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Role of Remittance in Economic Development of Nepal

*Bashanti Acharya**
Deparment of Economics, Bhaktapur Multiple Campus
Tribhuvan University, Nepal

Abstract
The aim of this research paper is to analyze the impact of remittances in economic development of the country. The study is quantitative in nature and examines the impact of remittances on two economic development indicators: nominal Gross Domestic Product (GDP) and Per Capita GDP (PCI). This study employs both descriptive analysis and a simple linear regression model. The contribution of remittances to GDP was 10.28 percent in 2001/02 and increased to 22.68 percent in 2022/23. The impact of remittances has been seen positive on both indicators, GDP and PCI, but it is comparatively lower for PCI. The findings show that the relationship between remittances and GDP, as well as between remittances and PCI, is significant. This means remittances have been playing vital role in improving economic well-being and reducing poverty.

Keywords: Economic Development, Gross Domestic Product, Per Capita Gross Domestic Product (PCI), Remittance

1. Introduction
International migration is a global phenomenon which affects almost all the countries in the world. Labour mobility has become one of the most important things in human history. People are moving from one place to another since ancient period, which is a continuous international phenomenon resulted due to complex mechanism, involving social, economic, psychological, political, institutional and other determinants (Singh, 1998 as cited in Gautam, 2006). In the initial period of human civilization, people's wants were limited. As human civilization advanced, so did the evolution of human desires. People were unable to satisfy their desires in the home country which caused them to seek employment abroad. According to Foreign Employment Act, 2064 the foreign employment means the employment to be obtained by worker abroad (Nepal Gazette, 2007). Working abroad to earn money is called foreign employment which is considered as the source of remittance. Remittances are money sent home by immigrants who have moved to different countries. According to Ratha (n.d.), when migrants send home part of their earnings

* Correspondence: acharyabasanti48@gmail.com
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in the form of either cash or goods to support their families, these transfers are known as workers' or migrant remittances (p. 76). Remittances include cash and non-cash items that flow through formal and informal channels. However Nepal reports only the amount that comes through formal channel.

At present, working abroad for earning money has become a common trend in Nepalese youths. Until mid 1980s, foreign employment was confined to India only. The boom of oil industries in Gulf countries created massive demand for labour force .Consequently, large number of Nepalese workers migrated to Gulf countries for employment. The Government of Nepal responded foreign employment with the promulgation of the Foreign Employment Act, 1985. The Act specified the countries (published in Nepal Gazette) to which Nepali citizens (preferably low skilled workers) were encouraged to migrate. The Act also opened avenues for the private sector to facilitate foreign employment (DoFE, 2014, p. 5). After the initiation of liberalization policy and economic reforms, the pace of foreign employment has seemed to increase because of economic and non-economic reasons. The liberalized economic policy adopted after 1992 helped to formalize labour migrants and opened doors for recruitment and remitting agencies to operate in the country and solicit workers for jobs in other countries. The flow of out-migrants increased with the achievement of democratic freedom (DoFE, 2014, p. 8). This emigration resulted to a sharp rise in contribution of remittance to GDP from two percent in early 1990s (World Bank, 2011) to 22.68 percent (Table No. 1, Appendix) in 2022/23 which also strengthened the overall balance of payments position in Nepal. Now, remittance has emerged as the most important factor of Nepalese economy because it not only fulfills the basic needs of poor households, children's education, health care but also the source of small business and entrepreneurial activities as well as external sector balance of Nepal. In the context of developing countries like Nepal, remittance has significant contribution to micro and macro level.

1.1 Theoretical Framework of the Study

Economic development is a multidimensional process, so it is defined and measured in numerous ways. Within the context of economic development, Todaro and Smith (2008) asserted that development as a multidimensional process involving major changes in social structures, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty. Jacobs and Slaus (2010) stated that the relationship between economic growth and development is difficult to measure, because there is no universally accepted measurement for economic development. Many authors conceptualize development as a process by which the economic and social well-being and quality of life of a nation are improved.

The literatures show different measures of economic development but the theoretical framework of this study is supported by numerous studies (Sharma and Bhandari, 2005; Dhungel, 2018 and Meyer, 2019). These studies mentioned that GDP and PCI are accepted dependent variables for measuring the economic development process. Similarly, many national and international studies in the context of Nepal have shown that remittances have a positive impact on economic growth and development. Not only the household sector, but external sector of Nepal also largely depends on remittances. Therefore, remittance is taken as focus variable in this study.

