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Exploring Brain Gain Potential: Overseas Work Experience and Return Migrant Income in Indonesia

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Abstract

This study aims to analyze the effect of overseas work experience and education level on the income of return Indonesian Migrant Workers (purna PMI) compared to non-PMI. The unit of analysis used is workers aged 20-40 years who are relatively young and have long career paths. The data used is Sakernas of August 2021, and the analytical method used is the Two Step Heckman Method to overcome selectivity bias problems. The results show that the achievement of human capital purna PMI is not better than non-PMI, where most purna PMI have low education, and only a few are highly educated. The results of the inferential analysis show that only highly educated purna PMI earn a higher income of 19.5% compared to non-PMI (earnings premium), reflecting the brain gain effect. In contrast, purna PMI with low education has a lower income of 9.01% (earnings penalty) compared to non-PMI with the same level of education.

Keywords: Return Migration, Human Capital, Brain Gain, Indonesia Migrant Workers, Overseas Work Experience.
JEL Classification: F22, J24, J31, J61, O15

INTRODUCTION

International migration, a form of investment in human capital (Borjas, 2019), is considered to produce a "brain gain" effect through work experience, skills, and capital savings obtained abroad to increase job opportunities and better income after returning to the country of origin (Dustmann & Kirchkamp, 2002; El-Mallakh & Wahba, 2021; Mayr & Peri, 2009). Furthermore, assuming a large proportion of return migrants, the accumulation of savings and acquired skills can be a potential source of economic growth for their country of origin (Arif, 1998; Dustmann et al., 2011).

The growth of international migrants is predicted to grow faster than the global population. In 2020 the number of international migrants was estimated to reach 281 million people, an increase of 3.6% compared to 2010 (UNDESA, 2020). Indonesia is the 2nd largest migrant-sending country in Southeast Asia, with an estimated international migrant stock of 4.7 million migrants (UNDESA, 2020). Even though it is the largest sending country of migrants, the trend of placement and return of Indonesian Migrant Workers (PMI) from 2010-2021 has decreased (BP2MI, 2021). Based on these data, the number of migrants who migrate is higher

than those who return, indicating the existence of a brain drain phenomenon, namely the migration of skilled resources to other countries so that it can affect the economic growth potential of the country of origin. However, the Covid-19 Pandemic in 2020 caused at least more than 2.4 million migrants from ASEAN to lose their jobs to return to their countries of origin, where the returning PMI is estimated to reach 180,000 PMI and can increase considering that there is also quite a lot of PMI returning via informal channels, Specially those working in Malaysia (ASEAN, 2022).

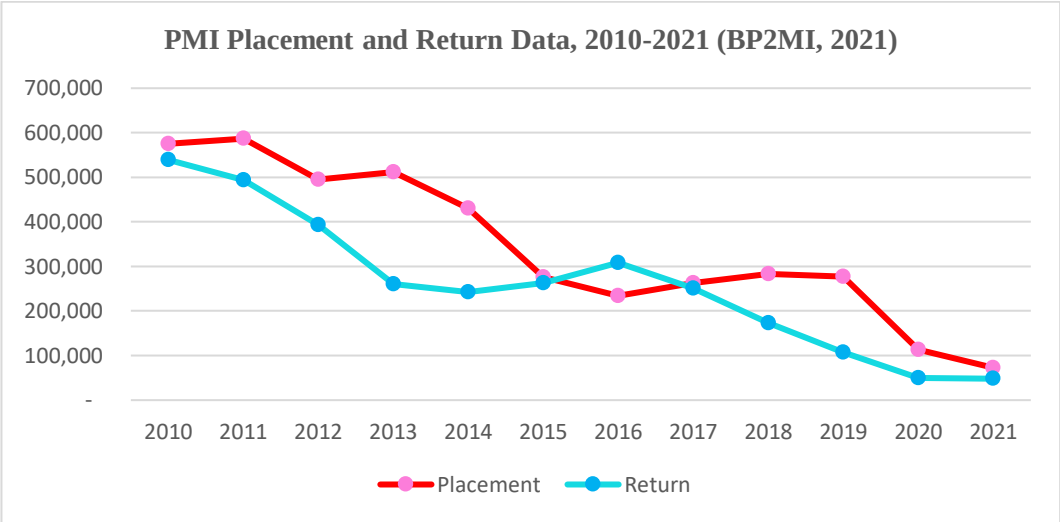

Figure 1. Placement and Return of Indonesia Migrant Workers Data
Source: BP2MI, 2021

