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Research Article

Role of international remittances in poverty alleviation: A panel data study of developing countries

Farhat Iqbal Awan[1], Maria[2], Zubda Zia Ur Rehman[3*], Anum Abdullah[4], Saleha Waheed[5]

[1,2,3,4,5]Economics Department, Kinnaird College for Women, Lahore, Pakistan

*Corresponding Author email: Zubda.Rashid@kinnaird.edu.pk

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ABSTRACT

Remittances are the funds sent by individuals to their home country from the host country and are the main source of foreign funding after FDI. Remittances are a crucial source of subsistence for countries that are still in the developing phase. In recent years, due to the increasing effect of international remittance flows into the developing country, it has gained the attention of many analysts from all over the world. The purpose of this study is to examine the role of foreign remittances in poverty alleviation in nine Asian developing countries (ADCs). Secondary data from nine ADCs for the time period 1990-2019 was used for analysis. Poverty (dependent variable) was measured through the poverty gap and the independent variables are Remittances as a percentage of GDP, Per capita GDP, External debt as a percentage of GNI, and Trade openness as a percentage of GDP. The software used for the empirical analysis is STATA. The findings reveal that foreign remittances have a significant role in alleviating poverty in ADCs. The results of the random effect model showed that a 1% increase in international remittances as a percentage of GDP leads to a decrease of .65932% in the poverty gap at the $1.90 poverty line in the sample countries. the results also indicate that trade openness and per capita GDP decrease poverty while external debt seems to increase poverty. Due to the significant impact of remittances in reducing poverty in developing countries, it is suggested that governments and policymakers should make special efforts to increase remittances. This study uses the Poverty gap ratio as a measure of poverty instead of the poverty headcount ratio. As the poverty gap was not used in any empirical model with the selected independent variables therefore the addition of this variable adds a new dimension to the empirical analysis in this context. Due to the unavailability of data, only nine Asian developing countries were selected for the study. Future researchers can test the model with all Asian countries. By expanding the sample size, future researchers may find interesting results.

Keywords: *Remittances; FDI; External Debt; Trade Openness; GDP; Poverty Gap; Asian Developing Countries*

1. INTRODUCTION

Remittances are becoming an important source of income for every country, especially developing countries. Developing countries received $554 billion as remittances in the year 2019 (World Bank Group, 2019). This was a rise of 4.7% as compared to the year 2018. Although the growth rate was less as compared to 8.6% in 2018 (World Bank Group, 2019).

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Remittances may reduce poverty by increasing income and consumption in the origin country. This may also lead to the growth and development of the country.

Although remittances to developing countries have attracted a lot of attention not much work is done on poverty alleviation through remittances in the data set of these nine ADCs. This region is one of the highest recipients of remittance inflows as well as the region with high poverty. This study aims to investigate the impact of remittances on poverty using the poverty gap as a measure of poverty in the ADCs. The panel of nine Asian developing countries includes Pakistan, India, Bangladesh, Sri Lanka, Nepal, Indonesia, China, Malaysia, Thailand, and the Philippines. The reason for the selection of these countries is that they are the highest remittance-receiving countries in the world and they exhibit similar trends of poverty as well. This study takes the data till 2019 because of Covid-19, which has significantly impacted these trends leading it to be a subject that needs to be studied separately because of its vast consequences. As there is not enough literature on remittance inflows and poverty alleviation, particularly in these countries, this study can aid policymakers in formulating an effective way to alleviate poverty as decreasing poverty is one of the main goals of the Millennium Development Goals MDGs. Most of these studies use the poverty headcount ratio as a measurement of poverty, this study uses the poverty gap as the poverty measure that gives more insight into the dimensions of poverty and if it gives similar results to poverty headcount.

The study is organized as follows. Section 2 explains the contemporary trends of IR in Asia and the contemporary trends of PA in Asia. Literature Review has been explained in Section 3. The theoretical framework and methodology are explained in Section 4. Section 5 consists of the results. Section 6 illustrates the Discussion and lastly, section 7 presents Concluding Remarks and Policy Implications.

2. ROLE OF INTERNATIONAL REMITTANCES IN POVERTY REDUCTION IN DEVELOPING COUNTRIES OF ASIA

2.1. Contemporary Trends of Remittances to Asia

Developing countries have a very prominent trend of migration. The main reason for this is to find employment, as in developing countries people belonging to higher, middle, and lower classes see migration as a better source of income. According to data released by the United Nations World Migration Report of 2020, the calculated number of international migrants is 272 million whereas the calculated number in 2000 was 150 million. Out of 272 million, the number of migrant workers is 164 million which is almost two third of the total migrants. The report further states that more than half of the migrants lived in Europe and Northern America. The data shows that there has been an increase in labor migrants. 2015 was a record-breaking year for labor migrants from Asia, both in the area and to OECD countries outside of Asia. If we observe this phenomenon then we can see that international remittances play the role of bridge or work as a linkage between migration and development. Goods and money sent to households by migrant workers working in

regions other than their homelands are described as international remittances (Adams, 2009).

