Brain Drain Issue of Indonesia to Singapore: Do Digital Media and Internet Play a Role in Stimulating It?

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Abstract: Brain drain or human capital flight is the phenomenon of intellectuals, scientists, intellectuals, or researchers leaving their own countries to more developed countries. The reasons behind it can vary. Considerations like hiked salaries, superior technology, better standards of living, and quality of work life, more unwavering political conditions & demand of skilled professional are attributed as reasons for brain drain from developing to developed countries. In contemporary technologically advanced era, digital media and internet has affected our political, social, cultural values. It would be oblivious if we neglected the role of digital media & internet in connecting cross border communities. This connection has brought changes in primordial intensions and the value system of people in developing countries to stay or move out of their country of origin to a developed country. There is a dearth of study related to paradigm shift in cross border mobility patterns mediated by digital media and internet. Here, it is an attempt to understand how the internet and digital media influences the intensions and priorities to move out from one's own country to foreign location. Specifically, it will review the brain drain phenomenon that occurs in Indonesia to Singapore recently in 2023.

1 INTRODUCTION

It is no longer surprising that many educated people choose to leave their hometowns to get a more decent life. When they have higher skills and knowledge than most people, finding work according to their skills is their goal in moving to another country. This happens because the country does not have the adequate facilities, they need to hone their skills. Apart from that, they want to experience life in a country that has a high level of prosperity with convenience in various things, such as food, entertainment, economy, culture, fashion, facilities, and infrastructure.

This phenomenon can be known as brain drain, which is a situation when a country loses its best human resources. This term is usually used for the migration of intellectuals, scientists, and intellectuals. In simple terms, this condition is described when many people have skills or intelligence, but they are not used to develop their nation or advance their country.

Brain drain is felt by developing countries like Indonesia. Even though it didn't happen on a massive scale, in the 1960s, many Indonesian students did not return to their homeland. For example, during the political change in 1965 from the Old Order to the New Order, many Indonesian students were studying at universities in Russia or universities in eastern European countries and chose not to return to their homeland.

Likewise in the 1980s, when Minister of Research and Technology BJ Habibie sent hundreds of potential teenagers to study abroad. Many overseas graduates do not immediately return home and serve in the country. Many of them choose to work in various companies in the US. Likewise, the Strategic Industry Management Agency (BPIS) sent thousands of young workers to be educated in various scientific disciplines. They were sent to become aircraft experts, telecommunications experts, oceanographers, satellite experts, etc. However, with the restructuring of the BPIS policy, many of these professionals are unemployed. Then they brain drain to various companies abroad.

The brain drain phenomenon has now evolved. Not only as the Indonesian diaspora (Indonesian people overseas) who have the status of high-class

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scientists and researchers. But there are also diaspora groups who choose to have careers and work in various job sectors in companies abroad.

Thus, the matter of returning to Indonesia is not just a consideration of the availability of companies that offer high salaries. But it also correlates with the values of a better and more dignified life in the country. Including a governance system that upholds clean governance with a clean and non-corrupt bureaucratic system.

So, the most prominent impact of this brain drain is that there is a brain vacuum where educated human capital has left the country, causing the vacuum of quality human resources in poor countries to increase. This happened to Indonesian Citizens (WNI) who changed citizenship to Singapore. The decision of Indonesian citizens to move to Singapore was caused by a pull factor. They are easier to facilitate and more appreciated. Moreover, the awards and salaries given are high. Not only that, but facilities, such as houses, cars are provided. They were also given important positions. Another encouraging factor can also be obtained from future guarantees obtained from Indonesian citizens.

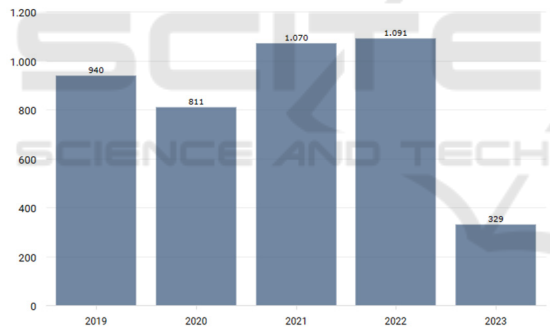

Figure 1: Number of Indonesian Citizens who become Singaporean Citizens (2019-2023).

As shown in Figure 2 (Muhamad, 2023), the movement of Indonesian citizens to Singapore continues to increase every year. 2022 was recorded as the highest year with 1,091 Indonesian citizens moving to Singapore. As of April 2023, it was recorded that 329 Indonesian citizens had changed citizenship. It is possible that this number will continue to increase until the end of 2023. This is a reality that many Indonesian citizens are interested in moving to become foreigners from certain countries. This is just data on Indonesian citizens who are Singaporean citizens, not from various countries.

