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THE EFFECT OF HUMAN CAPITAL ON EARNING OF INDONESIAN MIGRANT WORKERS FROM WEST SUMATRA IN MALAYSIA

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Abstract: The objective of this study is to examine the effect of human capital on earning of Indonesian migrant workers from West Sumatra in Peninsular Malaysia. In order to achieve this objective, the wage function is used and the analysis is based on the data collected from the field survey of 382 Indonesian migrant workers who have returned from Malaysia in 2015/2016. The research findings show that human capital influences significantly the income earning of Indonesian migrant workers in Malaysia. It means that the Indonesian migrant workers should increase their level of education and training in order to improve their skills, compared to another foreign worker. Therefore, it is expected Indonesian workers more competitive and could have higher income earning.

Key words: Indonesia worker, income, education, skill.

I. INTRODUCTION

Human capital has shown contributions to the development and economic growth in many countries. This has been evidenced from many studies such as the contribution of human capital to development, economic growth, productivity and household/individual income (see Romer, 1990; Gimeno et al. 1997; Psacharopoulos&Patrinos, 2004). However, not many studies conducted to analyze the specific effects of human capital on earnings of qualified workforce who work abroad. A qualified workforce is educated with a certain level of expertise, skills and entrepreneurial-ship who are able to compete with other workers in a foreign country.

Riboud *et al.* (2006) suggested that educated workforce were able to compete outside the country and can be classified into independent workforce and professional workforce. Independent workers are about 25 to 35 years old, who have idealism and integrity without being dependent on others, and are able to produce concrete results in the establishment of productivity and bring positive impacts to society in foreign

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countries. While the professional workforce use their ability according to their talents and interests to create and develop goods or services that can provide income for themselves and give satisfaction to others.

Hagan *et al.* (2014) stated that the education basically has more emphasis on the establishment of the basic quality of workers and creates workers competitiveness, while training is focused to the development of skills in workplace. Consequently, it is a critical point to be considered that the workers job placement should be based on their competency in order to have a higher productivity. To get all of the necessary cooperation between educational institutions, training institutions and the private sectors in improving the quality of workforce – is needed a share responsibility between government, communities and other business institutions. Education must be developed to be relevant to the labor market needs, by doing so the absorption of graduates will be higher for high school graduates and above.

For Indonesian workers (TKI) wherever they work both at home and out of the country the level of education and skills are very important because these factors will determine the level of productivity that they can generate. In 2014/2015, the local government of West Sumatra through recruitment agencies has sent 1,852 workers who came from various regions (district/city) to abroad, particularly to Malaysia (BP3TKI, 2016). Most of them work as employees, operators and construction workers.

This paper attempts to examine the effect of human investment on earning of Indonesia migrant workers from West Sumatra in Peninsular Malaysia. The analysis is based on data collected from the field survey of 382 Indonesian migrant workers who had returned from Malaysia in year 2015/2016. The first part of this paper contains the discussion on human capital on labor income base on cross tab analysis with Chi Square Test. The second part of this paper discusses the effects of the level of education, training and experience on labor income (wage) base on the estimation of wage function.

II. LITERATURE REVIEW

Trio Pioneered by Schultz (1960), Becker (1964) and Mincer (1974), human capital has been widely recognized as one of the most important inputs for economic growth. Human capital refers to productive capacity of an individual, household and nation that is generated through investment in education and training. Continuing investment in these human factors will induce and enhance individual inner potential (knowledge and skills), thereby making them more productive and capable to compete with others at job markets. It means educational level and training for workers can influence their income earning and their productivity.

Graph 1 shows the theoretical average income age-earning by level of education attained (see Borjas, 2005). At lower levels of education (graduates High school and down) and lower skills or even not at all been trained will earn lower income. For college graduates, income received more than senior high school graduates. While at

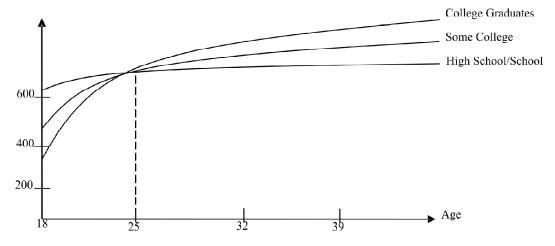


Figure 1: Age-Earning by Education

graduate level professionals, namely those with a higher education and acquire adequate skills training will earn more than those who graduate from high school and do not acquire the skills training.

