Bangladesh is increasing at an alarming rate.

According to United Nations Educational, Scientific and Cultural Organization (UNESCO), every day 90 students leave Bangladesh to study abroad, most of whom stay back for a better life. Not content with the education system and limited employment opportunities in the home country, 33,139 Bangladeshi students had enrolled at foreign universities in 2016. This student emigration figure was 22,725 in 2011, and 15,700 in 2007. The top destinations chosen in 2016 were Malaysia (20%), USA (16%), UK (14%), Australia (13%) and Germany (6%). Malaysian universities have comparatively cheaper education cost and international collaboration with the UK, US, and other countries' universities. So, a large number of Bangladeshi students, belonging to the middle-income household are attracted to Malaysia.

Bangladesh has faced massive student emigration to India in the past, but after the inauguration of the private universities, this emigration could be reduced. However, problems like poverty, political unrest, lower purchasing power and traffic jam demotivate the students from staying in their home country. According to World Economic Forum, 82 percent of young people aged 15 to 29 prefer migration and have no desire to settle in Bangladesh. Thus, our country might suffer from a talent crisis soon if this continues.

YEAR	BANGLADESHI STUDENTS GOING ABROAD
1999	7,169
2000	7,908
2001	9,416
2002	11,575
2003	15,380
2004	14,487
2005	14,420
2006	14,524
2007	15,756
2008	16,607
2009	19,344
2010	21,736
2011	22,725
2012	22,827
2013	22,779
2014	28,884
2015	33,139
2016	33,139
Source: UNESCO	

In this paper, we wish to find the fundamental reasons (push-pull factors) that cause the students to migrate from Bangladesh and recommend policies that would mitigate the acute problem of brain drain.

Literature Review

Scholars have conducted surveys in different countries to detect the reasons behind the decision to migrate and return/not return after migration.

By assigning a numerical value to all the responses (Strongly Agree=1, agree=2, Neutral=3, Disagree=4, Strongly Disagree=5), Ahmed Bin Yamin and Farhanaz Luna (2016)⁵ identified factors for migration as follows: getting better education (1.60), lack of higher study opportunity in home country (2.20), unavailability of specialized course/program in home country (1.89), reduced infrastructure in academic institution (2.40), political instability in home country (2.10), securing future generation's stability (1.64), sending remittances to home country (2.50). The

⁵Ahmad Bin Yamin & Farhanaz Luna (2016). Brain Drain; The Consequence of Globalization and Future Development: A study on Bangladesh

random sampling method was used to open and close end questionnaire. Data from primary and secondary sources had been summed up for quantitative statistical analysis.

From Mc Gill (2013⁶)'s paper which focused on actual migration outcomes rather than intentions showed how the three variables: scholarship aid, optimal practical training, and temporary work visa provision were strongly correlated to graduate's choice of residence. Binary logistic regression was conducted on data of foreign student graduates (the academic year 2000-2011) in the US from 43 countries. Length of stay in the U.S showed no reliable correlation to return decision. Scholarship aid with conditions has a negative correlation to US residence upon graduation. Type of degree and completion of a doctoral study showed no significant relationship to migration outcome.

According to Raveesh S. (May 2013)⁷, brain drain in India occurs from two aspects, countries and individuals. Countries: Social environment (in source countries: lack of opportunities, political instability, economic depression, health risks; in host countries: rich opportunities, political stability, and freedom, developed economy, better living conditions, favorable migration policies). Individual reasons: family influence, personal preference: preference for exploring, ambition for an improved career. There is 2 billion a year emigration of computer experts from India to the USA. The paper emphasized how developed countries should help the developing countries with necessary money and resources to improve the situation.

