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ABSTRACT

This research aims to evaluate differences between micro-level determinants of remittance from immigrant workers and migrants in Vietnam. We employ the cross-sectional regression of 1680 observations collected by a survey across the country. We found that female workers had a lower frequency of supporting their household of origin through remittances than male workers while female migrants seemed to send more money to their home countries than male migrants. Interestingly, we document that overseas workers sent more money to those they left behind while migrants were found to send less remittance from the North to the South. In addition, other demographic determinants, including income, age, and marital status play a very important role in attracting remittance flows into Vietnam. Lastly, language proficiency might have a positive impact on remittance amount for both migrants and immigrant workers. These findings suggest that the government should improve and set regulations on foreign languages and skill training for overseas workers before they go abroad.

Contribution/Originality: This paper focused on assessing differences between micro-level determinants of remittance from workers and migrants in a remittance-receiving country especially Vietnam unlike previous papers on remittances. In addition, we add proficiency in the foreign language, costs for obtaining permission to work abroad (for overseas workers), the home town of overseas workers and migrants into the model of determinants of remittances.

1. INTRODUCTION

This research seeks to evaluate differences between micro-level determinants of remittance from immigrant workers and migrants in a remittance-receiving country like Vietnam. Remittance has proved to be very important in contributing to economic development like other international capital inflows. On one hand, remittance promotes economic development by providing funds that recipients can spend on education, health care and business investment (Adams & Richard, 2006; Attzs, 2008; Bracking & Sachikonye, 2006; McKenzie, 2006; Vo, 2014; Yang & Martinez, 2006). On the other hand, it can boost aggregate demand and thereby spur economic growth. Therefore, policymakers should incentivize overseas workers and migrants to encourage them to send money to their homes. Recently, the analysis of determinants of remittance is becoming an interesting topic not only for researchers but also for policymakers including microeconomics and macroeconomics approaches (Atanov, Ciurea, & Frunzaru, 2012; Biyase & Tregenna, 2016; Elbadawi & Rocha, 1992; Hagen-Zanker & Siegel, 2007; Rapoport & Docquier, 2005; Russell, 1986). Recognizing the potential adverse effects of remittances is essential in addition to their beneficial benefits for socioeconomic development. These include exacerbating the phenomenon of dollarization, fostering excessive

consumer spending and raising the risk of money laundering. Consequently, the subject of major significance is the development of a legislative framework that ensures the efficient use of these funds for economic growth while also promoting and attracting remittance flows from immigrants and their workers and minimizing any legal hazards.

Currently, approximately 4 million Vietnamese individuals representing nearly 4.5% of the national population reside abroad in addition to over 500,000 overseas workers. Notably, 80% of these individuals live in developed countries such as the US (55%), France (7.5%) and Australia (7.5%) and they consistently send substantial amounts of remittances to Vietnam. The increasing trend of remittance inflows to Vietnam in recent years can be attributed to the efficacy of labor export policies as well as the policies directed towards overseas Vietnamese implemented by the Vietnamese government. Over the past 30 years, this financial inflow has surged almost 100-fold from 0.14 billion USD in 1993 to 11 billion USD in 2013 reaching a record high of approximately 16 billion USD in 2023. Cumulatively, remittances to Vietnam amounted to approximately 206 billion USD, nearly equivalent to the disbursed foreign direct investment (FDI), underscoring the critical role of remittances in economic development from 1993 to 2023.

2. LITERATURE REVIEW

The conventional theory of the economics of remittances suggests that there are three motives for sending money to their households of origin including altruism, self-interest and tempered altruism or enlightened self-interest (an intermediate form of the two first motives) (Biyase & Tregenna, 2016; Hagen-Zanker & Siegel, 2007; Lucas & Stark, 1985; Rapoport & Docquier, 2005). In the perspective of microeconomics of remittances, immigrant workers and migrants send money to their homes because they care for those left behind, i.e., spouses, children, parents and members of larger kinship and social circles (Atanov et al., 2012; Biyase & Tregenna, 2016; Rapoport & Docquier, 2005). This is also called the altruism model. Therefore, the decision to remit money to their home is closely related to migrants and household sociodemographic characteristics (Aydas, Metin-Ozcan, & Neyapti, 2005; Biyase & Tregenna, 2016; Ilahi & Jafarey, 1999; Knowles & Anker, 1981; Lucas & Stark, 1985; Rapoport & Docquier, 2005; Russell, 1986; Taylor, 1992). For example, gender, age, marital status, education and relationship with the persons living in their home are demographic characteristics of immigrant workers and migrants while social characteristics including education, income, and occupation might impact remittance inflows.