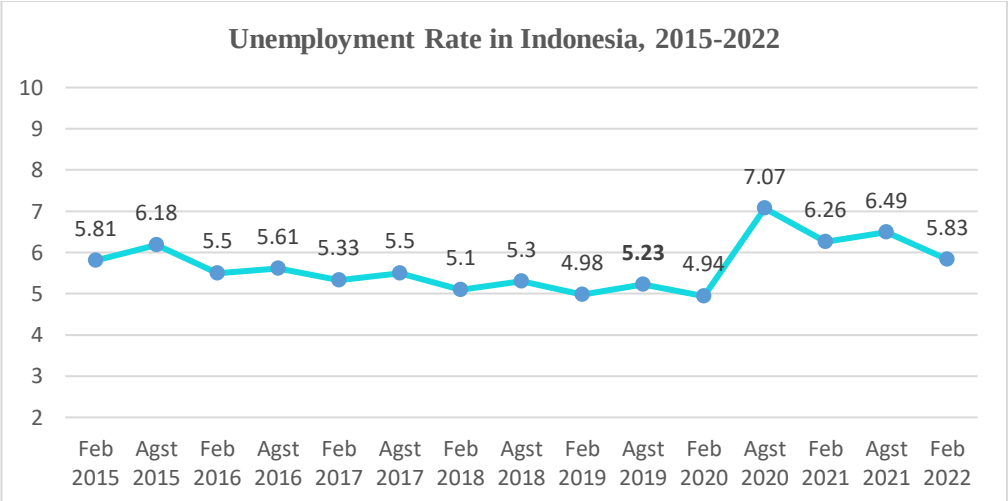

Figure 2. Unemployment Rate in Indonesia, 2015-2022
Source: BPS, processed

The return of purna PMI either because they have completed their work contracts or other factors can affect labor market conditions in Indonesia. Until 2022, the condition of the labor market in Indonesia still has not recovered when viewed from the unemployment rate (TPT), which the unemployment rate in February 2022 was 5.83%. This illustrates that the utilization of the existing labor

supply is still not optimal due to limited job opportunities in the job market. Having PMI returning to Indonesia can undoubtedly be a challenge for the labor market in Indonesia, which could be a potential or problem in the Indonesian labor market.

Several empirical studies related to return migration show that the effects vary, some of which show positive results, such as the tendency for returned migrants to become entrepreneurs for vocational graduates and wage workers for undergraduate graduates (Zulfiu Alili & Adnett, 2021), while other studies show that returning migrants are more attractive and valued in the job market (Kureková et al., 2018), and return migrant earn a higher income than non-migrant workers (Orozco-Aleman & Gonzalez-Lozano, 2021).

The study (El-Mallakh & Wahba, 2021), which analyzes the effect of foreign work experience on employment opportunities, states that foreign work experience can increase chances for employment opportunities and better wages upon return, even though it depends on labor market conditions in the country of origin. This increase is because former migrants gain skills improvement through overseas work experience, where the increase is more significant for migrants with higher education. This study corroborates the previous study by Wahba (2015), which analyzed the effect of overseas work experience on labor market output as measured by wages. Where the results of his research revealed that overseas work experience has an impact on increasing the wages of former migrants, with an average of about 16% higher than non-migrants if all selection biases are corrected. Other studies state that overseas work experience has no significant effect on higher job gains for all migrants except for former migrants with higher education and professionals (Abraham, 2020).

Meanwhile, Iara (2008) analyzed the effect of foreign work experience by destination country on the performance of former migrants compared to non-migrants, stating that migration destination country factors play an important role in increasing the skills and human capital of migrants. This study highlights the differences in performance from the aspect of human capital between former migrants and non-migrants, where young returning migrants and men who have experience working abroad from Western Europe earn an average 30% higher wage premium. In contrast, former migrants with lower education suffer a worse wage penalty than non-migrants. In addition, these findings also reveal that former migrants with overseas work experience from the Central and Eastern Europe (CEE) region do not receive a wage premium like former migrants from Western Europe.

Other empirical studies state that overseas work experience can be signaling in the job market of the country of origin. Kureková dan Žilinčíková (2018) revealed that in a job market that does not discriminate against return migrants, experience working abroad could increase the attractiveness of former migrants so that they are valued more in the job market than non-migrants. Overseas work experience signals to employers the skills of former migrants. Other findings suggest that low levels of return migrant employment do not negatively affect employers.

The effect of return migration is also associated with entrepreneurial opportunities. The study of Aleman dan Lozano (2021) states that overseas work experience positively impacts the probability of former migrants becoming entrepreneurs, with a higher elasticity for short-term migrants. The income of return

migrants is also 1.72 points higher than that of non-migrants. However, there is a difference in preference for work at the educational level of return migrants, where return migrants with higher education tend to become workers compared to returnees with secondary education who tend to become entrepreneurs (Zulfiu Alili dan Adnett, 2021).

