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GROWTH, MIGRATION RATE, AND INFLATION IN SOUTH ASIAN COUNTRIES**

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IMPACT OF REMITTANCE FLOWS ON NATIONAL SAVINGS: THE ROLE OF GDP GROWTH, MIGRATION RATE, AND INFLATION IN SOUTH ASIAN COUNTRIES

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ABSTRACT

This study investigates the relationship between remittance flows and national savings in five South Asian countries: Bangladesh, India, Pakistan, Sri Lanka, and Nepal. The analysis also examines the roles of GDP growth, migration rates, and inflation in influencing national savings. A panel dataset spanning 25 years (1999-2023) was analyzed using econometric models such as Pooled Ordinary Least Squares (POLS), Fixed Effects, and Random Effects, with robustness checks conducted to validate the results. Four hypotheses were tested to assess the significance of each independent variable on national savings. The findings revealed that remittance flows have a significant positive relationship with national savings, indicating that remittances contribute to increasing savings. However, GDP growth, migration rates, and inflation showed insignificant effects on national savings when controlling for country-specific factors. These results highlight the need for policies that maximize the productive use of remittances, such as savings and investment programs targeted at remittance-receiving households. The study concludes that while remittances have the potential to enhance savings, further policy interventions are necessary to unlock their full benefits. The study's findings support policymakers in optimizing remittance utilization to support long-term economic stability in South Asia. Future research could explore sector-specific impacts of remittances and extend the analysis to other regions for comparative insights.

1.0 INTRODUCTION

Remittance flows, defined as financial transfers between migrants and their families in their countries of origin, totaled over \$600 billion between 2016 and 2017, with roughly three-quarters of that amount going to developing and emerging economies (KOMAD, 2016; Clemens, 2017). These flows were generated by the global stock of 250 million international migrants, as developing nations account for 70% of the stock of foreign migrants. These rising economies include South Asian nations such as Bangladesh, India, Sri Lanka, Pakistan, and Nepal. These countries heavily rely on remittances to maintain economic stability, encourage investment, and increase household spending, since a sizable portion of their populations work overseas.

Despite the clear impact of remittances on recipient nations, the literature has not reached a consensus on their overall effects. For example, remittances can finance economic development by supporting

higher investment in human capital or easing credit constraints, enabling further accumulation of physical capital. A nation's economic growth and overall well-being can thus be influenced by remittances (Barajas et al., 2009; Nasrin et al., 2024). Additionally, personal remittances can boost national savings, as migrants help their families increase their capacity to save. According to the literature, remittances significantly contribute to national savings in countries like Bangladesh, the Philippines, and Pakistan (Chaudhry et al., 2010; Akter, 2018; Tchantchane et al., 2013). Remittances were also essential to Albania's economic revival, supporting pyramid-shaped investment schemes during its transition period, when foreign aid was insufficient to rebuild the economy (Korovilas, 1999). However, other research has found minimal or even negative consequences of remittance inflows, including high capital volatility (Imai et al., 2014; Nyamongo et al., 2012), increased informality (Brown et al., 2013; Opperman and Adjasi, 2019; Raza and Jawaid, 2014), or symptoms of Dutch disease (Acosta et al., 2009). Hossain (2014) argues that remittances can have a major and adverse effect on local savings, suggesting that remitted funds are often used for consumption rather than being saved. Thus, although remittances offer many benefits, the literature presents conflicting findings (Tchantchane et al., 2013).

In recent years, there has been significant debate regarding how remittances influence the economies of South Asian nations. National savings in several of these countries remain relatively low, even though remittance inflows to Bangladesh, India, Pakistan, Sri Lanka, and Nepal are substantial. It remains unclear how remittances actually affect national savings, despite being an essential source of foreign currency and household income. Supporters argue that remittances enhance savings and investment, thereby driving economic growth. Critics, however, contend that a large portion of remittance inflows is directed toward immediate consumption, particularly in low-income households.

Furthermore, the relationship between remittances and national savings is shaped by macroeconomic factors such as GDP growth, migration patterns, and inflation. For instance, while high GDP growth may encourage more remittance-driven savings, high inflation may reduce the real value of remittances, weakening their effect on savings. Moreover, changing migration trends influence the flow of remittances, making their contribution to national savings even more complex.

