Vol 12, Issue 4, (2022) E-ISSN: 2222-6990

Determinants Affecting Brain Drain Among Generation Y in Malaysia

Dr Nor Harlina Abd Hamid

Faculty of Business and Management, Universiti Teknologi Mara Selangor, Malaysia Email: harlinahamid@uitm.edu.my

Dr Hasnita Ali, Chia Ji Han

Faculty of Accountancy and Management, Universiti Tunku Abdul Rahman, Malaysia Email: hasnita@utar.edu.my, ansonchia0801@1utar.my

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v12-i4/12920 DOI:10.6007/IJARBSS/v12-i4/12920

Published Date: 03 April 2022

Abstract

Human capital plays an important role in developing and enhancing the economic growth of a country. To enhance economic development and growth, talents are the important key factors in driving success. However, Malaysia has been experiencing intense brain drain in the past decades. The recruitment agency claimed that Malaysian Generation Y highly contributes to the brain drain situation. Thus, this paper aims to propose a comprehensive conceptual framework on the determinants affecting the intention of Generation Y in Malaysia to migrate and work abroad. This framework is important in providing an insightful information to the Malaysian government and policymakers for a better understanding of the issue. A quantitative approach will be used to collect data for the study. It is believed that this study will be able to fill the gap by extending the existing theoretical knowledge concerning generation Y. Five independent variables: compensation package, career prospects, working environment, work-life balance, and quality of life are proposed and included in the conceptual framework. Further research could perform a generation gap comparison. Consequently, the significant variables towards the brain drain issue can be well-defined and provide greater insight to the policymakers.

Keywords: Human Capital, Generation Y, Brain Drain, Working Abroad

Introduction

The issue of brain drain occurred in the early 1950s and showed an upward trend during 1990s (Dodani & LaPorte, 2005). In 2000, approximately 8 million intellectuals from Organisation for Economic Co-operation and Development (OECD) members moved from their origins and over 170 million people had lived outside of their country of origins (Dodani & LaPorte, 2005; Dunnewijk, 2008). In addition, Kerr et al (2016) claimed that international migration rate of high-skilled personnel in year 2010 has increased more than 130% compared to year 1990.

According to Docquier (2014), the global migration database 2011 showed that almost 40% of the migrants moved from developing countries to developed countries. Those high-skilled employees emigrated to seek better compensation package, career opportunities and even better living standards.

Since brain drain is a global issue, Malaysia cannot steer clear from the issue of brain drain as well. Statistics of World Bank (2011) as cited in Harnoss (2011) projected and estimated that over one million Malaysians likely to live in overseas in the year 2010. Approximately 75% of them were 25 years old and above and 31% of them had tertiary education (Harnoss, 2011; Tyson, 2019). There are approximately 350,000 skilled personnel migrated to foreign countries in year 2013 (OECD-UNDESA, 2013). A study done by Hays as cited in Nadaraj (2016) claimed that 84% of the job seekers in Malaysia have the intention and willingness to work abroad. Chinese Malaysian has the strongest desire to emigrate to foreign countries compared to other ethnic groups due to factors socio-political and poor compensation package (Sukumaran, 2017). However, the population movement report of Department of Statistics argued that more and more middle and high-income Malays emigrated from Malaysia and resided overseas (Lim, 2019).

In recent years, the intention of Malaysians to work in foreign countries remains at a high level, especially Generation Y, known as millennials. The Department of Statistics reported the Generation Y consists of over 50% of the workforce in Malaysia (Khidhir, 2019). Thus, Generation Y plays an essential role in building and developing the economy of Malaysia as well as improving the status of country on the global scale. However, a recent survey done by Randstad, one of the main players in human resources industry as cited in Chong (2019) claimed that almost 90% of the Malaysians who fall under category of Generation Y has the intention of leaving Malaysia and seek for a better job opportunity in oversea. This shows that the economic growth and development of Malaysia are at risk due to the high intention of Generation Y to migrate and work abroad (Tyson et al., 2017). This study could provide insights to the government and key industry players to revamp the existing policies to retain and attract talents. Only by having sufficient talents, Malaysia will be able to achieve the mission of becoming a high-income economy.