The gender of the remitter is one of the important demographic determinants of remittance. However, empirical results seemed to be mixed to answer the question, “Is woman or man a better remitter?” McDonald and Valenzuela (2012) found that men seemed to remit a higher amount of money than women especially living in developed countries such as the US, the UK, Canada and Australia based on a survey dataset from the Philippine. A similar finding could be achieved in a study by Funkhouser (1995). He argued that married men could send a higher amount of money to their home because he has to take responsibility for taking care of their wife, parents and children. Interestingly, he also found empirical evidence that unmarried young men might send a smaller amount than young female migrants because of fewer savings and overspending. The latter finding of Funkhouser (1995) was supported by those of Osaki (1999); Sorensen (2005); Piper (2005) and Ramirez (2005).

Migrant age was found to have a positive impact on remittances in the sense that the older the migrant is the higher the amount of remittance they send (Funkhouser, 1995; Mannan & Farhana, 2014; Siegel & Loschman, 2015). This finding could be explained as follows: (i) Mature migrants can earn higher income in foreign countries than younger leading to a higher amount of savings and a higher number of remittances. (ii) Mature migrants are married so they send more money home to help those behind them such as spouses, parents, children even their relatives. Other demographic characteristics such as marital status, education and relationship with money receivers play a very important role in attracting remittance inflows. Mannan and Farhana (2014); Funkhouser (1995) and Siegel and Loschman (2015) found empirical evidence that marital status was one of the main determinants of remittance inflows. In detail, a married migrant might send a higher amount of money with more frequency than an unmarried migrant.

In the context of the socioeconomic determinants, Swamy (1981) found that the number of migrants and their income could explain nearly 90 percent of the volatility in remittances. For example, the higher the income the migrant earns, the higher the number of remittances they send to their household of origin (Donald Cox, Eser, & Jimenez, 1998; Cox & Stark, 1994; Funkhouser, 1995; Hagen-Zanker & Siegel, 2007; Lucas & Stark, 1985). In addition, another socioeconomic factor of education was also found to have a positive impact on remittance flows (Funkhouser, 1995; Siegel & Loschman, 2015).

This paper contributes to the literature in several novel ways. First, this is the first paper focusing on differences between micro-level determinants of remittance from workers and migrants. In other words, we look for differences in remitting behaviors between migrants and immigrant workers by taking the case of Vietnam as an example. Second, unlike previous studies, we add proficiency in the foreign language, costs for obtaining permission to work abroad (for overseas workers), the home town of overseas workers and migrants into the model of determinants of remittances. Third, we employ a survey dataset of 1680 observations including 1017 immigrant workers and 663 overseas Vietnamese from 16 provinces. Therefore, it could be considered the first comprehensive survey of both immigrant workers and migrants in Vietnam.¹

This research suggested some main findings as follows: First, we found differences in the impacts of gender on remittances between abroad workers and migrants in Vietnam. Specifically, female workers had a lower frequency to support their household of origin through remittances than male workers while female migrants seemed to send more money to their home countries rather than male migrants. The second difference in remittance behavior comes from the hometown of migrants and immigrant workers from the North to the South of Vietnam. Interestingly, this study revealed that migrants sent less remittances to their families when they moved from North to South Vietnam although foreign workers seemed to send more money. Third, the empirical evidence from the regression model suggests that other demographic determinants, including income, age, marital status of workers play an important role in attracting remittance flows into Vietnam. Fourth, it also suggests that the educational background of migrants and workers has a negative impact on remittances at a 5 percent level of significance in Vietnam. Fifth, language proficiency might have a positive impact on the amount for both migrants and workers but it will result in a decrease in the frequency of remittances per year.