Despite the critical importance of remittances in South Asia, there is a lack of comprehensive research investigating the combined effects of remittance flows, GDP growth, migration rates, and inflation on national savings in these countries. This study aims to fill that gap by exploring how these factors interact and influence national savings in selected South Asian countries. By doing so, it will provide valuable insights for policymakers, helping them design strategies to maximize the benefits of remittances for long-term economic development in the region.

1.1 OBJECTIVES OF THE STUDY

The main objective of this study is to assess the impact of remittance flows on national savings in South Asian countries. Specifically, the study seeks to, firstly, investigate the impact of remittance flows on national savings in some selected South Asian countries. Finally, examine the effect of GDP growth, migration rates, and inflation on national savings in these countries.

2.0 LITERATURE REVIEW

Many researchers have studied the link between remittances and national savings in South Asian countries. Adams and Cuecuecha (2010) investigated how remittances affect household spending and

investment in Guatemala, revealing that remittances enable families to save more, thereby increasing national savings. Adhikari (2023) supported this view through a study focused on Nepal, where remittances were found to significantly boost domestic savings. The additional income from remittances helps households meet their needs while saving a portion, thus contributing to national savings.

In South Asia, Akter (2018) examined the impact of remittances on savings in countries such as Bangladesh, India, and the Philippines. The study found that remittances positively affect gross savings, as families often save part of the money they receive from abroad. Benhamou and Cassin (2021) extended this idea by studying small emerging economies, arguing that remittance-induced savings can drive investment and economic growth. Similarly, Dash (2020) conducted a study on six South Asian countries and found that remittances lead to greater domestic investment, which indirectly boosts national savings. Overall, these studies suggest that remittances in South Asia are an essential factor in increasing national savings, although the extent of their impact varies depending on each country's economic conditions.

Several researchers have also explored how remittances impact economic growth in South Asian countries. Remittances can enhance economic growth by increasing household income, leading to higher levels of spending and investment. For instance, Jawaid and Raza (2012) analyzed China and Korea and found that remittances significantly contribute to economic growth by boosting household income and consumption. This finding aligns with Khan, Hassan, and Iqbal (2020), who showed that remittances positively affect economic growth in South Asian countries by supplementing domestic capital and stimulating consumption.

Masduzzaman (2014) examined Bangladesh and revealed that remittances have a direct positive effect on GDP growth. The additional money sent by workers abroad helps fuel the country's economy by increasing household purchasing power. Kumar and Vu (2014) studied Vietnam to understand the relationship between remittances, information and communication technology (ICT), and economic growth. They found that remittances, combined with improvements in ICT, can drive economic development. Similarly, Pradhan, Upadhyay, and Upadhyaya (2008) provided further evidence that remittances enhance economic growth in developing countries by increasing investment and consumption levels. These studies highlight that remittances can be a powerful tool for boosting economic growth in South Asian economies.

The relationship between remittances and inflation is more complex. Remittances can sometimes lead to increased inflation, but they can also promote financial stability in some cases. Iqbal, Khan, and Islam (2013) studied the connection between remittances and inflation in Pakistan. They found that remittance inflows could raise inflation by increasing the demand for goods and services. Similarly, Khan and Islam (2013) explored the situation in Bangladesh, showing that remittances contribute to inflation by driving up overall demand. When families receive remittances, they tend to spend more, which can push up prices in the economy. However, some researchers argue that the impact of remittances on inflation is not entirely negative. Gupta, Pattillo, and Wagh (2009) investigated the effects of remittances in Sub-Saharan Africa and found that while remittances might lead to inflation, they also support financial development by boosting savings and investments. Ullah, Zaman, and Shabbir (2019) discussed the links between remittances, exchange rates, and poverty in Pakistan, suggesting that policies aimed at stabilizing inflation need to consider the broader economic effects of remittance inflows. These studies indicate that while remittances can increase inflation, they also bring financial benefits, and policymakers must balance these factors.

The migration rate is a key factor influencing the flow of remittances and their economic effects. Mustafa and Ali (2018) studied Pakistan and highlighted how the diversification of migration destinations helps maintain stable remittance flows. When a country sends workers to different parts of the world, the risk of fluctuating remittance inflows due to economic changes in a specific region is reduced, thus stabilizing national savings. Rahman (2015) explored the role of policies and institutional development in managing migration and remittances in South Asia. The study suggested that countries with better-managed migration policies tend to have more stable remittance flows, which support national savings and economic growth. Rahman and Wadud (2015) further examined the macroeconomic factors affecting remittances in South Asian countries, highlighting that economic stability and policy interventions are crucial for managing remittance inflows effectively.