By surveying final year students and recent medical graduates in Lahore, Pakistan, (Nazish Imran, Zahna Azeem, Imran I Haider, Naeem Amjad, and Muhammad R Bhatti 2011) ⁸ explored factors responsible for international migration. Descriptive statistics for demographic and educational characteristics and mean and standard deviation for continuous variables was used. Chi-square test was applied to find the association between intention to migrate abroad for graduation and various factors. Reasons for migration with mean and standard deviation respectively have been identified as follows: impact of residency training on future career (8.20, 2.35), financial conditions of doctors (7.97,2.37), job opportunities (7.90, 2.34), financial situation of residents (7.9,2.41),working condition of residents (7.89,2.34), clinical training (6.98,2.51),research training

⁶ Jeny Mc Gill (2013).International student migration: outcomes and implications

⁷ Raveesh S.(2013,May).Brain Drain: Socio economic impact on Indian society

⁸Nazish Imran, Zahra Azeem, Imran I Haider, Naeem Amjad & Muhammad R Bhatti. (2011). Brain Drain: Post Graduation Intentions and the influencing factors among medical graduates from Lahore, Pakistan

(6.93,2.74),teaching in residency programs (6.63,2.74), ,residency training opportunities (6.35,2.7),personal conditions (5.94,2.84) and political conditions (5.72,2.89). Reasons for returning to Pakistan after graduation have been identified as follows: family ties in Pakistan (8.17,2.60),desire to settle in Pakistan (7.64,2.67), desire to serve own people/nation (7.57,2.71), religious factors (6.38,2.85), professional satisfaction (6.08,2.61), adequate/alternative financial support (5.68,2.78), quality of training in Pakistan (5.18,2.20), political factors (4.75,3.26),visa problems (4.37,2.81). A partnership between institutions in developed and developing countries, improvement in the quality of training in Pakistan, making the working environment more conducive to graduate trainees are some of the steps recommended in this paper to reduce migration of the physicians.

Shahidur Rahman, (June 2010)⁹ conducted an open-ended interview and found the reason for academics migrating is limited research incentives. Asian and African countries, on contrary to US public universities, spend 80% of their budget for personnel and student maintenance costs leaving hardly any resources for research development (World Bank). Lack of transparency in the education system and nepotism over merit practice in Bangladesh demotivate students to return. Remuneration packages in universities of developed countries provide a better standard of living for the academicians. On the other hand, public universities in Bangladesh proffer low pay and remuneration packages, and the intervention of political parties in the decision making of the education system discourage the students from studying in their native land. Four significant reasons for not returning of the migrants are i)secured life abroad (48%), ii) better career and economic opportunities (28%), iii) children's future (12%) and healthcare availability (12%). Priorities to return are listed as follows: substantial and meaningful contribution to the homeland (40%), parents (24%), children's cultural orientation (20%), better career (12%) and better social life (4%). Majority of the returnee group considers the return as temporary and plan to return to developed countries as soon as they gain a job opportunity there.

Differences lie between the return of Bangladesh, China, India and Taiwan's professionals. Taiwan provides incentives for the returnees like cheap airfares, subsidized housing and education for their children (R. Iredale, 2005¹⁰). China's government has established special zones for the

⁹ Shahidur Rahman (2010, June). Brain Gain in Bangladesh: What makes it possible

¹⁰Robyn Iredale (2005).Tackling the roots of Brain Drain

returnees by supporting business ventures, waived off business tax in the high tech industry, providing lab space for biotech fields (Zweig 2008).¹¹ The Indian government has also initiated favorable policies for software industry's development to attract the Indian students studying in software engineering (Stef Oosterik, 2016¹²). Unfortunately, the Bangladesh government has only provided dual citizenship for the skilled migrants. Only private organizations have taken steps to attract the skilled migrants.

A detailed survey on highest scoring high school graduates from New Zealand, Papua New Guinea, and Tonga showed factors other than income gaps to play a role in deciding whether to migrate, stay abroad or return. (Gibson and McKenzie, 2011¹³). Clemens (2009¹⁴) surveyed health workers in Africa who have given similar reasons to migrate like professional advancement, better facilities to work in, and safety for their families along with the possibility to earn a higher income.

