Overseas Labour Migration, Remittances, International Trade and Economic Growth Nexus in Pakistan

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Abstract
Foreign remittances are a source of capital inflows from foreign workers to their families or other individuals in their home countries. In many countries, remittances constitute a significant portion of a nation's economic growth. The study evaluates the effect of remittances, overseas migration, and international trade on the economic growth of Pakistan by using the ARDL technique. Data for this study have been taken from 1972 to 2020. The results indicate that labour migration, employment, remittances, and trade have a positive and significant influence on economic growth. The study suggests that households may utilize remittances in productive ways and government may devise such policies that enhance trade.
Key Words: Overseas Labour Migration, Remittances, International Trade, Economic Growth

1. Introduction

International migration is a global phenomenon that is expanding rapidly. People frequently migrate to improve their quality of life since the worldwide labour market provides them with more work opportunities. International migration can be permanent or temporary, depending on the circumstances, but the major goal of migrants is to improve their level of living. Economists have argued commonly that international migration can impede the development of the origin countries (Beine et al., 2001). These foreign workers are identified as fundamental players in the economic growth of their own countries because they transfer income in foreign exchange terms which are known as remittances (Younas, 2020).

Remittances are the transfers from foreign migrants to their family members in their origin country indicating one of the main sources of the financial flows of developing nations. Remittances are different from other capital flows i.e. foreign loans, foreign aid, and foreign direct investment (Kapur and Singer, 2006; Shahbaz and Naveed, 2007). In the same way, remittances tend to increase when the recipient country faces economic recessions as a result of political conflicts, financial crises, as well as natural disasters as migrants, usually send more money to their family and friends in such hard times ((Orozco, 2003; World Bank, 2005; Ratha, 2007). On the other side, the other capital inflows generally move pro-cyclically, reducing recession and increasing boom (Ratha, 2003). Additionally, the remittances smooth the level of consumption and take part towards the recipient's country's stability due to the macroeconomic shocks.

Remittances influence economic growth in three directions. Firstly, through the improvement of capital accumulation rate, lowering the cost of capital and the rise in human and physical capital rate. Secondly, remittances might have a negative influence on the rate of labour force participation because the income of remittance is replaced by labour income. Thirdly, remittances influence investment efficiency by affecting the growth of total factor productivity. For the international economy with an improved forecast, flows of remittances to the developing nations are likely to rise by 6.2 per cent in 2010 and 7.1 per cent in 2011 (Ratha, 2010). In 2009, the remittances sent by the Pakistanis were $316 billion and recently the growth rate of remittances is 29 per cent according to GOP, 2021.

Human capital has also been considered a strong source of development in any economy. Rational nations always care for them and utilize their knowledge and skills accordingly. The skilled migrants cause to raise in the rate of growth of the host nations in the developing countries but in the case of the native nation, it indicates a negative association with economic growth and skilled migration. It is easy to recognize that everyone wants to serve and live in their home country but due to some economic, social as well as political factors, many able people leave their home country for better living standards (Kobayashi, 2014). Many countries, specifically the developing nations in the world, have observed that their native human capital is reducing due to international migration. The International Labour Organization (2018) has estimated that one hundred and sixty-four migrant workers were living abroad across the world.

During the last three decades, Pakistan has received a significant amount of remittances. For capital deficient economies, for instance, Pakistan, the remittances of workers are considered an important foreign exchange source. Such remittances may have a positive effect on the economy of Pakistan via improved BOP and by decreasing the external borrowing dependency. Remittances have helped Pakistan to recover from the problems of unemployment, the adverse impact of oil price shocks, and improving the living standard of recipient households.

International migration is also considered one of the most important factors influencing the economic relations between developing and developed nations. According to United Nations (2002) report, at the start of the century, it was estimated that about one hundred and seventy-five million people lived and worked outside their home country. International remittances sent home by these migrants have a serious effect on developing nations i.e. Latin America, the Middle East,

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Asia, and Africa. However, in many developing countries, the proportion of semi-skilled and unskilled emigrants overcomes the skilled migrants (Crush et al., 2005). Usually, if not handled brain drain can generate negative externalities by dispersing the human capital of the sending country, causing the reduction in tax revenues that would have otherwise been endowed to the government of that country (Gibson and McKenzie, 2012).