Previous studies have shown the significant influence of human capital on income distribution with the emphasis on its impact through education and training. Differences in accumulated human capital play an important role in determining wage differentials and thus income distribution. According to Mincer (1974) in US it was found that the additional of one year of schooling had increased workers yearly earnings about 11.5%. Knowledge and skills obtained from investment in human capital had enhanced individual capability, efficiency and productivity thus making them more competitive and marketable (Giannini, 2001). Individual with higher skills will gain more benefits particularly in terms of income earning. The studies by Manson (2006) and Birchenall (2001) found that households' income inequality in the United States and Columbia were induced by higher demand for skilled workers compared to unskilled. Lin (2007) showed that skill-biased technological change was the factor that contributed to changes in demand for workers from unskilled towards skilled workers at Taiwan labor market.

Verner (2000) revealed that worker productivity and wages were positively influenced by the level of education, training and level of experience received. Workers with higher education attainment received higher payment relatively to those with minimum education. Schady (2000) also disclosed huge differences in workers wage rate of return based on the level of education in the Philippines. Marais (1994) studied the relationship between education and income distribution among black and white people in South Africa and showed that regardless races, income distribution would be equalized with the increase in educational attainment.

In Indonesia and Malaysia, there are no specific studies to look at the theeffect of human capital on earning of Indonesia migrant workers in Malaysia. But few studies have been conducted to look at the effect of human capital on wage for local worker and the determinants of wage differentials by gender. Research conducted by Behrman & Deolalikar (1995); Pirmana (2006); Purnastuti, Miller & Salim (2013) proved that the male workforce had a rate of return higher income than women. While the results of research conducted by Herz & Sperling (2004); Watson (2005) revealed that the social benefits of girls in school were significant, especially in developing countries. Rahmah (2001, 2014) and Latifah (1998) show that the private rate of return from education in Malaysia was between 12% and 14%. The same studies also revealed that the contribution of human capital on wage in Indonesia were between 14,3%-15,4% and there were no significant differences between the private and public schools (Boediono *et al.*, 1992).

III. THE MODEL

The data were collected through a field survey conducted in 2016 for the whole Indonesian migrant workers from West Sumatra province who have returned from Malaysia using a set of questionnaire. The group stratified sampling method is used to get the sample size by region (district/city). The migrants population were obtained from the local government of West Sumatra through recruitment agencies that had sent 1,852 workers who came from various regions (district/city) to abroad in 2014/2015 particularly to Malaysia, and the reports of Services Center for Placement and Protection of Indonesian Workers (BP3TKI) that based on the return data of Indonesian migrant workers through Minangkabau International Airport (BIM) in 2015/2016. The populations for survey were 559 workers and all of them were planned to be respondents, but only 382 migrant were successfully interviewed.

The effect of human capital on migrant earning is analyzed using a multiple regression model. The independent variables include human capital variables like education, training, working experience and other variables like demography, job category, skill and information. The estimation model can be written as follow:

$$\ln W_i = \beta_0 + \beta_1 Age_i + \beta_2 Age_i^2 + \beta_3 Educ_i + \beta_4 Dtrai_i + \beta_5 DExp_i + \beta_6 DStap_i$$
$$+ \beta_7 DAsal_i + \beta_8 DSex_i + \varepsilon_i$$

Where:

 $ln W_i = Natural logarithm of migrant workers monthly wage (Malaysian Ringgit)$

$$Age_i = Age$$

 Age_i^2 = Age square

Educ_i = Education (Years of schooling)

Dtrai, = Training or courses dummy; 1 if attended training or courses, 0 otherwise

DExp_i = Experience dummy; 1 if have ever go abroad before, 0 otherwise

DStatp; = Job category dummy; 1 if formal, 0 otherwise

DAsal; = District Origin dummy, 1 if rural, 0 otherwise

 $DSex_i = Sex dummy$, 1 if male, 0 otherwise

 ε_i = Error term.

IV. THE RESULT AND IMPLICATION

(A) Profile of Respondents

Table 1 present the distribution of migrant workers by origin destination or district in this study. There are 382 migrant workers that are successfully interviewed with majority of them being come from Padang the capital city of West Sumatra. Around 239 migrant workers of West Sumatra in Malaysia have minimum wage that are meet with the standard of Malaysian minimum wage which is RM. 900 in the year 2014/2015 for Indonesian worker (TKI). This minimum wage standard is established by both countries Indonesian and Malaysian government. While others 143 migrant workers have wage below the minimum standard.