According to King and Newbold (2008)¹⁵ years of emigration, age and education are vital factors for return migration. Comparatively, females and non-professionals are less likely to return than emigrants with at least a bachelor's degree and the ones with lower income. A behavioral heterogeneity is reflected as all emigrants do not plan to return to their homeland. Elderly migrants and migrants whose parents stay in home country have a higher possibility to return than a Ph.D. attained migrant and the migrants who prefer foreign lifestyle

Penelope Anthias (2005)¹⁶ studied by primary (survey and private interviews) and secondary research. Statistics of student migration from Bangladesh to the UK was collected from UNESCO, UCAS and the British High Commission. The motivations for Bangladeshis to study in the UK encompasses enhanced job prospects in Bangladesh, access to the international job market, higher social status in Bangladesh, historical ties with the UK, and the existence of large Bangladeshi

¹¹ David Zweig, Chung Siu Fung, and Donglin Han. Redefining The Brain Drain: China's 'Diaspora Option' Science, Technology and Society. Vol 13, Issue 1, pp. 1 – 33. First Published May 1, 2008

¹² Stef Oosterik (2016). From brain drain to brain circulation: attracting high skilled migrants back

¹³ John Gibson & David McKenzie. Eight Questions about Brain Drain

¹⁴ Michael Clemens (2011, August). Economics and Emigration: Trillion-Dollar Bills on the Sidewalk? Working Paper 264

¹⁵ King, K. M. and Newbold, K. B. (2008), Return immigration: the chronic migration of Canadian immigrants, 1991, 1996 and 2001

¹⁶ Penelope Anthias (2005). Student Migration from Bangladesh to UK

community in the UK. English language, images of the West and global culture also entice the students to study in the UK.

Research paper written by Dreher and Pauvaara (June 2005)¹⁷ used panel data (OLS) regression for 78 countries to analyze student migration flow to the US and found that stock of migrants in the host country also affect student migration decision. Availability of friends and family in the foreign country has its impact.

For Jamaican students, Thomas Hope (2002)¹⁸ identified transnational linkage between migrants and home country as a critical factor.

Methodology

This paper emphasizes on the push and pull factors that are determining the decision of student migration from Bangladesh.

- a. **Method-** A survey has been conducted on different students pursuing graduation within and outside the country, Bangladesh. The target respondents are
 - i. Final year undergraduates
 - ii. Undergraduates (Academic Year:2013-18)
 - iii. Students who have already enrolled in a graduate program abroad

For the final year undergraduates and undergraduates, this is the time when they plan on their graduation. For the already enrolled graduate students abroad, it would be easier to find the factors influencing their decision. A total sample size of 150, age (20-40years) is included. The survey questionnaire was anonymous and confidential, and it was conducted online through google forms.

- b. **Model-** Here the dependent variable is qualitative, Student migration decision (Yes or No) and the independent variables (qualitative) have been categorized under three subheadings:

¹⁷ Axel Dreher & Pau Pauvaara(2005).Student flows and migration: An Empirical Analysis

¹⁸ Elizabeth Thomas-Hope (2002). Caribbean Migration. By University of the West Indies Press. Barbados

Factors influencing graduation in Bangladesh or Abroad	
Bangladesh	Abroad
No language barrier	Availability of research centers/resources
More contextual to home country's job market	Greater choice of programs to study
Financial constraint to study abroad	Better facilities/equipment
Desire to settle in Bangladesh	Foreign residency opportunities
	More transparent education system

Factors influencing the decision to return/not return after completion of education	
Return	Not Return
Family Ties	Better job opportunities abroad
Desire to serve own country	More wage competitiveness abroad
Foreign citizenship visa complications	Political instability in Bangladesh
Inability to land a job abroad	Corruption in Bangladesh
Cultural and social ties	Better security abroad
Religious factors	Higher standard of living abroad
Better social status in home country	Better working environment abroad
	Prefer foreign lifestyle

Other factors influencing Migration Decision
Gender(Male/Female)
Educational background (Private/Public University)
Monthly Household Income(BDT 30,000-beyond 100,000)

- c. **Data Analysis**-A mixed approach has been taken (qualitative and quantitative) in this paper. Pearson Chi-Square test (significance level=0.05) for independence has been used to find the association between graduation abroad and categorical independent variables. Descriptive statistics has also been used to represent the categorical variables. Moreover, logit model has been carried out to find the influence of demographic factors on student migration.