The main objective of this research is to provide a greater conception on the determinants affecting intention of Generation Y in Malaysia to emigrate and work abroad. This research is aimed to determine the impacts of each independent variable on the dependent variable, brain drain. To achieve this research, the specific objectives are formulated:

1. To determine the relationship between compensation package and brain drain among generation Y.

2. To determine the relationship between career prospects and brain drain among generation Y.

3. To determine the relationship between working environment and brain drain among generation Y.

4. To determine the relationship between work-life balance and brain drain among generation Y

5. To determine the relationship between quality of life and brain drain among generation Y.

Literature Review

Migration and Brain Drain Among Generation Y in Malaysia

In this research, migration is defined as an individual who intends to migrate from Malaysia and work overseas for more than one year. This definition is similar to the definition of migration provided in UNESCO (1998) and Fielding (2016), which defines migration as an individual move out from his or her country of origin and reside in foreign countries for more than a year. Brain drain can be defined as emigration of high-skilled and educated labor from developing or low-income countries to developed or high-income countries due to several factors including economic, socio-political, socio- demographic, etc. (Shresta, 2011; Mawusse, 2016; Siraj et al., 2020).

Kim and Allen (2018) discussed that the exodus and departure of educated professionals and talents from their living countries to overseas are considered as brain drain. Studies of Beine et al (2011);Di Maria and Lazarova (2012) as cited in Pais et al. (2018) argued that the departure of individuals with at least tertiary education background can only be considered as brain drain. In this research, brain drain refers to emigration of skilled individuals and professionals with at least tertiary education background from Malaysia to foreign countries. Unlike China, Malaysia still experiences intense brain drain phenomenon even though several approaches have been taken by government. World Bank (2015b) reported the approaches are developed based on macro-level factors.

In Malaysia, the population of Generation Y (individuals born between year 1981 and 1996) is 29% of the total population (Lin, 2018). However, Khidhir (2019) argued that more than 9 million Malaysians are Millennials (individuals born between year 1980s and 1990s) and half of total workforce in Malaysia are Millennials. These 9 million Malaysians are valuable and a vital asset for Malaysia as Generation Y is viewed as the driver that may successfully transform Malaysia into a high-income country and achieve the mission of Industry 4.0 (Saieed, 2016; Kannan, 2019; Shah, 2019).

Compensation Package

Compensation package of an employee includes monetary and non-monetary compensation. According to Koh (2018), monetary compensation refers to salaries, retirement funds, overtime pay, bonus and commission given by employer; non-monetary compensation refers to training and program, accommodation, company-owned transportation, and other non-cash benefits provided by organisation. Ghazali et al (2015) argued that Malaysian skilled and educated emigrants believed that attractive compensation package and better employment policy would be offered in international organisations.

In addition, most of the skilled personnel moved from developing to developed countries due to the better pay in the developed countries (World Bank, 2011; Lim, 2019; Makhbul, 2020). Hays Asia Salary Guide 2019 revealed that almost half of the current compensation package of Malaysian employees has not reached their satisfaction level (Hays, 2020). In fact, the salaries offered in Malaysian market are much lower compared to its neighbouring country, Singapore and developed countries such as Germany, United States, Australia and United Kingdom (Kana, 2018; Rosli, 2019). Based on the Salaries and Wages Survey Report 2016

prepared by the Statistics Department, the salaries paid to most of the Malaysian labour are relatively lower than the living wage in Malaysia (Kana, 2018).

Career Prospects

Career prospect is defined as the probability or opportunity of an individual to achieve success in his or her career (Lim et al., 2016). Further, career prospects can be perceived as a better contribution of an employee towards an organisation (Lee et al., 2014). In this study, career prospects include career development, career opportunities, career growth as well as career advancement (promotion).