Table 1
Distribution Migrant Worker by District Origin and Minimum Wage

District Origin		Minimun					
	Lower Mini	mum	Meet Minimum		Tota	Total	
	Frequency	%	Frequency	%	Frequency	%	
Padang	52	36.4	81	33.9	133	34.8	
Pariaman	31	21.7	46	19.2	77	20.2	
Solok	20	14.0	29	12.1	49	12.8	
Pasisir Selatan	16	11.2	41	17.2	57	14.9	
Pasaman	8	5.6	8	3.3	16	4.2	
BatuSangkar	3	2.1	7	2.9	10	2.6	
Bukitinggi	5	3.5	13	5.4	18	4.7	
Payakumbuh	3	2.1	9	3.8	12	3.1	
LubukBasung	4	2.8	3	1.3	7	1.8	
Padang Panjang	1	0.7	2	0.8	3	0.8	
Total	143	100	239	100	382	100	

Source: Field Survey, 2016.

Table 2 shows that 62.6% of workers have educational background of junior high school, Diploma and Degree. They receive wage that have met the standard of Minimum Wages (MW). While others 37.4% still receiving wage below standard. Migrant workers from West Sumatra in Malaysia mostly have educational background in high school, in total it is 63.5%. Based on the four types of educational background, only workers with educational background in College graduate (diploma and degree) 100% have wage that meet the minimum standard. While the rest, workers receive

wages below the minimum wage, they are migrant workers who have a background in junior high school 45.0 percent.

Table 2
Distribution Migrant Worker by Educational Background and Wage

Educational Background		Minimun	n Wage			
	Lower Mini	mum	Meet Minimum		Total	
	Frequency	%	Frequency	%	Frequency	%
Junior High School	27	45.0	33	55	60	100
Senior High School	115	36.5	202	63.5	318	100
Diploma	0	0.0	2	100	2	100
Degree (Strata 1)	0	0.0	2	100	2	100
Total	143	37.4	239	62.6	382	100

Source: Field Survey, 2016

This data show that in the future if Indonesian migrant workers want to have job in formal sector abroad, they need to improve their quality of educational level, for example for technicians and operators. The improvement of educational level will be better if it supported by all stakeholders in educational institution, through the proper design of curriculum, qualified academic staff and facilities that are match with the development of technology and users or market demand. Moreover migrant workers not only have better skills and good in technical matters but they also have to get back up with the proper knowledge about country destination culture. Since the qualified migrant workers much depend on their educational level, in this case Indonesian migrant workers still have problems. Therefore Indonesian should pay attention on these issues. It is supported by the fact that in the perspective of Indonesian migrant workers placement, workers who have lower educational background are placed in informal sector such as house assistant, driver, plantation and etc.

Table 3 shows that Indonesian migrant workers from West Sumatra still don't get proper training programs, therefore mostly they have lower skills and receive lower wage than minimum wage standard. Although some of them have skills in computer, English, sewing cloths, and automotive but they are only less than half. It is caused by the fact that mostly Indonesian migrant workers go to Malaysia soon after graduate senior high school without having training program and proper knowledge for their future jobs in abroad. The only information they have is based on the experience that to get the jobs in Malaysia just need to graduate from high school. Though they know that their colleagues in abroad have deal with many problems, but strong eagerness to get job in Malaysia have made them to ignore all of the possible difficulties will face in the future. They tend to choose to go to Malaysia with all of the risks than to stay and looking for job in Indonesia.

Table 3
Distribution Migrant Worker by Training and Wage

Types of Training		Minimur	n Wage				
	Lower Mini	mum	Meet Min	imum	Total		
	Frequency	%	Frequency	%	Frequency	%	
Computer	18	22.2	63	77.8	81	100	
English	6	54.5	5	45.5	11	100	
Sewing Cloths	9	36.0	16	64.0	25	100	
Automotive	10	33.3	20	66.7	30	100	
None	100	42.6	135	57.4	235	100	
Total	143	37.4	239	62.6	382	100	

Source: Field Survey, 2016

Data shows that Indonesian workers who have training limited but the influence to wage improvement is significant enough. The result of *Chi Square*, χ^2 = 0,016 less than 0.05, it indicates that the variance of income differences is caused by training. Based on percentage types of training 62.6% of workers have had income meet to minimum wage standard, while the others 37.4% have income lower than minimum wage standard. From the four types of training that contribute to meet minimum wage standard only Computer and automotive training show higher influence each 77.8% and 66.7% respectively. While workers who have lower income than minimum wage standard mostly workers who have English and Sewing Cloths training each 54.5% and 36.0% respectively.