Although many empirical studies reveal the success of return migrants when returning to their country of origin, not all of the effects of return migration have a positive impact. Other empirical studies suggest that return migrants may face difficulties when returning to the job market in their home country (Potter, 2005). This is because the impact of return migration on the labor market in the country of origin depends on several factors, some of which are the characteristics of the migrants and the characteristics of the country of origin (Hausmann et al., 2017), status and job positions of migrants such as lower-level job positions in destination countries (Addleton, 1991). There are changes in the behavior of migrants while in the destination country due to exposure to different environments and cultures, as well as changes in The environment of origin of migrants, causing the need for re-adaptation for migrants when they return to their country of origin (McKenzie, 2017).

Meanwhile, in Indonesia, empirical studies on migrants still focus more on remittances and poverty (Meiliyana, 2019; Rosalinda, n.d.), the determinants of purna PMI employment interest (Chriswuri, 2019; Kurniati et al., 2017), and the implementation of the empowerment program for purna PMI (Kumala Sari & Sjamsuddin, 2021; Mindarti et al., 2022; Wahyudi et al., 2022). Even though it is the 2nd largest migrant-sending country in Southeast Asia, the governance related to return migration in Indonesia is considered to be still not optimal and has received less attention and policy intervention, where the implementation of the existing program of purna PMI still has limited coverage and information (ILO, 2006).

The variety of empirical studies regarding the effect of return migration shows that return migration to their country of origin continues to be an empirical question that needs further investigation. The high accumulation of returning migrants and labor market conditions with a high unemployment rate is the basis of study related to return migration in Indonesia to be studied further. Whether the returns of purna PMI returns could take advantage of the accumulation of human capital through work experience abroad and the savings capital gained to compete and earn better incomes in Indonesia. This study is expected to provide the latest empirical evidence from Indonesia and provide input to stakeholders regarding purna PMI governance policies. The research question in this study is how overseas work experience and level of education influence purna PMI income compared to non-PMI.

Previous empirical studies on return migration in Indonesia were still limited to a qualitative approach and focused on determinants, poverty, and implementing purna PMI empowerment programs. Therefore, this research is expected to enrich empirical studies regarding return migration, especially in Indonesia, by focusing on the effect of overseas work experience and level of education on purna PMI income compared to non-PMI to see the impact of brain gain.

METHOD

This study uses secondary cross-sectional data from the National Labor Force Survey (Sakernas) for the August 2021 period published by the Central Bureau of Statistics (BPS). The unit of analysis in this study is the early adult workforce aged 20-40 years, which is then differentiated based on their overseas work experience. The ages of 20-40 years were chosen because the authors wanted to see the influence of foreign work experience on individuals who entered the young adult period, who are the next generation, and have a long career path. Based on these limitations, the total number of worker analysis units was 172.313 samples, with details of 2.665 purna PMI and 169.648 non-PMI.

Based on the theoretical review and previous empirical studies, the research framework prepared to achieve the research objectives is as follows:

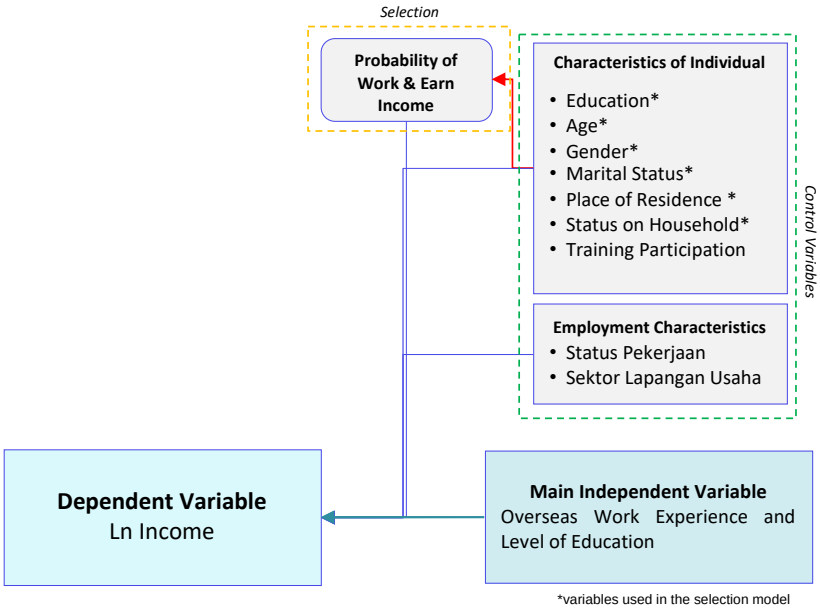

Figure 3. Research Framework

Individual income is influenced by the accumulation of human capital, including overseas work experience and level of education owned and controlled by individual and job characteristics. In this study, purna PMI income is compared to non-PMI income to see the effect of brain gain.

The hypotheses to be tested in this study are:

- Purna PMI with low and middle education earn lower incomes than non-PMI at the same level of education.
- Purna PMI with higher education earns higher incomes than non-PMI at the same level of education.