World Bank (2015b) reported that over 70% of Malaysians recognised that career opportunities are the main driving factor to enable them to emigrate and pursue a career in foreign countries. Besides, over 70% of the fresh graduates resigned from their first job within one year as they seek for better career opportunities (Kaur, 2017). Generally, Malaysian employees agreed that career development and opportunities are the key factors in their decision making to work abroad. The significance of career development measured by Malaysian employee is relatively high compared to other Asian markets such as Japan and Hong Kong.

Past studies by Choong et al (2013); Lee et al (2014) found that a better career prospect in overseas is one of the pull factors in the brain drain issue in Malaysia, and this impacts the career development of Malaysian working adults. Lim et al (2016) seconded that career prospect is one of the factors affecting the intention of undergraduate students to migrate and work in Singapore. Existing studies also found that Malaysian postgraduate students have a high intention to migrate and work abroad due to the poor career prospects in Malaysia, which contributes to the main factors driving the Malaysians to leave and work in foreign countries (Wahab, 2014; Chandar et al., 2015; Ghazali et al., 2015; Tyson, 2019).

Working Environment

Working environment is identified as a professional environment in which an individual has great amount of interaction with others, and it is supported by various factors including physical, cultural, and social factors (Lee et al., 2014; Koh, 2018). Narang (2013) claimed that working environment as a workplace for personnel to fulfill their needs and perform their ability including personal and working. In another study, Jauhar and Yusoff (2011) argued that there is a positive relationship between the better working environment in overseas and the intention of professionals towards brain drain. This study is focused on the workplace for employees to perform their tasks and it includes the working hour, workstation layout and design, facilities and resources given for task performance purpose, organisational culture as well as communication and support of co-workers.

According to Lee et al (2014), poor working environment is one of the factors to the brain drain issue among Malaysian employees. Fong and Hassan (2017) found that most of the Malaysian skilled emigrants are unsatisfied with the interpersonal relationship with their supervisors, poor management of human resources and lack of organisational support. These factors contributed to the decision of Malaysians working overseas, hence making the brain drain issue becoming more serious. Furthermore, Corcoran and Faggian (2017) asserted that the better facilities provided and the well-designed working conditions outside home country

Vol. 12, No. 4, 2022, E-ISSN: 2222-6990 © 2022

are the pull factors of international skilled migration. Thus, well-developed, and favourable working environment in a specific country may help in tackling the brain drain issues. For example, good employee relationship management system will create a harmonious working environment, and this will help in reducing the intention of working abroad (Liu, 2018).

Work-Life Balance

Every individual will perceive the meaning and practice of work-life balance in a different way (Gewinner, 2019). In this study, work-life balance refers to flexible and fair working hours, various types of paid leaves given, and any incentives or benefits given for relaxation purposes.

Work-life balance can be facilitated via deduction of working hours, flexible working hours management, availability of different types of paid leaves such as annual, sick, parental and family leaves (Noor & Mahudin, 2015). Kelly et al (2008) as cited in Hossain et al (2018), highlighted that work-life balance as a balance in both work and family roles due to the time and commitment.

Based on the past studies, the work-life balance is an essential factor affecting the intention of migration. Schmidt and Klambauer (2013) claimed that better work-life balance affects the intention of German medical specialists to migrate and work in Austria. Besides, Holland and Martin (2015) agreed that the main reason for well-educated British people who migrated from United Kingdom to France and Chamonix Valley is for the better work-life balance in the destination countries. Also, work-life balance has a significant relationship with professional commitment, and it may lead to a brain drain issue (Hazreena, 2020). Thus, these studies demonstrated that work-life balance is one of the determinants affecting the intention and behavior of Malaysian to migrate and work abroad.

