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Higher Education in Nepal and Brain Drain: A Study of its Economic Impact on Countries with Special Reference to Nepal

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Abstract

Brain drain occurred in Nepal since long but exact date not been identified but Muscle drain started since back to 200 years brain drain's momentum started since 80's decade. The Higher Education Institutions (HEIs) are 1440 with 12 universities and 5 medical academics have been functional, and some others are added to the list. All these HEIs are producing 460826 professionals and among them, Medical Academics alone produces 2350 higher level, medical professionals. There were 2409 students who secured a no-objection letter from the Ministry of education from January to July 2022. Push-pull factors which are highly associated with $p\text{-value}=0.001$ were found the main cause of brain drain. It was difficult to find proper data since there is no system of recording brain drain. The cost of brain drain is immeasurable, according to the study, if the 350 students of MBBS who are subsidized by the government for their study leave the country, the government will have lost 10.85 to 18.2 million USD and the brain drain receiving countries do have a trend to receive young professionals. The government should have a proper plan to retain the professionals in the country for development.

Key words: Brain Drain; Developing countries; Economic impact; Nepal

Declaration: There is no conflict of interest



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Introduction.

Nepal is not only a country of brain drain as well as labor drain, most of these countries of the developing world and countries of Europe also have the same problems. A few words typed in Google Scholar to find out what is the situation of brain drain, 'words were 'Brain drain countries of the world and economic impacts. These were very simple words given the articles of 67,200' (scholar, 2022). The same search engine discovered 44 articles on brain drain and its impact. The article has been explaining the sector of highly skilled people being drained from the country, but in Nepal, both labor and brain are found being drained. The brain drains needs to understand as a 'migration of engineers, professionals, physicians, and scientists via emigration (Raji A. Adeyemiand et.al., 2018)'. Nepal also has a mass exodus of professionals in developed countries in search of jobs and as students and they became emigrants to the country, particularly to the USA, Canada, Australia, and a few European Countries. "The Ministry of Education, Science and Technology is issuing around 1,200 NOCs daily to Nepali students for foreign study"(Maharjan, 2022). 'The No-objection Certificate (NOC) Section under the Ministry of Education says it issued 82,409 certificates between January 1 and July 4, 2022, to the students intending to study abroad'(Khabar, <https://english.onlinekhabar.com/nepalis-approval-study-abroad.html>, 2022). It not only sends the students it also involves the cost to send them abroad for education, with this one Nepal is not only losing its capable professionals and draining the money as well. 'The Human flight and brain drain indicator consider the economic impact of human displacement (for economic or political reasons) and the consequences this may have on a country's development (Economy, 2022). The higher the index, the greater the human displacements as per the identified data by 'the Global Economy of Nepal from 2007 to 2022, the average value for Nepal during that period was 6.2 index points with a minimum of 5.6 index points in 2012 and a maximum of 7 index points in 2015. The latest value from 2022 is 6.1 index points. For comparison, the world average in 2022 based on 177 countries is 5.21 index points (Economy, 2022)'. With this comparison, Nepal found the higher side of brain drain.

According to El-Khawas (2004) and the UN report (2001), 'it costs almost \$10,000 to \$15,000 to train a student for four years while it also costs about \$40,000 to train a medical doctor in Kenya.(Raji A. Adeyemiand et.al., 2018). The question is not only the cost occurred to train the professional, there is another negative aspect of brain drain found that 'it can induce shortages of manpower in certain activities, for example when engineers or health professionals emigrate in disproportionately large numbers, thus undermining the ability of the origin country to adopt new technologies or deal with health crises' (Frederic Docquier et.al., 2006).



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“Brain Drain” according to Alum (2016) was created by the British Royal Society to refer to the exodus of engineers, professionals, physicians, and scientists, via emigration from the United Kingdom to the United States of America.

