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IMPACT OF REMITTANCES ON FINANCIAL INCLUSION, HUMAN CAPITAL AND ECONOMIC DEVELOPMENT

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IMPACT OF REMITTANCES ON FINANCIAL INCLUSION, HUMAN CAPITAL AND ECONOMIC DEVELOPMENT

By

SAYDALIEV HAYOTBEK

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

May 2020

DEDICATION

To my Family Members

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

IMPACT OF REMITTANCES ON FINANCIAL INCLUSION, HUMAN CAPITAL AND ECONOMIC DEVELOPMENT

By

SAYDALIEV HAYOTBEK

May 2020

Chairman : Associate Professor Lee Chin, PhD
Faculty : School of Business and Economics

Remittances have been an important source of external fund for many developing nations. This thesis intended to study the impacts of remittances inflows to the development of financial inclusion, expansion of human capital and hence the economic development of the remittances recipient countries. The first objective examined the effect of the inflow of remittances on financial inclusion in high remittance-receiving developing countries for 2011-2018. The study found that remittances, which were measured by the opening of bank accounts, initially contributed negatively, but at a later stage, contributed positively to financial inclusion. Early in the period, the use of remittances appeared to be unproductive due to less volume. However, with the passage of time, it could be seen that the increasing remittances were associated with better institutional quality and, proxied by trust and bureaucracy which creates demand to opening bank account as safe place keep excess fund by increasing volume of remittances In contrast to the existing literature, which states that remittances foster financial inclusion, the evidence in this study showed that the effect of remittances on the financial inclusion was conditional upon people's perception about institutions. The results suggested that the impact of remittances on financial inclusion was inconstant. The policy implication of this finding is that the countries have to improve their governance as well as instill positive perception about financial institutions to enable those involved to enjoy the benefits of receiving remittances and growth of the financial sector. Enhance the institutional quality of financial institutions, such as reducing bureaucratic processes, improving credit allocation, strengthening credit regulation, ensure higher transparency, reinforcing information disclosure in the financial sector can instill public's positive perception on financial institutions. The trust on financial institutions encourages the public to open bank account and sustaining the trust of clients during banking transactions is important for them to use other financial services provided by banks, hence help to promote financial inclusion.

The second objective examined the effect of the remittance inflow on human capital investment in high remittance-receiving developing countries for the period of 1995-2018. Motivated by the availability of basic infrastructures such as telecommunication, transportation and utilities and access to such facilities may affect the expansion of human capital, the orthogonalized interaction term between remittances and social infrastructure is employed to examine the impact of remittances on human capital and how the impact varies across different levels of social infrastructure. The results of our study showed that remittances alone are unable to generate human capital formation. However, remittance associated with better social infrastructure increases human capital formation. Thus, better social infrastructure in the recipient countries escalates investment on education. However, the impact of social infrastructure on tertiary education in the recipient countries is not significant. From a policy perspective, our findings suggest that it is vital to improve the social infrastructure as a means of improving the mechanism of human capital accumulation.

The third objective examined the combined indirect effect of remittance inflows on economic growth with the interaction effects of financial inclusion and human capital in high remittance-receiving developing countries over the 2011-2018. The study found that a well-developed financial institution sector can absorb remittance inflows and efficiently channel it into proper and productive economic use, while a developed human capital may directly encourage robust economic activities and hence economic development. This implies that the policies to attract extra inward remittances ought to improve financial inclusion and human capital development are crucial.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KESAN PENERIMAAN WANG TERHADAP PENGLIBATAN KEWANGAN, MODAL INSAN DAN PEMBANGUNAN EKONOMI

Oleh

SAYDALIEV HAYOTBEK

Mei 2020

Pengerusi : Profesor Madya Lee Chin, PhD
Fakulti : Sekolah Perniagaan dan Ekonomi

Kiriman wang telah menjadi sumber dana luaran yang penting bagi banyak negara membangun. Tesis ini bertujuan untuk mengkaji impak kiriman wang ke atas penglibatan kewangan, pengembangan modal insan dan pembangunan ekonomi negara-negara penerima kiriman wang.Objektif pertama mengkaji kesan kemasukan kiriman wang ke atas kemasukan kewangan dalam penghantaran wang yang tinggi bagi negara-negara penerima iaitu dikalangan negara-negara yang sedang membangun untuk tahun 2011-2018. Kajian itu mendapati bahawa kiriman wang, yang diukur dengan pembukaan akaun bank, pada mulanya menyumbang secara negatif, tetapi pada peringkat seterusnya, menyumbang secara positif kepada kemasukan kewangan. Di awal tempoh masa tersebut, penggunaan kiriman wang kelihatan tidak produktif disebabkan oleh jumlah yang kurang. Walau bagaimanapun, dengan peredaran masa, ianya dapat dilihat bahawa kiriman wang yang semakin meningkat dikaitkan dengan kualiti institusi yang lebih baik dan berteraskan oleh kepercayaan dan birokrasi yang mewujudkan permintaan untuk membuka akaun bank sebagai tempat yang selamat menyimpan dana yang berlebihan dengan meningkatkan jumlah kiriman wang. Sebaliknya kajian yang sedia ada, yang menyatakan bahawa kiriman wang menggalakkan kemasukan kewangan, bukti dalam kajian ini menunjukkan bahawa kesan kiriman wang ke atas kemasukan kewangan adalah bergantung kepada persepsi orang ramai terhadap institusi. Hasil kajian ini mencadangkan bahawa kesan kiriman wang ke atas kemasukan kewangan adalah tidak menentu. Implikasi daripada penemuan ini adalah negara-negara tersebut harus meningkatkan persepsi positif mengenai institusi kewangan untuk menggalakkan orang ramai menikmati manfaat penerimaan wang dan pertumbuhan sektor kewangan. Meningkatkan kualiti institusi institusi kewangan, seperti mengurangkan proses birokrasi, meningkatkan peruntukan kredit, memperkuatkan peraturan kredit, memastikan ketelusan dan pendedahan maklumat di sektor kewangan dapat memupuk persepsi positif masyarakat terhadap institusi kewangan. Kepercayaan terhadap institusi kewangan mendorong orang ramai untuk membuka akaun bank dan kepercayaan pelanggan terhadap bank adalah penting bagi mereka untuk menggunakan perkhidmatan

kewangan lain yang disediakan oleh bank, justeru itu dapat mempertingkatkan penglibatan kewangan.

Objektif kedua mengkaji kesan aliran masuk pengiriman wang ke atas pelaburan modal insan dalam penghantaran wang yang tinggi bagi negara-negara penerima iaitu di kalangan negara-negara yang sedang membangun untuk tempoh 1995-2018. Dimotivasi oleh adanya infrastruktur asas seperti telekomunikasi, pengangkutan dan utiliti; dan akses ke kemudahan tersebut dapat mempengaruhi pengembangan modal insan, interaksi di antara kiriman wang dan infrastruktur sosial digunakan untuk mengkaji kesan kiriman wang ke atas modal insan dan dan bagaimana kesannya berbeza di pelbagai tahap infrastruktur sosial. Keputusan kajian kami menunjukkan bahawa pengiriman wang sahaja tidak dapat menjana pembentukan modal insan. Walau bagaimanapun, pengiriman wang yang berkaitan dengan infrastruktur sosial yang lebih baik meningkatkan pembentukan modal insan. Oleh itu, infrastruktur sosial yang lebih baik di negara penerima meningkatkan pelaburan ke atas pendidikan. Walau bagaimanapun, kesan infrastruktur sosial ke atas pendidikan tinggi di negara penerima adalah tidak signifikan. Dari perspektif dasar, penemuan kami menunjukkan bahawa adalah penting untuk memperbaiki infrastruktur sosial sebagai cara untuk meningkatkan mekanisme pengumpulan modal insan.

Objektif ketiga mengkaji kesan tidak langsung di antara aliran masuk kiriman wang ke atas pertumbuhan ekonomi dengan kesan interaksi kemasukan kewangan dan modal insan insan dalam penghantaran wang yang tinggi bagi negara-negara penerima iaitu dikalangan negara-negara yang sedang membangun pada tahun 2011-2018. Kajian ini mendapati bahawa sektor institusi kewangan yang maju dapat menyerap aliran masuk pengiriman wang dan secara efisien menyalurkannya ke dalam penggunaan ekonomi yang betul dan produktif, sementara modal insan yang maju dapat secara langsung menggalakkan aktiviti ekonomi yang teguh dan juga pembangunan ekonomi. Ini membayangkan bahawa dasar-dasar untuk menarik kiriman wang masuk tambahan harus meningkatkan kemasukan kewangan dan pembangunan modal insan adalah penting.