On the other hand, as time goes by, digital media continues to develop and there are always new and innovative ways to use it. Digital media has changed the way we communicate and consume information. This allows everyone to connect and share thoughts and ideas instantly. Basically, digital media is any form of media that relies on electronic devices for creation, distribution, display, and storage. One example of digital media is social media which allows users to interact with each other through posting text, photos, and videos, commenting and leaving likes to create conversations about pop culture, sports, news, politics, and everyday events in life. user.

Discussions about the Indonesia 4.0 era are currently hot. This discourse emerged in response to the increasingly significant development of digital technology at the global level. The government doesn't seem to want to be left behind by this.

The development of digital technology itself affects every line of human life. The impact is quite extreme on human behavior and lifestyle. How could it not be, everything that was initially difficult suddenly became easy.

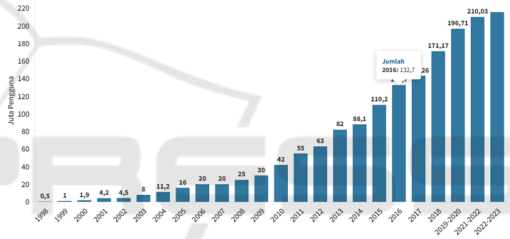

Figure 2: Internet Users in Indonesia (1998-2023).

This is supported by data on the number of internet users in Indonesia. Based on survey results from the Indonesian Internet Service Providers Association (Indonesia, 2023), internet users in Indonesia reached 215.63 million people in the 2022-2023 period. This number increased by 2.67% compared to the previous period which was 210.03 million users. The number of internet users is equivalent to 78.19% of Indonesia's total population of 275.77 million people. The percentage is 1.17% points higher than in 2021-2022 which was 77.02%. Based on gender, the internet penetration rate for men in Indonesia is 79.32%. This figure is higher than internet penetration for women which is 77.36%. Meanwhile, the internet penetration rate in urban areas will be 77.36% in 2022-2023. The percentage is also better than in rural areas which is 79.79%.

Based on this phenomenon, this article will discuss the brain drain that occurs from Indonesia to Singapore and how digital media and the internet can stimulate it.

2 LITERATUR REVIEW

Previous research (Asmuni, 2020) in the title Minimizing brain drain: how BumDes holds the best resources in the villages examined the extent to which the Village-Owned Enterprise (BumDes) BumDesor can minimize local brain drain in the village. By using qualitative methods and in-depth interviews in three villages in East Java, in Malang Regency, Banyuwangi Regency, Gresik Regency, this research found that BumDes was able to overcome brain drain to a certain extent. The paper shows that there are three patterns of how brain drain can be minimized through BumDes. Empowering women in the BumDes business unit, empowering village youth to manage the digitalization of the BumDes business unit, and local undergraduate educational institutions in universities to run BumDes. In short, BumDes can retain its best human resources to develop villages. BumDes' success in building its core business can be seen from how its business units operate. BumDes business is not like business in general. The BumDes business begins with the village's potential which is realized through the business units it owns. This research shows that the success of BumDes is more due to the ability of its members to explore the potential of the village so that BumDes runs and grows healthily. In this way, there is an economic turnaround in the village. BumDes requires the best human resources to manage, develop and maintain its sustainability. In order to reduce brain drain, healthy, open, and modern BumDes have utilized the best village resources to participate in managing the business. The best human resources prefer to stay in the village because there are unlimited job opportunities and economic opportunities. Villagers in urban areas even returned to their original homes and built businesses through BumDes. In short, BumDes can be a factor that reduces the brain drain phenomenon. However, the success of reducing brain drain rates through BumDes may not represent all BumDes in Indonesia. The study of these three BumDes provides lessons in overcoming brain drain at the micro level. The success of BumDes in running business units based on village potential and empowering rural communities can attract the best village human resources to develop villages. Thus, the paper shows that discussions about brain drain should provide space for micro or village-based organizations such as BumDes as important actors in reducing the amount of brain drain.

The second research entitled Brain drain from Europe to China in a digital economy era? (Ma & Zhao, 2022), the research explains that over the past few decades, China has exerted significant influence on European labor markets through commodity trade, through the channels discussed. Although a large body of research finds that exposure to international trade has a negative impact on employment opportunities for low-skilled workers in the manufacturing sector in developed countries, the impact can vary greatly depending on whether the interest group is low-skilled or not. Apart from international trade, globalization also directly affects local labor markets through international migration. As China develops, demand and competition for high-skilled workers will inevitably affect the European labor market, especially for the high-skilled segment. Along with advances in technology and digital transformation, the labor market itself is also experiencing changes. Online job search and matching is becoming increasingly important: organizing workers so that the production process is no longer limited by physical space or limited by borders. The model, which allows workers to supply their labor remotely, suggests that demand for and competition for high-skilled workers from China resulted in industrial upgrading and economic development increasing the tightness of the high-skilled labor market, but not the tightness of the low-skilled labor market in China. Europe. The implication of our findings is that in the era of the digital economy, international labor mobility has become less necessary because workers can provide their services remotely. These changes could create a favorable situation for both the EU and China. On the one hand, China benefits from high-skilled workers in the European Union; On the other hand, European labor markets were not negatively impacted by shocks to the demand curve for high-skilled workers. This result is in sharp contrast to the traditional model in which European workers were able to work in China through international migration.