Table 1. Remittance inflow to different regions of the world

Region	2010	2016	2917	2918	2019e	2020f	2021f
				$billion			
Low and middle income	*343*	*444*	*484*	*526*	*551*	*574*	*597*
EAST Asia and Pacific	96	128	134	143	149	156	163
Europe and Central Asia	38	44	53	58	59	62	64
Latin America and the Caribean	56	73	81	89	96	99	103
Middle East and North Africa	39	51	57	58	59	61	63
South Asia	82	111	117	132	139	145	15
Sub-Saharan Africa	32	38	42	47	49	51	54
World	470	589	634	683	707	739	768
			(Growth Rate and Percentage)				
Low and middle income	*11.6*	*-1.6*	*9.1*	*8.6*	*4.7*	*4.2*	*4.0*
East Asia and the Pacific	11.9	-0.5	5.1	6.8	3.8	4.7	4.5
Europe and Central Asia	5.6	0.1	22.3	8.4	1.8	4.6	4.3
Latin America and the Caribean	2.5	7.4	10.8	9.6	7.8	3.8	3.6
Middle East and North Africa	18.2	-1.2	12.1	1.6	3.0	2.7	3.2
South Asia	9.4	-5.9	5.8	12.7	5.3	4.1	3.6
Sub Saharan Africa	11.1	-9.9	9.4	10.7	5.1	5.1	4.9
World	8.6	-1.1	7.7	7.6	8.5	4.6	4.0

Source: World Bank-KNOMAD

Notes: e = estimated; f = forecasted. The projections for 2019 through 2021 are based on a worst-case scenario that assumes remittances have a unit elasticity of growth to GDP in the countries where they are sent from.

As Table 1 shows the remittances to Pacific and East Asia grew by 2.6%, $147 billion in 2019 which is 4.3% lesser in comparison to the rate it was growing as reported in 2018 (World Bank Group, 2020). Owing to the pandemic the remittances in 2020 were expected to fall by 13%. However, an improvement of 7.5% growth is expected for this region.

In the case of South Asia owing to the pandemic and decline in oil prices, the remittance flows declined by 22% following the growth rate of 6.1% in 2019. The economic slowdown from the United States, EU countries, and the United Kingdom directly affected the remittance outflows to South Asia. The declining oil prices also affected remittance outflows from Malaysia and other GCC countries. Another important fact that this table highlight is East Asia, Pacific, and South Asia are among the highest recipients of remittances.

In Pakistan, we see that the remittance inflows started to increase from FY 2016 gradually. From FY 2016 to FY 2018, the remittance inflows seem to be coming at a constant rate. However, from the fiscal year 2019, we see a massive increase in remittance inflows from 3000 USD million to a whopping 8035 USD million in 2021.

2.2. Contemporary Trends in Poverty Alleviation in Asia

The Millennium Development Goals (MDGs) have resulted in a sufficient reduction in poverty in Asia's developing regions. One of the MDG's key goals was to put an effort to

reduce the poverty headcount ratio to make it at least half of what it was. In 2011, the ratio of poverty known as the headcount ratio was the percentage of the population that was in poverty and consequently earning less than $ 1.90 which is considered the limit, at current international rates. Besides the $1.90/day poverty line at the international level, World Bank anticipates poverty lines which are $3.20 and $5.50 by 2020, which represent national poverty lines in the lower as well as the upper middle-income brackets in such nations (World Bank Group, 2020). In 2017 the global population of 689 million people was living below the poverty line at the international level. According to recent figures, poverty reduction has slowed over time, with the global poverty rate falling from 10.1 percent to 9.25 percent between 2015 and 2017 (World Bank Group, 2020). Four out of every five persons in backcountry areas lived under the international poverty line in 2018 (World Bank Group, 2020). However, following the Asian financial crisis, the poverty rate is predicted to skyrocket because of the global pandemic. The pandemic has resulted in an increase of 88 million people living in extreme poverty. According to the BPSP Report, high levels of poverty will affect 9.1% to 9.4% of the population (World Bank Group, 2020). If the pandemic had not occurred, the poverty rate would have dropped to 7.9%.

To put it shortly the data before the pandemic suggests the reduction in poverty.