Remittance flows are influenced by various macroeconomic factors, including exchange rates, GDP growth, and inflation. Understanding these factors is essential to maximize the benefits of remittances. Khan, Ahmed, and Chani (2019) used an ARDL approach to examine the macroeconomic determinants of remittances in Pakistan. Their study found that exchange rate changes, inflation rates, and economic growth play a significant role in determining remittance inflows. When the exchange rate is favorable, remittances increase, benefiting the national economy. Ullah, Mahbub, and Ahmed (2019) also discussed the link between remittances and economic growth, emphasizing the importance of policies that create a conducive environment for remittance flows. The World Bank (2020) pointed out that South Asian remittances act as a "cursed blessing." While they help countries manage economic shocks and provide a source of income, they can also contribute to issues like inflation if not managed properly. This underscores the need for careful policy planning to ensure remittances positively impact national savings and economic growth.

3.0 METHODOLOGY

3.1 RESEARCH DESIGN

The research is designed as a quantitative, empirical study employing a panel data approach. This design allows for an analysis of cross-country data over time, providing insights into both time-series and cross-sectional variations. The study uses secondary data from reputable international sources, such as the World Bank, International Monetary Fund (IMF), and country-specific databases, ensuring that the data is reliable and comprehensive for analyzing the impact of macroeconomic variables on national savings. The research design consists of the following components:

Table 3.1: Name and measurement of Variables

Dependent Variable	National Savings (Gross Domestic Savings as a percentage) of GDP
Independent variable	Remittance flows (as a percentage of GDP)
Control variable	GDP growth (annual percentage growth)
	Migration rates (net migration rates)
	Inflation (annual percentage change in consumer prices)

3.2 DATA TYPE AND SOURCES

The study uses secondary data collected from the following sources:

- **Gross Domestic Savings (GDS):** World Bank database

- **Remittance Flows:** World Bank Migration and Remittances Factbook
- **Migration Rates:** World Bank and UN data on net migration
- **GDP Growth and Inflation:** International Monetary Fund (IMF) and World Bank World Development Indicators. The data covers a period of 25 years (1999-2023) for Bangladesh, India, Pakistan, Sri Lanka, and Nepal, providing a comprehensive view of the variables across time. The panel data nature of the study allows for controlling unobserved heterogeneity across countries and capturing the dynamic relationships between the variables.

3.3 RESEARCH HYPOTHESIS

As there are conflicting findings available regarding the issue this study set the following null hypotheses that will guide the study:

1. H_{01} : There is no significant relationship between remittance flows and national savings in South Asian countries.
2. H_{02} : There is no significant relationship between GDP growth and national savings in South Asian countries.
3. H_{03} : There is no significant relationship between migration rates and national savings in South Asian countries.
4. H_{04} : There is no significant relationship between inflation and national savings in South Asian countries.

3.4 TOOLS OF ANALYSIS

To analyze the collected data and test the hypotheses, the following econometric tools and techniques are employed:

Descriptive Statistics: To summarize the dataset's characteristics, including mean, standard deviation, minimum, and maximum values of all variables.

Pearson Correlation Analysis: To assess the initial linear relationships between the independent variables and the dependent variable.

Panel Data Regression Models:

Pooled Ordinary Least Squares (POLS): To provide baseline estimates without accounting for country-specific effects.

Random Effects Model (RE): To account for variations across countries while assuming random country-specific factors.

Fixed Effects Model (FE): To control for time-invariant, country-specific factors that may influence national savings.

Hausman Test: To determine whether the fixed or random effects model is more appropriate for the data.

Robustness Tests: Additional tests to ensure the validity of the results across different model specifications.

The analysis is conducted using statistical software such as Excel and STATA, ensuring precision in estimating relationships and testing the significance of the independent variables.

4.0 RESULT AND DISCUSSION

The result and discussion part started with the descriptive statistics of the variables used for assessing the role of foreign remittance on national savings of South Asian countries.