Although the developing nations got benefits from the remittances but such countries lost their skilled persons. The migration of highly qualified and skilled persons to other countries is negative for origins countries as they lose people who are necessary for their economic and social development (Stark 2004; Clemens, 2007).

This study has focused on a very important area of economics. In this study, we aim to examine the nexus between overseas labour migration, remittances, international trade, and economic growth nexus in Pakistan. As there are many aspects of international capital inflows such as foreign investment, foreign aid, loans, etc. Among these remittances are the most important because it is related to international migration. So in this study, we have evaluated their effect on the economic growth of Pakistan. International migration is split up into Highly Qualified Labour Migration (HQLM), Highly Skilled Labour Migration (HSLM), Skilled Labour Migration (SLM), Semi-Skilled Labour Migration (SSLM), and Unskilled Labour Migration (USLM) and we have estimated their effects on economic growth.

2. Literature Review

This section has discussed the empirical linkage between remittances and labour migration. Ari (2020) delved into the effect of remittances on the growth of the economy with the role of labour mobility in the case of developing countries including Turkey, Germany, France, Netherlands, and Belgium. The study applied Johansen Co-integration econometric test on panel data of different macroeconomic variables like GDP and Remittances from 1994 to 2018. The results find out the unidirectional relationship between remittances and economic growth in selected countries. The study also concludes that the inflow of remittances in Turkey does not cause GDP growth. The study also concludes that remittances may cause higher labour mobility in Germany, France, the Netherlands, and Belgium. Zhu et al (2019) examined the impact of migration of labour to Gulf countries on remittances in Pakistan. The study used panel data from Gulf countries Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE from 2006 to 2018. The study used two variables number of migrant workers in the country and remittances. The study used pooled ordinary least square method for the findings. The results indicate that the immigration of labour to Gulf countries put a positive impact on remittance inflow in Pakistan. Lim and Basnet (2017) explored the relationship between remittances, labour migration, and income level in five South Asian countries including Pakistan, Bangladesh, India, Nepal, and Sri Lanka by using Panel data from 1975 to 2011. The study applied panel cointegration and Pooled Mean Group (PMG) estimation on data of different variables like Real GDP per capita, Consumption per capita, Investment per capita, Remittances per capita trade openness financial development, and immigration. The results show a positive impact of remittances on immigration and income level, and insignificant with consumption. Sakhawat et al (2017) illustrated the determinants of remittances in Pakistan. The study used annual data from 1972 to 2012. The study used different variables like GDP per capita, remittances, inflation, interest differential, secondary school enrollment, migrant workers, real effective exchange rate, democracy, foreign debt as % of GDP, law, and order, corruption, and government stability. The study used the GMM method to analyze the data. The result of the study shows that the number of migrant workers has a positive impact on remittance inflow in Pakistan. The study also concludes that skilled labour force migration is the source of remittance inflow in Pakistan. Yousaf et al (2016) tracked down the connection between Remittances, financial development, and work movement in Pakistan. The review utilized yearly time-series information from 1975 to 2010 of various macroeconomic factors like GDP, Domestic Savings, Investment, abroad specialist's Remittances, Migration of labour ers, utilization of family, uses of government, the pace of joblessness, and human resources improvement. The review applied Johansen and Juselius's Co-mix procedure and Recursive Simultaneous Equation Model for examination. The outcomes showed a long-run connection between Remittance from Workers and GDP in Pakistan. The results likewise show that there is for quite some time run connection between labour migration, unemployment, and economic development in Pakistan. The concentration additionally shows that the jobless workforce relocates to different nations for suitable positions and sends their pay to their families as settlements.