Developing countries have been hard hit by the brain drain. The brain drain has long been viewed as a serious constraint on poor countries ‘development and is also a matter of concern for many European countries such as the U.K., Germany, or France, which have recently seen a significant fraction of their talented workforce emigrate abroad. Recent comparative data reveal that by 2000 there were 20 million highly skilled immigrants (i.e., foreign-born workers with tertiary education) living in the Organization for Economic Co-operation and Development (OECD) area, a 70% increase in ten years against only a 30% increase for unskilled immigrants. These highly skilled immigrants come mainly (for two-thirds of them) from developing and transition countries and represent a third of total immigration to the OECD. The causes of this growing brain drain are well known.

Objective: The study is focused on identifying the higher education of Nepal, identifying factors of brain drain, and its’ Impact on development.

Methodology: The study was conducted based on the published liter with a convergence approach of a systematic review of published literature on higher education in Nepal and brain drain. The study focused on the issue of Higher education in Nepal with its present situation. The brain drains from the educated sector migration from different faculties of study. Reports published by UGC, the ministry of education of Nepal, Nepal Rastra bank, and others.

Review approach: The articles found in Google scholar and SSRN academic articles published identified by the use of key words impact of brain drain, brain drain, economic loss due to brain drain.



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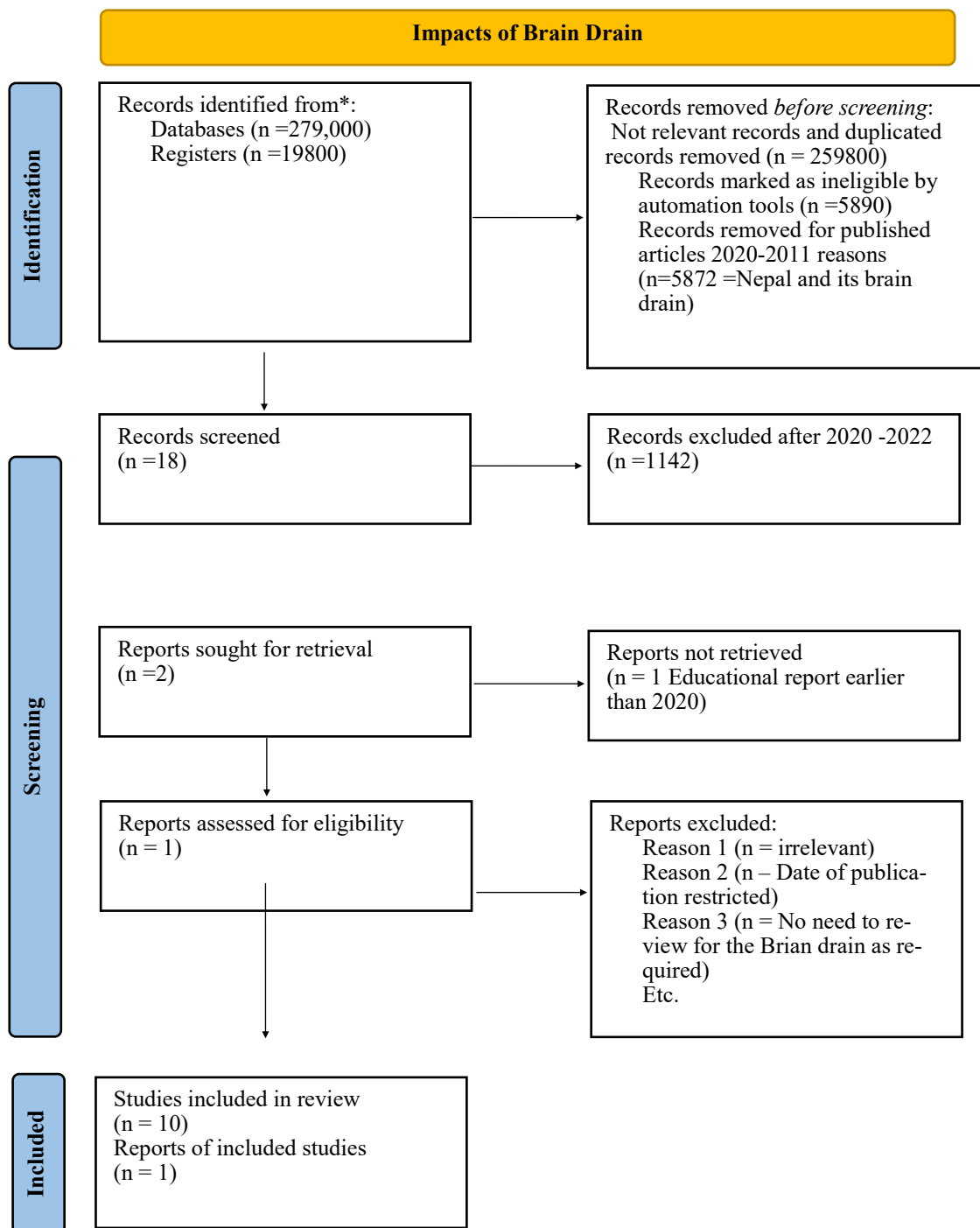
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Review of the Higher Educational System of Nepal