The third research entitled Does the Brain Drain Effect Really Exist? A Meta-Analysis (Böttger, Poschik, & Zierer, 2023). It used an accepted meta-analytic approach to verify these findings. Here the overall significant negative impact of smartphone uses, and presence is demonstrated. A database search identified 22 studies with a total of 43 relevant effects that could be put into the categories “memory,” “attention,” and “general cognitive performance.” Subgroup analysis showed that not all cognitive domains were equally negatively impacted by smartphones. The heterogeneity of impacts strengthens these fossils. The test subject's

nationality or research origin was identified as a further key variable. The findings also suggest that the distraction effects of smartphones vary across study areas and further research is needed. Given the results of current research, it seems important for society in general, and especially children and teens in schools and classrooms, to learn how to deal with potential distractions from smartphones.

The fourth research entitled Migration Vulnerability: The Role of Digital Media and the Internet in Stimulating and Inhibiting Brain Drain (Bhardwaj, 2017) is a contribution to theory and literature related to the intensity of brain drain in the era of digitalization. Online browsing and digital media influence learning and image formation about a place and can stimulate or inhibit migration decisions. Overall, this research identifies two dimensions. The first dimension relates to the role of the internet and digital media in stimulating migration decision making. The Internet and digital media increase geographic coverage by expanding regional migration possibilities and the number of destinations. Through accessibility to this medium, even vague dreams about distant and unfamiliar places can be quickly validated. Information distributed over virtual networks makes migration decisions easier. The increasing prospect of predicting the future consequences of a particular move has increased the openness to thinking about migration to previously unfamiliar places. The internet and digital media play an important role in stimulating dreams and thoughts, leading to concrete migration plans. Faster access to information facilitates faster decision-making processes. Distributed virtual access to related information makes it easier to make migration decisions, specifically the time between the intention to migrate and the final decision to make the move. The second dimension of this article is the hampering role of digital media and the internet when used as an open and unfiltered communication platform. Such information, if unreliable or biased, may transmit or misrepresent a perception of a community or country. Several ethical issues regarding digital media and the internet that influence migration decisions such as xenophobic viewpoints and stereotypes effectively distance humanity from migrants and damage the image of the destination country or community.

The fifth research is entitled Mitigating brain drain (Hijden & Wende, 2020) by connecting universities discusses three communication policies that are directly relevant to universities: one regarding the European Education Area, one regarding the European Research Area, and one regarding the Digital Education Action Plan. The policy report, towards a 2030 Vision on the Future of Universities in Europe, will be released soon. Earlier this summer, the commission published an equally interesting communication regarding the new European Skills Agenda. Excellence, sovereignty, and inclusion feature prominently in these texts. So, how can mobility fit onto this agenda in a post-pandemic world? The COVID-19 recovery creates an opportunity to align the EU's green, digital and knowledge agenda. For universities to become leaner, cleaner and provide better jobs, and for their staff to find a better work-life balance, we need to rethink mobility. Student and staff mobility is widely considered to have a positive impact on the lives and careers of the individuals concerned. This is part of the EU's general aim to promote the free movement of goods, people, services, and capital. Free movement is expected to allocate talent to places that are most productive and beneficial to everyone. In this way, universities and research institutions will obtain the human resources they need to develop. EU programs such as Erasmus+ and Horizon Europe encourage mobility. Millions of movements are proudly presented as European success stories. We are educating generations of students not only as "European citizens" but also as greedy, polluting air travelers. Universities are proud to contribute their research to addressing global challenges, such as climate change, but few universities limit the amount of academic travel (tourism) undertaken by their staff. The EU has launched a Green Deal, but ERASMUS and H2020 are still far from environmentally friendly. Mobility can also cause brain drain. Objections to 'brain drain' were met with the use of the more subtle notion of 'brain circulation'. But most of the movement occurred from south to north and from east to west, strengthening successful areas and covering less successful areas. From an efficiency standpoint, this might not be so bad. The concentration of talent in a few centers greatly stimulates exchange and innovation in these places. The flow of investment capital and optimal use of expensive infrastructure can be guaranteed. Well-known examples are Silicon Valley and the Boston area. In Europe, clustering and concentration are also definite trends, both within the country and across the continent. National excellence initiatives are driving this trend. Their European counterparts, such as the European Institute for Technology (EIT) and more recently the European Universities Initiative, are moving in the opposite direction, with some clustering but no