The remainder of the research is structured as follows: Part 3 presents a legal framework to attract remittances inflow to Vietnam. Part 4 describes the econometric model and dataset specifications employed in identifying micro-level determinants of remittance inflows to Vietnam. Part 5 will present empirical findings and comments. The last part is about summary and policy recommendations.

3. LEGAL FRAMEWORK FOR ATTRACTING REMITTANCES IN VIETNAM

Vietnam has developed and enacted laws to incentivize individuals and households sending money home to stimulate remittance inflows, then to improve the standard of living for their families and support the country's economic growth. The synchronized and proactive implementation of labor export policies has significantly increased the proportion of remittances from labor exports by increasing the quantity and quality of exported labor. The Vietnamese government has enacted the Vietnam National Assembly (2020) providing a relatively comprehensive and consistent legal framework for regulating this activity in line with domestic and international realities. This framework facilitates the operations of enterprises and protects the legitimate rights and interests of workers. Additionally, these legal documents explicitly outline prohibited behaviors in the activity of sending workers abroad and specify corresponding sanctions while also providing transparent regulations on service fees, brokerage fees, deposits and guarantees for workers. However, there are several legal issues still affecting the protection of workers' rights in labor exports as follows.

¹ The survey is funded by the Ministry of Science and Technology of Vietnam under grant research number ĐTĐL-XH.15/15.

First, Vietnam still lacks regulations on improving immigrant worker's quality and skills before sending them abroad. In detail, vocational and foreign language training, and professional knowledge enhancement have not been standardized in contents, curriculums, teachers, and logistic activities.

Second, the law does not clearly stipulate the authority coordination in monitoring, evaluation, and inspection of vocational training institutions. Therefore, there are so many vocational training institutions that have licenses to send workers abroad but are violating laws and regulations.

Third, law does not have sanctions strong enough to require businesses and training institutions to improve training quality and worker selection criteria. This led to the fact that workers had insufficient knowledge and skills to work abroad. In this case, they might get an unskilled job and receive a lower income.

Forth, regulations on orientation, foreign language and vocational training time are still short (two or three months), while the majority of workers come from rural, midland and mountainous areas. In practice, this labor force is so called the "Four No" workforce, no profession, no foreign language, no industrial style and no economy.

There are more than 4 million Vietnamese individuals living, working, and studying in various countries and regions worldwide. The implementation of multiple laws has made it easier for Vietnamese nationals living abroad (overseas Vietnamese or migrants) to do business, enter and exit the country and reside abroad. These policies reflect the spirit of considering overseas Vietnamese as an inseparable part of the Vietnamese national community, providing a solid legal foundation to unite compatriots domestically and internationally, thereby harnessing the strength of national solidarity. Moreover, maintaining and developing the relationship of the overseas Vietnamese community with Vietnam is a crucial objective to strengthen national spirit and unity. Consequently, the Vietnamese government has implemented policies and incentives for overseas Vietnamese. overseas Vietnamese who are non-residents can get a visa exemption for up to six months. In addition, they are allowed to own houses for themselves and their families residing in Vietnam. In this case, they have a right to sell, gift and mortgage houses associated with land use rights in Vietnam. These regulations would be expected to connect Vietnamese all around the world and attract more remittance inflows.

4. MODEL SPECIFICATION AND DATA DESCRIPTION

4.1. Model Specification

A cross-sectional OLS methodology with variables was employed to identify the main micro-level determinants of remittances in Vietnam as follows:

The cross-sectional regression models for immigrant workers are expressed in Equations 1 and 2 as follows:

$$REM_i = \alpha + \beta_1 SEX_i + \beta_2 AGE_i + \beta_3 MARRIED_i + \beta_4 INCO_i + \beta_5 EDU_i + \beta_6 PARENT_i + \beta_7 EXPENSE_i + \beta_8 LANGUAGE_i + \beta_9 REGION_i + u_i \quad (1)$$

$$REMFRE_i = \alpha + \beta_1 SEX_i + \beta_2 AGE_i + \beta_3 MARRIED_i + \beta_4 INCO_i + \beta_5 EDU_i + \beta_6 PARENT_i + \beta_7 EXPENSE_i + \beta_8 LANGUAGE_i + \beta_9 REGION_i + u_i \quad (2)$$

