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Time Series Analysis of Poverty Reduction Indicators: Case of Pakistan, India and Bangladesh

Quratulain Akhtar [1] Sadia Butt [2] Madiha Niaz [3]

Abstract: *This paper investigated the indicators of poverty reduction. The independent variables are financial development, military expenditure, remittances, trade openness and world oil prices. A time series analysis was conducted from 1980 to 2016. The ADF and Phillip-Perron unit root tests were applied to find the level of co-integration. The study researched the long-run relationship between independent and dependent variables by applying the Auto Regressive Distributed Lag (ARDL) Bound testing approach. The order of integration according to the unit root test is mixed for the variables. In all three countries, the ARDL bound testing approach found the long-run relationship between poverty and its indicators.*

Key Words: Financial Development, ARDL, Trade Openness, Poverty Reduction, Pakistan, India, Bangladesh

Introduction

All countries face the problem of Poverty (POV), mainly because it is present in the progressing nations. This problem must be resolved instantaneously; otherwise, it will be a huge hurdle for economic growth. That's the reason POV is recognized as an agenda item in the millennium's development objectives (Muthalib et al., 2018). The developing countries are engraved in poverty. One of the major hurdles that plague developing nations like Pakistan, India, and Bangladesh is poverty. Economic policy in developing nations is primarily focused on the attainment of sustainable development in the economy through poverty (POV) reduction and the development of infrastructure (Tajammal & Butt, 2024). Developing nations are facing poverty problems mainly due to their vulnerable population. According to Webster, "poverty means inaccessibility of material possession and money". According to an economic survey of Pakistan, the 2018 percentage of people living below the poverty parameter was 24.3 per cent in 2015-2016 and 50.4 per cent in 2005-2006. In India, poverty reduction has expanded in recent years, with the average percentage between 1993-2005 from 0.74 points per year to an average percentage of 2.18 points per year between 2005-2012, according to the Bangladesh Bureau of Statistics Percentage of poverty in a rural area comprised of 26.4 per cent, while the percentage of poverty in urban areas comprised of 18.9 per cent. The extreme poverty rate in recent years comprised 12.9 per cent in comparison to 17.6 per cent six years ago.

From the literature, it has been evident that well-established and productive financial development (FD) boosts the economy through access to credit people, injects money into the economy and productivity and ultimately reduces poverty (Ouaga & Faso, 2017). Researchers (like Sehrawat & Giri, 2018 Dewi et al., 2018; Rewilak, 2017 Bayar (2017) are evident that financial development (FD) contributes to POV reduction (Obinna & Innocent, 2024). Across the world, labour mobility is considered one of the most important phenomena that have a significant impact on host countries. On the one hand, these labourers not only improve the economy by boosting consumption level and quality of life but also boost the economy through the inflow of remittances (Gaaliche & Zayati, 2014). The military defence expenditure has both negative and positive impacts on poverty. For developing nations, military expenditure is far higher than that of

[1] Lecturer, Institute of Business & Management (IB&M), University of Engineering and Technology, Lahore, Punjab, Pakistan.
[2] PhD Scholar, Dr Hasan Murad School of Management, University of Management and Technology, Lahore, Punjab, Pakistan.
[3] PhD Scholar, Dr Hasan Murad School of Management, University of Management and Technology, Lahore, Punjab, Pakistan.

▪ **Corresponding Author:** Sadia Butt (F2018051001@umt.edu.com)
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other nations, especially in the case of Pakistan and India, which are usually at war in the territories. On the one hand, countries are making military expenditures at the expense of development projects, and on the other hand, military expenditure induces aggregate demand and employment opportunities (Apanisile & Okunlola, 2014). The study also focuses on the background of developing countries to examine the effect of military expenditure (ME) on poverty.

