

Understanding the Phenomenon of Brain Drain: An In-depth Analysis of the Emigration Patterns and Implications for IT Professionals in Sri Lanka

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Abstract – This research paper aims to comprehensively analyze the brain drain phenomenon within the context of IT professionals in Sri Lanka. The study delves into the emigration patterns and explores the underlying factors contributing to the outflow of skilled IT personnel from the country. Through a mixed-methods approach, including surveys, interviews, and data analysis, the research sheds light on the motivations and experiences of IT professionals who choose to leave Sri Lanka. Additionally, it examines the consequences of brain drain on the local IT industry and the broader economy. The findings highlight several key drivers behind the brain drain of IT professionals in Sri Lanka. Factors such as limited career opportunities, inadequate remuneration, lack of professional development prospects, and a perceived lack of recognition and support for IT expertise emerge as significant contributors. Moreover, external factors like immigration policies in destination countries and global demand for IT skills also play a role. The consequences of brain drain on the IT sector in Sri Lanka are multifaceted. On one hand, the loss of skilled professionals hampers the industry's growth and innovation potential. This research paper concludes with recommendations to address the brain drain challenge in Sri Lanka's IT sector. Policy interventions focusing on improving local career prospects, enhancing work environment conditions, fostering collaboration between academia and industry, and promoting a culture of innovation and entrepreneurship are proposed. These measures aim to mitigate the brain drain effects and create a conducive environment for IT professionals to thrive within Sri Lanka, ultimately benefitting the country's overall development and technological advancement.

Keywords - Brain drain phenomenon, IT professionals, mixed-methods approach.

I. INTRODUCTION

Brain drain is the emigration of highly skilled professionals from one country to another due to various reasons. In Sri Lanka, the brain drain of IT professionals is a significant issue that has been affecting the country's development for many years.

Recently in Sri Lanka, there is a rapid brain drain of IT professionals mainly due to the economic crisis. With the Covid-19 pandemic and the economic crisis afterward, many IT companies couldn't offer what the IT professionals were looking for (1). Due to low payment of salary, low quality of their life, and political instability the IT professionals had to leave the country. This causes a huge loss to the country as Sri Lanka has one of the highest emigration rates among developing nations, according to World Bank research, with many talented professionals leaving the country in quest of better chances elsewhere. The research names the IT industry as one of the industries experiencing a particularly severe brain drain.

This assertion is also backed up by several additional investigations. For instance, a study conducted by the Institute of Policy Studies of Sri Lanka revealed that the country's IT sector is suffering from a serious lack of qualified workers, which is impeding the expansion and development of the sector. The brain drain was one of the primary causes of this shortfall, according to the report. The University of Colombo discovered in another study that the exodus of IT workers from Sri Lanka is a serious issue. The study concluded that a lack of employment options and low pay are driving many brilliant IT experts out of the nation.

According to the data, Sri Lanka is experiencing a serious problem with the brain drain of IT workers, which is having an adverse effect on the nation's progress. The government, the business sector, and other stakeholders will need to work together to address this issue by making more possibilities for qualified IT experts in the nation. This study is conducted by collecting real-time data from IT professionals who left Sri Lanka and those who are planning to migrate from Sri Lanka. Hence the survey includes the reason for their emigration. The study proposes practical solutions for how the IT professionals can be retained in Sri Lanka for a longer period.

II. LITERATURE REVIEW

IT is a fast-moving industry that can nurture in any country. As IT competency is globally accepted, can be taught, and is

somewhat standardized, there seem to be more migration opportunities available for IT professionals. Considering a small country like Sri Lanka, the impact of migration can be multi-directional. Moreover, migration directly impacts the achievement of the IT industry vision for 2022 by taking IT talent out of the country. As per statistics extracted from WorldBank, Sri Lanka has the highest rate of total and skilled emigration in the South Asian region. The South Asian region has been growing in the aspect of its exports of both impersonal and personal services. The impersonal services enabled by Information Technology have been identified as a prospective driver for the development of the region. It recommends that the region has to provide opportunities for its people to acquire the required skills to meet the demands of these services industry (Dhar & Samanta, 2014).