2. Literature Review

This study found mixed results on the relationship between remittances and economic development when reviewing the literatures. The positive and negative relationship between remittances and economic development are reviewed here.

2.1 Global Context

Buckley and Hofmann (2012) analyzed the effectiveness of remittances on development in their study titled 'are remittances an effective mechanism for development? evidence from Tajikistan, 1999- 2007'. Using three cross-sectional national surveys (1999, N=2000), (2003, N=4160), (2007, 4860), the study compared remittance-receiving households to non-remittance households in Tajikistan, a country highly dependent on remittances. Ordinary Least Square (OLS) regression models (remittance-receiving and non-remittance households) for each of the three surveys were employed in the study. Exploring household perceptions of financial security, wealth and entrepreneurial activity, across a period of rising remittance reliance, this study found that households receiving remittances are not more economically stable, wealthier, or entrepreneurial than non-remittance household. In the same study, it was mentioned that although household-level data does not fully capture the macro-level contribution of remittances, the findings suggested that the positive impact of remittances on Tajikistan's economic development is limited. The research concluded that it's important to be cautious about relying on remittances as a major driver for the country's economic growth.

Jayaraman, Choong, and Kumar, (2012) analyzed the role of remittances in India's economic growth adopting an augmented Solow model covering the period 1970–2009. The study focuses on the linkage between economic growth and remittances facilitated by other variables including financial development (represented by domestic credit to private sector), interaction between financial sector development and remittances, exports, foreign direct investment (FDI) and overseas development assistance (ODA). It used a method called Bounds Testing to study these relationships. The study hypothesized that these variables have positive contribution on output. Given the intensification of financial sector development together with relatively stable capital inflows (FDI and ODA) and the efforts towards formalizing the channels of remittance inflows, the study found that remittances and the interaction between remittances and financial sector development have had a positive and significant effect on India's economic growth over the last four decades. In the light of these findings, it was proposed that the proactive policy measures in India should continue for encouraging remittance inflows for long-term growth and development.

Ahmad, Ahmad, and Hayat (2013) studied foreign remittances and economic growth in Pakistan: an empirical investigation using the secondary data from the period 1978-2011. This study measured economic growth by taking GDP as dependent variable with foreign remittances, FDI, inflation and the exchange rate as independent variables. Ordinary Least Squares technique was applied to check the relation among these variables. Results indicated that foreign remittances have positive and significant relation with GDP of Pakistan i.e. one percent increase in foreign remittances will raise GDP by 0.25 percent while inflation and exchange rate has negative effect on economic growth. Foreign direct investment has positive but insignificant relation with GDP of Pakistan. This study suggested that Pakistan needs stable and visionary government to enhance foreign capital inflow to boost investment and economic growth.

Yoshino, Hesary and Otsuka (2017) investigated international remittances and poverty reduction: evidence from Asian developing countries from the period 1981-2014. The aim of this paper was to examine the impact of international remittances on poverty reduction using the panel data of 10 Asian developing countries: Bangladesh, India, Nepal, Pakistan, and Sri Lanka from the South Asia Region (SAR) and the People's Republic of China (PRC), Indonesia, Malaysia, the Philippines, and Thailand from the East Asia and Pacific (EAP) region. The results showed that international remittances have a statistically significant impact on the reduction of the poverty gap ratio and poverty severity ratio using the random-effect model of ordinary least squares (OLS) estimates. A one percent increase in international remittances as a percentage of the GDP can lead to a 22.6 percent decline in the poverty gap ratio and a 16.0 percent decline in the poverty severity ratio in the sample of 10 Asian developing countries. In addition, the results indicated that a per capita GDP increase and trade openness can decrease the poverty measures and that higher inflation rates may be one of the causes of poverty.

2.2 Nepalese Context

Gaudel (2006) studied remittance income in Nepal: need for economic development. The main aim of this paper is to examine the role of remittance income for economic development of Nepal.This study adopted a regression model to show the impact of remittance income, grants, pension and other items on nominal GDP in Nepal. The findings indicated a significant relationship between remittance and GDP at one percent level. The analysis showed that remittance income and grants appear to be the most relevant variables to raise nominal GDP in Nepal. Additionally, the study claims that remittances and grants are important sources of foreign exchange earnings for the country.