Trade openness (TO) and trade liberalization policies are highly important for developing nations as they bring a bundle of opportunities for investment employment and ultimately reduce income inequalities and poverty (Tahir & Ali, 2014). Fambeu (2021) examined the effect of democracy on poverty (POV) in Sub-Saharan countries of Africa. Their findings concluded that both TO and democracy shouldn't be considered individually, and simultaneous policy is required to increase their effect on POV in African countries.) Remittances have become a crucial source of foreign earnings. Notwithstanding widespread literature, their influence on poverty (POV) reduction is still debatable. A few researchers (such as Azam et al., 2016) posit their negative effect and some others (Vacaflores, 2018; Adams Jr & Cuecuecha, 2013; Adams Jr, R & Page, 2005) posit their positive influence on POV reduction (Khan et al., 2022). Therefore, empirical investigation is required to address this inconclusive relationship.

World oil prices and standard of living are critical topics to be considered. World oil price is the main indicator affecting economies, and so is the poverty level of developing nations as well (Khaleefah et al., 2016). According to Naranpanawa and Bandara (2012), a sharp increase in food and oil prices during 2007-8 resulted in negative effects on economic growth and poverty (POV) in several progressing nations which were involved in imports of these products. However, empirical support is limited in progressing countries' context regarding the effect of higher prices of oil exclusively in the domain of household poverty (POV) and generally on growth. Research addressing the impact of oil prices on poverty (POV) and unemployment has rarely been conducted so far. Earlier studies (Like Oluwatayo and Alagbe, 2015; Pradhan & Sahoo (2002) investigated oil prices and POV association, and their results varied. For example, luwatayo and Alagbe's (2015) findings concluded that an increase in oil prices also results in an increasing level of poverty. Contrary to their findings, Pardhan and Sahoo (2002) study revealed that an increase in oil prices lowers the level of poverty (Muthalib et al., 2018).

In past decades, an enormous amount of research has been done on poverty indicators, but little work has been done on empirical investigation of poverty reduction with financial development (Sherawat & Giri, 2014; Keho, 2017). Also, there is no substantial work in Pakistan, Bangladesh, and India to observe the causal relationship between poverty reduction and its indicators. So, in this paper, the researchers explored the empirical impact of financial development on poverty reduction along with military expenditure, remittances, trade openness, and world oil prices in Bangladesh, Pakistan, and India. A time series analysis was done from 1980 to 2016.

In the current study, researchers have applied the (ARDL) approach of Co-Integration to inspect the long-run correlation between independent and dependent variables. The unit root test of ADF and Phillip-Perron was implemented to observe the order of integration. For causality, the Granger causality test was applied by the researcher. Augmented Dicky Fuller Phillip-Perron tests of the unit root have been used to trigger the immobility of said variables, and the results show the order of integration is mixed for dependent as well as independent variables. Following these results, the researcher applied the ARDL approach, which shows the existence of a comprehensive relationship between poverty and all its indicators in three sampled countries. Accordance with a long-run coefficient based on the ARDL approach depicts that all indicators have a statistically significant impact on poverty in Pakistan. In India, financial development, military expenditure, world oil prices and trade openness have a significant influence on poverty reduction over a longer period of time, while in Bangladesh, financial development, military expenditure, remittances, and trade openness have a significant while world oil prices have an insignificant effect on reduction of poverty in the long run. Based on diagnostic tests, the functional form is specified correctly, the model is distributed normally, there is no heteroscedasticity, and no serial correlation issue in our model. According to ECM, if a macroeconomic shock occurs, the speed of adjustment for Pakistan will be 47 per cent (2.12) years. For India, the speed of adjustment is 95 per cent (1.05) years, and for Bangladesh, 62.62 per cent (1.61) years. The current research study addresses the following research questions (RQs):

- What is the impact of financial development on poverty?
- What is the impact of Military expenditure on poverty?
- What is the impact of Remittances on poverty?
- What is the impact of Trade Openness on poverty?
- What is the impact of world oil prices on poverty?

To answer the RQs, the following research objectives are considered:

- To find the impact of financial development on poverty reduction.
- To examine the impact of Military expenditure on poverty.
- To investigate the impact of Remittances on poverty.
- To examine the impact of Trade Openness on poverty.
- To investigate the impact of world oil prices on poverty.