Kamande (2014) investigated the effect of unfamiliar migration on settlements in five African nations including Rwanda, Burundi, Uganda, Tanzania, and Kenya. The paper utilized board information from 2000 to 2010 from chosen African nations. Gross domestic product is utilized as a reliant variable and Remittances, GDP per capita, Inflation, Terms of Trade, and FDI as free factors in this paper. The consequences of the Pooled Ordinary Least Square (POLS) models show that gifted work relocation put a positive effect on the development of settlements in chosen African nations. It additionally shows positive in both sending and host nations. In light of the discoveries of the paper the review recommends that it is vital to African nations to support talented work relocation this is extremely useful for both the economy sending and host nations. Ahmed and Zarzoso (2014), investigated the determinants of remittances in Pakistan. The study used panel data from 23 different major sources of remittances country from 2001 to 2011. The study also used the gravity model and Pooled Ordinary Least Square (POLS) Method to find out the determinants. The study used different variables GDP, Income Level, Labour Migration, Geographical Distance, Transaction Cost, Exchange Rate, Financial Development, and

Unemployment Rate. The results of the study show that these factors are significant for remittances inflow in Pakistan. The result also shows that labour migration is very imperative to increase remittances. The study recommends policymakers focus on the transaction cost of sending money, and financial sectors should be improved. Jawaid and Raza (2012) the effect of income from a migrated worker on the economy of Korea and China. For this purpose, the study used annual data from China and Korea from 1980 to 2009. The study applied Johansen and Jeuuselius's cointegration technique, the Error Correction Model, and Sensitivity Analysis. The study also used variables including GDP, Labour Force, Gross Capital Formation, and Remittances. The results of the study confirm that remittances are significant for the economic well-being of Korea while on the other hand, remittances are negatively associated with the economy of China in the long run. In the case of a short-run period, the positive impact is detected in Korea while the negative in China. Shah et al (2011) empirically examined the nexus between remittances, immigration, and economic growth in Pakistan. For this purpose, the study used data from 1976 to 2009 for time series analysis. The study also applied ARDL and Bounds test to analyze the data on remittances, immigration, money supply, and exports. The results of the study indicate a positive correlation among variables, immigration is the source of remittances inflow in Pakistan. Remittances have a positive impact on economic growth as well. The study concludes with the findings that, all variables have a positive correlation in the long and short period. Akayleh (2011) provided a piece of evidence that the association between labour migration, workers' remittances, and economic activity in Saudi Arabia by using annual data from 1970 to 2006. The study used the Ordinary Least Square econometric model and different variables like GDP, Private Consumption, Investment, Government Expenditure, Imports, and Exports. The results show that Remittance put a positive impact on consumption, investment, and government spending and a negative impact on exports. The effect of remittance on GDP is positive. Shaheen et al (2011) look into the effect of remittances on private savings in the case of Pakistan. For this purpose, the study used annual time series data of different macroeconomic variables like Private Savings, Remittances, Foreign Direct Investment, Real Deposit Rate, and GDP per capita from 1973 to 2007. The study also applied Autoregressive Distributed Lag Approach (ARDL) and Bound test approach. The results of the analysis show a positive and statistically significant impact on private savings in Pakistan in both periods long and short run. Mamun and Nath (2010) investigated the movement of labour immigration and remittances in Bangladesh and also finds the impact of remittances on other selected macroeconomic variables. For this purpose, the study used annual data from 1998 to 2010. The study used different macroeconomic variables like the stock of immigration, remittances, GDP, FDI, Exports, and Foreign Aid. The study applied Vector Auto-regression (VAR) model to find the impact of remittances. The results indicate that remittances have a positive impact on other explanatory variables. Adams and Page (2005) examined the correlation between foreign labour immigration and remittances, and also find out the effect of both on poverty reduction in 71 developing countries. Panel data is analyzed by the study of different variables starting from 1980 till 1995. The study also applied the Ordinary Least Square (OLS) method to panel data. The results of the study indicate a positive correlation between remittances and immigration. The results also show that the immigration of labour and remittances reduces the poverty level in selected developing countries.

After reviewing the existing literature on overseas labour migration, we may deduce that no study has examined the effect of overseas labour migration, remittances, and international trade on economic growth by disaggregating the overseas labour migration into Highly Qualified Labour Migration (HQLM), Highly Skilled Labour Migration (HSLM), Skilled Labour Migration (SLM), Semi-Skilled Labour Migration (SSLM), and Unskilled Labour Migration (USLM).