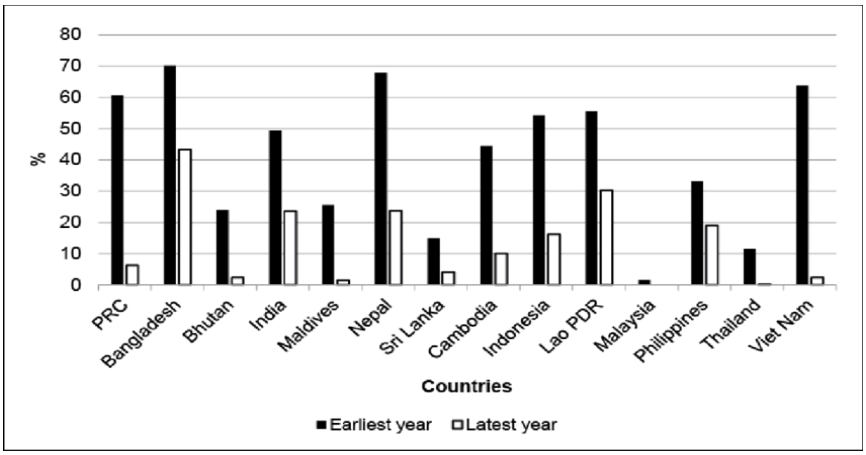

Fig. 1. Population living in poverty ($1.90 per day)

Source: ADB (2015).

As suggested in fig. 1 above, all the Asian countries particularly Nepal, PRC, and Viet Nam have been successful in reducing poverty.

Previously researchers have tried to investigate the role of IR in PA as well as economic growth. Various studies have also found links between remittances and consumption, investment, GDP, household development, poverty, welfare, foreign exchange, and employment (Banga and Sahu, 2010). However, the role of international remittances is still controversial as previous studies show mixed results. Hence, a further holistic study is required. This study tries to identify the reasons for the decrease in poverty in Asian developing countries. It is investigated whether the increase in foreign remittances has significantly contributed to decreasing poverty in the selected sample of developing countries. Moreover, it provides policy implications for the governments and decision-making bodies of these countries regarding poverty alleviation.

3. LITERATURE REVIEW

The scientific community and world leaders have taken the destructive effects of poverty seriously, and this is evident in the rising trend of research in this area. As a result, the purpose of this work was to undertake a bibliometric analysis of the literature on poverty alleviation, talk about the different aspects of it, and offer some suggestions for future research. This section offered a look back at the research and collaborative efforts of academics relevant to poverty alleviation, which will aid in understanding the growth of the literature and the conceptual framework of this discipline.

Hossain (2022), aimed to empirically observe the relationship between remittances and poverty and showed the effect remittances and debt have on poverty was positive and both factors contributed to poverty expansion. The study examined the effect of foreign remittances in addition to foreign aid, external debt, human capital, income, and inflation on poverty reduction in thirty-nine states which included all income groups in countries from 1990-2014 by using a panel framework and FMOLS. The results showed that an improvement in income affects poverty negatively, foreign remittances influence poverty negatively and aid and debt have a positive correlation with poverty foreign aid has for years proved to play a role in poverty mitigation. Furthermore, remittance's impact in the lower-middle income bracket of these countries is relatively small and in upper-middle-income countries, it plays an important part. The findings of this study showed that an improvement of 1% in remittances diminishes poverty by a percentage of 0.201%. The report recommended that decision-makers design an acceptable strategy to defend their reliance on foreign aid and reduce poverty by encouraging remittance inflows.

Saptono et al. (2022), examined if international remittances impact poverty alleviation, particularly in lower and middle-income countries. The article used data from 65 low- and middle-income countries from 2002 to 2016 to explore the immediate and delayed effects of overseas remittances on poverty alleviation. This study proves that, in general, overseas remittances per gross domestic product (GDP) considerably alleviate poverty using a two-stage least square (2SLS) regression analysis. A 10-percentage-point rise in remittances will typically result in a 4.8-percentage-point decline in the poverty gap at USD 1.90 per day, a 6.7-percentage-point decrease in the poverty gap at USD 3.20 per day, and a similar decrease in the poverty headcount ratio at USD 1.90 per day. Even after the model takes into account political variables, the finding is still solid. Additionally, it was discovered by the system-generalized method of moments (SGMM) calculations that the immediate effects of foreign remittances are far more significant than their delayed effects. This suggests that rather than having a trickle-down effect on other community members, remittances' primary contribution to reducing poverty is through their direct impact on raising the wealth index of recipient households. In order to disseminate the positive impacts of remittances to all sections of society, the study strongly advises that efforts be made to improve the remittance infrastructures, particularly in recipient nations, and the formation of cooperatives in the enclaves of migrant workers.

