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The Determinants of The Brain Drain Phenomenon in Educational Migration Activities

Abstract

During this time, the main reason someone migrates is related to the motivation to get a better job. However, the other reason that can not be ignored is the expectation to get the opportunity of having a higher level of education. A phenomenon that occurs following the educational migration is many educational migrants did not return to their origins after finishing their studies, and would choose to work in the destinations. This phenomenon is known as brain drain, which refers to the condition where the educational migrants did not return to their origins after fisnishing their studies in the destinations. This study covers educational migration activities between regions in Indonesia, so the term used to describe this condition is the domestic brain drain.

This study aimed to analyze the determinant of the brain drain phenomenon in educational migration activities. By using panel data of the Indonesian Family Life Survey (IFLS) wave 5, which were processed using the Logistic Regression Model method, the result suggested that about 49.08 percent of educational migrants in Indonesia chose not to return to their origins after finishing their studies. They decided to work in the destination or in other areas outside the area of their origins. Their decisions were significantly affected by the amount of salary/income, marital status, location of parents' residence, health facilities, sex, age, age square, province of the origin, and geographical. Partially, marital status, the residence of the parents, age square, and geographical, have a negative impact to migrant's decision. Meanwhile, health facilities, sex, and age have a positive impact to migrant's decision.

Keywords: Educational Migration, Brain Drain, IFLS

Research Background

During this time, the main reason someone migrates is related to the motivation to get a better job. The limitation of job opportunity in the origin becomes the main factor of migration, and expect to get a better job opportunity in the destination. But something that can not be ignored related to the reason someone migrates is the expectation to get the opportunity of having a higher level of education. One of the main instruments that is necessarily owned by someone to get out of a poverty trap, and also to improve the quality of life, is the education. Someone who migrates for the purpose of getting a better and higher level of education, is categorized as a recent migrant. By definition, recent migration is migration that is based on the domicile five years ago. Someone is categorized as a recent migrant if the

province or the regency/city where he lived five years ago is different from his current domicile (when the cencus is ongoing).

The Indonesian statistic migration which is sourced from the data of Survei Penduduk Antar Sensus (conducted between two censuses) in 2015 stated that the main reason someone migrated was because to join husband/wife/parents/child, with the number of recent migrants at 1,908,828 people or 39.66 percent. The second was due to their jobs, with the number of recent migrants at 1,304,307 people or 27.10 percent. The third was to seek for a job, with the number of recent migrants at 601,102 people or 12.49 percent. Meanwhile, the fourth was related to education, with the number of recent migrants at 363,114 people or 7.54 percent of the total recent migrants.

According to Weiss (Utari, 2018) in directly, the role of education is to provide the knowlegde and skill, so that it is able to increase the productivity and create the access to the job opportunity. Thus, the income earned can be used to help reducing the poverty. Meanwhile indirectly, the role of education is able to cover many fields of life, including economic activity, gender equality, maternal health, and skill development.

Various studies related to migration activities, especially educational migration have been done by the researchers. Yelena (2013) found that the main reason someone migrated for the educational purpose was because of the low quality of the higher professional education in his origin. In line with the study from Tamar (2002) which stated that educational migration was closely related to someones's dissatisfaction with the sociocultural environment in the origin, and the limited opportunity for realizing the self-potential. Besides that, educational migration was also influenced by the readiness of the prospective migrant to return to his origin while expecting to get the same opportunity with the destination of the migrant.

A phenomenon that occurs following the educational migration is many educational migrants did not return to their origins after finishing their studies, and would choose to work in the destinations. This phenomenon is known as brain drain. According to Hariyanto

(2008), brain drain is basically like an agglomeration. Agglomeration is a condition where population in a country is concentrated in urban areas, especially those people who have good quality. Their main goal moving to the urban was because the more promising economic prospect compared to their origins (rural). Same as brain drain, where educated people would move to the developed countries, with the same goal as the agglomeration. As a result many of educated people are concentrated in the developed countries. The difference is that agglomeration occurs in only one country, that is only between regions. While brain drain occurs throughout the world which includes many countries, both developed and developing countries.