3. Model, Data and Methodology

The study analyzes the influence of overseas labour migration, remittances, and international trade on the economic growth of Pakistan. Overseas labour migration is composed of two models. One is an aggregated model consisting of overall labour migration and the second is a disaggregated model that includes highly qualified labour migration, highly skilled labour migration, skilled labour migration, semi-skilled labour migration, and unskilled labour migration. The econometric form of the models can be expressed as:

3.1. Total Labour Migration and Economic Growth Model: Aggregated Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 TLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 TLM * REM + \alpha_8 TLM * TRADE + \varepsilon \quad (1)$$

3.2. Disaggregated Models of Labour Migration

3.2.1. Model 1: Highly Qualified Labour Migration and Economic Growth Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 HQLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 HQLM * REM + \alpha_8 HQLM * TRADE + \varepsilon \quad (2)$$

3.2.2. Model 2: Highly Skilled Labour Migration and Economic Growth Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 HSLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 HSLM * REM + \alpha_8 HSLM * TRADE + \varepsilon \quad (3)$$

3.2.3. Model 3: Skilled Labour Migration and Economic Growth Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 SLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 SLM * REM + \alpha_8 SLM * TRADE + \varepsilon \quad (4)$$

3.2.4. Model 4: Semi-Skilled Labour Migration and Economic Growth Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 SSLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 SSLM * REM + \alpha_8 SSLM * TRADE + \varepsilon \quad (5)$$

3.2.5. Model 5: Unskilled Labour Migration and Economic Growth Model

$$GDPPC = \alpha_0 + \alpha_1 EMP + \alpha_2 GFCF + \alpha_3 SSE + \alpha_4 USLM + \alpha_5 REM + \alpha_6 TRADE + \alpha_7 USLM * REM + \alpha_8 USLM * TRADE + \varepsilon \quad (6)$$

where,
GDPPC= Gross Domestic Product Per capita Growth rate (percentage Annual)
EMP= Employed Labour force (percentage of total labour force)
GFCF= Gross Fixed Capital Formation (percentage of GDP)
SSE=Secondary School Enrolment Ratio
TLM= Total Labour Migration
REM=Remittances (percentage of GDP)
Trade= International Trade (percentage of GDP)
HQLM= Highly Qualified Labour Migration
HSLM=Highly Skilled Labour Migration
SLM=Skilled Labour Migration
SSLM= Semi-Skilled Labour Migration
USLM= Unskilled Labour Migration

4. Results and Discussions
4.1. Descriptive Statistics and Correlation Analysis
Descriptive statistics of key variables are given in Table 1 while the correlation matrix is displayed in Table 2.

Table 1: Descriptive Statistics of Key Variables

	GDPPC	EMP	GFCF	SSE	TLM	REM	TRADE	HQLM	HSLM	SLM	SSLM	USLM
Mean	2.42	33.8	15.74	68.2	5.16	5.09	33.56	3.44	3.80	4.79	3.67	4.79
Median	2.18	29.0	16.47	60.9	5.15	4.87	33.70	3.36	3.84	4.78	3.52	4.79
Max	6.60	44.8	19.24	95.6	5.98	10.25	38.91	4.24	4.52	5.60	5.18	5.57
Min	-1.91	25.9	11.44	47.4	3.66	1.45	27.72	2.86	2.76	3.27	1.41	2.50
SD	2.02	7.37	2.05	17.2	0.46	2.11	2.66	0.43	0.39	0.48	0.74	0.51
Skewness	0.01	0.34	-0.58	0.41	-0.76	0.30	-0.21	0.51	-0.85	-1.07	0.25	-1.78
Kurtosis	2.37	1.29	2.30	1.52	4.45	2.36	2.87	2.11	3.95	4.80	4.07	9.68
JB	0.80	6.92	3.75	5.83	9.04	1.56	0.41	3.72	7.73	15.87	2.86	117.18
Prob.	0.67	0.03	0.15	0.05	0.01	0.46	0.81	0.16	0.02	0.00	0.24	0.00