Fahrizal et al. (2021), examined whether remittances were an important factor for poverty alleviation in ASEAN (Indonesia, Malaysia, Philippines, and Thailand). The results indicated

remittances and unemployment had an impact on poverty reduction. The impact of remittances and the macroeconomic variables on poverty in these four countries for 1991-2019 was analyzed using the panel ARDL framework. The results showed that the Gini coefficient and economic growth had an insignificant role in poverty reduction and the speed of the adjustment due to shocks was restored in eight months in short term. The impact of remittances is insignificant in the short run and significant in long run. GDP per capita and income inequality have significant short-term effects specifically fluctuations in these countries. The findings of this research highlight the requirement of practical and expedient macroeconomic policies particularly focused on poor income groups. Furthermore the actual contribution of remittances and the strengthening of the international corporation to migrant workers heavily contributed to poverty alleviation. This research provides important policy implications for AESAN countries emphasizing policy harmonization to counter poverty, this will enhance the effectiveness of the policy.

Olowookere et al. (2021), applied FMOLS and Granger causality techniques of estimation on the annual data between 1990 and 2019 of Nigeria to establish contributing factors in the sustainable development- poverty reduction in Nigeria. He found out that there exists a long-term relationship between poverty reduction and remittances. Moreover, capital inflows help to achieve sustainable poverty reduction. The study suggests that foreign capital inflow should be given priority in the country.

Rahman and Habib (2021), also found an important role of remittances in the economy of Bangladesh. Robust least square method on monthly data of economic determinants from 2014 to 2020 and annual data in the case of non-economic determinants was applied. Results showed the positive and significant impact of the economic and noneconomic determinants on remittances.

Mehedintu et al. (2019), observed the relationship between remittances and the danger of falling below the poverty line in nine rising European countries They looked at the evolution of remittances and the share of remittances in relation to the danger of falling below the poverty line. They analyzed data for nine European countries from 2005 to 2017 using a time-dependent lagged regression model. The findings revealed that the global economic crisis had a significant impact on both the evolution of remittances and the danger of being under the poverty line. Following the economic crisis, the probability of being below the poverty line increased in all emerging European countries. However, remittances saw highs and lows, with certain countries, such as Romania and Latvia seeing extreme lows and others, such as Hungary experiencing large increases. The result was that the percentage of remittances in the risk of poverty threshold reduced abruptly after the economic crisis of 2009, but in the short term, the majority of the nations studied were projected to retain a rising trend. The findings of this study further confirm remittances do impact majorly affect poverty, especially in countries like Lithuania, Romania, and Latvia.

Yoshino et al. (2018), examined how remittances affect poverty by panel data from 10 ADCs. This research used all three indicators of poverty. The empirical analysis showed remittances in mitigating poverty play an effective role. The results showed that using the REM model of (OLS) estimates, an addition of 1% in IR as a percentage of GDP resulted in a

fall of 22.6% in the poverty gap and a fall of 16.1% in poverty severity ratio in the 10 ADC's from 1981-2014. Lastly, the results of this study showed that two variables, trade openness and per capita GDP can decrease poverty.

Peković (2017), assessed the role remittances played in mitigating poverty, particularly in transitioning countries. The researcher proved remittance had a significantly consequential effect on all measures used for measuring poverty. Using the (LSDV) model and panel data for nine transition countries for 2002-2013 the results showed that a 10% improvement in remittances per capita caused poverty to decline by 4.4% in poverty headcount ratio average, 5.2% reduction in the depth of poverty and 5.8% decline in severity of poverty. Furthermore, the researcher used a standard error-corrected panel for estimating the remittances. The findings revealed that significant income disparity is linked to poverty and that GDP negatively impacted all measures of poverty. This literature highlights the importance of correct policy measures as well for providing effective management of remittances and the need to improve remittances data on the household level as most of the remittances are invested and consumed for consumer durables such as health expenditures, housing, and utility measures as well for providing effective management of remittances and the need to improve remittances data on the household level as most of the remittances are invested and consumed for consumer durables such as health expenditures, housing, and utilities.

For the period 1980-2008, Banga and Sahu (2010), found that remittances considerably negatively affected poverty in developing nations. There was a decrease in poverty as remittances increased. The study used panel architecture to conduct research on 77 developing nations. As a measure of poverty, the exam used the poverty headcount of poverty ratio, the gap of poverty, and the severity of poverty. The investigation was carried out on two levels. First, the impact of remittances on 77 developing nations was evaluated, followed by a separate analysis for 29 developing countries, including 21 Asian developing countries with a 5% or higher proportion of remittances in GDP. Remittances consistently and significantly improved poverty in recipient nations, according to the findings, while countries with remittances greater than 5% of GDP had more credibility. In these developing nations, a 10% improvement in remittances decreases the headcount of poverty (percentage of 1.25 per day) by 3.1 percent and the poverty gap ($1.25 per day) by around 3-5 percent. Finally, while this study acknowledges the involvement of migrants in remittance inflows to these nations, the mechanisms by which remittance eventually leads to poverty alleviation remain unknown.