The dependent variable in this study is the income earned by workers and entrepreneurs in a month which is then formed into natural logarithms. Meanwhile, the interest variable is the interaction between overseas work experience and education level. Overseas work experience is the status of an individual who states that he has gone abroad to work. While education in this study was categorized into lower education (junior high school and below), secondary education (high school/vocational high school equivalent), and higher education (diploma and

above). The operational definitions of the variables used in this study are in Table 1.

Table 1. Variable Operational Definitions

No	Variables	Definitions	Category
Dependent Variables			
1	Ln Income	Income earned by workers and entrepreneurs in a month	Numeric
Main Independent Variables			
2	Overseas Work Experience and Education	Overseas Work Experience and education that the individual has	0 = Non-PMI with low education 1 = Non-PMI with middle education 2 = Non-PMI with high education 3 = Purna PMI with low education 4 = Purna PMI with middle education 5 = Purna PMI with high education
Control Independent Variables			
4	Education	Individual educational level	0 =Low (SMP and below) 1 =Middle(SMA/SMK equivalent) 2 =Hight (Diploma and above)
5	Training	Training participation	0 =No 1 =Yes
6	Sex	Individual gender	0 =Female 1 =Male
7	Age	Respondent's age at last birthday	Numeric
8	Age squared	Quadratic age	Numeric
9	Age group	Individual 5-year age group	
10	Marital Status	Marital Status of individual	0 =Others 1 =Married
11	Status in the Household	Status in the Household	0 =Others 1 =Head of household
12	Residence	Residential area classification	0 =Rural 1 =Urban
13	Sector	Business field sector	0 =Agriculture 1 =Industry 2 =Service
14	Status	Job Status	0 =Informal 1 =Formal

Model Spesification

The analysis used in this research is descriptive and inferential. The inferential analysis method used is the Mincerian Earning Function with the Two Step Heckman method to overcome the problem of selectivity bias because the sample selection is not random and can be influenced by other unobserved things (Heckman, 1979). In the early stages, the selection is carried out by forming a probability model for individual participation to work and then the income estimation is carried out.

Probability Model of Work Participation

The Probit model is used to see individual opportunities to work and earn income. The form of the model used is as follows:

$$Z_i^* = \beta_0 + \beta_1\, educ_{1i} + \beta_2\, educ_{2i} + \beta_3\, age_i + \beta_4\, age2_i + \beta_5\, male_i + \beta_6\, married_i + \beta_7\, urban_i + \beta_8\, hhh_i + \varepsilon i$$

Where Z_i^* is a categorical variable of work participation, 1 for work & earn income, and 0 for other. The inverse mills ratio (λ) is obtained from this probability model and used as a correction factor in the income estimation

Income Model

In the next stage, the inverse mills ratio (λ) from the probit model is used as the independent variable in the Mincer income model. The existence of selectivity bias can be detected at the significance value of λ. If the results are significant, then there is an indication of selectivity bias so that λ is included in the income model. The form of the income equation model used is as follows:

$$\begin{aligned} ln_{earning} = \beta_o &+ \beta_1 nonpmimid + \beta_2 nonpmihi + \beta_3 purnapmilow \\ &+ \beta_4 purnapmimid + \beta_5 purnapmihi + \beta_6 train + \beta_7 agegr \\ &+ \beta_8 sex + \beta_9 married + \beta_{10} urban + \beta_{11} formal + \beta_{12} industry \\ &+ \beta_{13} service + C_1 \lambda \end{aligned}$$

RESULTS AND DISCUSSION

Based on Sakernas data for August 2021, there are 172,313 workers aged 20-40 years consisting of 1.55% are purna PMI, and 98.45% are non-PMI. In Sakernas August 2021, the data for purna PMI destination countries were only available for purna PMI who migrated recently. However, this study still presented the destination countries of purna PMI because it plays an essential role in forming human capital. According to the distribution of the destination countries for their placement, the majority of PMI who migrated recently have worked in Malaysia (66.13%), Taiwan (6.3%), Saudi Arabia (4.4%), Hong Kong (3.08%), Japan (2.93%) United States (2.79%), and the rest are work in several other countries around the world.