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I would be remiss if I did not express my acknowledgements to all those who gave me their help and support throughout this research journey

This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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Date: 08 October 2020

Declaration by graduate student

I hereby confirm that:

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Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

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Name of Member of Supervisory Committee: Professor Dr. Law Siong Hook

Signature: ______________________

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LIST OF ABBREVIATIONS

WDI	World Development Indicator
IMF	International Monetary Fund
UN	United Nation
GMM	Generalized Method of Moments
LSDVC	Least Square Dummy Variable Corrected
HC	Human Capital

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter introduces the impact of remittances on financial inclusion, human capital, and economic development as well as the objectives and significance of the current study. The chapter is organised in the following order: (1) Section 1.2 focuses on remittances; (2) Section 1.3 describes the impact of remittances; (3) Section 1.4 explains the problem statement; (4) Section 1.5 presents the research objectives; (5) Section 1.6 presents the significance of study; (6) Section 1.7 presents the thesis organisation.

1.2 Remittances

The migrants' earnings from other countries that are sent back to their country of origin have emerged as one of the largest and most stable sources of external financial flows that often overshadow and grow steadier than the traditional sources of external financial flows, such as foreign direct investment (FDI) (Barajas, Chami, Espinoza, & Hesse, 2010a). Such financial flow is nearly three times more than the official aid flows (World Bank, 2016) (see Figure 1.1). For instance, remittances that amounted to USD 683 billion were received across the globe in 2018 alone, which represented about 0.72% of the world's GDP and took up about 27% of GDP of developing countries (World Bank, 2018). Moreover, World Bank (2018) reported an increase in the global remittances from USD 470 billion in 1995 to USD 683 billion in 2018; thus, supporting the global significance of remittances. On the other hand, the flow of remittances to low- and middle-income countries increased from USD 343 billion in 1995 to USD 529 billion in 2018, which signified a growth of 53% (see Figure 1.2). It is crucial to acknowledge that the inflows of remittances to high-income countries only grew by 21% from USD 127 billion in 1995 to USD 154 billion in 2018.

The increasing importance of remittances has raised interest among academicians and policy-makers to study the development impact of remittances on the economy of low- and middle-income countries since remittances are important sources of financial inclusion, human capital, and economic development. A total of 96 remittances recipient countries were covered in the current study. The high diversification of development levels and inflows of remittances of these countries motivated the following categorisation of these countries by income group (see Table 1.1) and region (see Figure 1.3) with respect to the World Bank's country classifications. Figure 1.3 shows the global inflows of remittances. In 2018, East Asia and the Pacific region recorded the highest inflows of remittances at USD 143 billion, followed by South Asia (USD 132 billion), Latin America and Caribbean (USD 89 billion), Middle East and North Africa (USD 58 billion), Europe and Central Asia (USD 58 billion), and Sub-Saharan Africa (USD 47 billion) (Aga & Peria, 2014).