Literature Review and Hypotheses Development

Financial Development and Poverty Reduction

Extensive theoretical and empirical research has been done to back the proposal that a well-established and productive financial structure has a compelling impact on economic prosperity and poverty reduction (Jalalian, 2005). Financial intermediaries, with the help of the banking system, play a momentous role by injecting credit into the economy and improving productivity, bringing technical change and hence helping to alleviate poverty (Singh & Law, 2014). In the study of Rewilak (2017), the author tested a poverty reduction relationship with financial development and derived that financial deepening plays a powerful role in reducing poverty. The majority of the studies supported the idea that financial development has a significant impact on poverty contraction. Researchers imply an indirect approach to studying the economic growth effect through financial development (private sector credit, insurance services, and investment opportunities) automatically contributes to poverty reduction, as stated by trickledown theory and General Theory (Dhrifi, 2013). Justice et al. (2023) examined the effect of financial development (FD) on poverty in the Nigerian context utilizing time series data covering the period of 1990-2020.OLS regression was utilized by applying E-views software. Study findings revealed that FD was positively and significantly related to poverty. Khan and Majeed's (2023) empirical research assessed the importance of the financial sector's development in determining the energy poverty of one hundred and ten developing nations from 1990 to 2020. Analysis results verified that the financial sector's development had a positive impact on alleviating energy poverty in a selected sample of countries. Li et al. (2023) conducted an empirical investigation by taking panel data from South Asian nations. Their findings inferred that financial inclusion is favourable for both poverty reduction and economic growth in South Asian nations. Ho and Iyke (2017) examined the relationship of poverty with respect to financial development in Hong Kong based on time scale data of 1990-2014 by using the Toda- Yamamoto test of causality and found that financial development acts as a booster to enhance economic growth in Hong Kong during the study period and hence helping mitigating poverty in the country.

Kaidi, Mensi and Amor (2018) examined the association between poverty and financial growth by utilizing the 132 countries' data from the time period of 1980-2014. Researchers applied the least square method in three stages to find the causality between variables. Researchers found that financial development did not impact poverty, although institutional quality had a strong influence on poverty reduction. Rosario, Duarte and Xuemei (2017) studied the association between three variables such as economic growth, financial development and FDI, from the time period 1987 to 2014 by using the Johanson testing approach and Granger test of causality. Researchers found a significant association between private-sector credit, economic growth and FDI. Reviewing the literature, the following hypothesis is formulated:

H_1: Financial development has a significant relationship with poverty

Military Expenditure and Poverty

Geng et al. (2023) examined the effect of ME on economic growth (EG) by considering data from the period 1990-2018 in Islamic countries. Their results identified ME's negative impact on EG. Additionally, increasing ME by one per cent leads to a decline in EG by .101 per cent. Meanwhile, ME's elasticity to EG was the lowest in upper-middle-income nations compared to other countries groups. Kalim and Hassan

(2014) explored the effect of military expenditures (ME) in Pakistan on poverty (POV). The analyzed time-series data for the period covered 1972-2009. Analysis findings highlighted that inflation and ME significantly elevate POV in longer and short term periods in Pakistan. Dagume (2021) investigated vital macroeconomic variables of a country utilizing time series data for the period covered from 1996 to 2019. Their study results supported the idea that military expenditures (ME) had a positive long-run association with the rate of poverty, but this relationship was not statistically significant. Henderson (1998) examined the extent of military expenditure (ME) in relation to poverty (POV) for the period of 1959-1992 in the U.S. Their findings identified that the association was reversed between wartime ME and POV. This association was directly between peacetime ME and POV. Meanwhile, military people's expenditure was inversely related to POV. At the same time, other operational area expenses were directly related to POV. Akhtar et al. (2017) investigated poverty's impacting factors in the context of Pakistan. Study findings highlighted that all studied factors were impactful, and military expenditure (ME) significantly and positively impacted poverty in Pakistan. Reviewing the literature, the following hypothesis is formulated:

H_2: Military expenditure has a significant relationship with poverty

Remittances and Poverty

Remittances, a source of external financing, are an important factor for developing nations. It is not only the powerful basis of external financing but also the means to reduce poverty in developing countries (Abdelhadi & Bashayreh, 2018). Mirza, Hashmi and Iqbal (2014) have documented the association between foreign remittances and poverty reduction by gathering data from Pakistan from 2007-2008 and found that remittances not only reduce poverty but also bring macroeconomic stability in the country. Huay and Bani (2017) discovered that remittances play a significant role in poverty reduction. For empirical analysis, researchers used data from 54 developing nations for the time scale 1981- 2010 and tested dynamic panel estimators. Researchers found a significant relationship between dependent and independent variables. Idrissi (2023) examined (Panel) data of 8 SEMEC countries for years covering 2000 to 2018. Their findings also identified that remittances represented the hugest foreign exchange (FE) income, which represented an 8 per cent average of gross domestic product (GDP).

Abdelhadi and Bashayreh (2018) investigated the role of remittances in poverty reduction in Jordan from the time period 1972-2015. The author applied the unit root test and Johansen Co-integration approach for the empirical investigation and documented the statistical long-run association between GDPPC and remittances. Ismail (2017) empirically analyzed the study regarding the impact of military expenditure on economic growth in 5 South Asian nations by gathering panel data. Researchers stated that military expenditure is not playing a significant role in boosting economic growth. Henderson (1998) inspected the impact of the relationship between poverty and military expenditure in the United States from the time period 1959 to 1992. The researcher presented the positive association between poverty and military expenditure. In accordance with Markowiski, Chand and Wyllie (2017), the authors evaluated the empirical relationship of economic growth with military expenditure by collecting data from Indo-Pacific Asia and found a significant causal relationship between both variables. Zong et al. (2015) found that military expenditure strongly influences economic growth. Researchers used data from BRICS countries from 1988 to 2012 and applied the Granger Causality test for empirical analysis. Reviewing the literature, the following hypothesis is formulated:

H_3: Remittances have a significant relationship with poverty

Trade Openness and Poverty

Globalization has opened many ways for developing nations by introducing technologies, facilitating the free flow of goods and services, and removing barriers to trade. This trade openness not only elevates income inequality but also reduces poverty in trading countries (Semancikova, 2016). The study investigated the association of two variables, trade openness and poverty reduction in Latin America, by applying the panel data analysis, and the researcher found that trade openness, as well as financial development, has a strong negative influence on income inequality and poverty (Bayar & Sezgin, 2017). Nessa and Imai (2023) examined data from progressing countries from years 2000 to 2016 to know the effect of trade openness (TO) on working poverty (WPOV). Their results identified that trade openness (TO)

significantly declined the rate of WPOV. Augasalim (2017) researched the dynamic analysis between trade openness and poverty by gathering data from the time series of variables in Indonesia. The author used the data from 1978-2015. In the short run, empirical analysis was done using the VECM model. According to forecast error, trade openness has not significantly affected poverty on the basis of variance decomposition analysis till 3rd year but shows a significant effect in subsequent years. Mahesh (2016) explored the causal relationship between the two variables, income inequality, poverty, and trade openness, by utilizing data from BRIC countries from 1975 to 2013. Researchers stated that whenever an increase in trade openness, it also increases the income inequality of the countries involved in the study. Reviewing the literature, the following hypothesis is formulated:

H_4: Trade Openness has a significant relationship with poverty

Oil Prices and Poverty

Nwoba, Nwonu and Agbaeze (2017) discovered the influence of fallen oil prices in Nigeria. Pearson product momentum correlation and the Chi-Square analysis technique were used to analyze the interconnection between crude oil prices and indicators of macroeconomic factors. Researchers found that Nigeria's economy has powerfully changed with the prices of crude oil. Many researchers believe that high crude oil prices have a strong negative influence on the economy and thus enhance poverty (Setyawan, 2014; Ojikutu, Onolemhemhen, & Isehunwa, 2017). Naranpanawa and Bandara (2012) studied the influence of increased crude oil prices on the economy of Srilankan during the years 2007-2008. By using the computed general equilibrium approach, the researcher documented the significant effect of the change in the prices of crude oil on the economy. Reyes et al. (2009) investigated the impact of increasing oil and rice prices on levels of POV in the context of the Philippines. The analysis results suggest that the impact of the increase in oil and rice prices differed with the levels of POV (Muthalib et al., 2018). Chitiga et al. (2012) research in the South African context examined the implications of POV regarding Govt. policy's response to the rise in Int'l fuel/oil prices. Their studies revealed that oil prices had a positive influence on the level of poverty in the South African context. Sari et al. (2016) discovered that the increasing prices of crude oil had a greater influence on the income inequality of Malaysia's different ethnic groups in 2008 by running the novel price-induced Sam model and computable general equilibrium. Results suggest that increased prices of crude oil have a somewhat negative impact on income, which targets the different ethnic groups of Malaysia. Reviewing the literature, the following hypothesis is formulated:

H_5: World Oil Prices have a significant relationship with poverty

Methodology and Data Source

Methodology is a process of exploring something which is unknown through facts, which are then turned into outcomes and results (Butt et al., 2024). A quantitative paradigm has been undertaken to attain the objectives of this research. In the quantitative approach, data analysis is applied using statistical methods to derive conclusions (Akhtar & Butt, 2022; Butt & Yazdani, 2023). By using the general and statistically proven quantitative methods, research has promptly focused on driving a conclusion on the basis of existing/secondary data (Mundar et al., 2012). Statistical, numerical, and mathematical analysis of data was done using objective measurements. The research study basically relied on a secondary set of data, which was collected from the World Development Indicators (WDI) for the period 1980-2016 for Bangladesh, Pakistan,n and India. The data from only 3 South Asian countries has been considered for this study due to resource constraints.

Table 1

Data source

Variables	WDI
Poverty	WDI
Financial Development	WDI
Military Expenditure	WDI
Remittances	WDI
Trade Openness	WDI
World Oil Prices	WDI

Table 2

Conceptual model

Countries	Conceptual Model	Eq: No
Pakistan	$\ln Pov(Pak) = \alpha_o + \alpha_1 \ln M3 + \alpha_{2\ln} ME + \alpha_3 \ln TO + \alpha_4 \ln WOP$	1
India	$\ln Pov(Ind) = \alpha_o + \alpha_1 \ln M3 + \alpha_{2\ln} ME + \alpha_3 \ln TO + \alpha_4 \ln WOP$	2
Bangladesh	$\ln Pov(Bang) = \alpha_o + \alpha_1 \ln M3 + \alpha_{2\ln} ME + \alpha_3 \ln TO + \alpha_4 \ln WOP$	3

Theoretical Framework

The study model is based on a series of variables. The model is based on the following variables: poverty, financial development, military expenditure, remittances, trade openness and world oil prices.

Poverty

In comparison to developed nations, the time series data on poverty is limited in developing countries because they initiated the recording of the data in the late 1990s. Literature has offered a number of proxies to measure poverty. In literature, some studies use the Gini coefficient, and some use GPPC as a measure of poverty. However, these studies do not cover the time period researchers are using in this study. For this reason, the researcher is using an indicator called consumption per capita to measure poverty (Dhrifi, 2013). Data for this indicator is taken from WDI.

Financial Development

To measure the effectiveness of financial development on the reduction of poverty, many studies have used various indicators such as the ratio of broad money to stock as a percentage of GDP, domestic credit to private sector, private credit ratio allowed by financial intermediaries to GDP (Abdin, 2016). In this study, the researcher uses broad money to stock as a percentage of GDP to proxy for financial development. Data is collected from WDI to represent this indicator.

Military Expenditure

To measure the military expenditure, WDI is used as a basis to collect the data for this variable. Proxy is military expenditure, which is shown as a percentage of Gross Domestic Product (GDP). Various studies used this proxy. As is evident when any government allocate its share of GDP to military expenditure, it commences this expenditure at the expense of poverty (Ismail, 2017). Data for this variable is taken from WDI.

Remittances

To analyze the impact of remittances on the reduction of poverty, studies used the proxy as remittances per capita (Abdelhadi & Bashayreh, 2018). The researcher is using the indicator of personal remittances as GDP on a percentage basis. The data for this variable is collected from WDI.