Based on the previous research this study aims to understand how this massive increase in remittances in recent years has impacted poverty in the countries that are developing and are located in Asian regions. These countries include Bangladesh, China, Indonesia, India, Nepal, Thailand, the Philippines, Pakistan, and Srilanka. Per capita GDP, trade openness, and external debt are also used as independent variables to make the results more interesting as these variables were not analyzed with remittances in any model for ADCs.

4. METHODOLOGY

4.1. DATA

This study uses secondary data on the poverty gap, Per Capita GDP, Remittance, Trade openness, and External Debt for Pakistan, India, Bangladesh, Nepal, and Sri Lanka, Indonesia, China, Thailand, and the Philippines from 1990-2019. The benchmark for selecting these countries is that they all are the highest remittance-receiving countries and secondly they show similar trends in poverty as well. The poverty gap is used as the dependent variable and the data for it is collected from Povcal net. Remittances, trade openness, per capita GDP, and external debt are the independent variables and the data for the variables is collected from World Bank. The panel data is analyzed from the year 1990-2019. This study analyzes the data till 2019 because of Covid-19 which has impacted these statistics significantly. This study examines the impact of remittances on poverty alleviation independent of Covid-19. STATA is used for the Panel data analysis.

4.2. THEORETICAL FRAMEWORK

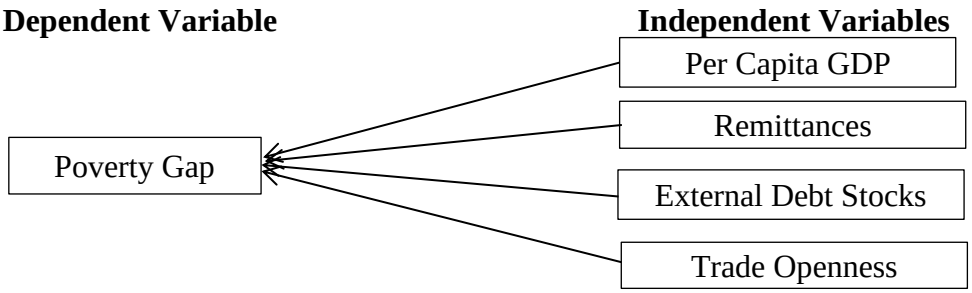

Fig. 2. Theoretical Framework

As described in figure 2, the first independent variable is per capita GDP. Studies show that poverty reduction is one of the results of economic growth measured in terms of GDP growth, which means that higher growth of GDP results in a decrease in poverty (Imai et al., 2014). As many economists believe that GDP growth benefits the whole nation, if not in equal terms then at least in poverty reduction. We also see that the distribution of income represents the extent to which the affected groups enjoy the benefits. Hence, GDP per capita has a significant impact on poverty reduction.

Remittances in the simplest form are the sum of money transferred by non-residents to the people living in the host country. Remittances as a percentage of GDP have proved to significantly lead to the development of a state by stimulating human and physical capital by alleviating poverty and inequality. In this way, poverty helps in poverty reduction. (Mehedintu et al., 2019).

Trade openness and poverty have a substantial relationship. Trade openness according to the MDGs can eradicate poverty and extreme hunger, as people living under the poverty line ($1.90) decrease numerically. External debt and poverty seem to have a positive relationship. External debt negatively impacts investment, and income growth, and also through high debt services crowd of government's social spending. Ultimately reducing

government budgetary allocations on health, social, safety, education, water, and sanitation.

4.3. MODEL

The dependent variable included in the model is Poverty Gap and the independent variables are Per Capita GDP, Remittance, and Trade openness. The equation for multiple regression analysis is as follows,

$$y = (PGDP, REM, TO, ED)$$
$$y_{it} = \beta_0 + \beta_1 PGDP_{it} + \beta_2 REM_{it} + \beta_3 TO_{it} + \beta_4 ED_{it} + \varepsilon_{it}$$
(i =1,...,N, t=1,....,T)

Where,

$\boldsymbol{y_{it}}$ is the dependent variable which is a measure of PA in a country I at time t. Bo is the constant.

$\boldsymbol{\beta_1}$is the economic growth elasticity of poverty with respect to Real per Capita GDP denoted by PGDP.