Table 4 shows that the percentage of migrant workers who have experience and never go abroad about 62.6% have wage meet the Malaysian minimum wage standard. *Chi Square* value for experience and wage is 0.075 little bit bigger than 0.05. It means that there are the differences between experience categories and wage of Indonesian migrant workers but the significant level is 10% only. About 72.9% workers who worked previously in abroad – have received wage that meet the minimum standard. The value of *Chi Square* that less than 0.10 could also be mean that workers who have experience partially has strong relationship to Indonesian workers income.

Table 4
Distribution Migrant Worker by Experience and Wage

Experience		Minimu	ım Wage			
	Lower Minimum		Meet Minimum		Total	
	Frequency	%	Frequency	%	Frequency	%
Never go abroad before	127	39.3	196	60.7	323	100
Have ever go abroad before	16	27.1	43	72.9	59	100
Total	143	37.4	239	62.6	382	100

Source: Field Survey, 2016

(B) The Results

Table 5 shows the comparison between estimation model that apply semi-log equation and model without using semi-log. Results of natural semi-log model (ln W) indicate some problems, for examples, classical assumption about Heteroscedasticity is not full fill, $adjusted\ R^2$ value is very small, and many of variables show the results of analysis are not significant level at 1%. Therefore, the second estimation model is applied which is a model without natural logarithm of wage variable. This second model is more efficient compared to natural logarithm model (Model 1). The estimation results are much better, the significant value of each variable is bigger and the error term of each variable is become smaller.

Table 5
Estimation Results of Factors that Influence Wage

Independent Variables	Wage Function			
	Model I (ln W)	Model II (W,		
Constant	7,128	1.080,54		
	(19,781)***	(3,205)***		
Age	-0,052	-54,20		
	(-2,248)**	(-2,483)**		
Age2	0,01	0,95		
	(2,169)**	(2,724)***		
Educ	0,24	37,81		
	(1,645)*	(2,821)***		
DTrai	0,079	83,60		
	(1,691)*	(1,916)*		
DExp	0,112	118,42		
•	(2,108)**	(2,403)***		
DStatp	0,145	121,71		
•	(3,164)***	(2,839)***		
DAsal	0,079	97,21		
	(1,790)*	(2,367)**		
OSex	0,103	90,81		
	(1,771)*	(1,663)***		
Adjusted R2	0,07	0,11		
,	(5,492)***	(5,492)***		

Source: Calculated based on field Survey, 2016

Note: *= Significant level at 10%; **= Significant level at 5%;

***=Significant level at 1%

Wage estimation model without natural logarithm equation shows that all Independent Variables influence significantly and positively the Dependent Variable except Age variable influence wage negatively. Negative relationship between Age variable and wage could explained by concept of marginal revenue of human capital efficiency where the revenue will decline as age of worker increase (Borjas, 2005). The results of this research show the same trend to previous researches that conducted by Ehrenberg & Smith (1996), Hackman and Oldham (1976). Those two studies founded

that as workers' age increasing their revenue/wage would decrease at the same time. The argument of this condition is that the companies more interested on employees' education, skills, experience and their productivity in determining the wage level instead of age factor to decide the employees' wage level.

Educational Variable (Educ) has influence significantly and positively to wage level. The higher of the educational level (based on the years of schooling), the higher the revenue as much as RM 37.81 for Indonesian workers. The argument for this is that the educational level related to workers' knowledge, insight and their attitude. The increasing of wage relevant to the increasing of educational level is also as a way to appreciate the workers' academic achievement. By doing so, workers will have more motivation to have a better education. The results of this study show the same findings to other researchers (Polachek, 2004); Tansel and Bircan, 2004).

Training Variable (DTrain) has influence significantly and positively to wage level. It means Indonesian workers who have training will have a better wage than the workers who don't have training. The coefficient value is shown that the workers with training will have wage RM 83.60 higher than workers who don't have training. This study confirms the study that conducted by Fleisher, Li, and Zhao (2011), they found that training aside of education and experience influenced significantly and positively the workers' revenue, productivity and output growth at various provinces in China.