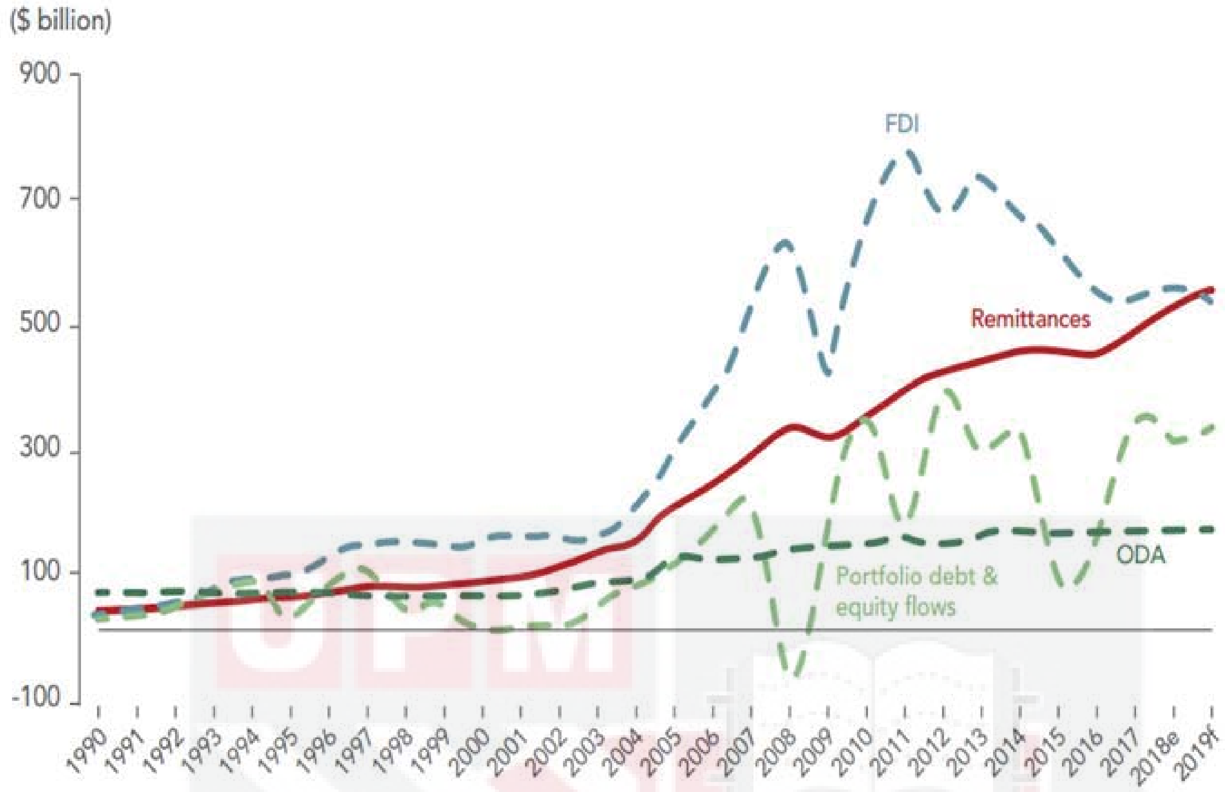


Figure 1.1 : Remittances inflow into Low and Middle income countries

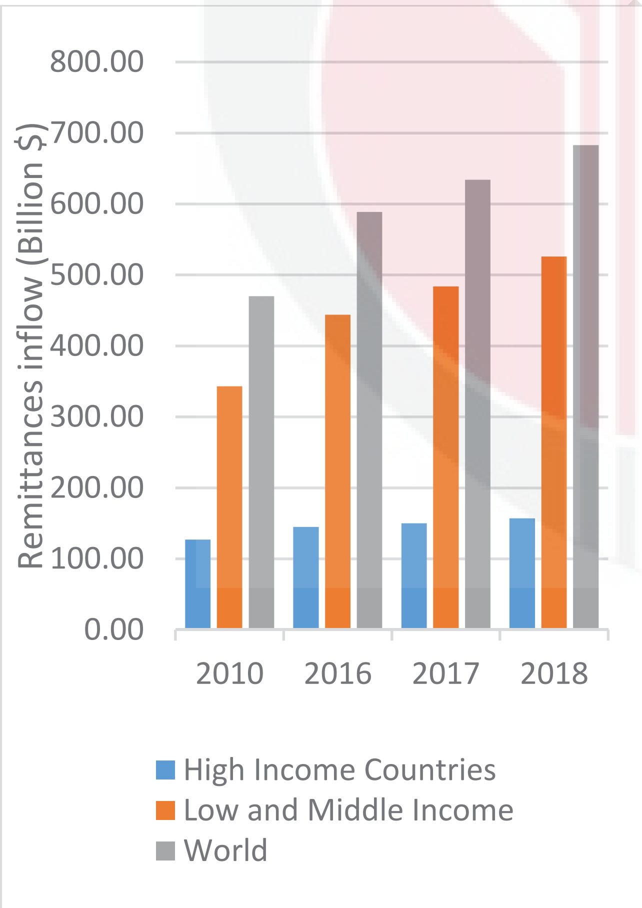


Figure 1.2 : Remittances (Billion USD) inflow by income groups

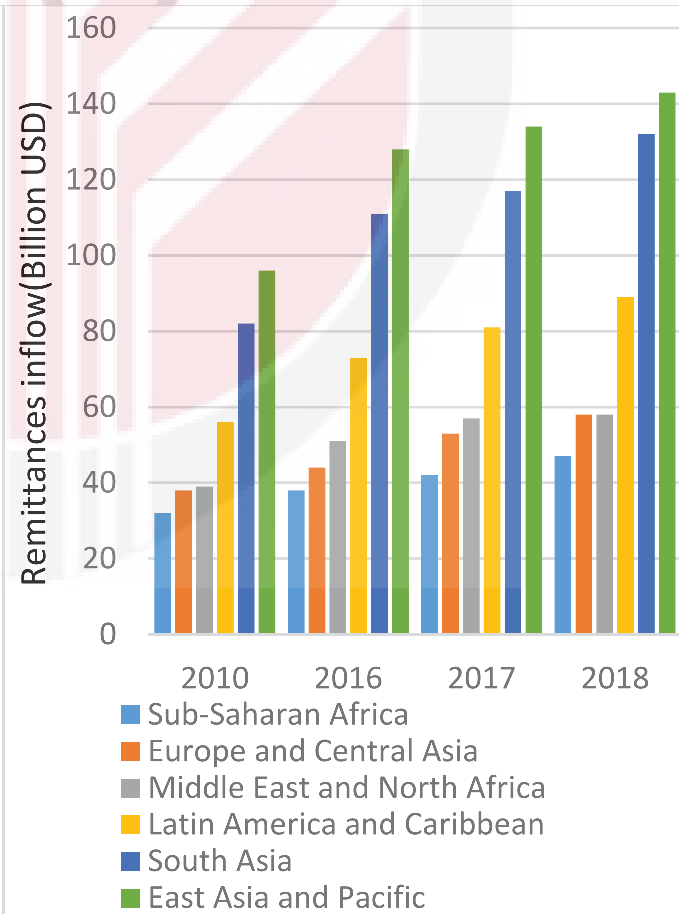


Figure 1.3 : Remittances inflow by region

Table 1.1 shows 27 countries from three different income groups that were sorted according to the inflows of remittances to GDP in 2018. The total sample consisted of 20 low-income countries, 61 middle-income countries, and 15 high-income countries. For each income group, nine countries were selected for demonstration purpose. Group 2 (middle-income countries) recorded the highest remittances' share to GDP at 10%, followed by Group 1 (low-income countries) (5.38%) and lastly, Group 3 (high-income countries) (1.21%). Unsurprisingly, high-income countries rely less on remittances. In addition, the mean ratio of remittances to GDP for Group 1 recorded 5.38. In particular, Haiti recorded the highest ratio (32.53%), followed by Comoros (13.81%), Senegal (10.06%), while Burkina Faso (3.23%), Niger (3.19%), and Madagascar (3.07%) recorded moderate ratio. Meanwhile, Tanzania (0.71%), Ethiopia (0.52%), and Guinea (0.26%) recorded the lowest ratio in the group. The rates of financial inclusion (bank account holders), human capital development (education index), and economic development (GDP per capita) for Haiti and Guinea were 276.2 and 90, 0.45 and 034, and 730.3 and 896.83, respectively. As for Group 2, Kyrgyz Republic recorded the highest remittances' share to GDP (approximately 33.22% of its gross domestic production), followed by Tajikistan (29.02%), and Lesotho (25.48%), while Lao (1.33%), Cameron (0.86%), and Cote d'Ivoire (0.76%) recorded moderate remittances' share to GDP. Gabon (0.11%), Argentina (0.1%), and Maldives (0.08%) recorded the lowest moderate remittances' share to GDP in Group 2. The rates of financial inclusion (bank account holders), human capital development (education index), and economic development (GDP per capita) for Kyrgyz Republic and Maldives were 524.36 and 981.97, 0.73 and 0.56, 1087.2 and 8033.33, respectively. As for Group 3, Latvia (5.28%) recorded the highest ratio of remittances to GDP whereas Kuwait recorded the lowest ratio (0.001%). Meanwhile, Palau (0.77%) recorded a moderate ratio in the group. The rates of financial inclusion (bank account holders), human capital development (education index), and GDP per capita for Latvia and Kuwait were 1392.19 and 1293.19, 0.87 and 0.63, 16268.95 and 33112.13, respectively.

In a nutshell, developing economies clearly receive remittances but the impact of remittances on the economy remains unclear. Hence, the current study examined the impact of remittances on the financial inclusion, human capital, and economic development of remittances recipient countries. The next section discusses these issues in greater detail.

Table 1.1 : Background of the 27 countries sampled countries grouped according to their income level

Countries		MWR %		MWR		GDPPC		FI		HC	
	Group	2010	2018	2010	2018	2010	2018	2010	2018	2010	2018
Haiti	1	22.25	32.53	1473.80	3142.26	665.63	730.30	332.57	276.67	0.40	0.45
Comoros	1	9.62	13.81	87.25	162.11	1315.21	1401.37	60.77	130.11	0.43	0.48
Senegal	1	9.12	10.06	1479.12	2427.53	1278.98	1546.52	101.89	186.58	0.30	0.35
Burkina Faso	2	1.34	3.23	120.46	455.65	575.45	712.04	78.64	174.15	0.23	0.3
Niger	2	2.35	3.19	134.42	296.68	347.34	403.49	26.23	58.89	0.18	0.25
Madagascar	2	4.57	3.07	455.83	425.50	471.96	490.10	106.32	79.75	0.48	0.49
Tanzania	3	1.08	0.71	344.29	412.91	743.40	957.13	188.96	276.33	0.42	0.42
Ethiopia	3	1.46	0.52	436.14	436.33	341.55	570.31	102.49	204.4	0.31	0.34
Guinea	3	0.67	0.26	46.26	28.43	672.42	896.83	45.00	90	0.29	0.34
Kyrgyz R	1	26.41	33.22	1266.20	2688.57	880.04	1087.20	100.69	524.36	0.70	0.73
Tajikistan	1	35.81	29.02	2020.50	2183.34	749.55	1073.02	365.12	730.12	0.67	0.67
Lesotho	1	25.48	22.98	610.12	629.38	1199.95	1411.68	287.81	374.38	0.49	0.51
Lao	2	0.59	1.33	41.77	238.67	1140.60	1785.58	43.05	547.38	0.43	0.48
Cameron	2	0.44	0.86	114.86	333.56	1285.26	1500.70	53.20	82.77	0.38	0.56
Cote d'Ivoire	2	1.50	0.76	373.48	325.29	1211.93	1692.54	128.18	234.33	0.38	0.44
Gabon	3	0.27	0.11	38.43	18.46	8840.73	9042.46	154.22	308.22	0.60	0.64
Argentina	3	0.15	0.10	644.30	515.86	10385.9	10043.5	673.26	1147.55	0.82	0.84
Maldives	3	0.12	0.08	3.16	4.22	7076.66	8033.33	981.26	981.97	0.49	0.56
Latvia	1	5.28	3.60	1257.37	1237.35	11344.6	16268.9	1387.51	1392.19	0.85	0.87
Hungary	1	1.41	2.68	1849.91	4234.53	13113.5	16647.7	525	1049.61	0.83	0.82
Malta	1	2.62	1.90	229.57	276.49	21107.3	28594.3	908.78	1836.61	0.77	0.82
Palau	2	0.92	0.77	1.69	2.18	10219.9	12260.2	560	1119.43	0.80	0.85
Italy	2	0.37	0.48	7975.13	9949.66	36000.5	35431.8	330	667.92	0.78	0.79
Israel	2	0.24	0.25	571.50	939.60	30693.5	34745.7	1067.08	1118.24	0.86	0.88
Saudia Arabia	3	0.04	0.04	236.48	334.91	19262.5	20819.7	706.87	1045.98	0.69	0.79
Chile	3	0.03	0.02	62.32	66.10	12808.03	15130.15	2133.16	4266	0.72	0.81
Kuwait	3	0.00	0.02	4.81	27.72	38577.3	33112.1	1160.33	1293.19	0.60	0.63

Note: MWR (%)refers to remittances ratio to GDP, MWR ($) real remittances inflow in million USD, GDPPC is Real GDP per capita, FI is a number of bank account holders per 1000 people and HC is education index.
Source: World Bank development Indicator (2018)

1.3 The Impact of Remittances

This section describes the link between the key variables of this study, specifically on how remittances affect financial inclusion and human capital as well as economic development. The first subsection focuses on how remittances lead to the expansion of financial inclusion. This is followed by the impact of remittances on the accumulation of human capital and finally, the impact of remittances on the economic development.

1.3.1 Remittances on Financial inclusion

The inflows of remittances to low- and middle-income countries have become an important source of development in the financial sector as well as financial inclusion. Many people in low- and middle-income countries do not have a bank account but the need to receive remittances induces them to open a bank account. Therefore, the increase of remittances leads to the expansion of financial inclusion in these countries. Financial inclusion refers to a process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy (Sarma & Pais, 2011). Demirguc-Kunt, Klapper, Singer, Ansar, and Hess (2018) reported that the number of adults who use bank accounts globally increased from approximately 3.8 million (69%) in 2011 to more than 515 million in 2018. This fact is further supported by Figure 1.4 and Figure 1.5 on the number of adults with a bank account at a formal financial institution per 1000 people across the world by income group and region from 2011 to 2018. The degree of financial inclusion varies widely by income group and region. On average, in 2018 alone, the number of adults with a bank account (out of 1000 people) were around 200 for low-income countries and almost 1400 for high-income economies. Focusing on geographical region, the bank account ownership was the lowest in Sub-Saharan Africa, with around 400 out of 1000 people, while Europe and Central Asia recorded the highest bank account ownership (1200 adults), followed by Latin America and Caribbean (1100 adults) and moderate level Middle East & North Africa (850 adults) , East Asia & Pacific (750 adults) and South Asia (700 adults).