There is an increasing trend in the migration of Sri Lankan professionals (Central Bank of Sri Lanka, 2015). Based on their high skill levels, there are more opportunities offered to them from foreign countries. Although this is earning foreign currency for the country, nowadays there are IT professionals who migrate permanently who do not contribute to the foreign currency earnings for Sri Lanka. Also, migration leads to the flow of innovative ideas and skills to foreign countries, rather than contributing to the development of Sri Lanka. Therefore, there is a necessity to identify the factors that are affecting the Sri Lankan IT professionals' migration, so that relevant authorities can refer to them and take remedial actions to retain the IT talents within the country. One of the challenges faced by the country is the loss of skilled IT professionals. It was mentioned that aligning the IT education curriculum with the current job market could be suggested as a solution. Also, Sri Lanka can produce many IT entrepreneurs by supporting them with the supply of proper guidance. This may help to create jobs and earn foreign currency for the country. (State Minister Kanaka Herath, 2023).

From most research, it is discovered that highly qualified people are migrating to high-growth economic countries where transitioning from the 'developing' phase to the 'developed' phase, e.g., Southeast Asia and Poland. More than 50% of skilled people are discovered to be migrating to Australia, Canada, and New Zealand with their families. (Global Commission on International Migration, 2005). Brain drains amongst the information and communication sector professionals has affected their targets of achieving USD 3 billion in export revenues by 2024 (CSSL).

From the past data, a relationship between brain drain and productivity growth could be identified that a large proportion of people (43.2%) related to the IT field are migrating from small developing countries, e.g., Sri Lanka. This happens because productivity growth in small

developing countries is more sensitive than in large one's changes happen due to brain drain. So, a negative impact occurred on productivity growth due to the brain drain of IT-skilled people in all developing countries (7.4%), and relatively it is mentioned as twice that of high-income countries (3.5%) (Schiff and Wang, 2008) Right now, there is a vacuum of about 20000+ IT professionals in Sri Lanka. Therefore, solutions must be started within the school by introducing IT into those underground levels which will benefit the brain drain issue in the country. (State Minister Kanaka Herath, 2023). Hence, it seems like a big challenge for developing countries including Sri Lanka to deal with brain drain as Sri Lanka is going through an economic crisis currently. Brain drains cause many considerable issues in the home country. Loss of tax revenue, loss of future entrepreneurs, shortage of important skilled workers, and loss of innovative ideas are identified as the worst issues. To overcome this, exchanging skills can be an effective solution.

III. THE OBJECTIVE OF THE STUDY

To investigate the factors contributing to the migration of highly skilled IT professionals from Sri Lanka to other countries, the impact of brain drains on the IT industry in Sri Lanka, and potential policy interventions that could be implemented to mitigate brain drain and promote the retention of IT talent in the country.

IV. METHODOLOGY

Professionals in the IT industry have shared their experiences working in Sri Lanka and their reasons for leaving or planning to leave. Some common reasons for leaving were lack of job opportunities in their field, personal or family reasons, and a desire for higher salaries and better quality of life. Respondents suggested that Sri Lanka could improve conditions for IT professionals by providing more job opportunities, training, and encouraging entrepreneurship. In terms of salary and benefits, most respondents reported that their current location was better than Sri Lanka. To improve conditions for IT professionals, the Sri Lankan government and tech industry could consider reducing taxes, increasing salary ranges, and improving infrastructure to attract foreign direct investment. Some professionals expressed interest in returning to Sri Lanka if conditions improve, while others had no plans to return due to personal reasons or a lack of confidence in the country's economic and political situation.

Additionally, improving infrastructure such as uninterrupted power supply and high-speed internet could attract more foreign direct investment in the IT industry. While some professionals expressed interest in returning to Sri Lanka if conditions improve, others had no plans to return due to personal reasons or a lack of confidence in

the country's economic and political situation. The data highlights the need for Sri Lanka to make significant changes to its economic and political structure to retain talented IT professionals and compete with other countries in the industry.

The data indicates that Sri Lanka's quality of life is not as good as other countries, and the cost of living is high. Many professionals mentioned that they are seeking a better quality of life and higher salaries in other countries. The data highlights the need for Sri Lanka to make significant changes to its economic and political structure to retain talented IT professionals and compete with other countries in the industry.

Real time data was collected through surveys and interviews which was then thoroughly analyzed using Python Programming Language and Microsoft Excel. This has allowed us to draw evidence-based conclusions and make informed decisions about the research findings.

a. Dataset

Real time data was collected through a questionnaire from the IT professionals in Sri Lanka who migrated recently. The dataset contains 14 columns and 68 rows. It contains 2 numerical data columns and 12 categorical data columns. The dataset was cleaned and filtered in excel.