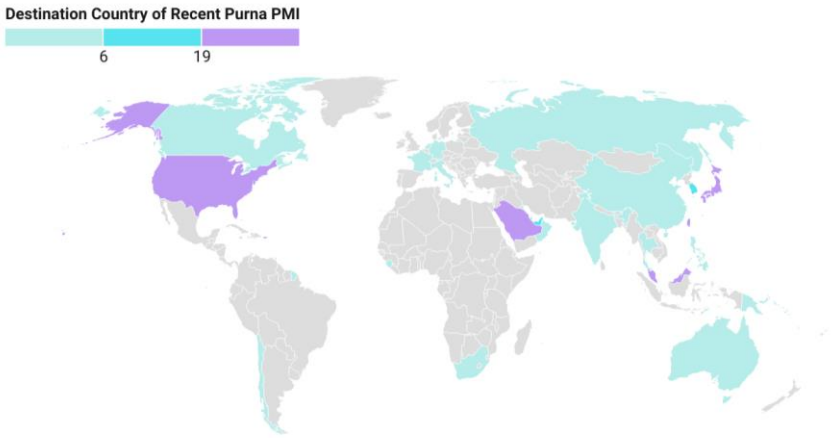

Figure 4. Distribution of Destination Countries for Recent Purna PMI
Source: Sakernas August 2021, processed

Table 2 presents an overview of the characteristics of purna PMI and non-PMI. Based on their individual characteristics, as shown in table 2, both purna PMI and non-PMI men have the same characteristics. Both were mostly male, had low education, never attended training, were married, and lived in rural areas.

Table 2. Individual Characteristics of Purna PMI and Non-PMI

Characteristics	Non-PMI		Purna PMI	
	N	%	N	%
Mean Age	31		34	
Sex				
Female	60.832	35,86%	846	31,74%
Male	108.816	64,14%	1.819	68,26%
Level of Education				
Low	69.583	41,02%	1.567	58,80%
Middle	66.611	39,26%	914	34,30%
High	33.454	19,72%	184	6,90%
Training Participation				
No	138.967	81,91%	2.125	79,74%
Yes	30.681	18,09%	540	20,26%
Marital Status				
Others	53.468	31,52%	487	18,27%
Married	116.180	68,48%	2.178	81,73%
Residence				
Rural	93.566	55,15%	1.652	61,99%
Urban	76.082	44,85%	1.013	38,01%
Total	169.648	100%	2.665	100%

Source: Sakernas August 2021, processed

Table 3. Employment Characteristics of Purna PMI and Non-PMI

Characteristics	Non-PMI		Purna PMI	
	N	%	N	%
Job Status				
Informal	76.037	44,82%	1.668	62,59%
Formal	93.611	55,18%	997	37,41%
Employment Sector				
Agriculture	38.264	22,55%	734	27,54%
Industry	38.864	22,91%	735	27,58%
Service	92.520	54,54%	1.196	44,88%
Type of Job				
Blue Collar	90.538	53,37%	1.705	63,98%
White Collar	26.239	15,47%	172	6,45%
Grey Collar	52.871	31,17%	788	29,57%
Work Participation				
Entrepreneur	63.022	37,15%	1.325	49,72%
Wage Worker	106.626	62,85%	1.340	50,28%
Total	169.648	100%	2.665	100%

Source: Sakernas August 2021, processed

The difference in characteristics between purna PMI and non-PMI is that purna PMI is older (34 years) than non-PMI (31 years). According to human capital

achievement, purna PMI with low education is much higher (58,8%) than non-PMI (41,02%). In contrast, the proportions of purna PMI with higher education are much lower than non-PMI, only 6.9%. However, in the training aspect, the percentage of training participation for purna PMI is slightly better than non-PMI.

Furthermore, table 3 presents an overview of purna PMI and non-PMI according to their job characteristics. The low achievement of human capital owned by purna PMI also affects their work characteristics. Most purna PMI are generally informal workers (62.59%), compared to non-PMI, mostly formal workers (55.18%). According to their line of business, most of them work in the service sector, but the percentage of purna PMI that work in the agricultural and industrial sectors is seen to be higher than that of non-PMI. Then according to the type of work held, the majority of purna PMI and non-PMI are blue-collar workers, but purna PMI who work as white-collar workers are lower (6.45%) than non-PMI (15.47%). From their job preferences, most of them also work as wage workers, but it can be seen that the tendency for purna PMI workers to work as entrepreneurs is almost half their proportions.

Table 4. Average Income of Purna PMI and Non-PMI

Characteristics		Non-PMI	Purna PMI	Difference
Education Level	Low	1.601.151	1.527.300	-73.851
	Middle	2.057.079	2.003.281	-53.798
	High	2.735.698	4.546.875	1.811.177
Training Participation	No	1.878.214	1.696.750	-181.464
	Yes	2.573.165	2.695.017	121.852
Sex	Female	1.691.075	1.360.126	-330.949
	Male	2.178.774	2.149.662	-29.112
Residence	Rural	1.738.632	1.643.475	-95.157
	Urban	2.330.119	2.315.777	-14.342
Marital Status	Other	1.830.812	1.855.810	24.998
	Married	2.083.553	1.908.688	-174.865
Job Status	Informal	1.530.291	1.416.581	-113.710
	Formal	2.388.590	2.706.164	317.574
Type of Job	Blue Collar	1.763.566	1.648.667	-114.899
	White Collar	2.639.382	5.006.657	2.367.275
	Grey Collar	2.100.065	1.762.412	-337.653
Employment Sector	Agriculture	1.531.397	1.441.953	-89.444
	Industry	2.262.244	2.026.621	-235.623
	Service	2.090.789	2.101.123	10.334
Work Participation	Entrepreneur	1.763.919	1.686.829	-77.090
	Wage Worker	2.145.737	2.108.847	-36.890
Total		2.003.896	1.899.025	-104.871