Srivastava and Chaudhary (2009) investigated the role of remittance in economic development of Nepal. This study hypothesized that remittance has direct impact on three development indicators: GDP, GNP and PCI of the nation. The analysis was conducted using both linear and log-linear models under multiple regressions. The study found that the impact of remittance was most remarkable in the GDP and GNP both in nominal and real terms. In the nominal GDP and GNP, the remittance shows 61 percent and 72 percent impact respectively while in real term it shows 48 percent and 55 percent respectively. It has also shown positive impact on the PCI but it is comparatively low (four percent in nominal and one percent in real terms).

Bhatta (2013) examined remittance and trade deficit nexus in Nepal by using vector error correction model (VECM) method. This paper explored whether remittance causes merchandise import and trade deficit to raise in the long run based on data from a ten- year period 2001-2011. The error correction model showed that there is a long-run positive unidirectional causality from remittance to import as well as remittance to trade deficit implying that remittance causes merchandise imports and deteriorates trade balance. This paper recommended channelizing remittance into productive sectors by encouraging the migrant worker's families to establish small entrepreneurships.

Dhungel (2018) analyzed the link between remittance and economic growth: An ARDL Bound Testing Approach covering the period 1990-2017. The general objective of this paper was to examine the impact of remittance and other control variables on economic growth in Nepalese economy. Per capita GDP was considered a proxy for economic growth. The empirical result revealed that one percent increase in remittance increases the per capita GDP by 0.36 percent in the long run. Similarly, the gross fixed capital formation, secondary school enrolment and the trade openness and per capita GDP have positive relationship. It implied that one percent increase in capital, labor and trade openness increases the per capita GDP by 0.82 percent, 0.46 percent and 0.30 percent respectively in the long run.

Ojha (2019) examined the status of remittance and its contribution to GDP of Nepal using the data from the period 1994-2016. The dependent variable is economic development measured in terms of GDP and PCI. The independent variables were remittance inflow, broad money supply, foreign aid, capital formation and import .The study has adopted multiple linear regression models to analyze the impact of independent variables on gross domestic product and per capita income. The study found that higher the remittance inflows, broad money supply, import, foreign aid and capital formation, higher would be gross domestic product and per capita income. The study also concludes that remittance is the most significant sources of GDP and per capita income in Nepal.

Chaudhary (2022) has assessed the contribution of remittances on economic growth and domestic private investment of Nepal by employing the ARDL bounds test approach covering the period 2000-2019. The empirical findings showed a positive long-run effect of remittances on GDP and a negative long-run effect of it on domestic private investment. The positive contribution of remittances on GDP oozes out from larger domestic consumptions which on the other hand, have affected the domestic private investment of Nepal negatively.

3. Research Objective

The general objective of the study is to analyze the impact of remittances on economic development of Nepal.

3.1 Hypotheses

Keeping the objective of the study in view, the following hypotheses have been set:

Hypothesis 1:

H_0: There is no positive relationship between remittances and Gross Domestic Product (GDP) of Nepal.

H_1: There is positive relationship between remittances and Gross Domestic Product (GDP) of Nepal.

Hypothesis 2:

H_0: There is no positive relationship between remittances and PCI of Nepal.

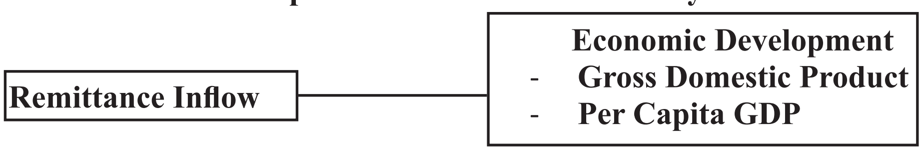
H_1: There is positive relationship between remittance and PCI of Nepal.

4. Conceptual Framework of the Study

Fig. 1 illustrates the conceptual framework of the study, where economic development is the dependent variable measured by nominal GDP and per capita GDP and remittance is taken as the independent variable.

Figure No. 1

Conceptual Framework of the Study



5. Methodology

This study shows the association between remittance and economic development. Nominal GDP and per capita GDP (PCI) are considered proxies for economic development in the study.

Nominal GDP is the final value of goods and services produced by a nation during a year. It measures the value of economic total output at the price prevailing in the period which the output is produced i.e. current price whereas per capita income is the average (Gelal, Dhungel, Shrestha and Giri, 2017). The per capita GDP is obtained by dividing the country's GDP by the country's total population within a year (Meyer, 2019).