The cross-sectional regression models for migrants are expressed in Equations 3 and 4 as follows:

$$REM_i = \alpha + \beta_1 SEX_i + \beta_2 AGE_i + \beta_3 INCO_i + \beta_4 EDU_i + \beta_5 LANGUAGE_i + \beta_6 REGION_i + u_i \quad (3)$$

$$REMFRE_i = \alpha + \beta_1 SEX_i + \beta_2 AGE_i + \beta_3 INCO_i + \beta_4 EDU_i + \beta_5 LANGUAGE_i + \beta_6 REGION_i + u_i \quad (4)$$

- REM: This variable is the amount of remittance and is measured as the ratio of remittance to income in percent.
- REMFRE: This variable represents the frequency of remitting money to home per year.

Besides conventional variables such as gender (SEX), age (AGE), marital status (MARRIED), income (INCO), education (EDU) and relationship with remittance receiver (RELA), the model adds some specific independent ones including

- *Expense*: The variable measures costs for obtaining permission to work abroad (for overseas workers). In other words, this is the amount of money that workers should have to pay to get a license or permission to work

abroad. In this case, a motive of remittance inflows is to compensate for costs. Therefore, it is expected to have a significantly positive impact on remittances.

- *Language*: It measures foreign language proficiency (for overseas workers and migrants). Similar to expenses, proficiency in a foreign language is expected to result in positive impacts on remittances.
- *Region*: It represents the hometown of overseas workers and migrants.

All variables with expected signs are presented and described in [Table 1](#).

Table 1. Expected impacts of independent variables on remittances.

Variables	Description	Expected impact
Sex	Gender	+/-
Age	Age of migrants or immigrant workers	+
Married	Marital status	+
Parent	Parent of remitter	+
WH	Wife and husband of remitter	+
Income	Income of migrants or overseas workers	+
Edu	Educational background of migrants or overseas workers	+/-
Language	Proficiency in foreign languages	+
Expense	Costs for obtaining permission to work abroad (For immigrant workers)	+
Region	Hometown of immigrant workers or migrants	+/-

4.2. Data Description

We utilize the survey dataset of 1680 observations including 1017 overseas workers and 663 overseas Vietnamese in 16 provinces from the North to the South of Vietnam with descriptive statistics presented in [Tables 2](#) and [3](#) and [Appendices 1](#) and [2](#) to identify micro-level determinants of remittance flows into Vietnam. Due to historical and political aspects, migrants reside in foreign countries. They moved to neighboring countries (Thailand, Laos, Cambodia, and China, etc.) to avoid wars or look for business especially during the colonial period and Vietnam War. In addition, Vietnamese migrants fled as (political) refugees after the end of wars against France and the US ([Vo, 2014](#)).

Another part of migrants is person who studied and resided in the former Soviet republics and Eastern European communist countries. About 80% of overseas Vietnamese reside in developed countries mainly in the US (about 1.24 - 1.79 million), France (300 thousand), Canada (250 thousand) and Australia (245 thousand) ([Vo, 2014](#)). Unlike migrants, immigrant workers work in foreign countries under fixed-term contracts with foreign employers based on the bilateral agreements on labor between Vietnamese and foreign governments. There are some main foreign markets for Vietnamese workers in Eastern Europe (in the 1980s), Japan, South Korea, China, Taiwan, Malaysia, the Middle East, and African countries.

[Table 2](#) illustrates the hometown statistics of immigrant workers and migrants in Vietnam who participated in the survey.

We selected respondents randomly based on the fact that migrants are mainly from the South and Middle of Vietnam while immigrant workers are mostly from the North. In addition, statistics of host countries of responders are presented in [Table 3](#) which covers all main markets mentioned above.

Table 2. Statistics of immigrant workers and migrants in terms of hometown in Vietnam.