Higher educational Institutions (HEIs) in Nepal: 'It is a well-known fact that most of the HEIs in Nepal are run under the affiliating universities. Out of the 1437 HEIs, those are affiliating to universities in Nepal, TU unilaterally holds the majorities. 79.78% (1144 HEIs). Likewise, Purbanchal University has 116 affiliations, Pokhara University has 67, and Kathmandu University has 24 affiliations. The other universities hold 82 remaining affiliations' (UGC, 2077/78). During the period of 78/79 three more institutes were added to the list of HEIs.

The data of the HEIS differs year after year, in 2020/2, the total HEIS found 1440, it showed in the annual report of UGC2020/21. Table 1 showed the situation of HEIS in Nepal. As per the data of UGC (2020/21), 12 Universities are in operation such as 'Tribhuvan University (TU), Nepal Sanskrit University (NSU), Kathmandu University (KU), Pokhara University (PokU), Purbanchal University (PU), Lumbini Buddhist University (LBU), Agriculture and Forestry

University (AFU), Mid-Western University (MU), and Far Western University (FWU), Nepal Open University (NOU), Rajarshi Janak University (RJU) and Gandaki University (GU) (UGC-Nepal, 2021).

Table 1: Status HEIs of Nepal 2020/21 - UGC Annual report

University	Constituents	Community	Private	Total
TU	62	528	554	1144
NSU	13	4	3	20
KU	9	0	15	24
PU	7	5	106	118
PokU	9	0	58	67
LBU	3	0	9	12
AFU	10	0	7	17
FWU	16	0	0	16
MWU	12	0	1	13
NOU	1	0	0	1
RJU	1	0	0	1
GU	1	0	0	1
Medical Academics				
BPKHS	1	0	0	1
NAMS	2	0	0	2
PAHS	1	0	0	1
KAHS	1	0	0	1
PoKAHS	1	0	0	1
Total HEIS	150	537	753	1440



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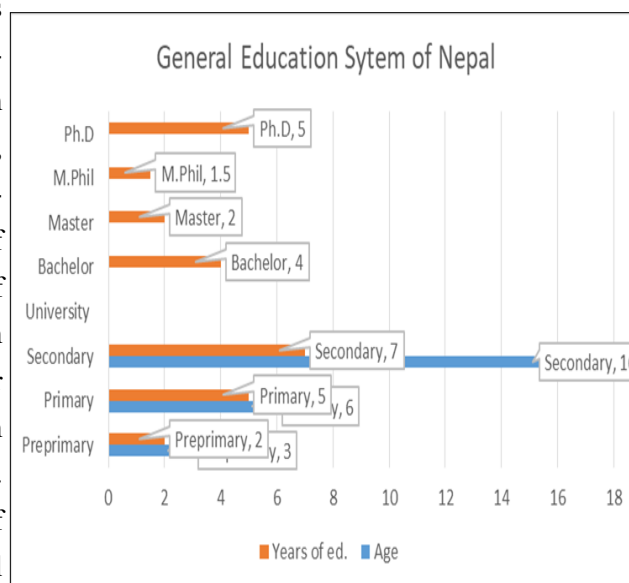
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Educational System Review of Nepal: An apex body of education is the Ministry of education; established in 1951, Now it is named as Ministry of Education, Science and Technology (MoEST) with responsibility of developing policies, programs, plans, implementing and management of overall development of education, science, and technology of country and 'The ministry has been providing policy-level guidance for Technical and Vocational Education establishing CTEVT'(N. Rijal & M. jal, 2021) and 'the objective of CTEVT is to produce mid-level 'skillful human resources required to nation'' (CTEVT, 2022).