Source: Sakernas August 2021, processed

Average Income of Purna PMI and Non-PMI

Table 4 presents the average income by individual and occupational characteristics. In general, purna PMI income is lower than non-PMI, with a difference of Rp104,871.-. Even though it is lower, purna PMI who are highly educated, have participated in the training, have/never been married, are formal workers, and are in the service sector have higher incomes than non-PMI. Meanwhile, the difference in income is lower, with the most considerable

difference being experienced by female purna PMI and purna PMI who works as a grey collar.

Probability Model of Individual to Work

The unit of analysis used in this model is the workforce aged 20-40 years, as many as 223,527 individuals. The model estimation results in table 5 show a Prob>chi2 value of 0.0000, which means that the model formed is statistically significant at the 1 percent level. Partially, the variables used in this model have a significant effect with a significance level of 5 percent. The results of the model can be written in the following equation:

$$Z_i^* = -2{,}5552 + 0{,}2374\ didik1 + 0{,}6827\ didik2 + 0{,}1512\ umur - 0{,}0022\ \text{umur2} + 0{,}3017 laki + 0{,}2627\ kota + 0{,}2112\ kawin + 1{,}1358\ krt \quad (4)$$

The effect of each variable on the model can be seen from the value of the marginal effect. All the independent variables used have a significant and positive effect on individual opportunities to work and earn income, except for the age-squared variable. Higher education will increase individual opportunities to work, where individuals with secondary education have a 5.97% higher chance and highly educated individuals have a 14% higher chance than individuals with low education. Men have a higher chance of 7.97% than women, while individuals who live in urban areas have a higher chance of 6.63% compared to those in rural areas. The existence of marital status also increases the opportunity by 5.59 percent greater than individuals who have/never been married to work and earn income. Furthermore, relationship status as the head of the household will increase the opportunity by 23.65 percent to work and earn income.

Table 5. Probability Model of Individual to Work Result

Variables	Marginal Effect	S.E	Coefficient	S.E
Education				
Middle	0,0597***	(0,002)	0,2374***	(0,007)
High	0,1400***	(0,002)	0,6827***	(0,010)
Age	0,0389***	(0,002)	0,1512***	(0,006)
Age Group	-0,0006***	(0,000)	-0,0022***	(0,000)
Sex				
Male	0,0797***	(0,002)	0,3017***	(0,008)
Place of Residence				
Urban	0,0663***	(0,002)	0,2627***	(0,007)
Marital				
Married	0,0559**	(0,002)	0,2112***	(0,008)
Status in Household				
HHH	0,2365***	(0,002)	1,1358***	(0,011)
Constanta			-2,5552***	(0,088)
No of Observations	223.527		LR chi2	38.348,97
Pseudo R-squared	0,1594		Prob > chi2	0,0000

Source: Sakernas August 2021, processed

Effect of Overseas Work Experience and Education Level on Income

After forming a probit model that produces a correction factor, income estimation is then carried out. Table 6 presents the estimation results of the income models. The results of the F test on both models show a prob>F value of 0,0000 which means that the independent variables used together in the model significantly affect the dependent variable at the 1 percent level. Partially, all the independent variables used have a significant effect except for the purna PMI with secondary education variable and the 25-29 age group variable. The results of estimated worker income can be written into the following equation:

$$\begin{aligned} ln_{earning} = {} & 13{,}5672 + 0{,}1284\ nonpmid + 0{,}2292\ nonpmihi - 0{,}0901 pmilow \\ & + 0{,}0166\ pmimid + 0{,}4242\ pmihi + \ +0{,}0716\ train \\ & + 0{,}0037\ agegr1 + 0{,}0256\ agegr2 + 0{,}0884\ agegr3 + 0{,}3283\ sex \\ & + 0{,}0428\ married + 0{,}1641\ urban + 0{,}3659\ formal \\ & + 0{,}2341\ industry + 0{,}0891\ service\ - 0{,}4594\ imills \end{aligned}$$