Criteria	Province	Immigrant workers	Migrants
I. The North of Vietnam			
1	Phu Tho	165	0
2	Thanh Hoa	167	0
3	Nam Dinh	147	0
4	Ninh Binh	199	0
5	Hanoi	1	17
II. The middle of Vietnam			
6	Ha Tinh	158	0
7	Phu Yen	9	136
8	Binh Thuan	0	150
III. The South of Vietnam			
9	Ho Chi Minh City	23	76
10	An Giang	60	74
11	Binh Duong	66	33
12	Kien Giang	4	23
13	Tien Giang	7	11
14	Vinh Long	11	69
15	Dong Thap	0	46
16	Can Tho	0	28
	Total	1,017	663

Table 3. Statistics of immigrant workers and migrants in terms of host countries.

No.	Host countries	Immigrant workers	Migrants
1	South Korea	283	40
2	Japan	198	30
3	Malaysia	50	17
4	Taiwan	323	72
5	Other Asian countries	42	43
6	Europe	44	128
7	The US and Latin America	13	253
8	Australia	10	39
9	Middle East-Africa	54	11
	Total	1017	663

5. RESULTS AND DISCUSSION

We employ the cross-sectional regression model for two survey datasets in identifying micro-level determinants of remittances from immigrant workers and migrants in Vietnam. All diagnosis tests are checked and corrected. The regression results are presented in [Tables 4](#) and [5](#) as follows:

Table 4. Determinants of workers' remittances in Vietnam.

Variables	Dependent variable: Amount of remittance		Dependent variable: Frequency of sending remittance per year	
	Model 1	Model 2	Model 1	Model 2
Constant	5.730***	7.060***	2.931***	2.636***
Sex	-0.020	-0.169**	-0.109	-0.117
Language	-0.029	-0.765***	0.069	0.066
Education	0.024	-0.094**	-0.037	-0.062*
Income	0.105***	0.144***	0.063**	0.066**
Expense	0.013	0.034	0.045	0.051
Language	0.042	0.080**	-0.151***	-0.147***
Married	0.005	0.134**	0.097	0.113
Parents	-0.148***	-	-0.191**	-
Region	-0.664***	-	-0.140***	-

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Determinants of migrants' remittances in Vietnam.

Variables	Dependent variable: Amount of remittance	Dependent variable: Frequency of sending remittance per year
Constant	1.101***	0.815
Language	-0.126	-0.209*
Sex	0.196***	0.282***
Region	0.178***	0.714***
Education	-0.045**	-0.024
Income	0.417***	0.174***
Language	0.086**	0.042

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

First, we see differences in the impacts of gender on remittances between workers and migrants in Vietnam. Table 4 illustrates that female workers had a lower propensity to support their household of origin through remittances than the male workers at a 1 percent level of significance in terms of both amounts as well as the frequency of remittances. On the other hand, female migrants seemed to send more money to their home countries than male migrants. This finding of different behaviors between female workers and migrants could be explained as follows:

(i) Overseas workers usually work and live alone in foreign countries leaving their families behind for a specific period of time under the labor contracts (except for high-level experts). According to altruistic motives, they should send remittance to their home because they care for those left behind, i.e., spouses, children, parents and members of larger kinship and social circles. However, in the case of Vietnam, female workers do not want to send too much money to their husbands and children because their husband should take the main responsibility for caring for their family. In addition, if they send too much money, their husband might face social evils such as gambling, falling in love with other women, etc. during the time when a wife is not at home. Therefore, female workers should keep their money and send a minimum amount of money that is enough for raising their children to avoid such negative consequences. On the other hand, male workers had a higher propensity to support their household of origin through remittances because of their vital role in supporting their family and weak skills in personal financial management. The finding is consistent with those of Funkhouser (1995) and McDonald and Valenzuela (2012).

(ii) In contrast, female migrants are with their husbands and children in foreign countries leaving their parents, sisters, brothers and other relatives in their home countries. Therefore, the remittance behavior of female migrants might be explained by their caring, altruistic nature as well as greater responsibilities for maintaining family linkage. This explanation is supported by Osaki (1999); Sorensen (2005); Piper (2005) and Ramirez (2005).