On a more important note, several studies have stressed the importance of remittances to financial inclusion. For example, Aggarwal, Demirguc-Kunt, and Martinez Peria (2006) argued that migrants' remittances can lead to the development of financial sector in less developed economies considering its ability to boost the total volume of deposits and loans granted by the banking institutions to the financially excluded segments. Similarly, Manuel Orozco, Lowell, and Schneider (2006) highlighted the potential of remittances in promoting the financial development of the recipient country by stimulating the demand and access to various financial products. At the same time, the provision of remittance transfer services allows banks and other financial institutions, in general, to gather information about unbanked recipients and mitigate any adverse selection problem. Apart from capturing money flows, the remittance channel can be used to sell financial service packages that are geared for low-income individuals (Toxopeus & Lensink, 2007).

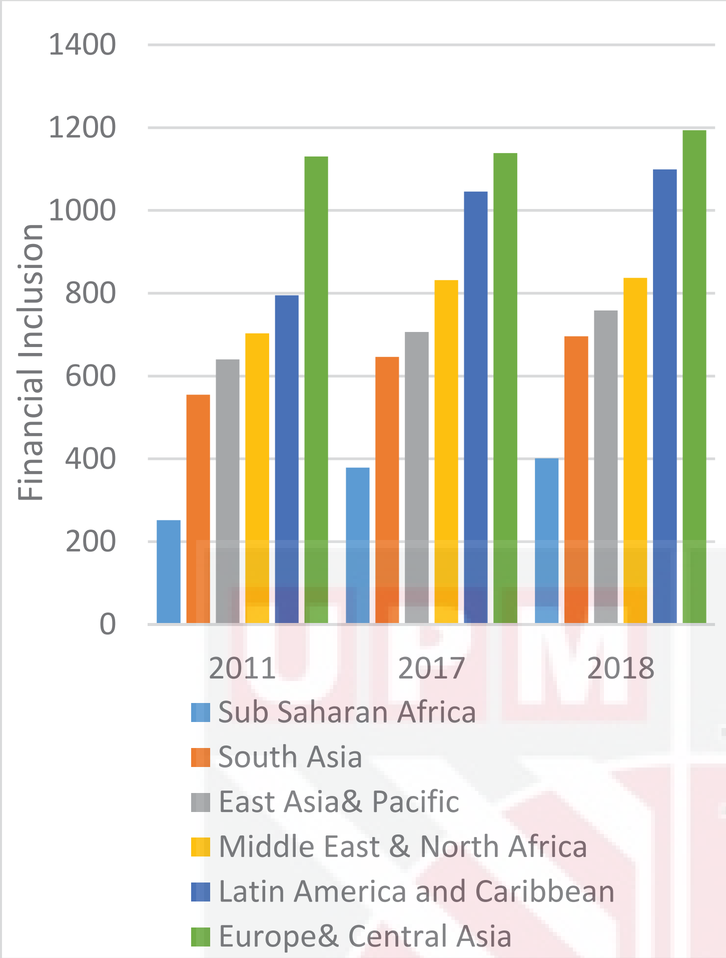


Figure 1.4 : Financial Inclusion (Bank account per 1000 adults) by region

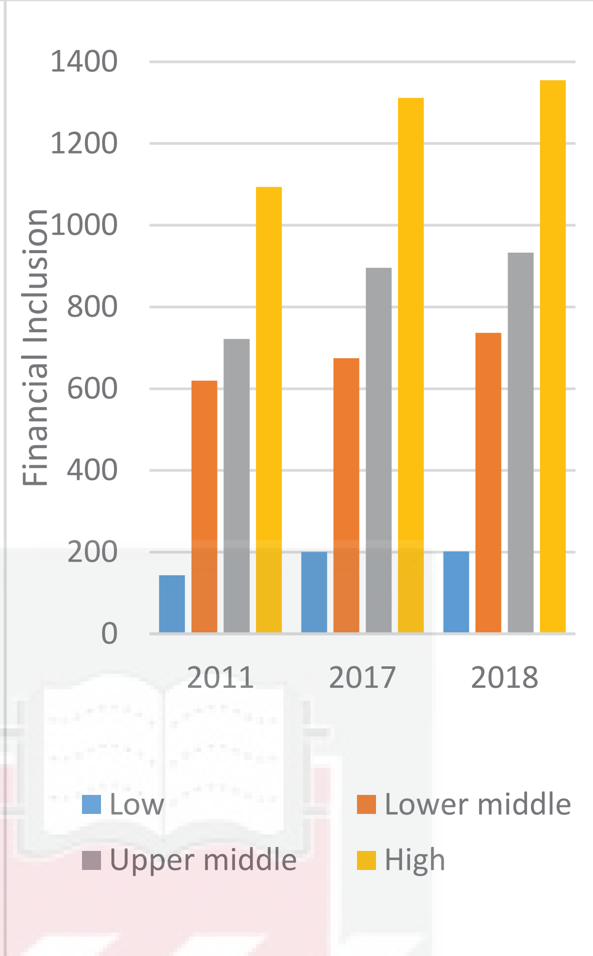
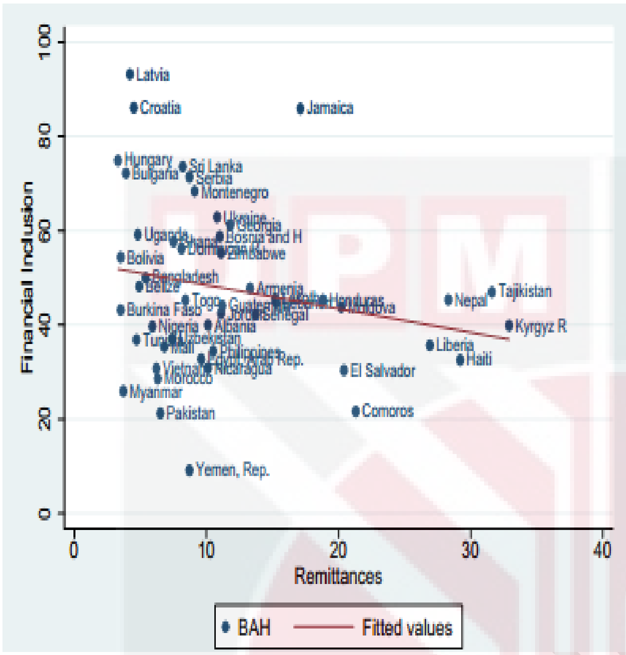


Figure 1.5 : Financial Inclusion (Bank account per 1000 adults) by income

Remittances affect financial inclusion in several ways. Firstly, remittances can increase the demand for savings instruments. The fixed costs of sending remittances yield lumpy flows that provide households with excess cash for a certain period of time. This potentially increases the demands for deposit accounts since financial institutions offer households a safe place to store this temporary excess cash. This is because the acts of sending and receiving remittances increase senders' and recipients' use of financial services, such as making deposits and wire transfers, accessing credits and loans, and opening savings accounts (Aggarwal et al., 2006; Aggarwal, Demirguc-Kunt, & Pería, 2011; Anzoategui, Demirguc-Kunt, & Martinez Peria, 2014; Demirgüç-Kunt & Klapper, 2012; Gibson, Boe-Gibson, Rohorua, & McKenzie, 2007; Gibson, McKenzie, & Rohorua, 2006; Gibson, McKenzie, & Stillman, 2013; Gibson, McKenzie, & Zia, 2012; Giuliano & Ruiz-Arranz, 2009; M Orozco & Fedewa, 2005).

Secondly, remittances can increase the recipients' chances of obtaining loans from formal financial institutions or banks. As processing remittances provides financial institutions with the information of the income of recipient households, such information increases the willingness and ability of financial institutions or banks to extend loans to otherwise opaque borrowers. Besides that, they can also assess the creditworthiness of remittance recipients (Giuliano & Ruiz-Arranz, 2009). These two ways suggest a positive relationship between remittances and financial inclusion.

Thirdly, remittances may help to relax households' financial constraints—therefore, the demand for credits may decline with the increase in the inflows of remittances. Steady inflows of remittances can reduce households' reliance on loans from banks and other financial institutions to finance their basic consumptions and other expenses. Based on this view, a negative relationship between remittances and financial inclusion was hypothesised in the current study (Chami, Hakura, & Montiel, 2012; Giuliano & Ruiz-Arranz, 2009).