Experience Variable (DExp) has influence significantly and positively to wage level. The more experience of workers have the better the level of wage they have. Cooefficient value is 118.42, it explains that Indonesian workers who have experience worked in oversea previously will have wage RM 118.42 higher than workers who are never worked in oversea. This study shows the similar results to Dustmann (2003) who conducted his research in German. He found that skilled workers who had more mobility and worked in various countries would earn more than workers who didn't have such experiences.

Job Status Variable (DStat) has influence significantly and positively to wage. It means the more formal the job status of workers the higher the level of wage they have. The coo-efficient value is 121.71, it translates that Indonesian workers from West Sumatra who worked in formal sectors will have wage RM 121.71 higher than workers who worked in non-formal sectors. This study confirms the study conducted by Picchio (2006) in Italy. He found that workers who had job in permanent status earned higher wage than workers who didn't have permanent job. However Picchio's study didn't supports the Theory of Compensating Wage Differentials because there was not enough explanation to describe the wage differentiation among workers in Italy.

Worker's Place Origin Variable (DAsal) has influence significantly and positively to wage level. It refers to the more remote workers' place origin in Indonesia the higher the wage level they have in Malaysia. The possibility explanation for this fact is the workers' place origin come from the poverty areas, usually those workers have more

fighting spirit to work harder and learn more than workers who come from urban areas. The coo-efficient value for this variable is 97.21. It shows that Indonesian workers who come from remote areas have higher wage as much as RM 97.21 than workers who come from urban areas in Indonesia.

Gender Variable (Dsex) also have influence significantly and positively to wage level. It means male workers from West Sumatra have better wage than female workers with coo-efficient value 90.81. It explains that Indonesian male workers have higher wage as much as RM 90.81 than Indonesian female workers. This finding is inlinetoPirmana (2006) studied, he found that there was inequality significantly on gender in term of income. In this research could be concluded that inequality in income based on gender is in 'U Shape' and the smaller gap in income between male and female workers could be achieved through the improvement of educational level of workers.

(C) Implication for Policies

Based on this empirical findings we can say that it is a logical reason for Indonesian workers who work in abroad to improve their welfare by working harder and by having over time job. BNP2TKI (Services Center for Placement and Protection of Indonesian Workers)data show that up to the year of 2015 the total number of Indonesian workers who work in around the world is about six millions and mostly worked in informal sectors. By this condition those Indonesian workers at least have remittance to Indonesia about US\$ 15 billionsina year or equal to Rp 150 trillions. This is a huge amount of money for Indonesia as source for foreign exchange and in general contribute to improve Indonesian economic growth. Furthermore, sending Indonesian workers abroad would help to minimize the poverty and unemployment in Indonesia.

In the future the quality improvement for Indonesian workers in term of education and skills should be used as a requirement for Indonesian workers to get job in abroad. This is a strategic choice to equip, improve and develop the competencies of Indonesian workers, in order to optimize the performance of Indonesian workers in doing their job and their responsibility properly. It is also expected that Indonesian workers getting their decent right and having equality in wage level compared to others foreign workers in abroad. At the end, this policy can build the image and shows the dignity of Indonesian workers in international community.

The improvement of workers' education and skills that are provided should bring impact and give the benefits in long and short terms both for workers and government of Indonesia. These programs should be done to anticipate the changing of technology improvement faster in all of the time to meet and foster the demand of the markets. The impacts of workers improvement in education and skills for Indonesian workers are such as follow: *First*, the improvement of working skills is not only the demand of users or companies but also the need of workers who should have strong motivation to improve their quality of working skills in order to increase their productivity. It is

expected that the workers will earn their wage proportionally based on their efforts spend to their job. The improvement in working skills is not only through training but also could be done by creating a positive habit in day to day activities continuously.

Second, working accident may occur as a cause of worker and company negligence. To overcome this condition, the improvement of workers education and skills need to be done in order to minimize the human errors factor, at the same time product defect could be eliminated, and prevent engine failure that caused by workers' lack of knowledge in handling machines or equipment. Workers only will send to abroad if they have had education and skills that meet to labor market.