Table 1. Dataset and its attributes

Column	Data Type
What is your IT related profession?	Categorical data
Age	Numerical data
Which country are you living currently?	Categorical data
How long did you work in Sri Lanka in the above profession?	Numerical data
What was your primary reason for leaving or planning to leave Sri Lanka?	Categorical data
If you are not planning to migrate, what is the reason?	Categorical data
Did you face any challenges in your profession in Sri Lanka that contributed to your decision to leave?	Categorical data
What opportunities are you seeking in your new location that you were not able to find in Sri Lanka?	Categorical data

Did you consider staying in Sri Lanka and working remotely for a foreign company?	Categorical data
What do you think Sri Lanka can do to retain talented IT professionals?	Categorical data
How would you rate the quality of life in Sri Lanka compared to your current location?	Categorical data
In terms of salary and benefits, how does your current location compare to Sri Lanka?	Categorical data
What do you think the Sri Lankan government or tech industry can do to improve the conditions for IT professionals in the country?	Categorical data
Are you planning to return to Sri Lanka in the future? Why or why not?	Categorical data

B. Data Analysis

The data was collected to an excel file. Then the excel file was converted to a comma separated version (CSV). The data analysis was done using python programming language. Hence, the data was imported to python.

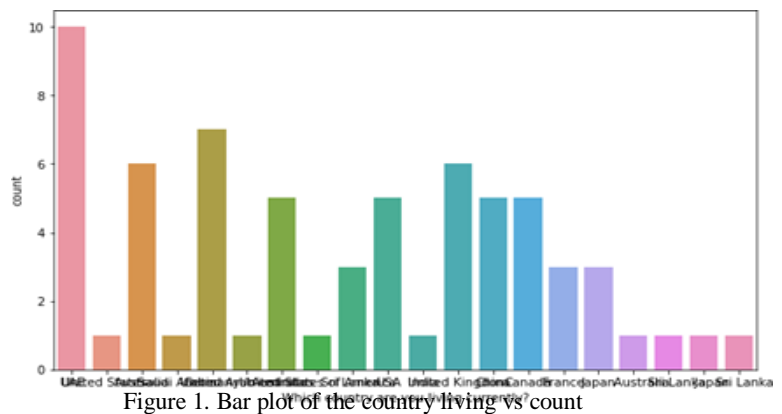


Fig 1. shows that most of the IT professionals are currently living in UAE. And least of them are currently in Sri Lanka.

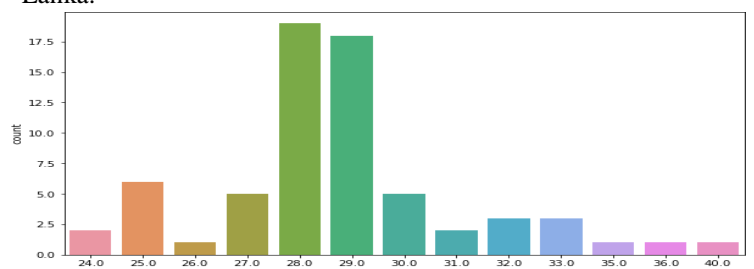


Figure 2. Bar plot of Age vs count

When age was taken into consideration, it shows that people of middle age which is 28 years old have fled recently. That is the age in Sri Lanka where people move to foreign countries looking for job opportunities.

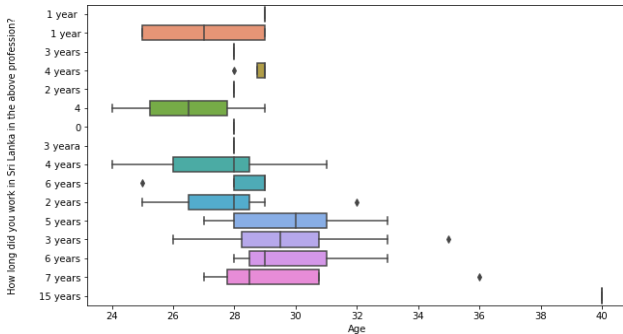


Figure 3. Boxplot of Age vs period of work in Sri Lanka

Fig 3. shows the variation between the age and the duration of work one has worked in Sri Lanka.