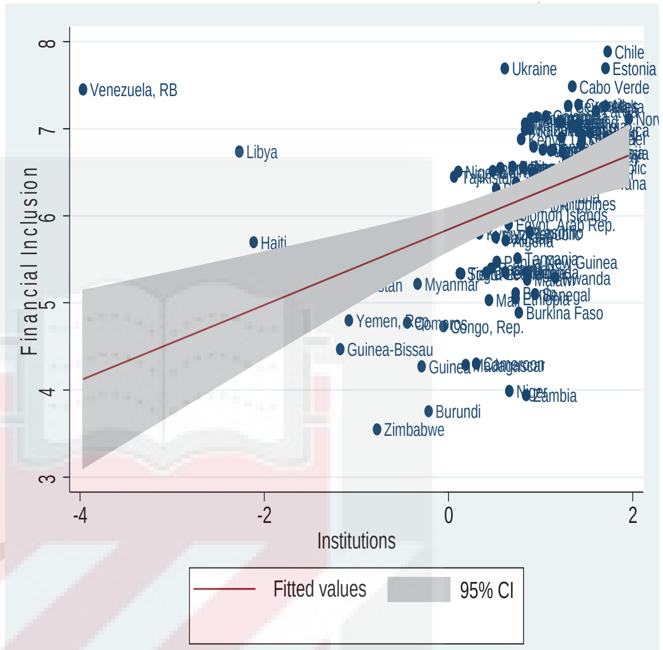


Figure 1.6 : Remittances inflow share to GDP and financial inclusion (Bank account holders)

Figure 1.7 : Financial Inclusion (Bank account holders per 1000) and Institutional

Note: List of the countries is provided in Table A1 in Appendix.
Source: Authors' compilation from World Bank data (2018)

The inflows of remittances potentially increase the ability of recipient households to join and gain access to financial services; thereby, encouraging further growth and expansion of financial inclusion. Figure 1.6 presents a scatter plot of the relationship between remittances and financial inclusion based on a set of 87 countries. As shown, high flows of remittances is associated with low amount of financial inclusion for low-income countries, such as Tajikistan, Nepal, and Haiti. This implies that households in low-income countries express more distrust towards financial institutions. Instead of keeping remittances in their bank accounts, they prefer to use them for personal or family expenditures. On the contrary, low flows of remittances is associated with high financial inclusion for the case of high-income countries. This suggests higher trust and preference to make use of the financial institutions for any transactions (rather than paying in cash) among households in these countries. Therefore, better institutions and stronger contract enforcement may play important roles in terms of access and use of different services of financial institutions, which suggest the need to examine the interaction of remittances and institutional quality and how it affects financial inclusion.

The scatter plot in Figure 1.7 reveals a positive relationship between institutional quality and financial inclusion. This suggests that the increase in the institutional quality leads to the expansion of financial inclusion. Institutional quality can be defined as governance indicators, specifically on the average of the rule of law and government effectiveness (Kaufmann, Kraay, and Mastruzzi (2008b). Figure 1.8 presents the level of institutional quality in the sample countries. Accordingly, a higher value indicates higher level of institutional quality—the values may vary from 0 to 2.5. High-income countries recorded the highest institutional quality (1.5), followed by middle-income countries (1.1) and lastly, low-income countries (0.8). Unsurprisingly, low-income countries have lower level of institutional quality.

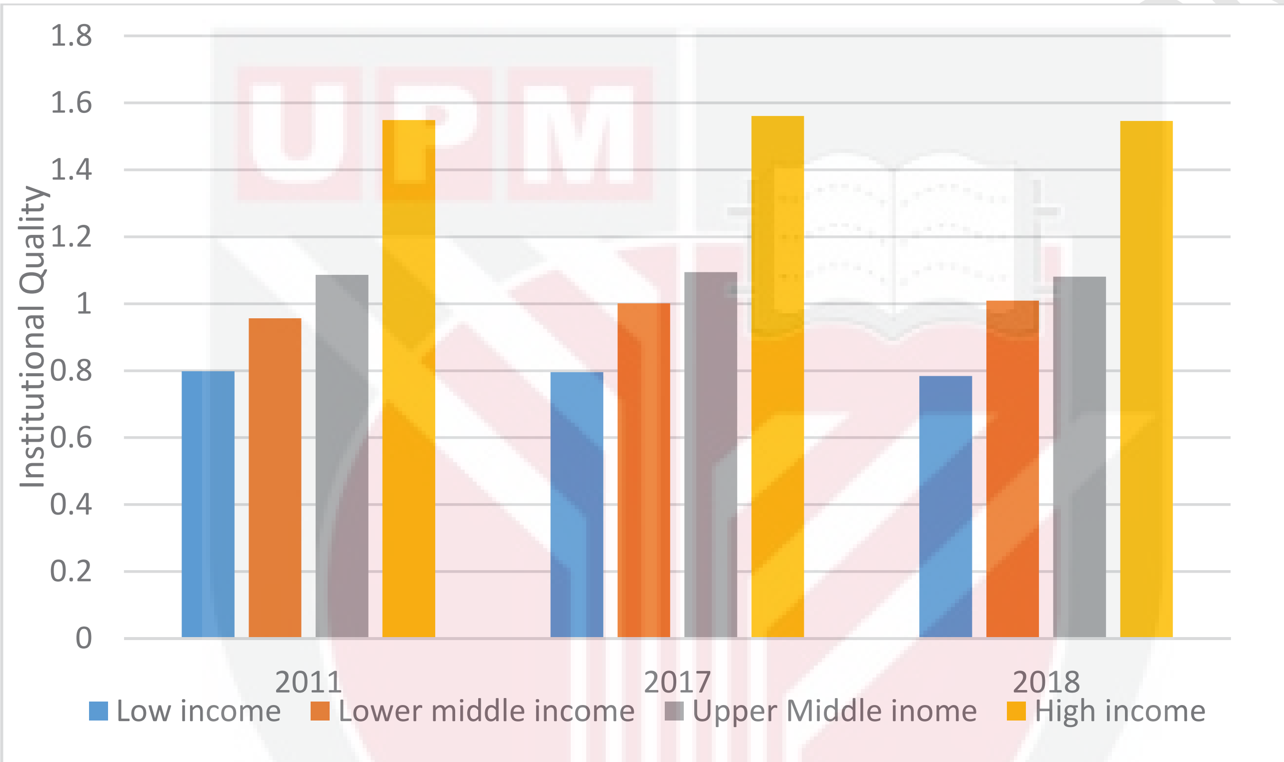


Figure 1.8 : Institutional Quality by income group
Note: List of the countries is provided in Table A1 in Appendix.

1.3.2 Remittances on Human Capital

Similar to the relationship between remittances and financial inclusion, human capital has also equally gained importance in stimulating economic growth and development. T. P. Schultz (1992) viewed human capital formation as the consequence of deliberate investment on human capital in the form of expanded expenditures on schooling and others. Human capital is an accumulation of knowledge and experience. As an additional source of income, steady inflows of remittances ease the financial constraints of recipients and allow them to invest in education (Bredl, 2011; De & Ratha, 2012; Medina & Cardona, 2010). The level of human capital varies widely by income level and region. This fact is supported by Figure 1.9 and Figure 1.10 that reveal the mean years of secondary schooling globally by income group and region from 1995 to 2018 non-overlapping five years averages. On average, in 2018, adults with secondary schooling recorded around 0.4 for low-income countries and almost doubled for high-income economies. Focusing on geographical region, Sub-Saharan Africa recorded the lowest human capital (around 0.5 adults), while Europe and Central Asia recorded the highest (around 0.8 adults) and Latin America and Caribbean recorded around 0.65. Middle East and North Africa (0.6), East Asia and the Pacific region (0.6), and South Asia (0.5) recorded a moderate level.

Basically, remittances can affect the development of human capital through three channels. Firstly, the remittance effect channel, where remittances improve the living standard and lead to expenditure in education. Steady inflows of remittances reduce households' capital and budget constraints, which subsequently provide more opportunities for them to invest in education for their children (Bredl, 2011; De & Ratha, 2012; Medina & Cardona, 2010). The second channel involves the disruptive channel, where the absence of parents and/or guidance adversely affects the school attendance and performance of their children. This negatively affects human capital (McKenzie & Rapoport, 2006). The third channel is the substitution channel, where the inflows of remittances serve as an incentive for children to migrate abroad for greener pastures. In this case, the inflows of remittances give the notion of better opportunities and affluence in remittance-sending countries and therefore, they would rather migrate than to study.