Third, the main purpose of company is getting higher profit as expected. They are several factors that support the achievement of company profit, such as working condition, motivation and working productivity. Good working condition will lead workers to have higher motivation in working and improve their productivity. However all of these benefits couldn't be achieved without supported by proper educational level and skills of workers.

Four, having higher sense of responsibility for employees is very much needed. By having this attitude, workers have strong willingness to accomplish their job in time as stated by company and have better productivity. Sense of responsibility could be strengthening through the improvement of worker's educational level and training. At the end it is expected that workers have strong mentality.

V. CONCLUSIONS AND RECOMMENDATIONS

(A) Conclusions

Sending Indonesian workers abroad have positive impact to eliminate the unemployment level in domestic. To make Indonesian workers more competitive abroad, Indonesian must pay attention to the quality of workers education and their training programs. Indonesian should build a clear and intense cooperation between government and employment agencies to overcome labor problems in foreign countries.

- 1. Migrant workers who work in abroad on average are people in productive ages and very much have potentiality to improve Indonesian economic growth. The capacity of central and local government to provide the conducive situation for new investment could create a bigger opportunity for employment. The government could facilitate the population in productive ages to improve their educational level and training programs by free of charge and by giving scholarship for talented person.
- 2. Indonesian workers from West Sumatera who work in Malaysia mostly come from poverty areas that are spread in remote and urban areas. Those workers seem lack of opportunity to continue their education since they are in poor

- condition even in getting a proper training program they cannot effort it. Parents are generally as farmers with family members about 5 to 8 persons, their income only enough for daily consumption. Therefore they are not productive enough to contribute in their own local economy.
- 3. Indonesian workers with lower educational level and lack of skill have contributed to the difficulty for workers in finding job in domestic. West Sumatran people or known as *Minangkabaunese* have a culture called as *merantau*. *Merantau* means people leave their place of origin to another place in order to look an opportunity for a better life and being knowledgeable where at the end it is expected they can help their family at home. Therefore they go abroad are considered as a right solution instead stay and looking for job in Indonesia. Even they are only as unskilled workers but by having job in oversea they will earn more income compared working in Indonesia.

(B) Recommendations

- 1. Indonesian workers often as an object for conflict of interests between owners and their superiors. The facts are Indonesian Labor Attaches still limited in abroad, labors protection is not optimize and workers' educational level is low have caused Indonesian workers often become victims. Therefore, it is expected Indonesian government should become a mediator bridging the interests and protecting the workers to get their rights in order to have a better life.
- 2. One of many alternatives that can do by Indonesian government is improving the skills and the quality of Indonesian workers to make them more competitive and meet the marked demand in overseas. Competent and qualified workers will have bigger opportunity to get a better job in countries destination. They will earn more money and through remittance they can help their family members, such as for consumption, and education in their home country. At the end this condition will bring positive impact for community welfare in domestic.
- 3. Currently although there is an increasing trend in term of numbers where Indonesian sent more workers to abroad, but in term of workers' quality in educational and skills are still low. These conditions become obstacle for Indonesian workers to compete with others foreign workers in labor market. Added to this condition, the lack of Indonesian support in protecting and promoting the Indonesian workers abroad have contributed more problems faced by Indonesian workers. It is very urgent for Indonesian government and all stakeholders to provide and equip the workers with a proper knowledge and skills, so they will ready to compete in international market.
- 4. The demand of foreign workers in abroad are varied, they are skilled workers, semi-skilled workers and general workers. Meanwhile, the problems faced by workers from West Sumatra are the capacity to provide skilled workers. To overcome these problems, there are the need to create the same perception, goals

- and attitude by having an open dialogue and cooperation among stakeholders to find the best solution for every party.
- 5. Training programs with *three in onesystem* (training, certification and placement) could be as a better solution to create skilled workers. Aside of this alternative, Indonesia should also improve its on line labor market to give an easy access for anyone who needs the information about opening job opportunities both domestically and internationally. Another important aspect is the higher administration cost such as job permit, passport and others administrative requirements. The local government can eliminate this problem by cutting or shorten the bureaucracy of this administration process. Easy and faster administration process could be created by having one stop service which is less cost and could eliminate the illegal departure.
- 6. Sending qualified workers to abroad for local government can minimize employment problems, increase the development of local economy through remittance from workers who work abroad. In the side of Indonesian workers, they will earn higher wage, treated equally like others foreign workers, and they can improve their family economy in their home country.

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