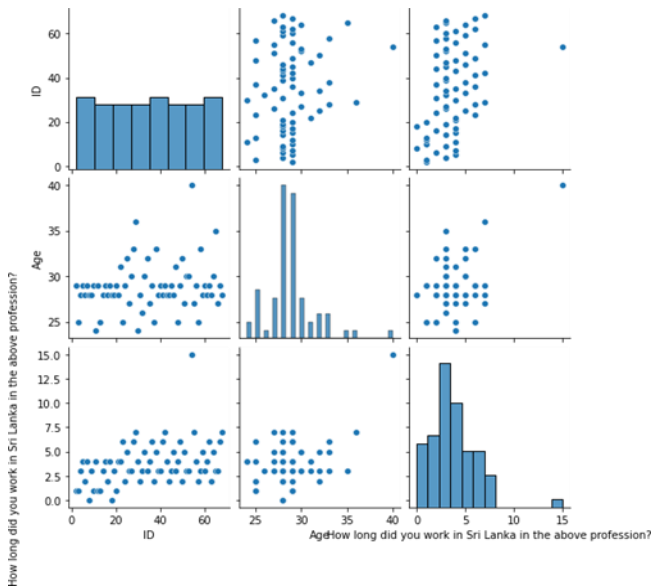


Figure 4. Pairplot

Fig 4. visualizes given data to find the relationship between the variables in the dataset where the variables can be continuous or categorical. Pairplot is a module of seaborn library which provides a high-level interface for drawing attractive and informative statistical graphics.

The analysis was carried out in excel for a sample dataset.



Figure 5. Bar plot showing the countries

The data shows that most of the respondents, which is three out of six, are currently living in the United Arab Emirates. This suggests that the UAE is a popular destination for Sri Lankan IT

professionals who are looking to leave the country. The UAE is known for its rapidly growing technology industry, which may be attracting Sri Lankan IT professionals seeking better job opportunities and higher salaries. One respondent is currently living in the United States, one in Australia, and one in Germany. These countries are also known for their thriving technology industries and provide better opportunities for IT professionals. This could be one of the reasons why Sri Lankan IT professionals are seeking opportunities in other developed countries.

The data also indicates that Sri Lanka needs to improve conditions for IT professionals to retain them in the country. The fact that only one respondent is currently living in Sri Lanka suggests that the IT industry in Sri Lanka is facing significant challenges in retaining talented professionals. The government and tech industry need to provide more job opportunities, training, and encourage entrepreneurship to improve the conditions for IT professionals in the country. Additionally, improving infrastructure such as uninterrupted power supply and high-speed internet could attract more foreign direct investment in the IT industry.

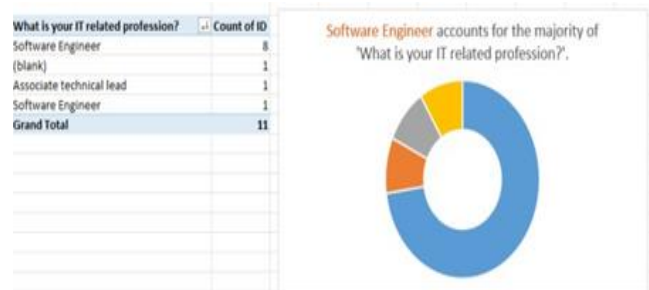


Figure 6. Pie chart showing the fields of IT professionals

The data suggests that most Sri Lankan IT professionals, who participated in the survey, are Software Engineers. This indicates that software engineering is a popular profession among Sri Lankan IT professionals. The high number of software engineers also suggests that Sri Lanka has a significant pool of talented software engineers who could contribute significantly to the growth of the IT industry in the country.

The fact that one respondent did not provide information about their IT related profession could indicate that there is a need for more diversity in the IT industry in Sri Lanka. The government and tech industry could focus on providing more job opportunities and training for other IT-related professions to promote diversity in the industry.

The data also highlights the need for Sri Lanka to retain its talented IT professionals. The government and tech industry need to provide better conditions and opportunities to retain such talented professionals. This could include providing more job opportunities, training, and support for the software engineering profession, and other IT-related professions.

Overall, the data suggests that Sri Lanka has a significant pool of talented IT professionals who have the potential to contribute significantly to the growth of the industry in the country. The government and tech industry need to focus on retaining these professionals by providing better conditions and opportunities to promote growth and diversity in the industry.

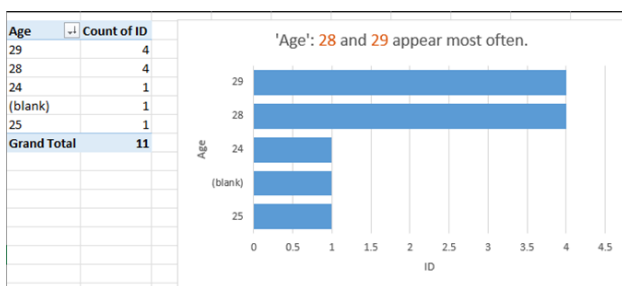


Figure 7. Age of respondents

The data shows that a significant proportion of the respondents are in their late twenties, indicating that this age group is a significant contributor to the IT industry in Sri Lanka. This suggests that Sri Lanka has a significant pool of young and talented IT professionals who could contribute significantly to the growth of the industry in the country.