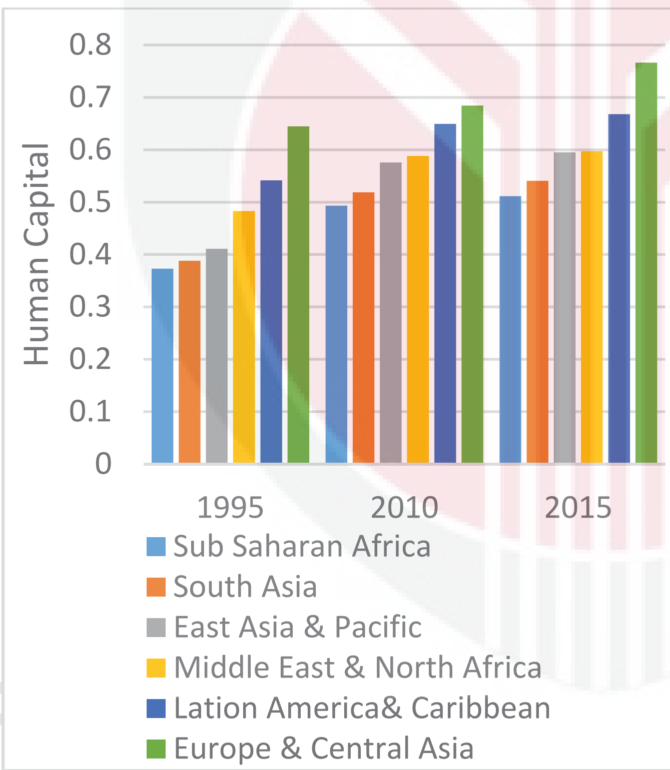


Figure 1.9 : Remittances inflow and human capital by region

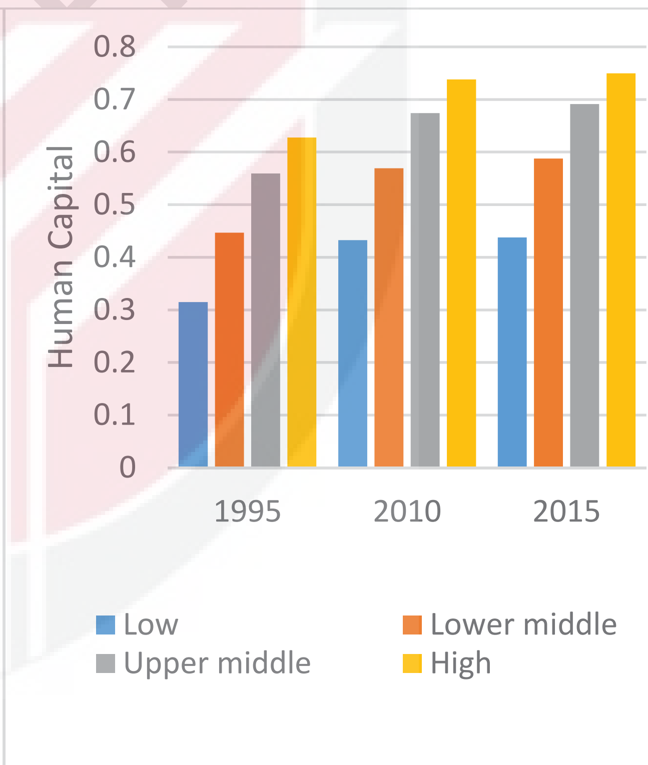


Figure 1.10 : Remittances inflow and human capital by income

The inflows of remittances are believed to encourage recipients' investment in education, w hich, in turn, contributes to the development of human capital. Expectedly, the increase in remittances is parallel to the accumulation of human capital. However, the trend in Figure 1.11 does not support this claim, as the relationship between remittances and the development of human capital is proxied by secondary school enrolment. Over the years, remittances have increased substantially but human capital has remained low. As shown in Figure 1.11, the coefficient of sample correlation between migrant workers' remittances and human capital formation is estimated to be weak and negative, which can be rather ambiguous and possibly contradicts the existing theories. This may be due to the absence of other factors that affect the development of human capital, such as the availability of social infrastructures or access to essential facilities in terms of quantity and quality, transportation networks, as well as utilities and telecommunications. Figure 1.12 shows the relationship between human capital and social infrastructures. Countries with better social infrastructures transform migrants' remittances into human.

Social infrastructures can be defined as infrastructures that enhance the health, educational, and cultural values of a population through accessible community services, individual skills and knowledge, and local networks (Fourie, 2006). As shown in Figure 1.13, the social infrastructures (transportation networks, utilities, and telecommunications) in these countries has the highest in high income countries (9), followed bymiddle income countries (6) and lowest has low income countries (4.3).

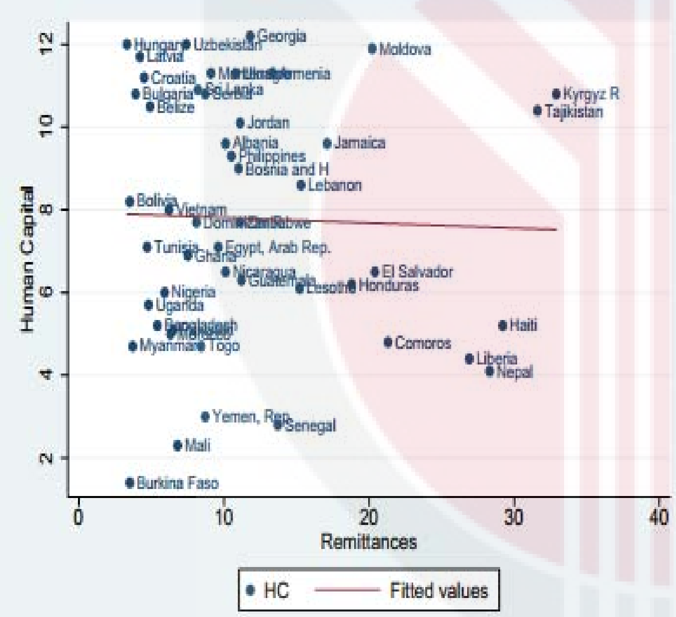


Figure 1.11 : Remittances inflow and human capital (Mean years of schooling)

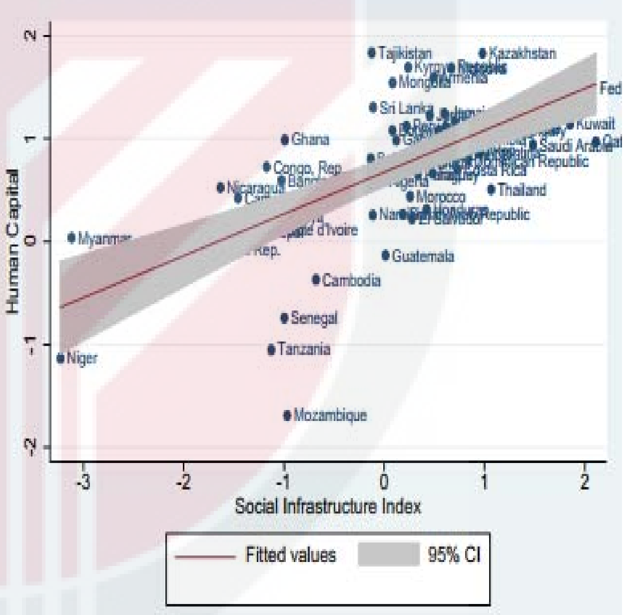


Figure 1.12 : Human capital (Average year of secondary schooling) and Social Infrastructure Index

Note: List of the countries provided in Table A1 in Appendix.