$\boldsymbol{\beta_2}$is the elasticity of remittances with respect to international remittances as a percentage of GDP denoted by Rem.

$\boldsymbol{\beta_3}$is the elasticity of trade openness as a percentage of GDP.

$\boldsymbol{\beta_4}$is the elasticity of external debt stocks as the annual % of GNI

ε is the error term that includes the errors in the poverty gap.

The dependent variable poverty is measured by the poverty gap. The data is extracted from The PovcalNet database of the World Bank. This study uses $1.90 per day in 2011 PPP as the poverty line. The poverty gap ratio indicates how far below the income of a household is from the poverty line. This can be described as

$$y_p = (1 - V)\bar{y}_{\text{povertyline}}$$

Here $y_p$shows the income of a poor person, V_1 is the poverty gap and $y_{\text{poverty ine}}$ indicates the poverty line at $1.90 per day in 2011 PPP.

5. EMPIRICAL RESULTS

This section evaluates the results of panel regression. For consistent estimates, the first step is to select the suitable method for panel analysis. Using the specification test, the selection of fixed effect, random effect model, or pooled OLS model is done. For this purpose, the “Hausman Specification” test is used.

5.1. Pooled OLS Results

5.1.1. Pooled OLS VS Fixed effect Model

Table 2. OLS vs Fixed effect

F-Stat(P-value)	level of significance
0.000	0.050

H_0: Pooled OLS is Suitable *H_1: Fixed Effect Model is Suitable*

Interpretation

According to table 2. the p-value of F-statistics is less than a 5% level of significance therefore we reject Ho and conclude that the Fixed effect model is suitable.

5.1.2. Random Model V/S Pooled

Table 3. Pooled OLS vs Random effect

F-Stat(P-value)
0.00

H_0: Pooled OLS is Suitable *H_1: Random Effect Model is Suitable*

Interpretation

As table 3 above shows that the p-value is less than 0.05% level of significance therefore we reject Ho and conclude that the Random effect model suitable for the analysis.

5.2. The Hausman test

Table 4. The Hausman Test

Chi Square	P Value	Level of Significance
4.790	0.309	0.050

Interpretation

Table 4 shows that the p-value of chi square test is greater than 0.05% level of significance therefore we accept Ho and use the Random effect Model.

Based on our three stages model specification criteria we choose the Random effect model.

5.3. Regression Results

Table 5. Regression results

Povertygap	Coef.	Std. Err	z	p>z	[95% Conf. Interval]	
GDP	-0.0009136	0.000086	-10.62	0.00	-0.0010822	-0.0007451
Remittances	-0.6593298	0.0509609	-12.94	0.00	-0.7592113	-0.5594483
Trade	-0.0317636	0.0151932	-2.09	0.037	-0.0615418	-0.0019855
External debt	0.054916	-.0149395	3.68	0.00	0.0256351	0.0841969
Constant	13.88238	1.6552664	8.39	0.00	10.63812	17.12664
Sigma_u	3.6528127					
Sigma_e	3.1465699					
Rho	0.57404377					

The regression results from table 5 show that the role of international remittances in alleviating poverty which is represented by the poverty gap is statistically significant. Furthermore, a 1% improvement in international remittances inflow (as %age of GDP) leads to a decrease of 0.659% in the poverty gap. The poverty gap has the advantage that it shows the group of people living under the poverty line (this poverty line can be at $0.50, $1.90, or $2.55 per day) which is $1.90 in this case. In this way, it encompasses the average income of the lower-income household and the expenditures against the poverty line. In this regard, the poverty gap shows a substantial reduction in poverty.

For the rest of the variables, improvement in per capita GDP leads to a deterioration of .0009136 % in the poverty gap. GDP per capita has a significant impact on the poverty gap. This seems true as an increase in per capita GDP means that the economy is doing well, there are job opportunities, and from this one can conclude that these factors tend to push people out of poverty (Bahmani-Oskooee & Oyolola, 2009). An increase in external debt leads to an increase of .0549% in the poverty gap and has a significant impact on the poverty gap statistically. This is because external debt negatively impacts investment, and income growth, and also through high debt services cause crowding of government's social spending. This ultimately reduces government budgetary allocations on health, social, safety, education, water, and sanitation, all of these factors are the criterion to analyze poverty. If a person does not have these facilities then he is regarded as poor. Hence external debt indirectly promotes poverty. Also, the poverty gap helps to get an idea of how many people are suffering from extreme levels of poverty, in this way it adequately represents people impacted by the effect of an increase in external debt (Imai et al., 2014). Lastly, a 1% improvement in trade openness leads to a deterioration of 0.0317% in the poverty gap and has a significant impact on the poverty gap as well. When the trade of a country increases it provides new and more market opportunities for domestic firms, increases productivity, and innovation through competition, and leads to job creation. As all of these factors are indicators of a booming economy hence any increase in these factors and ultimately trade openness decreases the poverty gap (Hassan et. al., 2022).