The second difference in remitting behavior comes from the hometown of migrants and overseas workers in Vietnam (see Table 5). Empirical evidence from the cross-sectional regression reveals that from the North to the South of Vietnam, immigrant workers had a lower propensity to support their household of origin through remittances while migrants seemed to send more money to those they left behind. The former could be explained by the natural and social characteristics of residents in the North and the South of Vietnam. People in the North preferred to save more money and spend less as much as they could. In contrast, the Southern people are more generous and broad-minded, so they do not care much about savings. They might think that if they enjoy their life, they can earn much more income. Therefore, immigrant workers in the North might have more savings and send a higher amount of remittance to their families than those from the mid and the South.

On the other hand, interestingly, migrants from the South are found to send more remittances than the Northern people. Most migrants from the South left Vietnam before the country's reunification (April 30th, 1975). Most migrants have resided in developed countries, mainly in the US, France, Canada, and Australia (245 thousand) (Vo, 2014). They were usually well- educated and closely related to Vietnam's South administration under the support of the host country's government especially the US. Therefore, when they immigrated to the US after the collapse of

Vietnam's South administration, the US government had to support them a lot. They had good jobs with high incomes leading to higher amounts of remittances to their family and relatives in Vietnam.

Third, the empirical results suggest that the income of workers and migrants is a main determinant of remittances at a 1 percent significance level for both amount and frequency in Vietnam. In other words, the higher the income they earn, the higher the amount and frequency of remittances they send. This finding is consistent with microeconomic theory as well as previous findings of [Swamy \(1981\)](#); [Lucas and Stark \(1985\)](#); [Cox and Stark \(1994\)](#); [Funkhouser \(1995\)](#); [Cox et al. \(1998\)](#) and [Hagen-Zanker and Siegel \(2007\)](#). According to microeconomic theory, disposable income² is available for consumption (C) and saving (S). If others are equal, the higher the income earned, the higher the savings. Therefore, migrants and overseas workers might have more money to send to their households of origin.

Fourth, it is very interesting to find empirical evidence that the educational background of migrants and workers has a negative impact on remittances at a 5 percent level of significance in Vietnam. This finding is not consistent with those of previous studies by [Funkhouser \(1995\)](#) and [Siegel and Loschman \(2015\)](#). However, it might be reasonable for Vietnamese workers in foreign countries and could be explained as follows: An immigrant worker with a high education background (skilled workers) could earn a higher income than others. With a higher education background, they might have better personal financial management skills. Therefore, they might send a part of their savings home and keep the remaining for investment themselves.

Fifth, foreign language proficiency (the language of the host country) is found to have different empirical evidence on the amount and frequency of remittances. In detail, language proficiency might have a positive impact on the amount of remittance for both migrants and workers but it will result in a decrease in the frequency of sending remittances per year. All findings are significant at a one percent level. The former could be explained as follows: Language proficiency is one of the big obstacles for immigrant workers and migrants to live in foreign countries. In Vietnam, most overseas workers are farmers or from rural areas, so they are not good at the language of the host country. Migrants might have better language proficiency except for Vietnamese women marrying foreigners (such as South Korean and Taiwanese) and elderly migrants before Vietnam's reunification (April 1975). If this is the case, they might not earn a higher income leading to fewer remittances to their family.

Similar to foreign language proficiency, the age of remitters is found to have a negative impact on remittances in Vietnam with a 1 percent (for the dependent variable of amount) and 10 percent (for frequency) level of significance. In other words, the older the migrant and immigrant worker, the lower the remittance amount. It is quite an interesting finding and not consistent with previous findings suggested by [Funkhouser \(1995\)](#); [Mannan and Farhana \(2014\)](#) and [Siegel and Loschman \(2015\)](#).

Empirical evidence from the cross-sectional regression suggests that remittance flows in Vietnam are mainly based on altruistic motives. It means that people behind migrants and immigrant workers such as parents, spouses, children and other relatives are the most popular receivers of remittances in Vietnam. This finding is consistent with those of previous studies such as [Rapoport and Docquier \(2005\)](#) and [Biyase and Tregenna \(2016\)](#).