Enrollment at the University level: 'There are a total of 458486 students enrolled in the 12 Universities and 2350 five autonomous health academies of the country. Altogether there were 460826 More than 75.36% of these students are enrolled in Tribhuvan University. Besides TU, Pokhara University has the highest number of enrollments. 7.41% of the total students are enrolled at PoKU, a total of 34166 students. Chronologically, Purbanchal University hosts a total of 26896 students; Kathmandu University has 16046 students enrolled; Far Western University has 10,922 students enrolled; Mid-Western University has 11712 students enrolled; Agriculture and Forestry University hosts 4270 students; Nepal Sanskrit

Table 2: Students enrolled records - UGC 2078/79

S.N.	University	Constituents	Community	Private	Total	Column1
1	TU	120158	133362	93749	347279	
2	NSU	2230	425	167	2828	
3	KU	8203	0	7843	16046	
4	PU	1995	257	24644	26896	
5	PoKU	3754	0	30412	34166	
6	LBU	482	0	341	823	
7	AFU	3708	0	562	4270	
8	FWU	10922	0	0	10922	
9	MWU	10886	0	826	11712	
10	NOU	2926	0	0	2926	
11	RJU	417	0	0	417	
12	GU	201	0	0	201	
						458486
13	BPKHS	1334	0	0	1334	
14	NAMS	642	0	0	642	
15	PAHS	234	0	0	234	
16	KAHS	64	0	0	64	
17	PokAHS	76	0	0	76	2350
	Total	168236	134044	158544	460826	



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Nepal Open University has 2926 students enrolled, and Lumbini Buddhist University and Rajesh Janak University have 823 and 417 students enrolled respectively. Among the five autonomous health academies, B.P. Koirala Institute of Health Sciences hosts the most number of students, a total of 1334 Similarly, Patan Academy of Health Sciences hosts a total of 234 students, National Academy of Health Sciences 447 students enrolled, Karnali Academy of Health Sciences have 64 students enrolled, and 'Rapti Academy of Health Science Academy has no enrollments yet' (Edusanjal, 2021).

Total students produced almost every year more than 0.45 million from 12 universities and 5 Independents academic institutions. The human resource produced in the different faculties shown in the following table. These are the major faculties of the universities.

Faculty-wise Students in HEIs

Many students (152555) were produced from the Management faculties, likewise, the second largest HR production with number 89662 found Education, third-largest faculties showed humanities and social sciences with students 3878. Engineering faculties produced 16933 and medical sciences 19274. The area of Medical Science included BSC nursing and BPH, MPH, MMBS, MD, and Ph.D. In other subjects also from bachelor's level to Ph.D.