Table 2: Correlation Matrix of Key Variables

	GDPPC	EMP	GFCF	SSE	TLM	REM	TRADE	HQLM	HSLM	SLM	SSLM	USLM
GDPPC	1.00											
EMP	0.13	1.00										
GFCF	-0.04	-0.36	1.00									
SSE	0.15	0.89	-0.42	1.00								
TLM	0.28	0.57	-0.08	0.77	1.00							
REM	0.36	-0.16	-0.12	-0.15	0.13	1.00						
TRADE	0.03	-0.26	0.40	-0.06	0.15	-0.07	1.00					
HQLM	0.23	0.77	-0.40	0.89	0.85	0.04	-0.10	1.00				
HSLM	0.09	0.42	0.32	0.42	0.62	-0.23	0.22	0.47	1.00			
SLM	0.25	0.54	-0.02	0.73	0.99	0.09	0.18	0.81	0.66	1.00		
SSLM	0.24	0.45	-0.26	0.70	0.87	0.18	0.10	0.80	0.37	0.86	1.00	
USLM	0.33	0.52	-0.02	0.69	0.97	0.19	0.18	0.78	0.57	0.95	0.77	1.00

4.2. Unit Root Analysis

To escape from the spurious regression results and to select the proper econometric methodology, the Augmented Dickey-Fuller (ADF) test for unit root is applied. The results of the ADF test are reported in Table 3.

Table 3: ADF Unit Root Test Results

Variables	Unit Root Test on Level						
	Intercept	Lags	Intercept and Trend	Lags	None	Lags	Conclusion
GDPPC	-1.3546 (0.345)	0	-1.3392 (0.568)	0	-1.5450 (0.120)	0	I(1)
EMP	-0.9036 (0.7785)	1	-2.1706 (0.4943)	1	1.0177 (0.9165)	0	I(1)
GFCF	-2.2539 (0.1908)	0	-2.7781 (0.212)	0	-0.0260 (0.6691)	0	I(1)
SSE	0.8172 (0.9690	0	-1.6617 (0.7527)	0	3.1050 (0.9993)	0	I(1)
TLM	-3.8349' (0.0049)	0	-3.2949 (0.0793)	0	1.0637 (0.9227)	0	I(0)
REM	-1.9731 (0.2974)	0	-2.1184 (0.5227)	0	-0.6527 (0.4292)	0	I(1)
TRADE	-3.6429 (0.0083)	0	-3.5713 (0.0431)	0	0.0976 (0.7089)	1	I(0)
HQLM	-1.5723 (0.4852)	0	-2.0057 (0.5834)	0	0.4491 (0.8075)	0	I(1)
HSLM	-2.6071 (0.0987)	1	-2.0148 (0.5782)	1	0.3293 (0.7765)	1	I(1)
SLM	-3.6419 (0.0083)	0	-3.1372 (0.1096)	0	1.0203 (0.9168)	0	1(1)
SSLM	-1.8573 (0.3491)	0	-3.0114 (0.1400)	1	0.1500 (0.7251)	0	I(1)
USLM	-6.3996 (0.000)	0	6.6457 (0.0000)	0	0.8708 (0.8942)	0	I(0)

The results of the ADF test show that all variables are not stationary at the same level. We have noticed that GDP per capita, employment, gross fixed capital formation, secondary school enrolment, remittances, highly qualified labour migration, highly skilled labour migration, skilled labour migration, and semi-skilled labour migration are stationary at

first difference but on the other hand, total labour migration, trade, and unskilled labour migration are stationary at level. The findings of the ADF test demonstrate that all variables are not in the same order so the ARDL technique is appropriate.

4.3. Bounds Test Analysis

Pesaran et al. (2001) devised a chart for tabulated F-statistics, and they establish two essential bounds: upper bound and lower bound. If the estimated F-statistics are greater than the upper bound, there will almost certainly be a long-run relationship or cointegration in the variables. If the calculated F-statistics are less than the given lower bound, it indicates that there is no long-run association, but estimated F-statistics between the upper and lower bounds indicate uncertain results.