Unlike previous studies, it is the first time that costs for obtaining permission to work abroad (for overseas workers) are added to the model for evaluating its impacts on remittance inflows in Vietnam. Despite insignificance, the model suggests that those costs caused a positive impact on remittance flows. For example, with a 1 percent increase in costs for obtaining permission to work abroad, remittance flows increase from 0.013 to 0.051 percent for different models. This finding could be explained as follows: In Vietnam, immigrant workers have to pay a certain amount of money to get an opportunity to work abroad. These costs could be the cost of paperwork, deposits, training services (related to foreign language and jobs in foreign countries), health checks, visa applications, etc. In this case, the motive of remittance is to compensate for costs. According to current regulations on imposing costs for working

² Income remaining after deduction of taxes and other mandatory charges available to be spent or saved as one wishes.

abroad, the Ministry of Labor and Social Affairs in Vietnam imposed a ceiling on deposits for immigrant workers in foreign countries depending on how much they could earn in that country. In other words, the higher the money they could earn, the higher the deposits they put. For example, deposits could be USD 3,000 for workers in Japan and Korea, USD 2,000 for Australia and Germany, USD 1,000 for Taiwan, and USD 300 for Malaysia, Thailand and Laos. Immigrant workers are mostly from rural areas, so the costs might be very high for them. In this case, they should look for other sources of funds to finance such as borrowing money from parents, their relatives and friends, loans from banks and others (see Table 6).

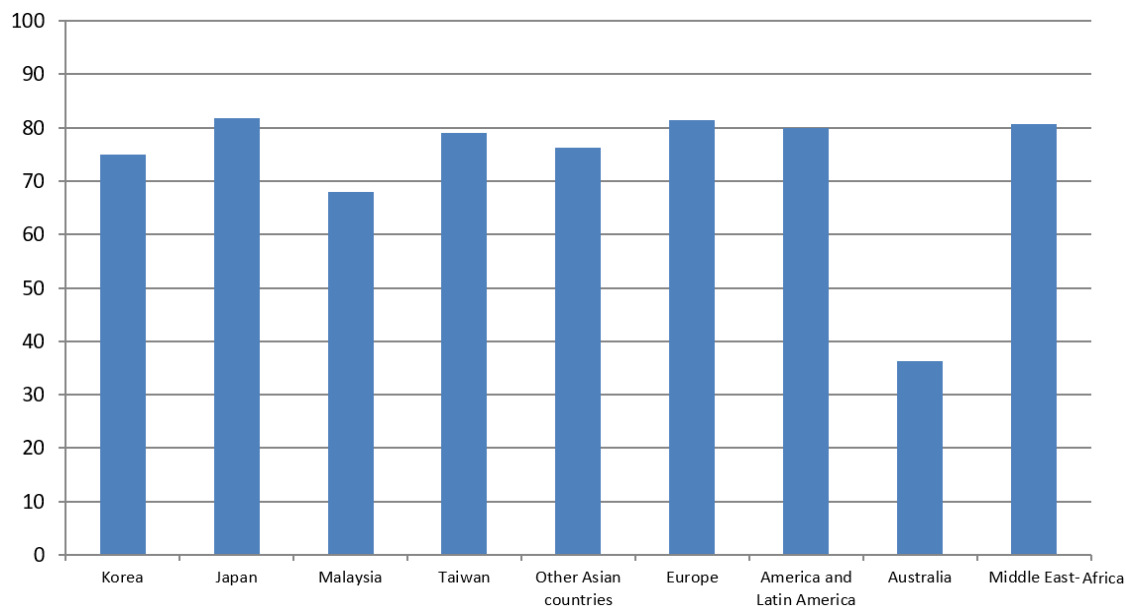


Figure 1. The ratio of borrowings over total costs for obtaining permission to work abroad in different host countries (In percent).

Table 6. External sources of funds for working abroad in Vietnam.