$$\text{Log} (p/1-p) = B_0 + B_1 * \text{male} + B_2 * \text{private university} + B_3 * \text{household income}_1 + B_4 * \text{household income}_2 + B_5 * \text{household income}_3$$

Decision to Migrate abroad (dependent variable=1) and dummy independent variables:

B_0 = refers to the unknown intercept for each entity

B_1 = odds ratio of male over female (Female=0)

B_2 = odds ratio of private university over public university (Public university=0)

B₃= odds ratio of household income (BDT30-50,000) over household income (BDT beyond100,000). (BDT beyond 100,000=0)

B₄= odds ratio of household income (BDT60-80,000) over household income (BDT beyond100,000). (BDT beyond 100,000=0)

B₅= odds ratio of household income (BDT90-100,000) over household income (BDT beyond100, 000). (BDT beyond 100,000=0)

d. **Data Source-** Mainly Primary data has been used with the help of a survey.

Results and Discussion

Among the 150 respondents, there are male respondents (62.2%) almost double to female respondents (37.8%), and the majority of the respondents are single (88.5%).The monthly household income of the students are as follows BDT (in thousand); 30-50 (42%),60-80 (21.7%), 90-100 (14.5%),beyond 100 (21.7%).

Majority of the respondents (75.7%) have opted for graduation abroad, and USA (25%) tops the destination list. Other than the USA, respondents have mainly chosen Canada (21.6%), Australia (11.5%) as their graduation destination. Given an option of financial funding/scholarship, 82.4% of the respondents desired for a foreign degree, and both parents (69.6%) and education/professional institution (62.8%) are supportive of the respondent's decision to study abroad. Hence, there is a growing demand among the youth of Bangladesh to study abroad.

i. Decision to graduate Abroad/ in Bangladesh

Pearson Chi Sq. Test

H₀: No association between migration decision and the factors

H_a: An association between migration decision and the factors

According to the Chi Sq. Test, migration decision (dependent variable) has the strongest association with the factor combination, availability of research centers and greater choice of programs to study abroad, (P value=0.005<0.05).

Others factors influencing graduation abroad are given in Figure 1

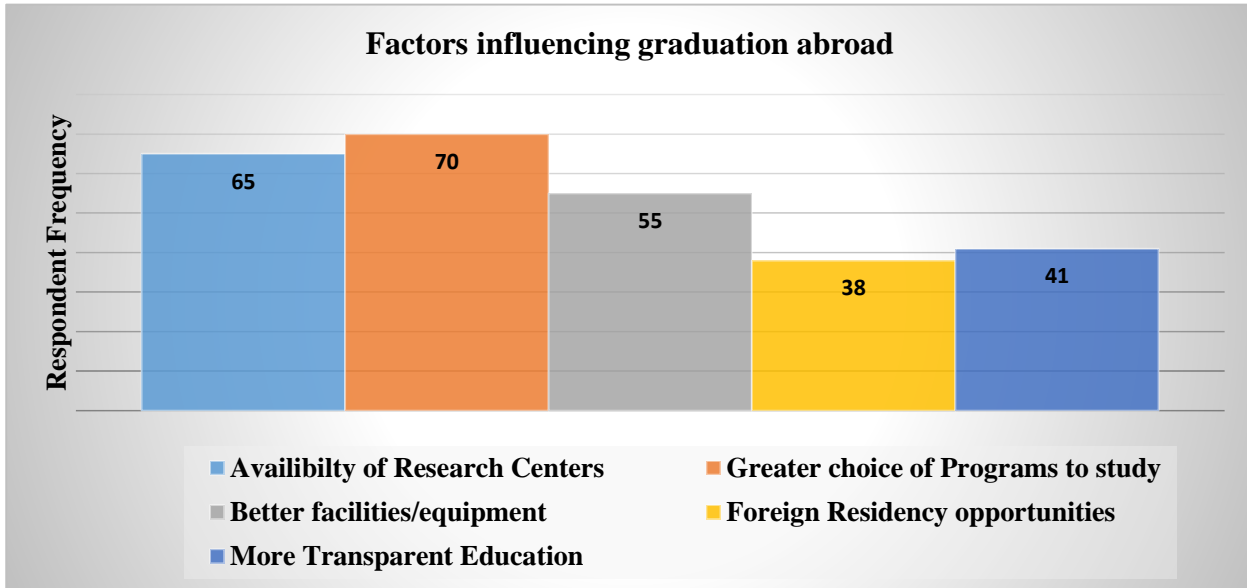


Figure 1

The reasons for the respondents to do their graduation in Bangladesh are shown below in Figure 2