Table 4: Bounds Test based on F-Test

Model	F-Statistic	I_0	I_1
GDPPC/EMP, GFCF, SSE, TLM, REM, TRADE, TLM*REM, TLM*TRADE	5.23	2.99	1.94
GDPPC/EMP, GFCF, SSE, HQLM, REM, TRADE, HQLM*REM, HQLM*TRADE	4.23	1.99	2.94
GDPPC/EMP, GFCF, SSE, HSLM, REM, TRADE, HSLM*REM, HSLM*TRADE	3.96	1.99	2.94
GDPPC/EMP, GFCF, SSE, REM, SLM, TRADE, SLM*REM, SLM*TRADE	5.64	2.17	3.22
GDPPC/EMP, GFCF, SSE, SSL, REM, TRADE, SSL*REM, SSL*TRADE	6.08	1.99	2.94
GDPPC/EMP, GFCF, SSE, USLM, REM, TRADE, USLM*REM, USLM*TRADE	5.17	1.99	2.94

In Table 4, the results of the bounds test analysis show that the value of F-statistics of all models is greater than the upper bound value so a long-run relationship exists in all models.

4.4. Long Run Analysis

This section describes the long-run results of overseas labour migration, remittances, international trade, and economic growth in Pakistan. The overall labour migration has been split into five categories i.e. highly qualified labour migration, highly skilled labour migration, skilled labour migration, semi-skilled labour migration, and unskilled labour migration. Firstly, we explain the aggregated results of overall labour migration, and subsequently, we would discuss the disaggregated results of labour migration.

4.4.1. Aggregated Analysis

Table 5 exhibits the long-run aggregated analysis results of overseas labour migration. The value of the coefficient of employment (EMP) shows that it has a positive and significant relationship with the gross domestic product (GDPPC). The reason for the positive relation might be that if more and more people have employed it raises the level of output, and this employment growth can take people out of unemployment and poverty. Further, the rise in the employment level in a country has a connection with the increase in the level of production of that nation and this increased level of production is the main reason for the increase in GDPPC. The population growth of developing countries is high as compared to developed countries which can also raise the level of the labour force and this labour force can enhance the production level. Our findings are also matched with Messkoub, 2008 and Kargi, 2014).

Table 5: Long Run Results of Overall Overseas Labour Migration (Aggregated Analysis)

Dependent Variable: GDPPC			
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
EMP	0.377383	0.146813	2.570507	0.0222
GFCF	0.6245	0.209479	2.972827	0.0101
SSE	0.56224	0.081358	3.100606	0.0078
TLM	0.39992	1.847732	2.131106	0.0513
REM	0.212929	0.153511	1.38706	0.0871
TRADE	0.090718	0.204752	0.44306	0.6645
TLM*REM	0.665851	0.28229	2.358747	0.0334
TLM*TRADE	0.517657	0.208106	2.487461	0.0261
C	0.825989	6.955552	0.118752	0.9072

The next independent variable is gross fixed capital formation (GFCF) which indicates a positive and significant relationship with GDPPC. The rationale behind this phenomenon might be that the rising fixed capital formation can generate the possibilities of production which is the basic reason for the rise in GDP of any nation. Moreover, foreign direct investment and the dependence on internal resources are the best ways of financing various productive projects. Besides, GFCF is also considered vital for raising the GDP level as it has a connection with employment level. It also influences the expenditures of the government and the consumers. A state's investment and expenditures on productive projects can boost the GDP of that country. Our results have a link with Fatima et al., 2012 and Ferrer & Zermeño, 2015. Secondary school enrolment (SSE) is a basic social factor and it shows a positive and significant relationship with the GDPPC of Pakistan. The reason for this positive relation is that SSE has a connection with children's education and this level of education can enhance their capability and can increase technological progress which in turn can raise the production level. If youngsters will not familiar with advanced methods of production as well as technologies they will not be able to enhance production level. Primary education is not enough for raising their capabilities, therefore, the increased SSE is necessary if the ratio of SSE rises people will be able to get modern production methods and can raise their capabilities which in turn raise the GDP of that country. Our findings are in line with Wadud et al, 2007 and Sudrajat 2012.