Table 4.1: Descriptive Statistics

Variables	Observations	Mean	Std. Dev.	Min	Max
Net National savings	125	21.268	7.605	5.610	36.310
Remittance	125	8.228	6.718	1.081	27.626
Migration	125	-367937	478551	-2290411	940739
Gross Domestic Product	125	3.538	2.886	-7.451	8.819
Inflation	125	7.572	5.680	2.007	49.721

Source: Study calculation

Table 4.1 shows the mean, median, standard deviation, maximum and minimum value of the variables. The average national savings across the 125 observations is 21.268% of NNS, with a standard deviation of 7.605, indicating moderate variability. The minimum savings rate is 5.610%, and the maximum is 36.310%. The average remittance inflow is 8.228% of GDP, with a standard deviation of 6.718, showing considerable variation. The average net migration is negative (-367,937 people), meaning there is more emigration than immigration in these countries, with a large variability (478,551). The range extends from a large outflow of -2,290,411 to an inflow of 940,739. The average GDP growth rate is 3.538%, with a notable variation (2.886). Some countries experienced negative growth (-7.451%) while others reached 8.819%. The average inflation rate is 7.572%, but the high standard deviation (5.680) and the wide range (from 2.007% to 49.721%) indicate significant inflation volatility.

Table 4.2: Pearson Correlation matrix

	NNS	Remit	Migra	GDP	Inf
NNS	1.000				
Remit	0.521 (0.000)	1.000			
Migra	0.278 (0.002)	0.158 (0.079)	1.000		
GDP	0.264 (0.003)	-0.046 (0.608)	-0.075 (0.406)	1.000	
Inf	-0.132 (0.142)	0.022 (0.810)	0.047 (0.606)	-0.352 (0.000)	1.000

Source: Study calculation

The above Table 4.2 presents the correlation among the variables. The correlation between net national savings and remittances is 0.521, significant at the 5% level (p-value: 0.000). This positive correlation indicates that as remittance flows increase, national savings also increase, but it also reflects that mostly rural people are the primary consumers of remittance spending. The correlation of national savings and migration is 0.278, with a marginal significance (p-value: 0.002). This positive correlation suggests that increased migration may have a positive effect on national savings. The correlation between national savings and GDP growth is 0.264, significant at the 5% level (p-value: 0.003). This indicates a moderately positive relationship, suggesting that economic growth fosters higher national savings. Lastly the NNS and inflation presented a negative and insignificant

relationship. Indicates inflation has an uncertain and insignificant impact on savings in these countries.

Table 4.3: Baseline Estimation

Coefficients			
	POLS	FE	RE
NNs			
Remit	0.4899269 (0.000)	0.49444 (0.000)	0.4899 (0.000)
Migra	0.3731576 (0.002)	0.05712 (0.534)	0.3732 (0.002)
GDP	0.3974791 (0.000)	0.08571 (0.240)	0.3975 (0.000)
Inf	-0.1112965 (0.478)	0.00849 (0.935)	-0.1113 (0.477)
Hausman Test		Chi2(4) 72.360 Prob > chi2= 0.000	

Source: Study calculation

The above table 4.3 demonstrates the baseline estimation consisting of pooled ordinary least squares (POLS), the Random effect model, and the fixed effect model. The Hausman test is conducted to check which model is more appropriate. With a chi-squared value of 72.360 and a p-value of 0.000, the fixed-effects model is preferred. This means the fixed-effects model should be used to interpret the impact of remittance, migration, GDP, and inflation on national savings.

The main findings suggests that remittances consistently have a strong and positive impact on national savings across all models, indicating that higher remittance inflows are associated with increased national savings. Similarly, GDP growth shows a positive relationship with savings in the pooled OLS and random effects models, though the fixed effects model suggests that country-specific factors may reduce its significance. Migration also positively influences savings in the pooled and random effects models but is not significant in the fixed effects model. Inflation, however, does not significantly affect savings in any of the models. The Hausman test indicates that the fixed effects model is more appropriate for this data, although the effects of migration and GDP growth appear weaker when accounting for fixed country-specific characteristics.

Table 4.4 Robustness Test of models

	POLS		RE		FE	
NNS	Coef.	P value	Coef.	P value	Coef.	P value
Remit	0.489927	0.000	0.489927	0.000	0.494436	0.000
Migra	0.373158	0.002	0.373158	0.054	0.057118	0.662

GDP	0.397479	0.000	0.397479	0.228	0.085708	0.711
Inf	-0.1113	0.672	-0.1113	0.375	0.008488	0.958
cons	-0.09939	0.351	-0.09939	0.767	0.284046	0.23