Trade Openness

Trade openness can be represented as a sum of imports and exports, which is illustrated as a share of GDP. In order to measure trade openness and its effect on poverty, many studies used proxy of imports and exports of goods and services (Mahesh, 2016). In this study, the researcher used the trade as a percentage of GDP as a proxy. Data on this indicator is taken from WDI.

World Oil Prices

World oil prices have a strong impact on countries' economies. In this study, the researcher is using crude oil prices as a percentage of GDP to measure the impact of this variable on poverty.

Estimation Procedure

This study considers poverty (POV) as a dependent variable (DV) and financial development, military expenditure remittances, trade openness and world oil prices as independent variables. A descriptive analysis was conducted. Researchers also conducted the diagnostics test. Time series analysis was done by

using the Auto Regressive Distributed Lag Bound Co-integration approach (ARDL). The ARDL technique is applied to determine the existence of short and long-term co-integration among (study) variables which are being considered for data analysis (Tajammal & Butt, 2024). Data transformation techniques have been used to transform data into natural log specifications. Unit root tests of Phillip-Perron and Augmented Dickey-Fuller have been applied to data to analyze the stationary of data. For causality, Granger causality has been conducted.

Analysis of Results and Discussion

The following section of the paper describes the analysis of the results and its discussion for Bangladesh, Pakistan and India. Table 3 indicates the basic descriptive statistics, which are as follows.

Table 3

Descriptive statistics

Variable	Pakistan			India			Bangladesh		
	Mean	Standard deviation	Sample Size	Mean	Standard Deviation	Sample Size	Mean	Standard Deviation	Sample Size
LPOVt	22.753	0.38883	37	0.0418	0.035641	37	22.744	0.349067	37
LM3t	3.8293	0.121961	37	3.9879	0.283465	37	0.2664	0.113869	37
LMEt	1.6259	0.307589	37	1.0649	0.124705	37	3.4773	0.48464	37
LREMt	1.5074	0.509397	37	0.7325	0.478424	37	1.4576	0.540927	37
LTOt	3.5147	0.094409	37	0.2957	0.516199	37	3.3107	0.341291	37
LWOPt	0.5418	0.382518	37	3.2475	0.264329	37	3.4124	0.992895	37

The Mean Values of all variables are greater than their comparable standard deviation values, showing under dispersion and similar characteristics for all three countries such as Bangladesh, India and Pakistan. After looking at the descriptive statistics, the next thing to discuss is stationarity. Stationarity in this study is tested via Augment Dicky Fuller (1979) test, and Phillip Perron (1988) is used to confirm results displayed by the Augment Dicky Fuller test. For both the tests, the null hypothesis postulates that the series is non-stationary and no unit root test is appropriately applicable, although the alternate hypothesis postulates that the series is stationary and a unit root test is appropriately applicable. Table 4 represents the results of all three countries, which are as follows:

Table 4

Unit root

Pakistan						
ADF- at Level				ADF- at First Difference		
Variables	t-statistic	Prob value	Decision (d)	t-statistic	Prob value	Decision
LPOVt	-3.99085	0.0039	Stationary	-4.51172	0.0010	Stationary
LM3t	-1.20294	0.6625	Non-Stationary	-5.20027	0.0001	Stationary
LMEt	-0.12706	0.9387	Non-Stationary	-4.72819	0.0005	Stationary
LREMt	-1.52701	0.5087	Non-Stationary	-5.20773	0.0001	Stationary
LTOt	-1.4385	0.5527	Non-Stationary	-7.19809	0.0000	Stationary
LWOPt	-2.64535	0.0936	Stationary	-7.17151	0.0000	Stationary
Phillip -Perron at Level				P.P- at First Difference		
LPOVt	-3.99569	0.0038	Stationary	-4.54615	0.0009	Stationary
LM3t	-1.04611	0.7260	Non-Stationary	-6.22647	0.0000	Stationary
LMEt	-0.31076	0.9135	Non-Stationary	-4.69585	0.0006	Stationary
LREMt	-1.52701	0.5087	Non-Stationary	-5.18318	0.0001	Stationary
LTOt	-1.52051	0.5120	Non-Stationary	-7.18458	0.0000	Stationary
LWOPt	-2.56065	0.0104	Stationary	-8.22949	0.0000	Stationary