6. DISCUSSION

The results of the empirical analysis reveal that there exists a statistically significant negative relationship between remittance inflows and poverty alleviation. Remittance inflow directly increases the income of migrant families (Adams & Page, 2005; Yoshino et al., 2020). They spend their income which leads to an increase in the income of other members of society. Although remittances decreased poverty substantially (0.65%) but most of the remittances sent by the lower and middle-income brackets of the countries come through informal channels therefore the actual amount that translates into the economy is far less than the amount sent (Adams, 2009; Javid et al., 2012). In accordance with the previous literature, these results also show that effective policies which promote the transfer of remittances through formal channels can help in increasing remittances and reduce poverty even more (Adams, 1998). This study approached the subject from a different perspective by choosing the poverty gap as a measure of poverty, which showed similar dynamics as the poverty headcount ratio.

Furthermore, as discussed previously there is contrasting literature on the impact of remittances on poverty alleviation. However, an important observation from the comparative analysis of previous literature suggests that the impact of remittances varies regionally and remittances if not channeled properly could fail to alleviate poverty (Antwi et al., 2013). The regions that have higher remittance inflows are also the ones that suffer from poverty as well particularly the East Asian and Pacific (EAP) and South Asian regions (Azam et al., 2016). Hence poor people migrate for employment or job opportunities and when they send back inflows to their households in their homeland generate an influx of remittances.

Lastly, this study keeping in view the previous literature and the results of the study which are in accordance with previous findings as well suggests two important findings. The findings of this study show a negative and significant relationship between remittance inflows and poverty. Firstly, the results of this massive increase in remittances in the East Asia and Pacific (EAP) and South Asian region (SAR) prove that international remittance inflows were crucial in mitigating poverty previously and are still a crucial factor in poverty alleviation (Jongwanich, 2007; Gupta et al., 2009). Secondly and most importantly this also highlights the need to build proper channels for the formal transfer of remittances in these regions so that contribution to the economy can be increased. Fourthly, as the people in discussion belong to middle and particularly lower income brackets those who live below the poverty line at $1.90 per day in rural areas showcase higher trends of migration and sending back remittances to their families, this shows that international remittance inflows decrease poverty in the particularly rural sector.

7. CONCLUDING REMARKS AND POLICY IMPLICATIONS

This study used Panel data from nine Asian developing Countries from the years 1990-2019 to investigate the impact of remittances on poverty alleviation. Through econometric analysis, it was proved that international remittances are significantly reducing poverty in the sample countries. Other than remittances, trade openness and per capita GDP also significantly reduce poverty. Only external debt has a positive and significant impact on the poverty gap. Some key recommendations and policy implications based on the findings are as follows.

As remittances are conducive to reducing poverty they should be properly channelized. As discussed previously the high remittance inflows in these regions are usually through informal channels hence if they are properly channelized through formal channels then the final and official contribution to the economy can be increased massively.

Secondly, the process of transferring remittances should be facilitated in such a way that promotes the inflow of remittances in these regions. One way can be to lower the transaction costs and make the process easier and smoother. Also lowering the transaction costs could encourage people belonging to these regions to send remittances by formal channels rather than informal channels.

Thirdly, in modern and present times where technology is the key driver of the economy, it is pertinent to create an online internet payment system through which remittances can be transferred at a lower transaction cost.

Lastly, as an extension of the previous point, strong banking technologies and system is crucial. The banking system has greatly facilitated the economy. If there is an established and proper corporation between the international banks and the remittance transfer operators then the process of transferring remittances through proper channels could be facilitated properly. In this way the transaction can take place at a lower cost and facilities such as information disclosure and clearance of checks can be provided.

Based on the findings these recommendations are expected to have a positive impact.

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Author's contribution to the various parts of the paper is as follows

Conceptualization, Farhat and Maria; Methodology, Maria and Anum; Software, Maria and Anum; Validation, Zubda and Saleha; Formal Analysis, Maria and Farhat; Data collection, Maria; Data Editing, Farhat; writing—original draft preparation, Maria; review and editing, Farhat.

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Adams, R. (1998). Remittances, Investment, and Rural Asset Accumulation in Pakistan. *Economic Development and Cultural Change, 41* (1): 155–73, https://doi.org/10.1086/452390.