This study is based on the econometric analysis of secondary data of the past 22 years, i.e. from fiscal year 2001/02 to 2022/23. The data have been abstracted from Economic survey 2008/09, 2010/11, 2016/17, 2021/22 and 2022/23 published by MoF, Quarterly Economic Bulletins published by Nepal Rastra Bank and other reports and journals published by different sources. The relationship between dependent and independent variable has been analyzed by applying descriptive statistics approach and simple linear regression model.

Model 1

$$GDP= \beta_0 + \beta_1(REM) + e\ldots\ldots(i)$$

Model 2

$$PCI= \beta_0 + \beta_1(REM) + e\ldots\ldots.(ii)$$

Where, β_0 is the constant term, β_1 is the regression parameter, and e is the error term.

6. Limitations of the Study

This study covers the period from 2001/02- 2022/23. As mentioned by NRB (2016), the size of remittance inflows was relatively limited before this period but it became a major source of national income starting from 2001/02.Therefore, this study has chosen this period. Although there are several indicators affecting economic development of the nation, this study focused solely on remittance. Similarly economic development is measured by taking two indicators i.e. GDP and PCI.

7. Results and Discussion

This section presents the results and discussion of the study.

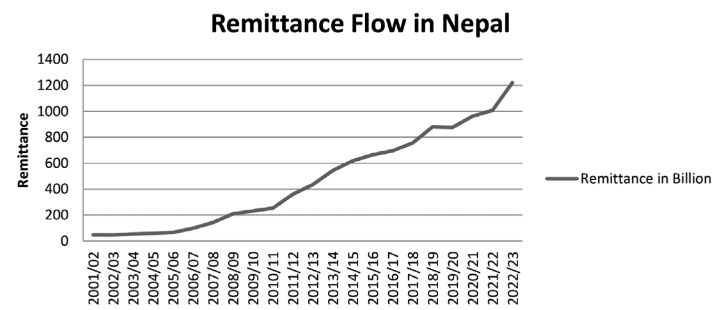
7.1 Contribution of Remittance on GDP

Remittances have emerged as the backbone of Nepalese economy as its share of GDP is roughly equal to that of agriculture sector. Remittances contribute substantially to maintain micro and macroeconomic stability. According to Pant (2011) the remittances sent home by the migrants affect the development at both household and national levels. In Nepal the main factor for poverty reduction is considered as the remittances. At the household level, remittances help to reduce poverty, improve standard of living and attain higher educational levels. According to Ratha (n.d), between a fifth and half of the 11 percent reduction in poverty in Nepal between 1995 and 2004, a time of political conflict, has been attributed to remittances (p. 76). ADB (2012) mentioned that remittances to some Asian countries have very significant in terms of gross domestic product (GDP) and also found that a 10% increase in remittances leads to a 3-4 percent rise in real GDP per capita (p. 14). Although. Nepal is known as agricultural country, the contribution of agriculture sector to national GDP is 24.7 percent in 2022 (NSO, 2023).In comparison, the contribution of remittance on national GDP is 22.68 percent (Table 1). This indicates the significant importance of remittances to Nepalese economy. The reasons for the increase in foreign exchange reserves, the improvement of the current account situation and the Balance of Payment (BOP) surplus are remittances. According to NRB (2023b) the foreign exchange reserve was 105.901 billion in 2001/02, now it reached to 1539.80 billion in 2022/23. Although the current account remained deficit, the size of the deficit decreased. Similarly, the balance of payment remained surplus of 290.52 billion in 2022. Although remittances have negative economic and social consequences such as deteriorating the trade balance and increasing the demand for consumption goods and imports, remittance is considered a major source of national economy.