Source of funds	South Korea	Japan	Malaysia	Taiwan	Other Asian countries	Europe	Latin America	Australia	Middle East-Africa	Total
Self-finance	71	36	16	68	10	8	2	7	11	229
Relatives	61	25	7	31	10	8	0	0	8	150
Friends	15	7	2	17	2	2	2	2	2	51
Bank for social policy	35	33	7	56	5	5	2	0	3	146
Commercial banks	92	86	14	136	15	18	2	0	26	389
Local associations and organization	6	4	2	11	0	0	0	0	3	26
Others	3	6	2	5	0	2	2	1	4	26
Total	283	197	50	324	42	43	10	10	57	1,017

In addition, Figure 1 illustrates ratios of borrowings over total costs for obtaining permission to work abroad in different host countries. It could be seen that borrowings account for the lowest of 38 percent (Malaysia) to more than 80 percent of total costs (Japan, Taiwan, Europe and Latin America). We also realized that if overseas workers prefer to work in high-income countries, they have to pay higher costs for working abroad leading to a high amount of loans. Therefore, overseas workers have to work hard and send a large part of their income to their home through remittances.

6. CONCLUDING REMARKS

This research aims at evaluating differences between micro-level determinants of remittance from overseas workers and migrants based on a unique survey dataset of 1680 respondents in Vietnam. By employing a cross-sectional regression as well as adding new variables of proficiency in a foreign language, costs for obtaining permission to work abroad (for overseas workers), home town of overseas workers and migrants into the model, the paper found some novel findings as follows: First, we argue differences in the impacts of gender on remittances between workers and migrants in Vietnam. In detail, female workers had a lower frequency to support their household of origin through remittances than male workers while female migrants seemed to send more money to their home countries than male migrants. The second difference in financial behavior comes from the hometown of migrants and overseas workers from the North to the South of Vietnam; overseas workers seemed to send more money to those they left behind while migrants from the South were found to send more remittances than the Northern people.

Third, the empirical evidence from the regression model suggests that the income of workers and migrants is a main determinant of remittances in Vietnam. Fourth, it is very interesting to find empirical evidence that the educational background of migrants and workers has a negative impact on remittances at a 5 percent level of significance in Vietnam. It implies that the government should add regulations on the minimum education background of overseas workers such as high school qualifications. Fifth, language proficiency might have a positive impact on the amount for both migrants and workers at a significant level. This finding implies that the government should set regulations on foreign language training for overseas workers to enhance their income as well as remittances.

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Institutional Review Board Statement: The Ethical Committee of the Banking Academy of Vietnam, Vietnam has granted approval for this study.

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: Writing review and editing, writing original draft, visualization, validation, supervision, software, resources, project administration, methodology, investigation, funding acquisition, formal analysis, data curation, conceptualization, P.T.H.A.; writing – review and editing, writing original draft, methodology, formal analysis, software, resources, methodology, formal analysis, data curation, L.N.T. Both authors have read and agreed to the published version of the manuscript.

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Appendix 1. Statistics of overseas workers' age and gender.

Age	Number of responders	Percent
17 - 30	678	66.67
31 - 45	316	31.07
46 - 65	23	2.26
Total	1,017	100
Gender	Number of responders	Percent
Male	771	75.81
Female	246	24.19
Total	1,017	100

Appendix 2. Statistics of migrants' age and gender.

No.	Gender	Number of responders	Percent
1	Male	309	46.61
2	Female	354	53.39
	Total	663	100
	Status	Number of responders	Percent
1	Single	96	14.47
2	Married	549	82.80
3	Divorced/Widow	18	2.71
	Total	663	100
	Age	Number of responders	Percent
	19-25	10	1.51
	25-30	83	12.52
	30-35	110	16.59
	35-40	107	16.14
	40-45	55	8.3
	45-50	79	11.92
	50-55	35	5.28
	55-60	45	6.79
	>=60	139	20.97
	Total	663	100

Appendix 3. Summary of micro economic determinants of remittance flows in literature review and in Vietnam based on two datasets.

Variables	Expected sign	Real sign (Immigrant workers)	Real sign (Vietnamese migrants)
Sex	-/+	-	+
Age	+	-	-
Married	+	+	N/A
Income	+	+	+
Edu	+	-	-
Language	+	-	+
Expense	+	+	N/A
Region	N/A	-	+

Appendix 3 presents theoretical determinants of remittances flows (the second column) with expected signs. In addition, based on the dataset, we also present empirical determinants of remittance flows in Vietnam from immigrant workers and migrant aspects. We realized that some signs are consistent with theory, but others are not.

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