Source: Study calculation

The robustness test compares three models—Pooled Ordinary Least Squares (POLS), Random Effects (RE), and Fixed Effects (FE)—to assess the relationship between remittance, migration, GDP growth, inflation, and national savings. The robustness test results in the table 4.4 confirm that remittances consistently have a strong and significant positive impact on national savings, with coefficients of 0.4899 to 0.4944 across all models. Migration shows a significant positive impact in the Pooled OLS model (coef. 0.3732, $p = 0.002$), and is borderline significant in the Random Effects model ($p = 0.054$), but is not significant in the Fixed Effects model. GDP growth also has a significant positive impact in the Pooled OLS model (coef. 0.3975, $p = 0.000$), though this effect diminishes in the Random and Fixed Effects models, where it becomes statistically insignificant. Inflation does not significantly affect national savings in any model, with consistently small and statistically insignificant coefficients. These results demonstrate that while remittances robustly influence savings, the effects of migration and GDP growth may depend on the model used, and inflation appears to have little impact. The Fixed Effects model, based on the Hausman test, is the preferred model, but migration and GDP growth effects appear weaker when accounting for country-specific characteristics.

Table 4.5: Hypothesis Testing

Hypothesis	Coefficient (FE)	P-Value (FE)	Significance	Impact on National Savings	Hypothesis outcome
H1	0.49444	0.000	Significant	Positive	Rejected
H2	0.05712	0.534	Insignificant	Positive	Accepted
H3	0.08571	0.240	Insignificant	Positive	Accepted
H4	0.00849	0.935	Insignificant	Positive	Accepted

Source: Study calculation

Remittances have a statistically significant and positive impact on national savings, leading to the rejection of the null hypothesis. Migration, GDP growth, and Inflation do not significantly affect national savings, as indicated by their p-values (above 0.05), supporting the acceptance of the null hypothesis for these variables. Therefore, it is proved that only remittances have significant and positive effects on the national savings of the selected South Asian countries.

Findings

According to this study, the national savings rate of five South Asian nations is positively and significantly influenced by remittances. Literature (Chaudhry et al., 2010; Akter, 2018) supports this

conclusion, yet it runs opposite to Hossain (2014). It makes sense that households' ability to save more money is increased when they receive personal remittances in the form of cash or in kind. In a similar vein, remittance inflows boost national savings. By incorporating remitted funds into investments in productive industries, the nation can save even more. Remittance influx has been shown to have a detrimental impact on local savings in 63 developing countries (Hossain, 2014). The study also investigated the positive but negligible effects of migration rates on South Asian nations' national savings. It has been shown that more migrants boost a nation's foreign exchange inflows, which could result in savings for the country. Even so, the effect is negligible.

Additionally, the national savings rate of five South Asian nations is positively but marginally impacted by the real GDP growth rate. Although they discovered that the GDP growth rate had a considerable impact on savings, the literature (Epaphra, 2014; Agrawal & Sahoo, 2009) found a similar result. It might take place because rising real GDP growth rates suggest rising real incomes and savings. Conversely, as with families, a growth in the debt stock indicates that it will help to reduce national savings. Udeh et al. (2016) support this finding.

Finally, it is perfectly understandable that the inflation rate and national savings have a negligible inverse relationship. A higher rate of inflation may hurt savings because fewer goods can be bought with the same income. Nonetheless, Abou El-Seoud (2014) and Mose and Thomi (2022) discovered a favorable correlation between national savings rates and inflation.

5.0 CONCLUSION AND POLICY IMPLICATION

The study offers a comprehensive analysis of the effects of remittance flows, GDP growth, migration rates, and inflation on national savings in South Asian countries. Utilizing secondary data and robust econometric techniques, the analysis reveals important insights into the macroeconomic factors that impact national savings in Bangladesh, India, Pakistan, Sri Lanka, and Nepal. The study mainly found significant and positive effects of remittances on national savings of the selected five South Asian countries.

Remittances serve as a crucial source of savings in South Asian countries, reinforcing the need for policies that promote the productive use of these funds. Policymakers should focus on developing mechanisms that encourage the productive use of remittances. Financial literacy programs and attractive savings products targeting remittance-receiving households could help channel these funds into savings and investments.

GDP growth, while showing a positive relationship with national savings in some models, did not have a statistically significant impact when accounting for country-specific factors. This suggests that economic growth alone may not be enough to drive higher savings rates. Migration rates demonstrated a positive but marginally significant impact on national savings. This outcome hints at the potential for migration to contribute to national savings, but further analysis is needed to understand how remittances sent by migrants can be better channeled into savings. The analysis reveals that inflation has no statistically significant impact on national savings. This suggests that inflationary trends do not substantially alter national savings behavior in South Asian countries. These results contribute to addressing the research questions and provide policymakers with valuable insights into the macroeconomic factors that influence national savings.

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