Table 3 : Faculty wise students record in the HEIs 2077/78 (MoEST)

Faculties	Female	Male	Total
Buddism	57	139	196
Education	57101	32561	89662
Engineering	2383	14548	16931
Humanities & Social Sciences	20753	18033	38786
Law	2081	4094	6175
Management	80540	72015	152555
Medical Sciences	11805	7469	19274
Science & Technology	13029	22596	35625
Sanskrit	59	231	290
Agriculture	285	660	945
Forestry	110	175	285
Animal Science Veterinary science	92	261	353
Total	188295	172782	361077

Brain drain Data

The trend of brain drain started in higher education, in a different field. When the study started to find out, the No objection certificate was issued by the foreign ministry on the recommendation of the ministry of education. The following data was received for the year 2017-18.(MOEST, 2017/18) During the period 2073/10/01 to 2074/11/30 (BS), 67226 students were out of the country and scattered in 74 countries of the world, a large chunk, 33241 students being enrolled by Australian universities.



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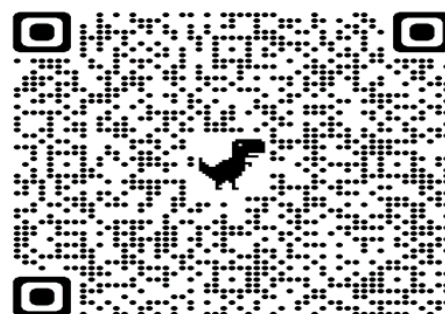
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The students are young dynamic quick to learn and work as well. At the same time, students have taken in an average of 15 lacks NPR for the studies. 'The No-objection Certificate (NOC) Section under the Ministry of Education says it issued 82,409 certificates between January 1 to July 4, 2022, to the students intending to study abroad (Khabar, 2022). here is another sector of the students who do not need NOC, they go to India to study, there are no records of such students, and they are in thousands which are scattered in different universities of India. Generally, Social science-related students do not need NOC if they go own their expenses for further education. Study of Every year showed that the trend of getting NOC has been increasing.

The trend of receiving brain drain

A study was conducted by Richard H. Adams, Jr.(2003) on 'International Migration, Remittances, and the Brain Drain of 24 Labor-Exporting Countries'. The study was a part of the policy research working paper of the World Bank. The results from the study show that international migrants were '67 percent of all immigrants to the United States and 88 percent of those to the OECD have a secondary (high school) education or higher. While these figures do not include the large numbers of illegal (and presumably less educated) international migrants, it does appear that uneducated individuals have limited access to legal international migration' (Richard H. Adams, 2003). The study also highlighted 'only 10 percent of professionals are accepted for the migration, they need young people who are capable and learn quickly according to their needs (Richard H. Adams, 2003)'



Muscle drain from Nepal: A study carried out by François Libois and et.al (2020) titled From Muscle Drain to Brain Gain: The Long-term Effects of Gorkha Recruitment in Nepal- they have identified 'Gorkha soldiers in Nepal have been recruited by the Indian and later the British armies for over 200 years. The transformational role that these soldiers played in the development of their home communities is often described informally but is challenging to quantify' (François Libois and et.al., 2020) .



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The argument was a female member of the families were put on literacy classes and prepared them as literate member of the family so that they will be better off in communication other matters of their family. The male counterpart were rejected since their muscle also drained or no longer need them from the employer, they returned when they are retired, who is going to look after the family and use energy for the development of the country. Here, the study tried to divert the attention of people from being self-sustained, when the country needs to develop they do not have muscle and a brain, how can it be developed?

Nepal: Brain drains and its economic impact

Katel and Sapta (2018) found that the loss of brain drains and causes of brain drain as “that 52% of students intend to pursue higher study abroad or for better job opportunities and better livelihood. The poor higher education system in Nepal (42.7%), socioeconomic condition (29.8%), and desire to go abroad (25%) were major push factors toward brain drain, whereas high income and better living standard (29.7%), better job and working environment (25.6%), family future security (17.4%), personal freedom (9.9%) and political stability in abroad (10.7%) were found major pulling factors of skilled manpower to abroad from Nepal”(Rishi Ram Kattel & Mahesh Sapkota, 2018). The push-pull factors encouraged to be migrated from developing countries like Nepal.