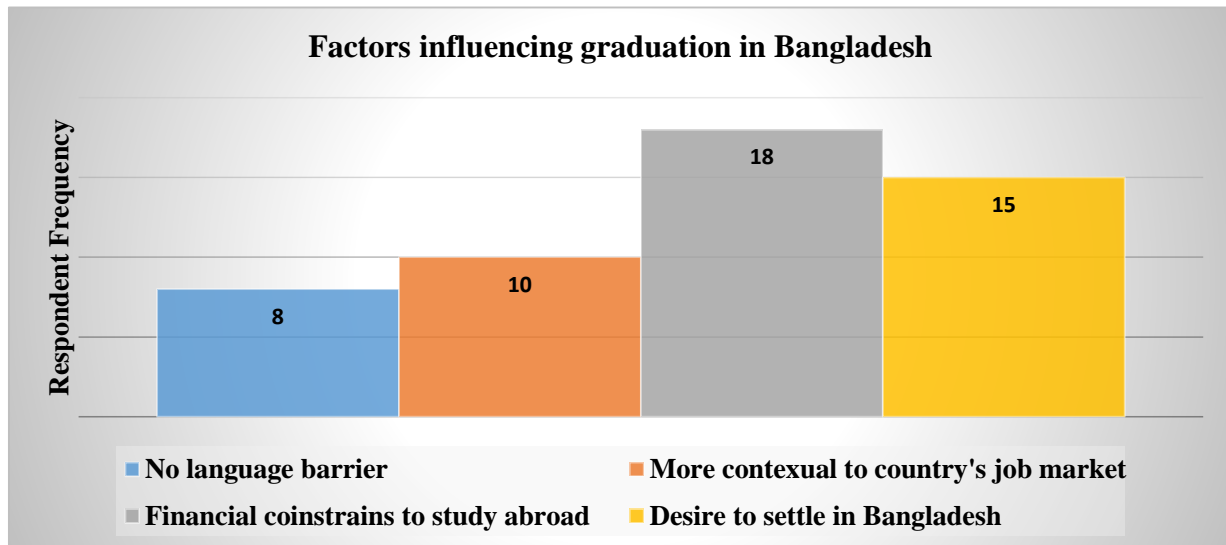


Figure 2

Thus, the students are not satisfied with the quality of Bangladesh's tertiary education system. Since Bangladesh lacks in research centers, has limited choice of programs and facilities/equipment, i.e., computers and lab facilities, the students are more interested in studying

abroad. Moreover, the major reason for the students who wish to study in the home country is the financial constraint to study abroad. So, not for any better opportunity but it is the financial constraint that confines the student to study in his/her country. Although, the students have agreed (27.7%) that private universities have been successful in reducing student migration, the majority of them remained neutral (34.5%) on this statement. Private universities have been able to enroll a larger number of students who could not procure admission in the public universities. However, there remains a vacuum in the quality of these private university's education.

ii. Decision to return/not return after completion of education

Among the respondents, 47.6% have the plan to return to their country, 19% have the plan not to return, and 33.3% have not decided yet. Although the majority of the students plan to return, a growing number of students are indecisive about the matter. As a result, the majority of the indecisive students, attracted to the pull factors of the developed countries, later on, decide to stay back abroad. The factors influencing the decision not to return are given below in Figure 3