India						
ADF- at Level				ADF- at First Difference		
Variables	t-statistic	Prob value	Decision (d)	t-statistic	Prob value	Decision(d)
LPOVt	-2.45563	0.1347	Non-Stationary	-13.1114	0.0000	Stationary
LM3t	-1.08205	0.7123	Non-Stationary	-3.96464	0.0043	Stationary
LMEt	-1.86921	0.3424	Non-Stationary	-4.24909	0.002	Stationary
LREMt	-0.93684	0.7647	Non-Stationary	-6.57726	0.0000	Stationary
LTOt	-0.5922	0.8601	Non-Stationary	-4.68825	0.0006	Stationary
LWOPt	-2.80008	0.0683	Stationary	-6.73293	0.0000	Stationary
P.P- at Level				P.P- at First Difference		
LPOVt	-5.49142	0.1247	Non-Stationary	-18.3669	0.0001	Stationary
LM3t	-1.00569	0.7408	Non-Stationary	-3.93508	0.0046	Stationary
LMEt	-1.45049	0.5468	Non-Stationary	-4.19433	0.0023	Stationary
LREMt	-0.89361	0.7788	Non-Stationary	-6.57761	0.0000	Stationary
LTOt	-0.70079	0.8339	Non-Stationary	-4.7383	0.0005	Stationary
LWOPt	-2.7419	0.077	Stationary	-7.62938	0.0000	Stationary
Bangladesh						
ADF- at Level				ADF- at First Difference		
Variables	t-statistic	Prob value	Decision (d)	t-statistic	Prob value	Decision(d)
LPOVt	-3.11487	0.0343	Stationary	-6.00484	0.0000	Stationary
LM3t	-0.88893	0.7803	Non-Stationary	-4.83858	0.0004	Stationary
LMEt	-2.33179	0.168	Non-Stationary	-5.68242	0.0000	Stationary
LREMt	-0.71178	0.8304	Non-Stationary	-5.56333	0.0001	Stationary
LTOt	-0.64711	0.8473	Non-Stationary	-6.55266	0.0000	Stationary
LWOPt	-1.60481	0.4699	Non-Stationary	-6.53252	0.0000	Stationary
P.P- at Level				P.P- at First Difference		
LPOVt	-2.86881	0.059	Stationary	-6.13963	0.0000	Stationary
LM3t	-0.89829	0.7773	Non-Stationary	-4.75305	0.0005	Stationary
LMEt	-2.28581	0.1818	Non-Stationary	-5.26929	0.0001	Stationary
LREMt	-1.45421	0.5449	Non-Stationary	-4.16561	0.0025	Stationary
LTOt	-0.60842	0.8564	Non-Stationary	-6.55259	0.0000	Stationary
LWOPt	-1.63699	0.4539	Non-Stationary	-6.51877	0.0000	Stationary

The results of the Augmented Dicky Fuller and Phillip Perron indicated all variables (LPOVt, LM3t, LMEt, LREMt, LTOt and LWOPt) are Non-stationary at level for Pakistan, India and Bangladesh except for LPOVt and LWOIt (Pakistan), LWOIt (India), LPOVt (Bangladesh) which are stationary at level. So, there is a mixed order of amalgamation of variables. All variables in this study have a stationary impact at the first difference for all three countries. After the estimation of results for the Unit root by the Augmented Dicky Fuller and Phillip Perron test, the next appropriate step is the estimation of the Auto Regressive Distributive Lag (ARDL) approach. The Results of the ARDL approach are reported in Table 5.