Brain drain phenomenon is in line with the study from Natalia (2017), who suggested that educational migration activity was expected to lead to a new intellectual product for the origin, as well as new knowledge and technology. But what happened was most of these migrants did not return to their origins because they would choose to migrate again as workers. The similar study were also conducted by McQuaid and Hollywood (2008), where two-thirds of educational migrants in Northern Ireland did not return to their origins within the short and medium term. The main thing that became the cause was they got job opportunities in the destinations after finishing the studies. This condition would certainly disadvantaging the origins of the migrants, because the activity of the migrant was expected to lead to a new intellectual product for the origin. However, what happened was the origin lost its social capital due to the non-return of educational migrant to his origin.

Several studies related to the return of the educational migrants to their origins for the educational purpose, such as Tamar (2002) who said that the readiness to conduct an abroad educational migration, was strongly associated to the dissactifation with the socio-cultural environment and the opportunity available for the self-realization, the readiness to return to home which was related to the expectation for the equal opportunity, and a shifting value system (privacy and independency, for examples) compared to the condition of moral in the origin. This

led to a serious re-adjustment, and in many cases led to the second attempt to move abroad, which is often forever.

The other study came from Olha (2017), who said that the result of the variance analysis indicated that 75.3% of the variation foreign students in the Poland province was related to its proximity to the border area. The main reason for the mass migration of the Ukrainian youth to Poland was the cross border characteristic of the both countries educational system and the assymetry of the main indicator of the socio-economic development. The main opportunity of the Ukrainian youth migration to the universities in Poland was related to acquisition of intercultural communication experience and also the formation of the new social capital. The main threat in this case was related to the loss of the Ukrainian youth's social capital that might be not return to the Ukraine after studying in Poland and reducing the domestic demand in the domestic market of universities education. Meanwhile, Elena et.al (2015) found that some basic problems those were related to the learning process of the educational migrants were expressed in their study, as well as the attitude of the Chinese students about the geographical living conditions and the households in Russia. The conclusion is that at the present, most of the Chinese students did not feel comfortable living in Russia and planned whether to stay/return to China or migrate to another countries.

Migration activity for educational purpose (educational migration), besides impacted on the migrant himself, is also impacted on the origin of the migrant. Based on the research background, the problem in this study was whether someone who migrated for educational purpose (educational migration) in Indonesia, would return to his origin or not? Thereby the purpose of this study was to find out whether someone who migrated for educational purpose (educational migration) in Indonesia, would return to his origin or not.

Design and The Research Method

This study was conducted because there was a concern about the negative impact that might arise due to this migration activity, where the migrants did not want to return to their origins

when they have finished their studies. So that the social capital owned by the origins, would automatically dissapear. This study is categorized as a positivism type of research, which is a research that inquires facts and the cause of social phenomenon from the indiviual statements. Based on the type of data, this study is classified into a quantitative research. Quantitative research is a research that uses numerical data.

This study was conducted in Indonesia and it used a micro data which was the Indonesian Family Life Surveys (IFLS). This study focused on educational migrants in Indonesia who migrated to various regions in Indonesia for the purpose of studying. The reason of choosing Indonesia as the location of the study was because there have been not many studies, yet, about the educational migration in Indonesia. In addition, to observe another side of migration activity that is identically related to the job issue. This study would later discuss a phenomenon, whether someone who migrated with the educational purpose (educational migration) in Indonesia, would return to his origin or not. This phenomenon is known as brain drain, which refers to educational migration activity between countries. Nevertheless, only because this study covered educational migration between regions in a country, and there is no appropriate term, yet, to describe this kind of phenomenon occurs in a country, so for the next discussion, researchers would use the term of *domestic brain drain*. To analyze this problem, the nine indicators were used, those were: salary/income, marital status, location of parents' residence, health facilities, sex, age, age square, province of the origin, and geographical.