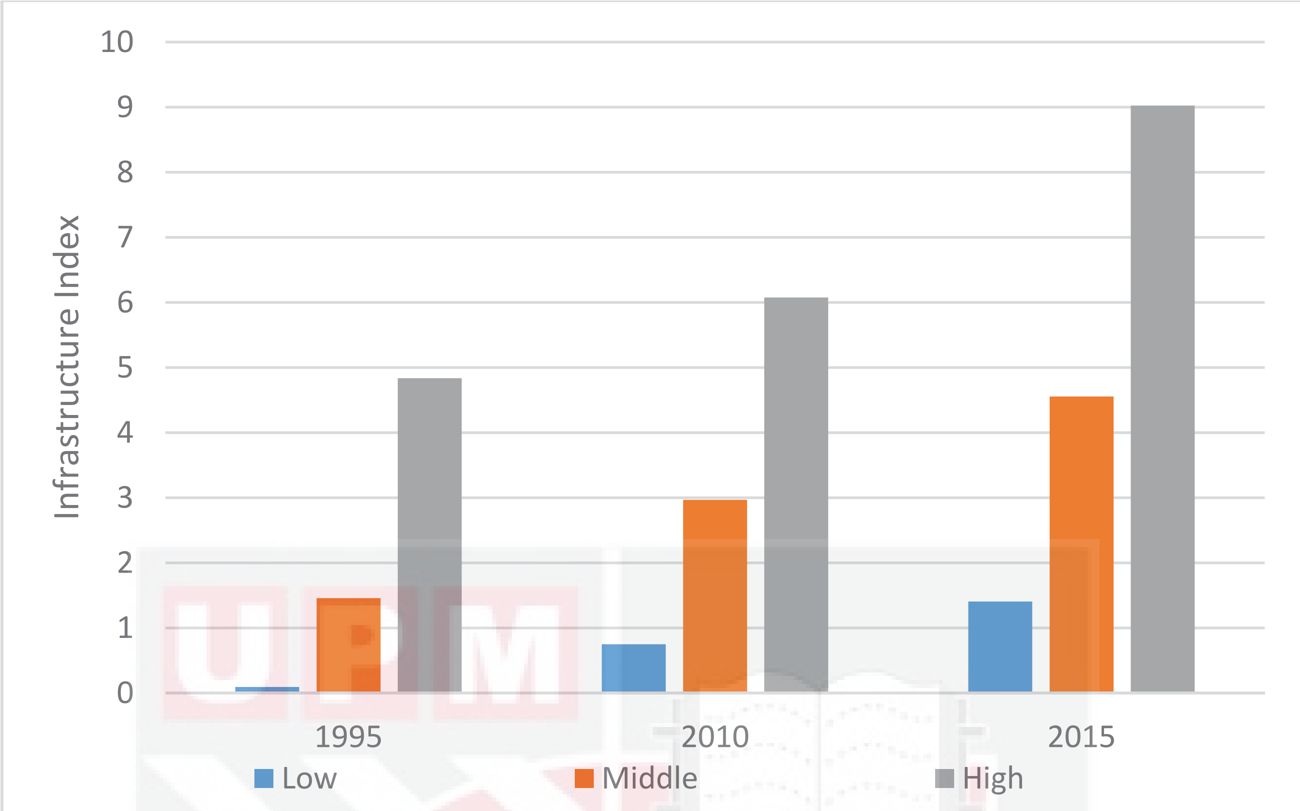


Figure 1.13 : Infrastructure index by income group
Note: List of the countries is provided in Table A2 in Appendix.

1.3.3 Remittances and Economic Development

Generally, the income level or GDP per capita of high remittances recipient countries is low and often associated with high unemployment. This drives more people to migrate in order to obtain higher income for better living standard. Hence, the inflows of remittances have become an important source of economic development for these countries.

Literature on remittances have put forward that remittances can affect economic development through three main channels (Bollard, McKenzie, Morten, & Rapoport, 2011). Firstly, remittances can affect economic development through *welfare effect*, where remittances improve the welfare of recipients directly and others indirectly (McKenzie & Rapoport, 2011). Remittances indirectly affect supply through the improvement in the recipients' budget constraints. With that, consumption expenditures also increase, which consequently generate positive multiplier effect on the economy. The second channel involves *growth effect*. Arguably, remittances potentially increase both human and physical investments. In addition, the increase in savings owing to the inflows of remittances ensures the availability of funds for investment, which promotes the development of the financial sector. This may have a direct impact on the economic growth and development (Aggarwal et al., 2011; Chiodi, Jaimovich, & Montes-Rojas, 2012). The third channel involves the *moral hazard effect.* The inflows of remittances may affect the willingness of recipients to engage in economically productive activities. Recipients may choose not to work due to the steady inflows of remittances, especially when such income is enough to cater for their basic needs and leisure (Amuedo-Dorantes

& Pozo, 2004; Chami, Fullenkamp, & Jahjah, 2005). This contributes negative consequences to the economy of the recipient country.

The scatter plot in Figure 1.14 reveals an insignificant relationship between the inflows of remittances and economic development, which may be explained by the growth effect channel. There is a need for absorptive capacity to moderate the relationship between remittances and economic development. Financial inclusion and human capital are two important measures of the degree of financial and human absorptive capacity, which may affect the nexus between remittances and economic development. Prior studies attempted to associate these indicators together—the inflows of remittances have welfare- and growth-enhancing effects on the recipient countries. Welfare effect eases financial constraints by providing an additional source of income and improving the living standard (Adams, Cuecuecha, and Page (2008)). Channelling remittances into effective investments and savings can also promote the development of financial system and human capital (Chiodi et al. (2012); Kugler, 2006)), which is known as growth-enhancing effect.

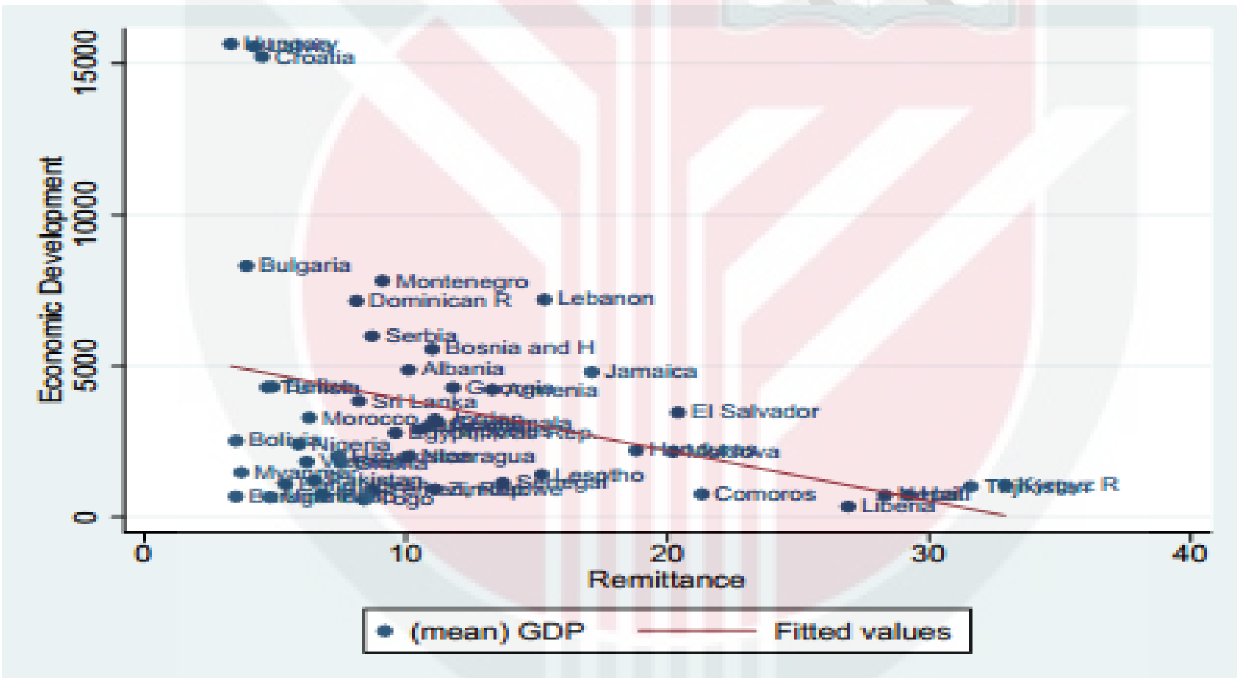


Figure 1.14 : Remittances inflow and Economic Development
List of the countries provided in Table A1 in Appendix.

Figure 1.15 and Figure 1.16 plot economic development against human capital and natural logarithm of financial development, respectively. As shown in Figure 1.15, countries with higher level of human capital appear to be positively associated with economic development. Referring to Figure 1.16, countries with better financial development seem to have higher rate of returns on economic development. Thus, it is plausible to hypothesise that the inflows of remittances may be an important driving force of economic development for recipient countries via financial inclusion and human capital, particularly in the case of less developed countries where a large proportion of the population is financially excluded (Sharma, 2016) with low human capital. Remittances can help these countries to deal with these issues. Thus, the primary purpose of the current study was to examine the impact of remittances on financial inclusion, human capital, and economic development, specifically on how low- and middle-income countries can leverage remittances on economic development.

In this study, high remittances recipient countries with comparatively better financial system and human capital were hypothesised to have the ability to successfully channel the remittance flows towards economic development. Higher levels of financial inclusion or financial inclusion or financial development and human capital represent a prerequisite condition to achieve sustainable economic growth for a country. Accordingly, this study also examined the interactive effects of remittances on economic development through financial inclusion and human capital.