Quality of Life

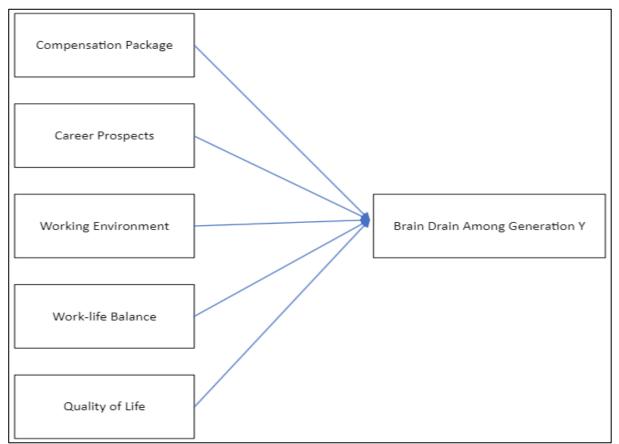
According to World Health Organisation (WHO), quality of life is not only referring to the absence of disease or illness, but also it covers the well-being of the individual, mental and society (Gattino et al., 2013). Diener et al (1999) as cited in Lim et al (2016) stated that quality of life includes the individual's sense of satisfaction towards his or her lifestyle and life fulfillment. Further, the environmental factors such as the crime rate, security level and cleanliness are comprised under the quality of life (Ishak & Aziz, 2014). Cardona (2010) discussed the subjectivity and multidimensionality in the definition of quality of life. Subjectivity refers to the judgement and perception of an individual towards quality of life such as Satisfaction of Life Scale. Multidimensionality refers to the quality of life ranking and index of countries. Therefore, quality of life from this research could consider the satisfaction of an individual towards his or her life, life fulfillment, well-being of society, security and crime rate of countries as well as the quality-of-life rankings.

Moreover, the quality of life in a country can be indicated and accessed through the qualityof-life ranking. Generally, the citizens in the countries with lower quality of life ranking including Malaysia, Romania and Sri Lanka will move to the countries with a higher quality of life such as New Zealand, Germany, Singapore, and Poland (Foster, 2018). Lim et al (2016); Jauhar et al (2015) argued that undergraduate students and professionals have the intention to migrate and work in Singapore. In addition, there is a growth in the number of Malaysian

migrants who resided in New Zealand due to the better quality of life in New Zealand (Ehambaranatha et al., 2015). Sechet and Vasilcu (2015) stated that there is a great outflow of Romanian physicians to countries in Europe. One of the European countries, Poland is chosen by most of the health professionals as their destination country of migration (Domagala & Dubas-Jakóbczykb, 2019).

Conceptual Framework

The proposed conceptual framework of this research is developed from the past literature



review (Figure 1). This research investigates and suggests the determinants affecting the intention of Generation Y to migrate and work abroad. There are five independent variables including compensation package, career prospects, working environment, work-life balance, and quality of life. There is one dependent variable which refers to the intention towards brain drain. All the variables are the pull factors to Malaysians leaving and working abroad. Figure 1: Proposed Conceptual Framework

Theoretical and Practical Implications

The findings of this research may enrich the literature review of the intention of brain drain among Malaysians as findings of insignificant relationship is limited in past studies. Also, the population of Generation Y is not used as the focus in the statistics published by the Malaysian government. Although the previous studies as indicated in the literature have emphasized the brain drain among Malaysian people, the population of Generation Y has not become the favorite group. Therefore, this study aims to extend the existing theoretical knowledge concerning to the specific generation (Generation Y) as this generation holds "a key economic position" (Shafiq et al., 2019).

Vol. 12, No. 4, 2022, E-ISSN: 2222-6990 © 2022

Findings from this research will enable the policymakers and industry key players to develop and implement an efficient, effective, and appropriate strategies to retain the Malaysians talent. The significant determinants that affect the intention of Malaysian Generation Y found in this research are compensation package, career prospects, working environment, work-life balance, and quality of life. The policymakers thus, can consider these variables while designing the new policy or strategy. Further, quality of life is found to be the most influential determinant in affecting the intention towards brain drain. Based on this indicator, the policymakers and Malaysian government can also improve the quality of life in Malaysia as another initiative of retaining Malaysian talents. Several strategies or programs that help to cope with the brain drain issue in Malaysia need to be well-designed and implemented by Malaysian government to effectively retain Malaysians' talents as well as attracting professional foreign talents to work in this country.