Table 6. Income Model Result

Variables	Income Model	
	Coefficient	**S.E**
Overseas Work Experience and Education		
Non-PMI - Middle	0,1284***	0,0045
Non-PMI - High	0,2292***	0,0073
Purna PMI - Low	-0,0901***	0,0205
Purna PMI - Middle	0,0166	0,0254
Purna PMI - High	0,4242***	0,0750
Training Participation		
Attended Training	0,0716***	0,0056
Age Group		
25-29	0,0037	0,0064
30-34	0,0256***	0,0071
35+	0,0884***	0,0071
Sex		
Male	0,3283***	0,0055
Marital Status		
Married	0,0428***	0,0053
Place of Residence		
Urban	0,1641***	0,0041
Job Status		
Formal	0,3659***	0,0042
Employment Sector		
Industry	0,2341***	0,0057
Services	0,0891***	0,0055
imills	-0,4594***	0,0133
Constanta	13,5672***	0,0138
No. of Observations	172.313	
R-squared	0,1946	

Source: Sakernas August 2021, processed

Based on the model estimation results, it is known that the interaction of overseas work experience and educational level has various influences. Compared

to non-PMI with low education, individuals with no overseas work experience (non-PMI) with a secondary education level have a higher income of 12.84 percent, while non-PMI with higher education have a higher income of 22.92 percent. For individuals who have overseas work experience (purna PMI), purna PMI with low education have a lower income of 9.01 percent, while purna PMI graduates with secondary education have no significant effect, and purna PMI graduates with higher education have a higher income of 42.42 percent compared to non-PMI with low education. This finding is in line with studies (Dustmann & Kirchkamp, n.d.; Iara, 2008; Wahba, 2015) which state that the level of education increases the chances of returning migrants to work rather than being unemployed and obtaining higher incomes, especially for migrants with higher education because they earn more human capital abroad compared to migrants with lower middle education.

All independent control variables used in the model have a significant positive effect on income at α=0.01, except for the imills correction factor variable, which is negatively related, and the 25-29 age group variable, which does not have a significant effect. It means that the characteristics of an individual, such as sex, marital status, and place of residence, positively affect the individual's income. The correction factor resulting from the probability model of working and earning income has a significant effect indicating that there is a selectivity bias issue in the data used, so the use of selection in controlling decisions to work is appropriate in the model.

This study found that overseas work experiences have varying effects on individuals with different levels of education. Table 7 shows the income predictions between purna PMI and non-PMI resulting from the employee income model. At the same level of education, purna PMI graduates with tertiary education have higher incomes than non-PMI tertiary graduates, with the difference in income between the two being 19.5 percent higher for purna PMI. In contrast, the results showed no significant effect at the secondary education level. It is presumed that there is no difference between purna PMI and non-PMI with secondary education, where the results of the descriptive analysis show that the difference in income between the two is not too significant. Meanwhile, purna PMI with low education has a lower income of 9.01 percent compared to non-PMI with low education.

Table 7. Predicted Ln Income based on Income Model

Education Level	Predicted Ln Income		
	Non-PMI	**Purna PMI**	**Difference**
Low	14,0851	13,9950	-0,0901***
Middle	14,2135	Not Significant	
High	14,3143	14,5093	0,1950***

Source: Sakernas August 2021, processed

This study shows that purna PMI with higher education enjoys an earnings premium compared to non-PMI, while those with low education have lower incomes than those with low education. The achievement of a better level of education will increase individual income, while the effect of overseas work experience as an accumulation of human capital can increase individual income at the higher education level. In Contrast, individuals with middle and lower education levels who have experience working abroad have been unable to optimize the potential of new skills and knowledge and savings capital owned. This finding is in

line with studies (Abramitzky et al., 2019; Bossavie & Özden, 2022; Iara, 2008; Wahba, 2015) which stated that former migrants with higher education benefit from their overseas work experience so that they receive a higher wage premium than non-migrant, while former migrants with low education experience a wage penalty due to the characteristics of work abroad and education that affect the process of accumulation of human capital for returning migrants. This was reinforced by a study (Morrice, 2014) which stated that individual characteristics and identities during pre-migration played an essential role in shaping the process of absorbing new skills during migration.

In explaining purna PMI performance after returning to their home country, this cannot be separated from the aspect before their returns; that is when they migrate. The theory of human capital explains that in the context of migration, apart from focusing on individual costs, it also considers the skills, knowledge, and other characteristics possessed in the expectation of the expected rate of return (de Haas, 2010). Therefore, the effects arising from migration vary depending on the level of human capital owned by individuals because it can affect the performance of migrants while working in the destination country and the extent to which returned migrants acquire new skills that can be applied in the country of origin (Hausmann et al., 2017; Bhagwati (2009); de Haas (2010).

The study of Navarro et al. (2020) states that the low accumulation of human capital from migrants is caused not only by education level but also by the type of work that is not skill-intensive, external factors such as labor market conditions in destination countries, and motivational factors from individuals. The low accumulation of human capital obtained generally arises from low-skilled migrants. Although they may earn better income while working abroad, they face the consequence of lower returns on accumulated human capital. Adda et al. (2022) highlighted the differences in the behavior of migrants who migrate temporarily, which, when linked to the theory of work participation, which considers leisure and work (leisure), former temporary migrants tend to have a lower reservation wage than native residents of destination countries, so they are willing to accept jobs in the informal sector and lower wages than native.