The better job opportunity, is one of which can be seen from the amount of wages or salary in the related region. This salary would later be one of the indicators to discuss the domestic brain drain phenomenom in educational migration in Indonesia. Logically, someone would certainly pay attention to the level of the wages when decided to work in an certain area. Besides the level of wages, another indicator used is the marital status of the migrant, which is assumed when an educational migrant was married in the destination, he would settle in there. Another indicator is the location of

parents' residence, where if the migrant's parents still live in the origin, logically he would return to his origin after he had finished his study. These nine indicators were later tested for their influence on the educational migrants' decision whether to return or not to return to their origins.

The type of data used in this study was the quantitative data, which is a numerical data that can be calculated (Sugiyono in Utari, 2018). The variables' data were taken from the data of Indonesian Family Life Survey (IFLS) wave 5. The respondents were people who had migrated for educational purpose (educational migration), and were later seen by their current place of work.

The analysis technique used was the Logistics Regression Model or the Logit Model, where the equation form used were simply as follows:

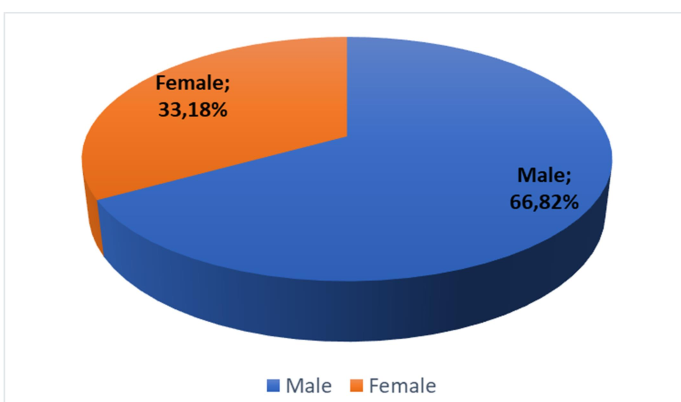
$$\ln[odds(T/X_1, X_2, \ldots, X_9)] = \beta_0 + \beta_1X_1 + \beta_2X_2 + \ldots + \beta_9X_9 \quad \ldots\ldots\ldots\ldots (1)$$

where,

$$odds(T/X_1, X_2, \ldots, X_9) = \frac{p}{1-p} \quad \ldots\ldots\ldots\ldots (2)$$

Analysis Result Discussion

The respondents in this study were people who had migrated for educational purpose (educational migration), and have been working recently. The total of respondents who met the requirements were about 2,459 respondents. The characteristic of the respondents based on gender, can be seen in figure 1 below.

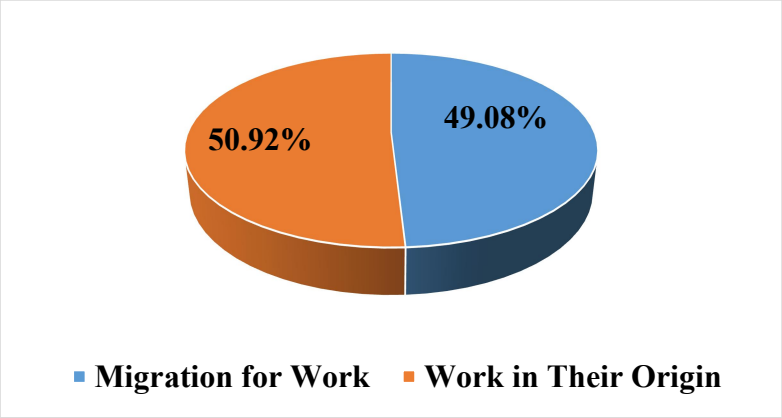


Source: IFLS *wave 5* (processed data)

Figure 1

Respondents' Characteristic Based On Gender

A total of 66.82 percent or 1,643 respondents were male. The remaining of 33.18 percent or 816 respondents were female. This suggested that the migration activity for educational purpose (educational migration) were mostly performed by male. Furthermore, when viewed from the respondents' work location, the characteristic can be seen in figure 2 below.