This research provides an insight to the organisations especially in those sectors that experience a huge shortage of talent, including manufacturing, construction, and information technology. The organisations in these sectors may develop strategies of talent retention to minimize the brain drain issues and gain competitive advantage because human capital is difficult to be imitated by their competitors. In fact, the organisations can emphasis more on the policies related to compensation package and work-life balance so that skilled and talented young generation will make decision to work in Malaysia.

References

- Chandar, H., Jauhar, J., & Ahmad, B. A. G. (2015). Postgraduates' perception about the causes of brain drain among Malaysian professionals. *Problems and Perspectives in Management*, 13(2).https://businessperspectives.org/pdfproxy.php?item_id:6755.
- Chong, C. (2019). Most Malaysians looking to emigrate for career, work life balance. *The Edge Markets*.https://www.theedgemarkets.com/article/most-malaysians-chooseemigrate-career-work-life-balance
- Cardona, L. A. (2010). *Understanding quality of life in older adult* [Unpublished doctoral dissertation]. University of North Texas.
- Docquier, F. (2014). The brain drain from developing countries. *World of Labor*. https://wol.iza.org/uploads/articles/31/pdfs/brain-drain-from-developingcountries.pdf
- Dodani, S., & LaPorte, R. E. (2005). Brain drain from developing countries: How can brain drain be converted into wisdom gain? *Journal of the Royal Society of Medicine*, *98*(11), 487-491.
- Domagała, A., & Dubas-Jakóbczyk, K. (2019). Migration intentions among physicians working in Polish hospitals Insights from survey research. *Health Policy*, *123*(8), 782-789.
- Dunnewijk, Theo. (2008). Global Migration of the Highly Skilled: A Tentative and Quantitative Approach. United Nations University, Maastricht Economic and social Research and training centre on Innovation and Technology, UNU-MERIT Working Paper Series.
- Ehambaranathan, E., Chalapati, S., & Murugasu, S. (2015). The determinants of income towards brain drain The case of Malaysians in New Zealand. International Journal of Academic Research inBusiness and Social Sciences, 5(1), 212-225.
- Fielding, T. (2016). Asian migrations : social and geographical mobilities in Southeast, East, and Northeast Asia. Taylor.

- Fong, T., & Hassan, Z. (2017). Factors contributing brain drain in Malaysia. *International Journal of Education, Learning and Training, 2*(2), 14-31.
- Foster, C. (2018). These are the 20 safest and most crime-free countries. *Business Insider*. https://www.businessinsider.com/these-are-the-20-safest-and-most-crime-free-countries-in-the-world-2018-10.
- Gewinner, I. (2019). Work–life balance for native and migrant scholars in German academia: meanings and practices. *Equality, Diversity and Inclusion, 39*(5), 497-512.
- Ghazali, M. S., Kusairee, M. A. Z. A., Tan, P. L., Yasin, N. H. M., & Yasoa, M. R. (2015). Intention to migrate: Underlying factors affecting Malaysia brain drain [Unpublished doctoral dissertation]. Universiti Malaysia Kelantan. Retrieved from: http://umkeprints.umk.edu.my/5030/1/Conference%20Paper%2036%20%20ISEB%20 2015.pdf
- Gattino, S., Piccoli, N. D., Fassio, O., & Rollero, C. (2013). Quality of life and sense of community. A study on health and place of residence. *Journal of Community Psychology*, *41*(7), 811-826.
- Harnoss, J. D. (2011). Economic Costs of the Malaysian Brain Drain: Implications from an Endogenous Growth Model. *Malaysian Journal of Economic Study*, *48*(2), 117-130.
- Hays. (2020). *Malaysian professionals most unsatisfied with pay across Asia* [Press release]. Retrieved from: https://www.hays.com.my/press-release/-/content/malaysianprofessionals-most-unsatisfied-with-pay-across-asia/826578.
- Hazreena, M. H. (2020). Influence of job satisfaction, social support system and work-life balance on Malaysian women engineers' professional commitment [Masters thesis]. Universiti Teknologi Malaysia.
- Holland, C., & Martin, E. (2015). Lifestyle migration and work choices. *Hospitality & Society*, 5(1), 23-42.
- Hossain, M. I., Limon, N., Amin, M. T., & Asheq, A. S. (2018). Work life balance trends: A study on Malaysian Generation Y bankers. *IOSR Journal of Business and Management.* 20(9), 1-9.
- Ishak, N., & Abdul Aziz, A. R. (2014). Malaysian construction professionals: Why are they leaving? [Conference session]. Procs 30th Annual ARCOM Conference, Portsmouth, United Kingdom. Retrieved from:

https://www.researchgate.net/publication/269702965_MALAYSIAN_CONSTRUCTION_ PROFESSIONALS_WHY_ARE_THEY_LEAVING.

- Jauhar, J., & Yusoff, Y. M. (2011). Brain drain: Propensity to leave by Malaysian professionals. International Journal of Innovation, Management and Technology, 2(2), 119-122.
- Kana, G. (2018). Wages too low, says Bank Negara. The Star. Retrieved from: https://www.thestar.com.my/business/business-news/2018/03/31/wages-too-lowsays-bank-_negara/.
- Kannan, H. K. (2019). Skill shortages, job mismatch among workers must be remedied. New Straits Times. Retrieved from: https://www.nst.com.my/news/nation/2019/09/520832/skill-shortages-jobmismatch-among-workers-must-be-remedied.
- Kaur, D. (2017). A third of fresh grads quit their jobs within 1st year. *The Malaysian Reserve*. Retrieved from: https://themalaysianreserve.com/2017/09/25/third-fresh-grads-quit-jobs-within-1st-year/.
- Kerr, S. P., Kerr, W., Ozden, C. & Parsons, C. (2016). *Global talent flows. World Bank Group Policy Research* (World Bank Working Paper No. 7852). World Bank. Retrieved from:

Vol. 12, No. 4, 2022, E-ISSN: 2222-6990 © 2022

http://documents.worldbank.org/curated/en/793861475694096298/pdf/WPS7852.pd f

- Khidhir, S. (2019). Malaysia's millennials need help. *The Asean Post*. Retrieved from: https://theaseanpost.com/article/malaysias-millennials-need-help.
- Kim, H., & Allen, R. M. (2018). Glocalizing cures for China's brain drain ills: The Thousand Talents Plan in Shanghai, Tianjin, and Guangdong. *International Journal of Comparative Education and Development, 20*(1), 16-32.
- Koh, Y. H. (2018). *Factors affecting the retention of generation Y workers in food industry* [Unpublished master's thesis]. Universiti Tunku Abdul Rahman.
- Lim, T. H. (2019). Brain drain and the role of the state. *The Sun Daily*. Retrieved from: https://www.thesundaily.my/opinion/brain-drain-and-the-role-of-the-state-KI846963.
- Lim, Y. S., Tan, M. C. I., Siew, S. Y., Tan, Y. C., & Wong, V. (2016). Factors influencing tertiary education students' intention to work in Singapore [Unpublished doctoral dissertation]. Universiti Tunku Abdul Rahman.
- Lin, S. Y. (2018). Millennial moment: Coming of age of the world's big spenders. *The Star*. Retrieved from: https://www.thestar.com.my/business/businessnews/2018/08/25/millennial-moment-coming-of-age-of-the-worlds-big-spenders/.
- Liu, H. (2018). *The causes and countermeasures of brain drain in enterprises* [Unpublished doctoraldissertation]. Oulu University of Applied Sciences.
- Makhbul, Z. K. M. (2020). Understand brain drain to stop it. *New Straits Times*. Retrieved from: https://www.nst.com.my/opinion/columnists/2020/07/612892/understand-braindrain-stop-it
- Mawusse, K. N. (2016). Corruption and emigration of physicians from Africa. *Journal of Economic Development, 41*(2). Retrieved from: http://www.jed.or.kr/full-text/41-2/2.pdf.
- Nadaraj, V. (2016). Malaysia's brain drain reaching critical stage. *ASEAN Today*. Retrieved from: https://www.aseantoday.com/2016/03/malaysias-brain-drain/_
- Narang, U. (2013). HRM practices–Its impact on employee retention. *International Journal of MultidisciplinaryResearch in Social and Management Sciences*, 1(4), 48–51.