7.2 Pattern of Contribution of Remittance on GDP

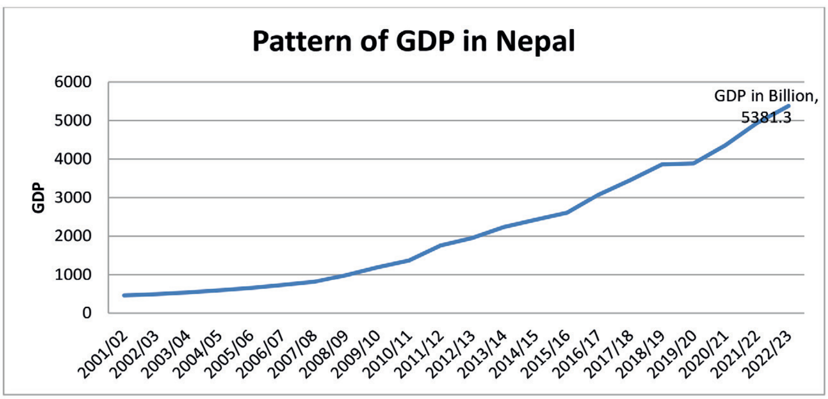
The remittance inflow in Nepal has been increasing rapidly year by year. In the FY 2001/02 Nepal saw a remittance inflow of NPR 47.22 billion that increased gradually year by year and became NPR 1220.56 billion in the FY 2022/23. In FY 2001/02 remittance's contribution was estimated to be around 10.28 percent and in FY 2022/23, it was 22.68 percent to the national GDP and it was maximum in 2015/16 (25.50 percent). Diagrams No. 1, 2 and 3 show the remittance flow, pattern of GDP and contribution of remittance on GDP. Table No.1 in Appendix shows the significant contribution of Remittance on national GDP.

Diagram No. 1



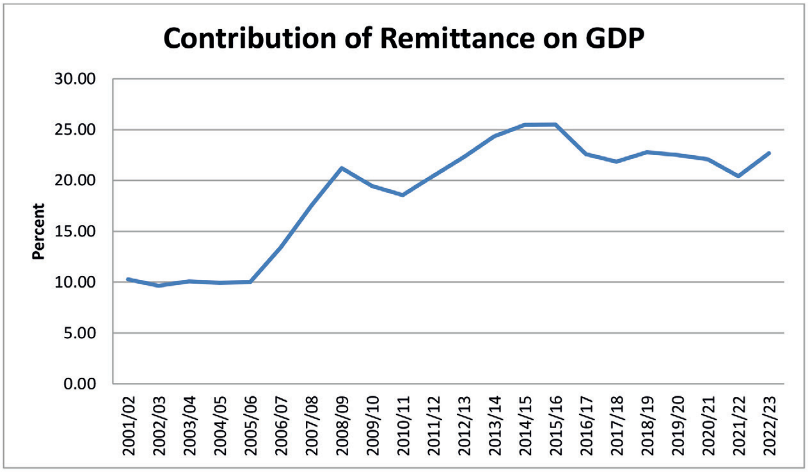
Source: Table No. 1

Diagram No. 2



Source: Table No.1

Diagram No. 3

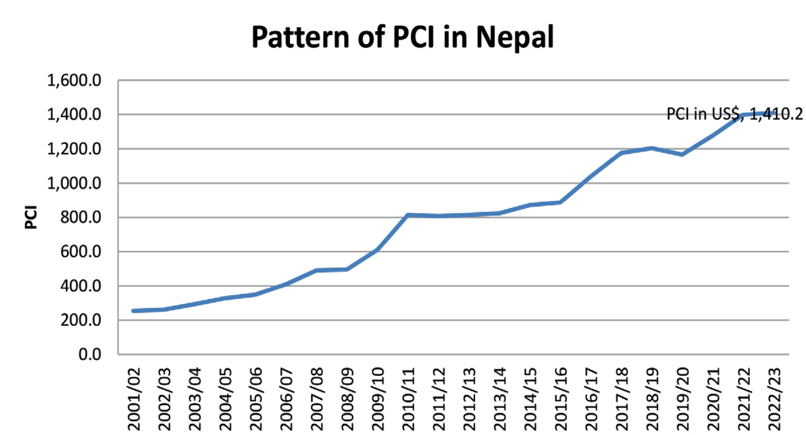


Source: Table No.1

7.3 Pattern of PCI in Nepal

The literature shows that remittance is the basis of national economy; it helps to increase the per-capita income and reduces the poverty-gap ratio. In FY 2001/02, the PCI of Nepalese people was US$ 254.6 and it reached to US$ 1410.2 in FY 2022/23. Diagram No. 4 shows the trend of increase of PCI in Nepal. Table No. 1 in Appendix illustrates the overall PCI from 2001/02 to 2022/23 of Nepal.