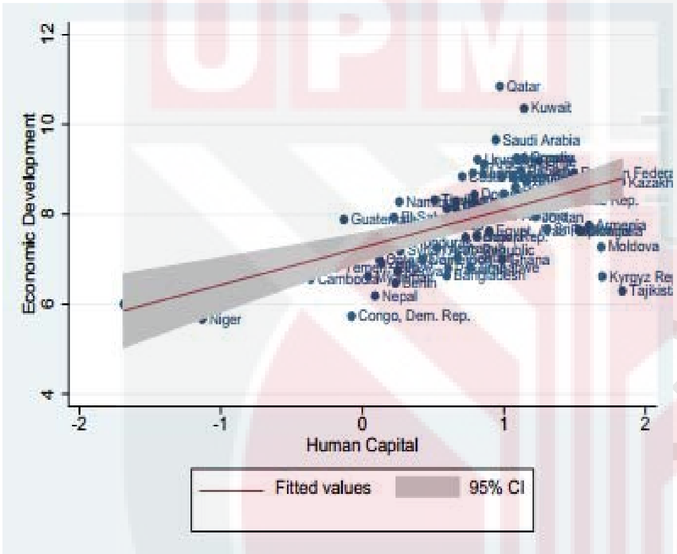


Figure 1.15 : Human Capital and Economic Development

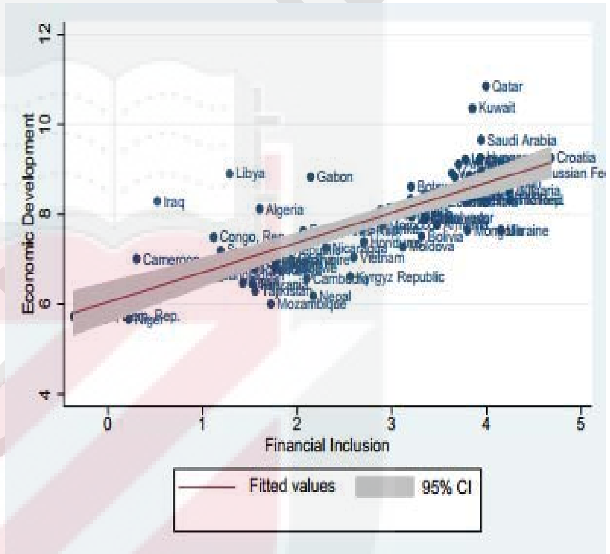


Figure 1.16 : Financial Inclusion and Economic Development

1.4 Problem statement

The inflows of remittances are believed to increase the ability of recipients to join and acquire access to financial services, which encourage further growth and expansion of financial inclusion. However, available statistics (see Figure 1.16) revealed otherwise, where high inflows of remittances are associated with lower financial inclusion for low-income countries, such as Tajikistan, Nepal, and Haiti. On the contrary, low inflows of remittances are associated with higher financial inclusion for high-income countries, which suggests that households in these countries have trust in the financial system and prefer to use the system for any transactions, rather than paying in cash. Meanwhile, households in low-income countries appear to express more distrust towards the financial institutions. Instead of keeping remittances in bank accounts, they prefer cash. Based on these observations, the validity of the assumption of a direct relationship between remittances and financial inclusion in the context of developing countries was questioned in the current study. The possibility of an indirect relationship between remittances and financial inclusion through an interaction factor, specifically institutional quality, was explored in this study. A low expansion of financial inclusion was hypothesised to be the result of poor institutional quality, which can be explained by the ability of financial institutions to manage the bureaucratic processes in the forms of reducing the amount of documentation or paperwork as well as sustaining the trust of clients during the transactions of remittances. In addition, it should be understood that institutional quality may be an important factor that influences the public decision to access the financial services provided by financial institutions. The public may avoid utilising the financial institutions as a channel for remittances if they have a general distrust towards the financial institutions and are concerned of the time-consuming bureaucratic processes involved. As a result, the preference for more conservative alternatives can affect the expansion of the financial institutions. With that, the current study examined the impact of remittances on the level of financial inclusion in accordance with the level of institutional quality.

Next, the increase in the inflows of remittances is supposed to be in line with the accumulation of human capital but the existing evidence revealed otherwise. The coefficient of sample correlation between the migrant workers' remittances and human capital formation is estimated to be weak and negative. In other words, the relationship between remittances and human capital can be rather ambiguous. Notice that the data points are spread out quite even in this graph. Over the years, remittances have increased substantially but human capital has remained low. This inverse pattern of non-parallel growth appeared to be noticeable among the developing countries in the sample of this study. Thus, the validity of the assumption of a direct relationship between remittances and human capital in the context of developing countries remains in question. The possibility of an indirect relationship between remittances and human capital through an interaction factor, specifically social infrastructures, was explored in this study. This study put forward an argument that low expansion of human capital in remittances recipient countries may be attributed to poor social infrastructures, such as underdeveloped transportation networks, utilities, and telecommunications. The availability of and accessibility to good social infrastructures and income or more precisely, remittances were expected to accelerate human capital investment. Therefore, this study further hypothesised that, without the physical presence and accessibility of basic infrastructures, hesitation to attract investment from remittances can be substantial.

Literature has revealed that remittances can directly lead to economic development since remittances provide a source of external funding. However, existing evidence does not support the claim of direct positive relation between remittances and economic development. Thus, the validity of the assumption of a direct relationship between remittances and economic development in the developing countries was questioned in this study. Considering that remittances may not directly and positively affect the economic development, an indirect relationship between remittances and economic development through the interaction effects of financial inclusion and human capital was hypothesised in this study. A well-developed financial sector can absorb the inflows of remittances and efficiently channel remittances into proper and productive economic use, while a developed human capital may directly encourage robust economic activities that subsequently lead to economic development.

1.5 Research objectives

The general objective of this study was to examine the impact of remittances on the economic development of high remittances recipient countries through the effects of financial inclusion and human capital from 1995 to 2018. The interaction effects of institutional quality and social infrastructures on the relationships of remittances with financial inclusion and human capital were also examined. Apart from that, the relationship between remittances and economic development through the combined interaction effects of financial inclusion and human capital was also examined. The specific objectives of this study are as follows:

(1) To examine the impact of remittances on financial inclusion through the interaction effect of institutional quality
(2) To examine the impact of remittances on human capital through the interaction effects of social infrastructures
(3) To examine the impact of remittances on economic development through the interaction effects of financial inclusion and human capital

1.6 Significance of Study

This study contributed to the existing literature in several aspects. Firstly, to the best of our knowledge, prior studies did not explore the non-linear effects of remittances on financial inclusion. The marginal impact of remittances on financial inclusion was estimated to be inconsistent, as opening bank accounts is initially not necessary when remittances are received in a small amount. Instead, the immediate use of remittances for daily consumption is preferred (Chami et al., 2005). However, further increase in remittances surely influence the demands of workers or households for financial services. Keeping a large amount of money at home is less safe than saving the money in the bank.

Secondly, the lack of attempt to theoretically examine the interaction effect of institutional quality on the relationship between remittances and financial inclusion. The trust towards financial institutions encourages the public to open bank accounts and sustaining their trust during banking transactions is important for the public to use other financial services provided by banks, which help to promote financial inclusion.

Thirdly, prior studies overlooked the interaction effects of social infrastructures on the relationship between remittances and human capital. Although a number of earlier studies focused on the relationship between social infrastructures and human capital, the impact of remittances on human capital via social infrastructures was not explored, which was addressed in this study.

Fourthly, a newly created index of the overall social infrastructures was employed in this study, rather than focusing on its individual components separately. Most past studies like Leung and Meisen (2005) and Kusharjanto and Kim (2011) employed only specific components of social infrastructures, which may overlook other vital components. Therefore, current study aimed to construct a more robust and comprehensive social infrastructure index by taking into account the three aspects of social infrastructures, specifically transportation networks, utilities, and telecommunications, which may affect the access to quality education.

Besides that, studies have failed to examine the impact of remittances on economic development in relation to financial development and human capital. Furthermore, the direct causal model was found to be inconsistent in the case of developing countries. Although remittances have increased greatly, evidence revealed insignificant relationship between remittances and economic development; thus, suggesting the possibility of an indirect causal effect. Considering that, this study attempted to address this literature gap by examining the combined interaction effects of both financial inclusion and human capital on the relationship between remittances and economic development through a dynamic panel data framework.

Lastly, as suggested by Brambor, Clark, and Golder (2006), this study considered the marginal effects and standard errors for the interaction terms. It is very important to evaluate how the marginal effects, omitting the calculation of marginal effects may lead to misinterpretation of the interaction term. A panel-GMM method was employed to estimate the major results of the study.

1.7 Thesis Organization

The thesis is organised as follows: Chapter 2 reviews the relationship between remittances and economic development and the relationship of remittances, financial inclusion, and human capital; Chapter 3 covers the methodology, model specification, and data description; Chapter 4 presents the results and discussion. Lastly, Chapter 5 summarises the main findings of the study and presents recommendations for future research.

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[1]Previous studies examined the relationship between infrastructures and human capital (Kusharjanto & Kim 2011); the effect of electricity consumption on human development (Leung & Meisen, 2005); the effect of rural infrastructure investment on human capital (Duffy-Deno & Eberts, 1991; Ali & Pernia, 2003; Fan & Zhang, 2004; Ezcurra et al., 2005); the effect of access to road and sanitation on human capital (Estache & Fay, 1995).

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