Meanwhile, from the point of view of destination countries, Åkesson & Baaz (2015) stated that the context in destination countries, such as job opportunities and characteristics of migration destination countries, also influences the outcomes of returned migrants. Migrants who migrate to developed countries have better outcomes than migrants who migrate to developing countries. When viewed based on the results of the descriptive analysis, it is known that most of the purna PMI who have returned have worked in Malaysia (66.13%), Taiwan (6.3%), and Saudi Arabia (4.4%), where Malaysia and Saudi Arabia are one of the traditional destination countries for PMI placement with the majority of jobs offered to be informal jobs. Meanwhile, if viewed according to their education, most purna PMI with higher education work in Malaysia, Singapore, and the United States.

Another factor that is no less important is the characteristics of the country of origin, such as labor market conditions and the existence of reintegration policies or programs for purna PMI workers. Studies (Bossavie & Wang, 2022; Hausmann et al., 2017) highlight the existence of barriers from the environment of origin of former migrants, such as job market discrimination and labor market volatility, can

lead to low performance of returning migrants because they tend to work in available jobs. In addition, the lack of information on labor market demand also causes returning migrants to find jobs that are not suitable and offer low wages (OECD, 2008). This obstacle to entering the labor market is supported by the results of a descriptive analysis which shows that the returning PMI workers tend to work as informal workers with minimal protection, and the majority are blue-collar workers. Therefore, it is suspected that the factors in the conditions of the home country also affect the reservation wage for purna PMI; hence they decide to work even though they earn a lower income.

The findings from this study emphasize the importance of preparing skilled human resources to fill available job opportunities abroad, especially with the phenomenon of an increasingly aging world population, which is expected to create demand for the needs of migrant workers (Amo-Agyei, 2020). Even though the majority of PMI fill informal positions and have low education, this needs to be considered as Indonesia's comparative advantage, so a strategy is required so that besides contributing through remittances, it can also increase the potential for brain gain from the assimilation of new skills and knowledge while working abroad. Especially with his relatively young age, long career path, and role as an agent of change and development. International migration can produce a triple-win effect for recipient countries, countries of origin, and purna PMI. In the context of receiving countries, the existence of PMI can encourage economic activity. Meanwhile, in the home country, the opportunities obtained are remittances that can increase foreign exchange and the potential brain gain effect from acquiring new skills and knowledge. For PMI themselves, they can get better knowledge and income to improve the welfare of their families, and, as a provision, after returning to Indonesia, they can compete and perform better than before.

CONCLUSION

This study aims to analyze the effect of overseas work experience and education level on purna PMI income compared to non-PMI with the same level of education. Young adults (20-40 years old) purna PMI has low human capital outcomes and is not better than non-PMI. The low level of human capital also influences the achievement of performance in entering the labor market and the income of PMI after returning to Indonesia. Regarding performance achievements, most purna PMI work as blue collars, informal workers, and in the service sector. Meanwhile, according to the average income, only highly educated purna PMI, work as white-collar workers, work as formal workers, and work in the service sector, have attended training, have/never been married, have a higher income than non-PMI. Meanwhile, female purna PMI and those working as grey collars have lower incomes than non-PMI.

The results of the inferential analysis show that overseas work experience has various effects on educational levels, where highly educated purna PMI have a higher income of 19.5% compared to non-PMI and reflect the brain gain effect. In contrast, purna PMI graduates with low education have an income of 9. 01% lower than non-PMI. This confirms that the level of education possessed by return migrants reflects the capacity that can support the absorption of new knowledge and skills so they can determine the outcome in the labor market when they return.

Even though individuals with lower secondary education dominate the majority of migration from Indonesia, this needs to be seen as Indonesia's comparative advantage so that it can take advantage of the potential brain gain effect to boost Indonesia's economic growth. Therefore, the government's role is needed to improve migration governance. From the supply side, it is necessary to prepare better CPMI quality and encourage PMI working abroad to improve their education to optimize the assimilation of new skills and knowledge. From the demand side, the government needs to expand access to the job market in new countries and positions, given the high unemployment in Indonesia and the aging population phenomenon in other countries that has the potential to open up new job opportunities. For purna PMI, the government needs to increase the scope of the purna PMI reintegration program so that purna PMI can optimally utilize the accumulated human capital and savings.

The limitations of this study are not having made a selection of migration decisions. In addition, in terms of data, the data used is cross-sectional, so it has not been able to capture opportunities for individuals to migrate again and cannot see employment status before and during migration from purna PMI. In addition, overseas work experience in this study is still limited only to the status of individuals who have worked abroad and have not seen the duration of the migration due to limited data.

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