The next variable is total labour migration (TLM) which elaborates positive relation with GDPPC. The influence of migration on gross domestic product per worker depends on (i) migration scope (ii) parameter of production and (iii) native- and foreign-born migrants relative to the human capital endowments. Migration alters the structure of the domestic age of the host countries because the migrants tend to be robust in a more active age group than natives, therefore decreasing the ratio of dependency. Additionally, the migrants might bring some assets along with them, hence contributing to the accumulation of physical capital in the host country. Besides, skilled migrants can take part in research and enhance technological and innovative progress. Research has needed to account for these influences before one might convincingly states the full effect of migration on economic growth (Boubtane et al., 2016).

The next important variable in the economic growth process is remittances (REM) which have a positive and significant association with GDPPC. Possible reasons for this relation are that the economic growth may be influenced positively through remittances because remittances can become a cause of investment and that investment can create employment which in turn raises the production level. Secondly, the remittances of migrants can push up the level of income which can increase the purchasing power this led to the rise in production domestically. Thirdly, the remittances from the earnings of migrants living abroad as well as the income multipliers they create are the fundamental resources for the subsistence strategies of the household receives. Remittances become more important as an external financing source in developing countries because they are seen to be more highly stable than the other flows of foreign currency. Our results are matched with Kamande, 2012; Asad et al.,2016 and Ari, 2020.

Another variable is trade which shows a positive but insignificant relationship with the GDPPC of Pakistan. Although the findings are insignificant few reasons are needed to explore the positive relation. This positive link is due to the stability of trade policies enhanced innovations, technology diffusion, and knowledge. Furthermore, the rise in exports is a basic cause of the rise in production that can enhance economic growth. Our results show little effect of trade on the GDP of Pakistan because the exports of Pakistan are primary products while imports are capital products so we have to pay more for importing the products than our receipts. Due to this, the trade balance of Pakistan remains negative that's why it has little effect on enhancing the GDP of Pakistan as compared to other countries. Our findings are matched with Bourdon et al, 2013 & Gwaindepi et al, 2014.

In our analysis, we have used interaction terms of TLM and REM and TLM and TRADE. The interaction term of TLM and REM shows that on the average value of REM, TLM can increase and it raise the GDP by 0.66 per cent and this relation is significant. The next interaction term indicates that on the average value of TRADE, TLM can raise the which in turn increases the GDP of Pakistan by 0.51 per cent.

4.4.2. Disaggregated Analysis

Table 6. reports the long-run disaggregated results of labour migration (LM) in terms of highly qualified labour migration, highly skilled labour migration, skilled labour migration, semi-skilled labour migration and unskilled labour migration. The variables i.e. employment, gross fixed capital formation, remittances and trade have a positive influence on the economic growth of Pakistan. The factors of labour migration such as; highly qualified labour migration, highly skilled labour migration and skilled labour migration insert a positive effect on economic growth for numerous reasons i.e. quality of a highly qualified workforce creates the capability of a country to develop, grow, and use information and technology in such a manner to make a nation more competitive and improving the lifestyle of its population. The rise in economic growth due to highly skilled and skilled labour migration results from raised labour force diversity that brings new investment, ideas, innovations, business opportunities, inventions as well as technological innovations to produce a broad variety of goods & services, therefore, showing high social returns to the higher skill effects.