The fact that one respondent did not provide information about their age could indicate a need for more diversity in the age groups of IT professionals in Sri Lanka. The government and tech industry could focus on providing more job opportunities and training for IT professionals in different age groups to promote diversity in the industry.

The data also highlights the need for Sri Lanka to retain its young and talented IT professionals. The government and tech industry need to provide better conditions and opportunities to retain such professionals. This could include providing more job opportunities, training, and support for the younger age group to promote growth and diversity in the industry.

Furthermore, the data suggests that Sri Lanka needs to focus on nurturing and retaining young talent in the IT industry. Sri Lanka has a significant pool of young and talented IT professionals who could contribute significantly to the growth of the industry in the country. The government and tech industry need to provide better

conditions and opportunities to retain such professionals and foster growth and diversity in the industry.

Overall, the data highlights the need for Sri Lanka to focus on retaining its young and talented IT professionals, provide more opportunities for different age groups, and promote diversity in the industry for sustainable growth.

V. CONCLUSION

Brain drains of IT professionals in Sri Lanka is a complex issue with significant implications for the country's economy and technological development. This research paper has shed light on the underlying causes, consequences, and potential solutions associated with this phenomenon. The findings indicate that several push factors contribute to the brain drain, including limited career opportunities, low wages, inadequate infrastructure, and political instability. On the other hand, pull factors such as attractive job prospects, higher salaries, better work-life balance, and advanced technological environments in destination countries attract IT professionals to emigrate. The consequences of brain drain are far-reaching. Sri Lanka loses skilled individuals who could contribute to its economic growth, innovation, and technological advancement. Additionally, the outflow of IT professionals hinders the development of a robust IT industry and reduces the country's competitiveness in the global market. Several potential solutions have been identified to address the brain drain of IT professionals in Sri Lanka. Strengthening the IT infrastructure, fostering research and development, and promoting collaboration between academia and industry are also crucial steps. Furthermore, the government, private sector, and educational institutions must work together to enhance the quality of IT education, aligning it with industry demands and encouraging entrepreneurship. This can help create a thriving IT ecosystem that retains and attracts skilled professionals. mitigating the brain drain of IT professionals in Sri Lanka requires a comprehensive and multi-faceted approach. By addressing the underlying causes and implementing effective strategies, the country can retain its talent pool, foster technological innovation, and realize its potential as a global IT hub.

VI. RECOMMENDATIONS

- i. Educating the youngsters about the job opportunities in Sri Lanka and giving them proper guidance through career guidance units.
- ii. Introducing novel opportunities in Sri Lanka related to IT fields.
- iii. Recognize and appreciate the contributions of IT professionals regularly. Implement an employee recognition program to acknowledge their achievements and provide rewards such as bonuses, incentives, or public recognition.
- iv. Offer competitive salary packages that align with

industry standards and the cost of living. Ensure that IT professionals feel adequately rewarded for their skills and experience.

- v. Providing proper trainings so that the IT undergraduates could gain hands on experience related to their fields.
- vi. Introducing to new courses and training materials that give them free learning opportunities to enhance their knowledge and skills on latest technological advancements.

REFERENCES

Dahl, M. S., and Sorenson, O. (2010). The Migration of Technical Workers, *Journal of Urban Economics*. Elsevier Inc., 67(1), pp. 33–45. DOI: 10.1016/j.jue.2009.09.009

Balasoorya, B. M. A. (1975). The Brain Drain; With special reference to Engineers, *Economic Review*, September, pp. 23–27.

Brain drain in IT industry a threat: State Minister Kanaka Herath (2023) Available at: <https://www.ft.lk/it-telecom-tech/Brain->

[%20drain-in-IT-industry-a-threat-State-Minister-%20Kanaka-%20Herath/50-744833](https://www.ft.lk/it-telecom-tech/Brain-drain-in-IT-industry-a-threat-State-Minister-Kanaka-Herath/50-744833) (Accessed: Thursday, 2 February 2023)

Nearly 10,000 ICT professionals migrated during crisis period – CSSL (2022) Available at: <https://www.adaderana.lk/news/86571/nearly> (Accessed: 3 December, 2022)

Global Commission on International Migration (2005) *Migration in an Interconnected World: New Directions for Action* [Online] Available at: <https://www.unitar.org/ny/sites/unitar.org.ny/files> [Accessed: 20th August 2015].

Schiff, M. and Wang, Y. (2008) Brain Drain and productivity Growth: Are Small States Different?, Discussion Paper No. 3378, Bonn: IZA Institute of Labor Economics [Online] Available at: <http://ftp.iza.org/dp3378.pdf> [Accessed: 22nd August 2015]