The medical sector also has the same problem pushing and pulling factors are the main cause of brain drain ‘A study showed that in 2004, the emigration rate was 9%, and over 50% of graduates of the Institute of Medicine (IoM) during the period 2003-04 migrated and in another study of 22nd batch of Institute of Medicine (IoM), the study was conducted among the 710 graduates, among them, 27.2% were working in Nepal in districts outside Kathmandu, 36.8% were working in Kathmandu and 36.1% were working in foreign countries with the US being the most common location’ (Shankar, 2017). In the same study, Shankar revealed that ‘educating a doctor costs 200000 to 250000 thousand pounds UK, there UK has been accepting doctors of foreign studied and the study also found that 31% percent of practicing doctors were born outside the country, likewise international medical graduates (IMGs) constituted between 23 and 28% of physicians in the US, Canada, and Australia’ (Shankar, 2017). The amount and effort to produce them being saved by these countries.

A recent MBBS graduate, who was working at a private hospital in Kathmandu expressed his frustration over the paycheck he receives as a doctor. . “I make Rs 40,000 a month. My parents spent a total of Rs 5.5 million on my studies.



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And a postgraduate degree is even more expensive than MBBS,” said the doctor who wished not to be named (HRM, 2022).

IT sectors also has the same problem “Nepal produces around 15,000-16,000 IT graduates every year. Of them, more than 6,000 go overseas seeking better opportunities. Besides, there is also a trend that those who stay in Nepal either work for foreign companies through outsourcing firms or work in domestic companies for a certain period before starting the process of applying abroad.” Likewise, the HRM highlights the problem of Brain drain in the Engineering sector as “At least 71,000 engineers are registered with Nepal Engineering Council, and experts in the sector say more than 55 percent of Nepali engineers have migrated abroad for better opportunities” (HRM, 2022).

Factors of Brain drain

There are push and pull factors of brain drain. There are different professions of push and pull factors but most of them are influenced by push factors.

A study was carried out on factors of Brain drain of Nurses from Nepal by Thapa & et.al (2017), in their study push-pull factors are identified and the factors were “Personal ambition, Political conflict, Low salary, Curiosity to practice abroad, Lack of job and carrier opportunity, Lack of satisfactory working environment, Lack of modern facilities, Lack of self-recognition. Most nurses (85.1%) working in Nepal had ranked very important push factors were better job and carrier opportunity followed by high salary (84.2%) and family future security (83.3%)” (Thapa B and Shrestha K., 2017). They calculated the association was measured with p value 0.05 as its measuring point. If the p-value is less than <0.05 , the association is established otherwise no bond of the measured value.

The outcome of calculated factors found to 0.001 which is $0.001 < 0.05$, therefore the brain drain factors are associated with playing a role to push the people out of the country. The same type of role played by the pull factors; the study identified the pull factors which were significantly associated with brain drain. Major pull factors: Family future security, Better working condition, political stability, personal freedom, modern facilities, high salary, and higher living standard. Average p-value: $0.001 \leq$ which was also less than the standard value’ (Thapa B and Shrestha K., 2017).

Another study was conducted to identify the brain drain of doctors B. Phuyel (2013), who found that there were 9% of doctors emigrated from Nepal.



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The migration of doctors found in the increasing trend since 1991 and very little dropped in 1999, then after it has been increasing (Phuyel, 2013). He found out the pull and push factors and 'Push Factors were Low-employment opportunities, Low wages and poor working environment in the home country, Lack of professional development and specialist training, especially in advanced medical technologies, and Political instability. He also identified the pull factors as 'High-employment opportunities due to shortage of health staff in the destination countries higher wage, Proximity, and family links in destination countries' (Phuyel, 2013). He did not calculate the association of these factors of push-pull with brain drain. These factors are associated with other sectors' brain drain as well.