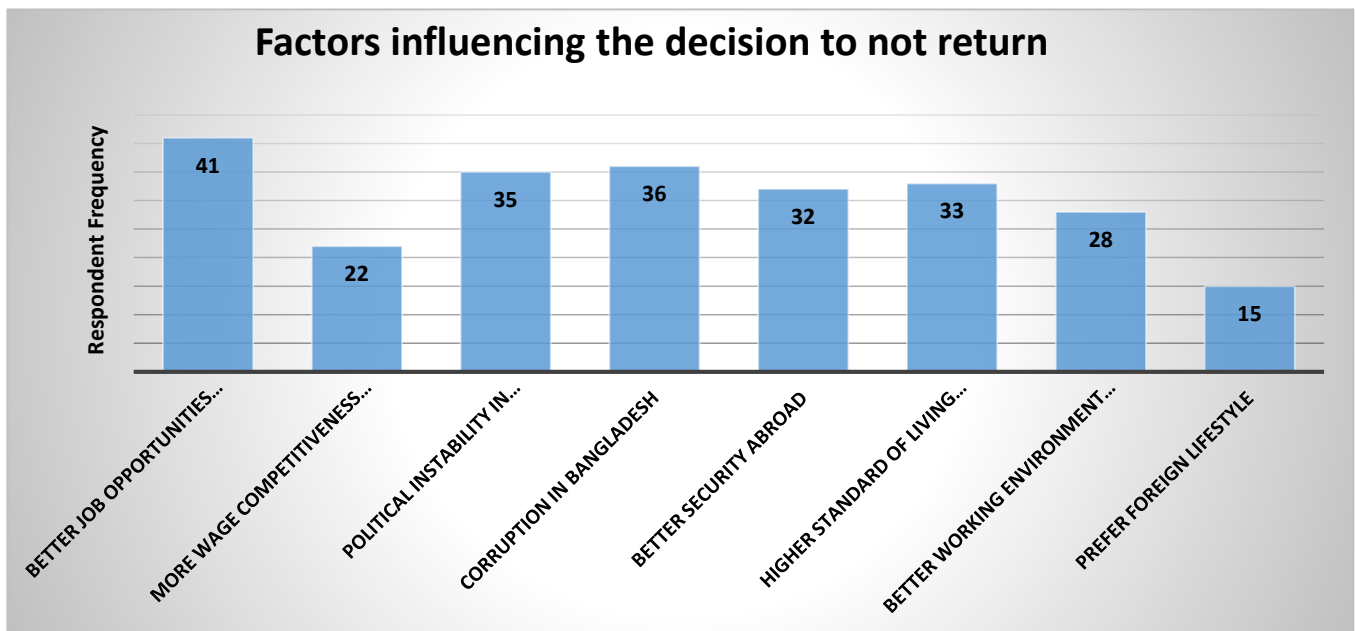


Figure 3

From the above bar chart, the main factors that deter the students from coming back to Bangladesh are better job opportunities abroad. The students have greater access to the jobs they wish to pursue

and are more exposed to international career prospect. On the other hand, in Bangladesh, many students are unable to pursue their dream job due to lack of availability or meager pay for the job.

For example, Muniza a final year undergraduate in BUET (Bangladesh University of Science and Technology) explains her situation as follows:

‘One of the main reasons why I am considering going abroad for higher studies is that being a chemical engineering student, the resources available in Bangladesh can only result in an MS/ Ph.D. degree which will have limited acknowledgment and use, both here and abroad. Limitation of resources would also result in a limited scope of work in research. The other reason is that there are, as of yet, very few jobs here in the field of engineering I am studying in. So switching fields is not something I want to consider, because then the struggle of the past four years would be for nothing.’

On the other hand, push factors like political instability and corruption in Bangladesh play a major contribution to deter the students from returning. Compared to pull factors like higher standard of living, better working environment, and more wage competitiveness, it is the push factors that have more significant influence. High prevalence of corruption in almost every job sector of Bangladesh demotivates the students from living and continuing their career here. The amount of hard work and dedication by the students remains unrecognized as power over merit practice is more prioritized in Bangladesh. Moreover, there is an increasing intervention of political parties in the decision making of the major economic sectors. Hence, the student believes s/he has better chance to be successful in his/her career abroad where skill and diligence are more valued.

Better security abroad has been an important factor as well. High crime rates with increasing cases of female rape/harassment, discourage the students from returning, especially the female students. Secured working environment, residential area, and transport service attract the students for a foreign lifestyle.