Adams Jr, R. H. (2009). The determinants of international remittances in developing countries. *World Development*, *37*(1), 93-103, https://doi.org/10.1016/j.worlddev.2007.11.007.

Adams Jr, R. H., & Page, J. (2005). Do international migration and remittances reduce poverty in developing countries? *World Development*, *33*(10), 1645-1669, http://doi.org/10.1016/j.worlddev. 2005.05.004.

ADB. 2015. *Eradicate Extreme Poverty and Hunger*. Manila: Asian Development Bank.

Antwi, S., Mills, E. F. E. A., & Zhao, X. (2013). Remittances and the poverty nexus: Evidence from Ghana. *International Journal of Academic Research in Economics and Management Sciences*, *2*(1), 206.

Azam, M., Haseeb, M., & Samsudin, S. (2016). The impact of foreign remittances on poverty alleviation: Global evidence. *Economics & Sociology*, *9*(1), 264. DOI: 10.14254/2071-789X.2016/9-1/18.

Bahmani-Oskooee, M. & Oyolola, M. (2009). Poverty reduction and aid: cross-country evidence. *International Journal of Sociology and Social Policy, 29*(5/6), 264-273. https://doi.org/10.1108/01443330910965796.

Banga, R., & Sahu, P. K. (2010). Impact of remittances on poverty in developing countries. *UNCTAD, United Nations, Switzerland*, *35*(2), 45-68.

Fahrizal, T., Aliasuddin, A., & Majid, M. S. A. (2021). Do Remittances Matter for Poverty Reduction in ASEAN?. Signifikan: *Jurnal Ilmu Ekonomi*, *10*(1), 13-30, https://doi.org/10.15408/sjie.v10i1.19154.

Gupta, S., Pattillo, C. A., & Wagh, S. (2009). Effect of remittances on poverty and financial development in Sub-Saharan Africa. *World Development*, *37*(1), 104-115.

Hassan, M. K., Alshater, M. M., Banna, H., & Alam, M. R. (2022). A bibliometric analysis on poverty alleviation. *International Journal of Ethics and Systems*, (ahead-of-print). https://doi.org/10.1108/IJOES-10-2021-0191

Hossain, M. I. (2015). An empirical investigation of the impact of foreign remittances on poverty in developing countries. *Economy, 2*(2), 44-48.

Javid, M., Arif, U., & Qayyum, A. (2012). Impact of remittances on economic growth and poverty. *Academic Research International*, *2*(1), 433.

Jongwanich, J. (2007). *Workers' remittances, economic growth and poverty in developing Asia and the Pacific countries* (No. WP/07/01). United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), https://hdl.handle.net/20.500.12870/1197.

Imai, K. S., Gaiha, R., Ali, A., & Kaicker, N. (2014). Remittances, growth and poverty: New evidence from Asian countries. *Journal of Policy Modeling*, *36*(3), 524-538. https://doi.org/10.1016/j.jpolmod.2014.01.009

Mehedintu, A., Soava, G., & Sterpu, M. (2019). The effect of remittances on poverty in the emerging countries of the European Union. *Sustainability*, *11*(12), 3265. https://doi.org/10.3390/su11123265

Olowookere, J. K., Olowo, S. O., Mabinuori, O. T., & Aderemi, T. A. (2021). Foreign Capital Inflows and Poverty Reduction in Nigeria: An Implication for Sustainable Development. *Euro Economica*, *40*(1).

Peković, D. (2017). The effects of remittances on poverty alleviation in transition countries. *Journal of International Studies*, *10*(4), 37-46. doi:10.14254/2071- 8330.2017/10-4/2

Rahman, M. H., & Habib, A. (2021). Impact of Economic and Noneconomic Factors on in flow of Remittances into Bangladesh: Application of Robust Least Squares Method. *Finance & Economics Review*, *3*(1), 51-62. https://doi.org/10.38157/finance-economics-review.v3i1.289

Saptono, P. B., Mahmud, G., & Lei, L. F. (2022). Do international remittances promote poverty alleviation? Evidence from low-and middle-income countries. *IZA Journal of Development and Migration*, *13*(1). https://doi.org/10.2478/izajodm-2022-0006

World Bank Group. (2019). World development report 2020. World Bank Publications.

World Bank Group. (2020). World development report 2021. World Bank Publications.

Yoshino, N., Taghizadeh-Hesary, F., & Otsuka, M. (2018). International remittances and poverty reduction: evidence from developing Asia. *Journal of Comparative Asian Development*, *17*(2), 21-42.

Yoshino, N., Taghizadeh-Hesary, F., & Otsuka, M. (2020). Determinants of international remittance inflow in Asia-Pacific middle-income countries. *Economic Analysis and Policy*, *68*, 29-43.