Source: IFLS *wave 5* (processed data)

Figure 2

Respondents' Characteristic Based On Work Location

Based on figure 2, 49.08 percent or 1,207 respondents who had migrated for educational purpose (educational migration) in Indonesia, decided to migrate again for the purpose of working. This was reflected from their current work locations which were different from the origins. The remaining of 50,92 percent or 1,252 respondents decided to return to the origin after finishing the studies, and worked in there.

Respondents for this research amounted to 2,459 people, with an age range from 15 to 77 years. Those in this sample are residents with a minimum age of 12 years, and throughout their lives have migrated for educational reasons. The dependent variable is migration status, which is divided into two categories, namely whether they migrated again for the purpose of working after completing their education, or returned to

their area of origin to work in their area of origin.

The average value of this migration status variable is 0.4908499, which means that 49.08 percent of respondents does not returned to their area of origin after completing their education in the area of migration destination, or returned to migrate for work purposes. Meanwhile, 50.92 percent returned to their area of origin after completing their education. The average primary income held by the respondents is 14.7084 (value in logarithm). Meanwhile, based on marital status, the respondents were dominated by those who were married, namely 76.66 percent. The variable location of parents' residence shows that most of the parents of the respondents live in their area of origin with an average of 0.0845872. Meanwhile, the availability of public facilities in the areas of origin of the individual samples in the form of posyandu, shows a number between 1 and 38, with an average of 7.605956 posyandu. The following table is a summary its descriptive statistics.

Table 1

Statistic Descriptive

Variable	Observation	Mean	Standart Deviation	Minimum	Maximum
Migration Status	2,459	0.4908499	0.500018	0	1
Income	2,459	14.7084	3.036724	9.21034	20.72327
Marital Status	2,459	0.7665718	0.4230984	0	1
Location of Parents' Residence	2,459	0.0845872	0.2783231	0	1
Health Facility	2,311	7.605956	6.322686	1	38
Sex	2,459	0.6681578	0.4709704	0	1
Age	2,459	33.21269	10.29262	15	77
Age^2	2,459	1,208.978	821,6899	225	5,929
Province of the Origin	2,459	0.50305	0.5000924	0	1
Geographical	2,459	0.554697	0.4971003	0	1

Source: IFLS *wave 5* (processed data)

Some variables which were believed to influencing someone's

decision to return to his origin after migrated for educational purpose (educational migration) in Indonesia were analyzed using the the Logistics Regression Model, which the result was as follows.

Table 2

Output of Logistics Regression Model

VARIABLES	(1) bols_r
Income	0.00437
	(0.0147)
Marital Status	-0.438***
	(0.111)
Location of Parents' Residence	-1.124***
	(0.180)
Health Facilities	0.0238***
	(0.00790)
Sex	0.753***
	(0.0940)
Age	0.105***
	(0.0247)
Age^2	-0.00123***
	(0.000304)
Province of the Origin	-0.0277
	(0.0913)
Geographical	-0.279***
	(0.0964)
Constant	-2.218***
	(0.468)
Observations	2,311

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: IFLS *wave 5* (processed data)

The data processed by using degree of freedom (df) at 9, and level of significant of 95 percent, indicated that $F_{statistic}$ = 137.93 was bigger than F_{table} = 2.606; with a significance of 0,000. So that it concluded that the amount of salary/income, marital status, location of parents' residence, health facilities, sex, age, age square, province of the origin, and geographical, simultaneously influenced the decision of educational

migrants to return and work in the origins.

Partially, test results to variable income, obtain P value >|z| amounting to 0.766 which is bigger than alpha 10% (0.1). Then the partial income variable does not have a significant influence on educational migrants' decisions to return and work in their area of origin. The second variable is marital status variable, with a significance of 0.000. It is concluded that the marital status variable partially has a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is -0.438367, which means that those who are unmarried have a higher probability of working outside their area of origin than those who are married at 0.392 (which is obtained from $1/1 + e^{-(-0.438367)}$).

The test results for location of parents' residence variable obtained a value of P>|z| of 0.000 is smaller than alpha 1% (0.01). This means that the location of parents' residence partially has a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is -1.123855, which means that those whose parents live in their area of origin have a higher probability of working outside their area of origin than those whose parents do not live in their area of origin, amounting to 0.245 (which is obtained from $1/1 + e^{-(-1.123855)}$).