For example, Arfa enrolled in International Relation master’s program at Illinois State University states that:

‘To receive quality education on a subject like International Relations, I had to come abroad. Although I miss my family in Bangladesh, the security and the disciplined lifestyle here in the US encourage me to stay back abroad. I do not have to fear when traveling alone at night and have the full independence. The best thing, I do not have to experience the traffic jam of Dhaka streets.’

The factors influencing the students to return to Bangladesh are given below in Figure 4

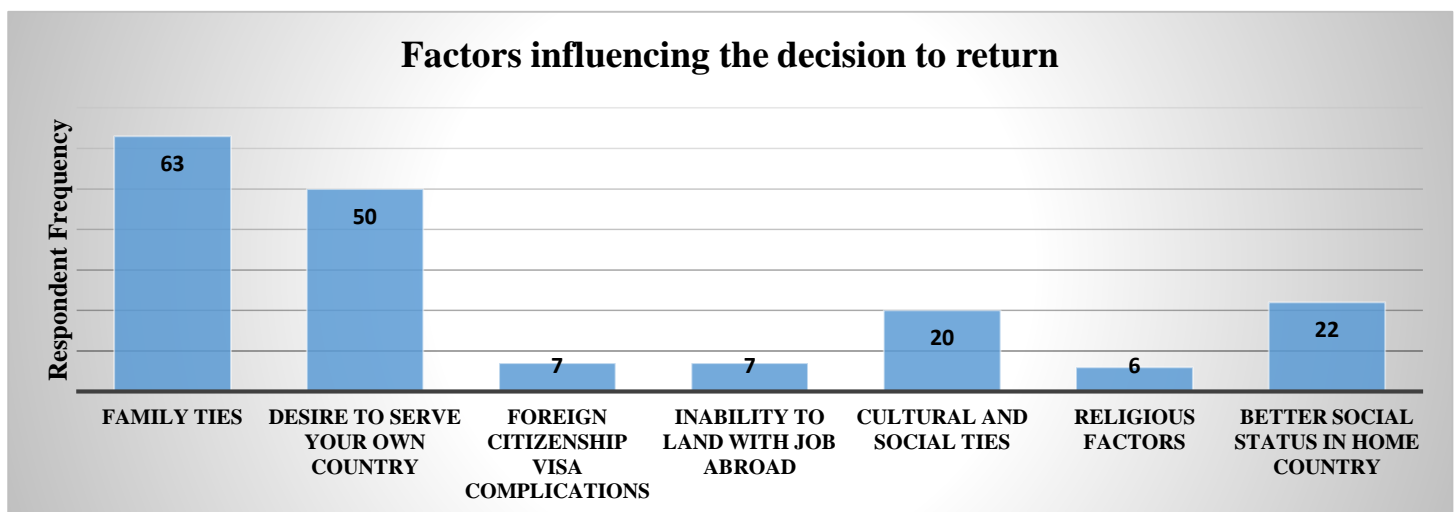


Figure 4

Family attachment and patriotism override all other factors in case of a student's decision to return. So, it is the emotional attachment rather than economic or professional prospect that attract the students to return. However, in times of sheer global competition for a better career, these factors will not be significant for long. Better social status in the home country and cultural and social ties also contribute to the decision to return. The experience of a first-class citizen, local culture, and tradition result in the students to come back. Moreover, the growing racial discrimination in certain parts of the developed countries also discourage the students from staying back in the foreign land.

iii. Other factors and migration decision

Migration Decision	
Male	0.746 (0.67)
Private University	0.511 (1.27)
Household Income ₁	0.180 (2.16)*
Household Income ₂	0.159 (2.20)*
Household Income ₃	0.170 (2.01)*
_cons	28.94 (3.590)
<i>N</i>	138

* $p < 0.05$; ** $p < 0.01$

Table 1. Binomial Logit Regression

$$\text{Log}(p/1-p) = 28.94 + 0.746 * \text{male} + 0.5114 * \text{private university} + 0.1800 * \text{household income}_1 + 0.1585 * \text{household income}_2 + 0.169 * \text{household income}_3$$