- Noor, N., & Mahudin, N. (2015). *Work–life balance policies in Malaysia: theory and practice*. Elgar Online:The online content platform for Edward Elgar Publishing. Retrieved 7 March 2022, from https://doi.org/10.4337/9781783475094.00017.
- OECD-UNDESA. (2013). *International migration report 2013*. New York: United Nations, Department of Economic and Social Affairs, Population Division.
- Pais, P. S. M., Mattos, L. B., & Teixeira, E. C. (2018). Interstate migration and humancapital formation in Brazil. *International Journal of Social Economics*, *45*(8), 1159-1173.
- Randstad. (2019). 90% of Malaysians would emigrate to improve career and work-life balance. Retrieved from: https://www.randstad.com.my/about-us/news/90-of-malaysianswould-emigrate-to-improve-career-and-work-life-balance/.
- Saieed, Z. (2016). Malaysia's skilled labour shortage. *The Star*. Retrieved from: https://www.thestar.com.my/business/business-news/2016/11/26/malaysias-skilledlabour-shortage/.
- Schmidt, A. E., & Klambauer, E. (2013). Caught between economic pressure and work-life balance –Perspectives on emigration of German health professionals to Austria. *Healthcare 2014, 76* (5), 312-316.
- Sechet, R., & Vasilcu, D. (2015). Physicians' migration from Romania to France: a brain drain into Europe? *European Journal of Geography*. Retrieved from:

Vol. 12, No. 4, 2022, E-ISSN: 2222-6990 © 2022

https://doi.org/10.4000/cybergeo.27249.

- Shafiq, A., Mostafiz, M. I., & Taniguchi, M. (2019). Using SERVQUAL to determine Generation Y's satisfaction towards hoteling industry in Malaysia. *Journal of Tourism Futures*.
- Shah, S. A. (2019). Local employers worry about shortage of digitally skilled workers, says JobStreet. *The Malaysian Reserve*. Retrieved from: https://themalaysianreserve.com/2019/01/22/local-employers-worry-about-shortageof-digitally-skilled-workers-says-jobstreet/.
- Shresta, M. B. (2011). Reversing the flow of international migration. *International Journal of Social Economics*, 38(2), 165-176.
- Siraj, A. S., Sorichetta, A., España, G., Tatem, A. J., & Perkins, T. A. (2020). Modeling human migration across spatial scales in Colombia. *PLoS ONE*, *15*(5).
- Sukumaran, T. (2017). What's causing Malaysia's ethnic Chinese brain drain? *South China Morning Post*. Retrieved from: https://www.scmp.com/weekasia/politics/article/2095012/whats-causingmalaysias-ethnic-chinese-brain-drain_
- Tyson, A. (Ed.) (2019). *The political economy of brain drain and talent capture: Evidence from Malaysia and Singapore*. Routledge.
- UNESCO. (1998). *Migrant/Migration*. Retrieved from: http://www.unesco.org/new/en/social-andhumansciences/themes/internationalmigration/glossary/migrant/.
- Wahab, M. A. (2014). The occurrence of brain drain in Malaysia: Perceptions on to work or not to work overseas in the future. *Journal of Emerging Trends in Economics and Management Sciences*, 5(5), 480-489.
- World Bank. (2015b). World development report 2015: Mind, society, and behaviour. Retrieved from: https://www.worldbank.org/en/publication/wdr2015.