concentration. Harmonization of national and European instruments would be welcomed. From a political and societal perspective, clustering and concentration carry certain risks. Less developed regions will lose talented human resources and become less attractive for investment in knowledge-intensive sectors. Proximity services will become scarce. Public resentment will grow, and populist movements will become stronger, threatening the EU's social and political cohesion. Italy is a strong example, with low support for the EU and much to lose if it continues to drain its brains as populist parties warm up for the next election. Societal cohesion and economic development would theoretically be better supported by extensive higher education and research facilities across countries and regions, but this, in turn, may not foster world-class excellence.

3 METHODS

This research is descriptive research with a literature study approach, where researchers collect data and information from various library sources such as books, journals, articles, magazines, online news portals and others. Various literature sources collected by researchers were sorted and selected and then studied one by one. The data analysis technique used uses content analysis techniques. The stages used by researchers in carrying it out are determining the research topic, determining the problem formulation, developing a thinking framework, developing methodological instruments, analyzing data, drawing conclusions (Bungin & Burhan, 2017).

4 RESULTS AND DISCUSSION

Internet usage and smartphone penetration worldwide is progressive and intensive. The fact that internet usage and smartphone penetration worldwide continue to increase shows its applicability to every aspect of our lives. There are approximately seven billion people (95% of the global population) living in areas covered by mobile networks. Mobile broadband networks (3G or higher) already cover 84 percent of the global population. LTE networks have reached nearly 4 billion people (53% of the global population), thereby improving the quality of internet use (Bhardwaj, 2017). As technology changes and advances, migration patterns also change. Figure 1 highlights the number of internet users in Indonesia. This clearly shows that internet penetration has increased over time and has become an inseparable part of everyone's life. In such a dynamic scenario, special attention is needed to change in system values and individual behavior due to the digital era.

To sum up as identified in the above literature, the major roles of internet and digital media in stimulating brain drain intensions are:

a. Increases in the size of the migrant's network of migrants and prospective migrants.
b. Strengthening the existing social ties.
c. The internet reinforces the pull factors such as information about job opportunities, housing, education, lifestyle, and leisure activities.
d. Moderates the upshot of “intervening obstacles” or hurdles.
e. Information about maps, travel routes and connecting migrants to the destination.
f. Precisely predict the increase or decrease of migration flows and insight into how migrants choose target countries.
g. Lowering of the risks and costs of migration
h. Facilitates adjustments.

5 CONCLUSION

This research analyzed by conducting a literature review of various literature sources. Based on the issues discussed in the present article future studies can be conducted to empirically assess how media is playing a role in triggering brain drain. There are also several differences from the previous research as can be seen below:

Table 1: Differences with previous research.

Previous Research	The Difference
(Asmuni, 2020) in the title "Minimizing brain drain" discusses the role of BumDes (Village-Owned Enterprises) in minimizing brain drain in rural areas.	The research highlights that BumDes holds valuable resources in the villages, which can be utilized to create opportunities and retain skilled individuals in their local communities
Brain drain from Europe to China in a digital economy era? (Ma & Zhao, 2022).	The study suggests that the digital economy has created a favorable situation for both the European Union and China
Does the Brain Drain Effect Really Exist? A Meta-Analysis (Böttger, Poschik, & Zierer, 2023).	Examines the existence of the brain drain effect through a meta-analysis. The research aims to verify the findings related to the use of smartphones and their impact on cognition.
Migration Vulnerability: The Role of Digital Media and the Internet in Stimulating and Inhibiting Brain Drain (Bhardwaj, 2017).	The literature review highlights the potential drawbacks of digital media, such as the spread of misinformation and the reinforcement of stereotypes.
Mitigating brain drain (Hijden & Wende, 2020)	It discusses various approaches to address brain drain, including policies to attract and retain skilled individuals
Brain Drain Issue of Indonesia to Singapore: Do Digital Media and Internet Play a Role in Stimulating It?	A study that attempts to understand the brain drain phenomenon from Indonesia to Singapore and the role of digital media and the internet in stimulating it.

Besides that, assessment of the role of digital media & internet in inhibiting brain drain can be conducted and studied related to the role of digital media and internet in influencing burning issues such as xenophobia, political expression or stereotypes and their role in migration decisions with a mediating role of digital media can be polluted. The present study will be helpful in bringing new dimensions to migration studies & studies related to digital media age.

There are several points as recommendations from the research results. First, the Indonesian Citizens who move to Singapore can be described in more detail for the demographic data. Second, the digital media and internet can be explained more specifically such as which platform that has more affection for stimulating brain drain. Third, future research can be done by using some software to process the data.

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