The economic impact of brain drains

Many writers have confused in between brain drain and labor drain, the concept of brain drain is migrating a skilled educated workforce, these work force found the engine of the development, the development geared with the dynamic, energetic, and productive youth. 'The emigration is associated with the loss of skills, human capital and stop development and delivery of basic services from sending countries' (Zahoor Hussain Javed and, et.al., 2016). A debate was raised about brain drain or gain from brain drain; a study conducted by Frederic Docquier (2014), and the study found that 'there are many more losers than winners among developing countries' (Docquier, 2014). In the same studies, it was found that 'This externality argument has been central in the literature since the 1970s, and the seminal contribution on this subject concludes that the brain drain entails significant losses for those left behind and increases global inequality. Another discovery they have made this at when skilled workforce leaves their country they forget the country back home and are not liable to pay taxes to the source country and the burden to recover their expenses what the country spends on them. The most touching in discovery was that 'the brain drain increases the technological gap between leading and developing nations because the concentration of human capital in the most advanced economies contributes to their technological progress' (Docquier, 2014). A study was conducted on the brain drain of nurses in Nepal 'most of the respondents (89.5%) were aware of the consequences of brain drain, where a shortage of manpower was reported to be the major consequence by (81.4%) respondents' (Thapa B & Shrestha K, 2017). Likewise, the cost to produce an undergraduate doctor (MBBS) was Estimated to the individual '3000000-5000000 NPR' (Bohara, 2012) or about 31,000- 52,000 USD (1 USD=95.59 NPR July 20, 2013, rate) during the MBBS course.



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Assuming a 50% emigration rate out of 700 subsidized scheme graduates 350 will leave the country means the government is losing 10.85 to 18.2 million USD each year, which is a significant amount the Government (Phuyel, 2013). The cost incurred heavily even in engineering, and the technical field as well.

Findings of the study

Brain drain is a higher percentage, more than 17 % of the students have taken a no objection letter in 2022 and the student who are going to India for general subjects do not need NOC. Those who are in NOC most of them will not return to their home country. High-skilled people such as doctors, engineers, and technicians are also on the list of migrants.

There is no proper data source to study of the migrated skilled persons from the country, it was forced to understand the few data collected from the website of the Most. Many researchers raise the question of whether brain drain could be beneficial but other research has rejected the motion, here two lines of thought emerged, but researchers like Frederic Docquier (2014) right way rejected the motion.

There will be a huge loss to the country since the required high level of HR has been migrating. In Nepal, engineers, doctors, nurses, and technicians have been migrating for a long. It could be drawn back to the time of the colonial period 1816, it had opened the door from muscle drain, later brain drains.

Push-pull factors are the major issues of brain drain, every people are looking to secure the future of their family and in the USA, and they have been paid 18 times higher than the Nepalese doctors back home. A similar situation is in other sectors also. The push factors discovered were unemployment, low wage, low salary, and curiosity to practice abroad, lack of job and career opportunities, lack of a satisfactory working environment, lack of modern facilities, lack of self-recognition, and others.

The brain drains receiving countries preferred to accept young professionals, not highly professionals, they do not want a mature person to take up their jobs, young people work harder and they will be taught accordingly.



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Conclusion

The people of Nepal started being recruited almost 200 years before by the British government in their army, this was the muscle drain but since the decade of 80, huge numbers of professionals, doctors, engineers, and nurses also started to migrate to secure their future. The push factors are most associated with the brain drain, low – employment opportunities, less salary, high cost of study, and other factors were identified for the brain drain. Likewise, the pull factors are also the cause of the brain drain. There is a significant discovery that where there is brain drain, the development of the country is next to impossible. Therefore the government should make the efforts to adjust their brain in the country; doctors, engineers, nurses and managers, social scientists, geographers, muscles, and economists all of these makes a combined force that required to push the development of the country.

The end



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Note.

Difference in between systematic review and desk top study: A systematic review is completely web based search of article by the use of different search engine such as Google scholars, SSRN, Research gate Academia and others. Desk review incorporated unpublished reports, thesis, article on local journals, organizational reports, minutes and online article, reports which are not picked by the scholar search engine such as newspaper articles with facts and figures, references presented since these are not under the category of scholarly articles but still valid to the data and referencing.