Diagram No. 4



Source: Table No. 1

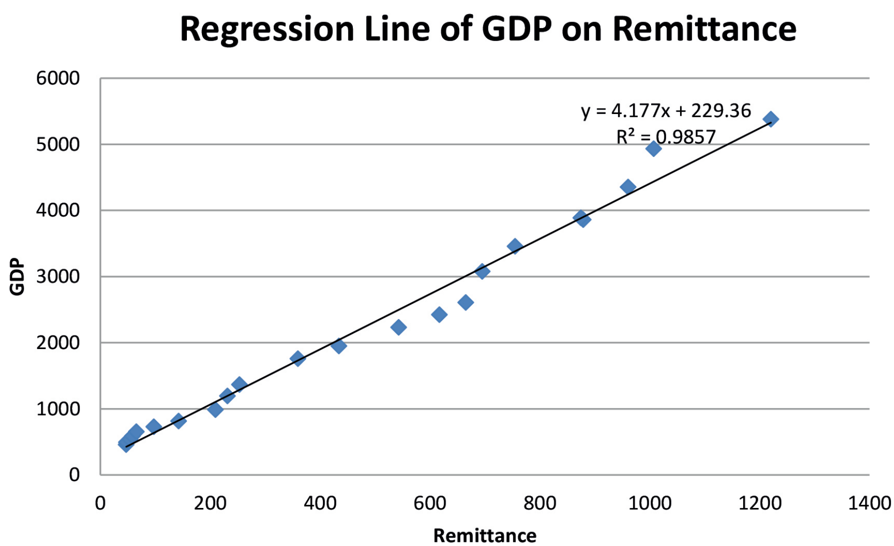
7.4 Regression between Remittance and GDP

Table No. 2 and Diagram No. 5 illustrate the association between Remittance and GDP. There is significant contribution of remittance on GDP. The model is significant (R square = 0.985, $p < 0.05$)

The beta value 4.177 indicates that GDP has positive relationship with remittance. As the p-value = 0.000 is less than 0.05, the statement 'there is positive relationship between remittance and GDP' is supported with sufficient evidences. This proves that there is positive relationship between remittance and GDP in Nepal.

The Diagram No. 5 shows that the value of R square is 0.985. That means 98.5 percent of the variation in GDP were explained by the variation in remittance and remaining 1.5 percent of the variation in GDP would be explained by other factors which were not taken into account.

Diagram No. 5



Source: Table No. 1

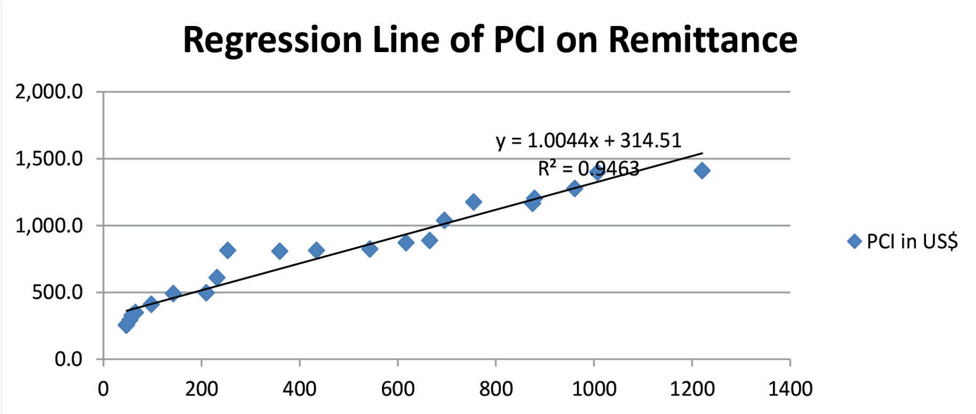
7.5 Regression between Remittance and PCI

Table No. 3 and Diagram No. 6 illustrate the association between Remittance and PCI. There is significant contribution of remittance on PCI. The model is significant (R square = 0.946, $p < 0.05$).

The beta value 1.004 indicates that GDP has positive relationship with remittance. As the p-value = 0.000 is less than 0.05, the statement 'there is positive relationship between remittance and PCI' is supported with sufficient evidences. This proves that there is positive relationship between remittance and PCI in Nepal.

The Diagram No. 6 shows that the value of R square is 0.946. That means 94.6 percent of the variation in PCI were explained by the variation in remittance and remaining 5.4 percent of the variation in PCI would be explained by other factors which were not taken in to account.

Diagram No. 6



Source: Table No. 1

8. Discussion of Results

Analyzing the relationship between remittances and economic development, this study found a positive and significant relationship between remittances and economic development in Nepal.