Table 6: Long Run Results of Overseas Labour Migration (Disaggregated Analysis)

Variables	Dependent Variable: GDPPC				
	Model 1 HQLM	Model 2 HSLM	Model 3 SLM	Model 4 SSLM	Model 5 USLM
EMP	0.08946 (0.02748)	0.3347 (0.0684)	0.3818 (0.0072)	0.363145 (0.0003)	0.438 (0.0276)
GFCF	0.167847 (0.0018)	0.8886 (0.035)	1.3183 (0.0086)	0.83302 (0.0002)	0.78 (0.0176)
SSE	0.0007 (0.0918)	0.19067 (0.0321)	0.0662 (0.0372)	0.1722 (0.0015)	0.169 (0.0627)
LM	2.8003 (0.0448)	1.9757 (0.0847)	1.3601 (0.0130)	-1.867 (0.0123)	-0.9120 (0.090)
REM	0.0867 (0.0867)	0.0210 (0.9213)	0.1046 (0.0711)	0.0099 (0.029)	0.681 (0.037)
TRADE	0.3802 (0.1662)	0.02545 (0.8961)	0.733 (0.0158)	0.0503 (0.6131)	0.5428 (0.0842)
LM*REM	0.265 (0.0934)	0.19010 (0.0321)	0.366 (0.0045)	0.223 (0.0670)	0.4556 (0.0657)
LM*TRADE	0.3176 (0.0261)	1.9757 (0.0847)	1.32456 (0.03345)	0.533 (0.0102)	0.3567 (0.0087)
C	5.667 (0.00940)	5.1623 (0.5347)	18.0462 (0.0919)	4.915431 (0.148)	-2.246 (0.7837)

On the other side, semi-skilled labour migration and unskilled labour migration indicate a negative relationship with the economic growth of Pakistan because the immigration of semi-skilled foreign workers, especially, irregular ones, may cause a minor fall in semi-skilled native earnings, and a decrease in technological investment by the domestic firms that may result in a fall in the overall productivity of labour. Moreover, the local governments and states need to carry out the burden of unskilled labour to provide them welfare support and public services etc. It is also true that the recently arrived immigrants commonly have less contribution to economic growth as compared to natives. Therefore, their contribution is also low in taxes and social securities as well as their labour force participation rate usually remains low which reduces productivity. Our results are in line with (Oliinyk et al., 2021 Tipayalai, 2020; Dadush, 2014).

4.5. Error Correction Analysis
The "error correction" term indicates the adjustment speed to restore the equilibrium level in a dynamic model. The error correction coefficient shows how slowly and quickly the variables usually move towards the equilibrium level. The coefficient term must be negative and significant.

Table 7: Error Correction Results of Labour Migration

Models	Variable	Coefficient	Std. Error	t-Statistic	Prob.
	Dependent Variable: D(GDPPC)				
Aggregated Analysis	CointEq(-1)*	-1.7643	0.1894	-9.313	0.0000
Disaggregated Analysis					
Model 1	CointEq(-1)*	-0.858223	0.133484	-6.429428	0.0000
Model 2	CointEq(-1)*	-1.563125	0.235453	-6.638794	0.0000
Model 3	CointEq(-1)*	-2.333352	0.248145	-9.40319	0.0003
Model 4	CointEq(-1)*	-2.293905	0.289179	-7.932475	0.0000
Model 5	CointEq(-1)*	-1.929051	0.250026	-7.715398	0.0000

The error correction terms in both aggregated and disaggregated analyses indicate that all coefficients are negative and significant.

5. Conclusions and Policy Implications
This study has explored the impact of overseas labour migration, remittances, and international trade on economic growth in Pakistan. Findings indicate total labour migration, remittances and international trade have a positive and significant relationship with economic growth. In disaggregated analysis, mixed findings related to labour migration have been found.

Following policies can be made from this study:

i. As the flow of remittances is increasing in Pakistan so there is a need to utilize the capital sent by the foreign workers in productive ways. Being a consumption-oriented society, people usually consume remittances for luxurious goods. Instead of using these earnings for unnecessary consumption they should use invest in them.

ii. No doubt overseas labour migration is a source of foreign earnings but due to overseas migration, Pakistan is getting deprived of skilled and educated people. If these people got opportunities and good jobs in Pakistan they would not need to migrate. So, the government should provide them employment according to their skills and knowledge which can generate more revenue for the country directly.

iii. International trade is a fundamental source of economic growth, so government should make such policies i.e. provision of adequate infrastructure, reduction in tariffs and quotas and expansion of the market, etc. which can enhance trade.

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