The test results for the health facility variable obtained a value of P>|z| of 0.003 is smaller than alpha 1% (0.01). This means that the health facility partially has a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is 0.0238471, which means that if the health facility, in the form of a posyandu, increases by 1 unit, then the probability that a person will migrate again with the aim of working outside their area of origin will increase by 0.506 (which is obtained from $1/1 + e^{-(0.0238471)}$).

The test results for the sex variable obtained a value of P>|z| of 0.000 is smaller than alpha 1% (0.01). This means that the sex variable partially has a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is 0.7532162, which means that men have a higher probability of returning to migration with the aim of working outside their area of origin,

compared to women, amounting to 0.680 (which is obtained from $1/1 + e^{-(0.7532162)}$).

The test results for the age variable obtained a value of P>|z| of 0.000 is smaller than alpha 1% (0.01). This means that the age variable partially has a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is 0.1054779, which means that if age increases by 1 year, the probability that a person will migrate again with the aim of working outside their area of origin will increase by 0.526 (which is obtained from $1/1 + e^{-(0.1054779)}$). Meanwhile, the test results for the age^2 (age square) variable obtained a value of P>|z| of 0.000 is smaller than alpha 1% (0.01), with a coefficient of -0.001234. The significant negative sign indicates that as age increases, the probability that a person will migrate again with the aim of working outside their area of origin will increase. However, at a certain point, increasing age will reduce a person's probability of working outside their home area.

The test results for the province of the origin variable, obtained a value of P>|z| of 0.762 is greater than alpha 10% (0.1). This means that the province of the origin partially has no significant effect on educational migrants' decisions to return and work in their area of origin. The last variable is the geographical variable, which is obtained a value of P>|z| of 0.004 is smaller than alpha 1% (0.01). This means that geographical variables partially have a significant effect on educational migrants' decisions to return and work in their area of origin. The regression coefficient is -0.2793489, which means that those from rural areas have a higher probability of re-migrating with the aim of working outside their area of origin, compared to those from urban areas, amounting to 0.431 (which is obtained from $1/1 + e^{-(-0.2793489)}$).

Conclusion

The brain drain phenomenom which is one of the impacts of the educational migration activity, could be influenced by various things. Especially for the domestic brain drain phenomenon in Indonesia, as many as 49.08 percent of the population who had migrated for education did not return to their area of origin and chose to migrate again as workers. This is influenced simultaneously by the amount of salary/income, marital status, location of

parents' residence, health facilities, sex, age, age square, province of the origin, and geographical. Partially, the migrant's marital status, location of parents' residence, age^2 (age squared), and the geographical conditions of the migrant's area of origin, have a significant negative effect on the domestic brain drain phenomenon. Meanwhile, the availability of health facilities, gender and age, partially have a positive effect on the domestic drain drain phenomenon.

Policy Implications

The results of the analysis show that almost 50 percent of the population who undertake educational migration in Indonesia do not return to their area of origin and choose to work in the destination area of educational migration or in other areas outside their area of origin. Conditions that cannot be denied are the lack of employment opportunities and limited public facilities in the area of origin which is one of the causes of this phenomenon.

A policy that can be used to suppress the brain drain phenomenon in the country is that local governments can provide educational assistance to the community. This educational assistance is accompanied by a written contract that after completing education, the people who receive educational assistance must return to their area of origin to work together with the local government to develop their area of origin.

Apart from the phenomenon of loss of social capital in the region of origin as one of the impacts of educational migration activities, on the other hand, educational migration activities which are carried out between regions/provinces within one country, will still contribute to the country itself. Because those who carry out this educational migration only leave their area of origin but remain in Indonesia. So, in general it can be said that educational migrants between regions within a country will not necessarily lose social capital, even if they do not return to their area of origin. In accordance with the previous point, the relevant parties, in this case the government, are expected to facilitate the community so that after studying they can make a real contribution to their region of origin in particular, and Indonesia in general.

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