8.1 Remittances and Nominal GDP

For nominal GDP, the linear model seems good fit having a high R squared value of (0.985). The relationship is statistically significant at 5 percent level. The positive coefficient of independent variable (remittances) indicates a positive relationship with nominal GDP. This suggests that remittances have a positive impact on overall economy.

8.2 Remittances and Per Capita GDP (PCI)

Similarly, for per capita GDP, the linear model seems good fit having a high R squared value of (0.946). The relationship is statistically significant at 5 percent level. The positive coefficient of independent variable (remittances) indicates a positive relationship with per capita GDP. This suggests that remittances have been playing vital role in reducing poverty.

The findings of the study confirm those of Jayaraman, Choong, and Kumar (2012) who found a positive relationship between remittances and economic development. The results of this study also match to those of Ahmad, Ahmad, and Hayat (2013); Dhungel (2018); Gaudel (2006); Srivastava and Chaudhary (2009); Yoshino, Hesary and Otsuka, (2017); Ojha (2019) and Chaudhary (2022) .

The result shows that remittances are effective in increasing both nominal GDP and per capita GDP in the country. It is essential to understand that only the meaningful utilization of remittances can accelerate the pace of economic development. So government should strictly control informal channels of remittances and the income obtained from remittances should be allocated to productive sectors. Furthermore, the government should pay attention to the rights of migrant workers and address their problems.

9. Conclusion

Remittances boost human capital, enhance purchasing power, decrease the magnitude of poverty, encourage people to engage in income-generating activities, and build foreign exchange reserves - all of which have a beneficial effect on the economy's GDP growth. From the past few decades remittances have been playing vital role in the Nepalese economy. Remittances not only fulfill the needs of household sector, but also are becoming the major source of external sector. Remittances have been increasing over the years. In 2001 remittance inflow was 47.22 billion and reached to 1220.56 billion in 2022. The simple regression model applied in this study showed that there is positive and significant relationship between remittances and nominal GDP, as well as between remittances and per capita GDP in the country.

The proper use of remittance can bring changes in both micro and macro level. So, instead of using remittance in unproductive fields, it is essential to invest it in productive sectors to enhance the overall economy of the nation.

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Appendices

Table No. 1
Patterns of Different Indicators of Economic Development

Year	Per Capita GDP in US$	Remittance in Billion	Nominal GDP in Billion	Contribution of Remittance on GDP (%)*
2001/02	254.6	47.22	459.442551	10.28
2002/03	261.3	47.54	492.2307791	9.66
2003/04	293.2	54.2	536.7490549	10.10
2004/05	327.8	58.59	589.4116732	9.94
2005/06	349.5	65.54	654.0841284	10.02
2006/07	410.1	97.69	727.8269666	13.42
2007/08	491.3	142.68	815.658201	17.49
2008/09	496.5	209.7	988.0527887	21.22
2009/10	609.5	231.73	1192.774	19.43
2010/11	814.3	253.6	1366.954	18.55
2011/12	808.2	359.6	1758.379178	20.45
2012/13	814.3	434.6	1949.294819	22.30
2013/14	824.1	543.3	2232.525284	24.34
2014/15	871.4	617.3	2423.638483	25.47
2015/16	887.6	665.1	2608.184438	25.50
2016/17	1,039.0	695.45	3077.144919	22.60
2017/18	1,176.7	755.06	3455.94929	21.85
2018/19	1,203.8	879.27	3858.930402	22.79
2019/20	1,166.6	875.03	3888.703651	22.50
2020/21	1,276.8	961.05	4352.6	22.08
2021/22	1,398.9	1007.31	4933.7	20.42
2022/23	1,410.2	1220.56	5381.3	22.68

Source: MoF, 2009; MoF, 2011; MoF, 2017; MoF, 2023; NRB, 2023a; & NRB, 2023b
*Calculated by Author

Table No. 2

Regression Result of GDP as Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	229.356	66.309		3.459	.002	91.039	367.674
	Remittance	4.177	.112	.993	37.181	.000	3.943	4.411

Dependent Variable: Gross Domestic Product

Source: Calculated by Author based on Table No. 1

Table No. 3

Regression Result of PCI as Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	314.497	31.561		9.965	.000	248.662	380.332
	Remittance	1.004	.053	.973	18.783	.000	.893	1.116

Dependent Variable: Per Capita GDP in US $

Source: Calculated by Author based on Table No. 1