According to the model, holding **private university** and **household income (1, 2, 3)** at a fixed value, the odds of migrating abroad for males (**male= 1**) over the odds of migrating abroad for females (**male = 0**) is 0.746. , Holding **male** and **household income (1, 2, 3)** at a fixed value, the odds of migrating abroad for private university (**private university= 1**) over the odds of migrating abroad for public university (**private university = 0**) is 0.511. Holding **male** and **private university** at a fixed value, the odds of migrating abroad for household income₁ (**H: BDT30-50,000=1**) over the odds of migrating abroad for household income (**H: BDT beyond 100thousand=0**) is 0.180. Holding **male** and **private university** at a fixed value, the odds of migrating abroad for household income₁ (**H: BDT60-800001**) over the odds of migrating abroad for household income (**H: BDT beyond 100,000=0**) is 0.159. Holding **male** and **private university** at a fixed value, the odds of migrating abroad for household income₁

(H: BDT 90-100,000=1) over the odds of migrating abroad for household income (H: BDT beyond 100,000=0) is 0.170. Although male and private university variables do not have statistical significance on migration decision, household income has high statistical significance on migration decision.

Thus, male students have more independence and flexibility when deciding to study abroad. Students from middle-income household have higher tendency to study abroad than students from a very high-income household. The middle-income household students have greater desire to achieve a better and secure career. Moreover, the private university students compared to public universities have higher tendency to migrate. The private university students, who are mostly from financially well-off families can better afford the tuition and living cost of the foreign countries. In cases when they are unable to gain admission in the public universities, they prefer the foreign universities over the local private universities of Bangladesh.

Limitations

- Due to limitation of time, sample size is small
- Since target group is concentrated and respondents were not equally divided according to certain categories (e.g. number of males>number of females), the outcome may not be generalizable.

Recommendations

A deficit in the tertiary education system can be observed in this paper. So there needs to be improvement in certain sectors of the higher education system given as follows:

- A greater diversification of programs offered in the universities such as integrating liberal arts into main courses. The curriculum has to be updated regularly as often curriculum in courses like medical, information technology, business and economics becomes outdated.
- A greater portion of the budget has to be earmarked for improving the quality of higher education system. The government has to expand funding for research and development both for students and professionals. The tax money can be invested to develop better lab facilities and equipment for the university.
- Pay structure has to be reviewed, and the quality of training has to be improved to retain the qualified faculties and researchers,

- Building an education system free from political intervention.

On contrary to countries like India and Taiwan, Bangladesh has not much initiated to return the highly intellectual and skilled migrants. Apart from dual citizenship, the government of Bangladesh has no special programs to encourage the return of highly educated students. The government along with professional unions, international bodies and government of the host country need to ensure the return of the intellectuals by deploying certain policies as follows:

- Since fewer job opportunities is one of the key reasons for the students to not return, there has to be an expansion of STEM (Science Technology Engineering and Mathematics) industries. The Ministry of Science and Technology and entrepreneurs have to focus on establishing more IT firms, research centers, banks, and hospitals to preserve talent.
- Scholarship scheme with the tagline ‘pay it back if you do not come back’ has to be created. The education ministry can provide this scholarship to the students for higher education abroad under the condition that the students have to come back and contribute to the home country's development. If they want to stay permanently in the foreign country, they would have to return the money.
- Greater effort is needed to create a better working environment, enhance transparency in leadership, properly evaluate merit over nepotism.
- Incentives like tax breaks, grants or easy housing loan and support for business startup has to be provided to the returnees
- Infrastructural developments and crime rate reduction are integral to attract the talented human resource.

Conclusion

Bangladesh prides in its young population. The tax money spent to transform the youth into human capital becomes futile if the youth are ultimately unable to contribute to the country's development. Before, brain drain renders a substantial intellectual vacuum in Bangladesh, the country needs to convert brain drain into brain gain. It is not possible to prevent the students from going abroad to study. However, to continue sustainable development, the government has to implement feasible policies to ensure the return of the valuable human resource.

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