Table 5

Autoregressive distributive lag (ARDL) approach

Countries	Pakistan	India	Bangladesh
Estimated model	POVt = f(M3t, MEt, REMt, TOt, WOPt)		
Optimal lags	(1,1,0,0,0,1)	(1,0,0,1,0,1)	(1,1,1,0,1,0)
F-statistics	3.9464*	4.3143	10.03
W-statistics	23.6784*	25.8855	60.1802

Significance level	Critical bounds for F-statistics		Critical bounds for W-statistics	
	Lower Critical Bound	Upper Critical Bound	Lower Critical Bound	Upper Critical Bound
5%	3.0647	4.3919	18.3884	26.3515
10%	2.5355	3.7211	15.2129	22.3266
Diagnostics				
Serial Correlation		.50358[.484]*	.49900[.486]*	2.0085[.169]*
Functional Form		6.9984[.114]*	6.9984[.114]*	.21657[.646]*
Normality		67.0876[.782]*	2.9752[.226]*	2.7979[.247]*
Heteroskedasticity		1.8792[.179]*	1.6059[.214]*	.081188[.776]
Adjusted R-square		0.88219	0.778105	0.699796
F-statistics		367.7094[.000]	.68414[.007]	1899.5[.015]
DW Statistic		2.2346	1.8833	2.4099

The F-statistic and w-statistic values are 3.9464 and 23.6784 (Pakistan), 4.3143 and 25.8855 (India) and 10.03 and 60.1802 (Bangladesh). The calculated estimates for F-statistics as well as W-statistics represent a greater effect than the calculated superior bounds of 3.7211 and 22.3266 at a 10% significance level. Hence, the conclusion can be drawn that all of the variables selected for the study, i.e. M3t, MEt, REMt, TOt, and WOPt, have a long-run relationship with POVt for Bangladesh, India and Pakistan. By looking at the diagnostics of ARDL in Table 3, we can identify no problem with serial correlation, correctly specified functional forms, normally distributed error terms and no heteroscedasticity problems. The F- statistics values for Bangladesh, India and Pakistan are significant, indicating the reliability of the model. After the stable results of the ARDL approach, we now have to look for short-run as well as long-run coefficients for the three countries sampled in this paper. Table 6 presents the results which show as follows:

Table 6

Long and short-term dynamics

Variable	Pakistan Coefficient (prob. value)	India Coefficient (prob. value)	Bangladesh Coefficient (prob. value)
Estimated long-term coefficients using the ARDL approach dependent variable: POVt			
LM3t	- .44143[.008]	-0.19828[.018]	-0.17434[.006]
LMEt	.27363 [.030]	0.19161[.085]	-1.4584[.022]
LREMt	-.228982[.013]	0.013058[.760]	-1.3564[.019]
LTOt	-1.7322 [.034]	-0.13683[.008]	-0.4785[.059]
LWOPt	0.63526[.004]	0.117196[.018]	0.4208203[.962]
C	27.3361[.000]	0.17119[.504]	16.9119[.000]
Error correction representation for the selected ARDL model dependent variable: POVt			
ΔLM3t	-0.12562[.029]	-0.1885[.094]	-0.074552[.033]
ΔLMEt	0.040262[.048]	0.18215[.075]	-0.031549[.061]
ΔLREMt	-0.0426404[.022]	-0.0029295[.954]	-0.084767[.001]
ΔLTOt	-0.25487[.042]	-0.13008[.084]	-0.056285[.019]
ΔLWOPt	0.018344[.051]	0.055959[.046]	0.267632[.062]
ecmt-1	-0.47114[.003]	-0.95066[.000]	-0.62493[.021]
Diagnostics			
Adjusted R-Squared	0.98821	0.778105	0.699796
Durbin -Watson Stat	2.2346	1.8833	2.4099
F- Statistic (Prob. Value)	367.7094[.000]	.68414[.007]	1899.5[.015]

According to Table 6, financial development has a negative influence on the variable of poverty in Pakistan, India, and Bangladesh, both in the short run and the long run. The results show that financial development may lead to the control of poverty for all of the sampled countries in the short run as well as in the long run. Military expenditure shows a positive and significant coefficient effect in the long run as well as in

the short run for Pakistan and India. At the same time, Bangladesh's coefficient with respect to military expenditure has negative impacts mutually in the long run and short run. The results show that Military expenditure may increase poverty at an increasing rate in Pakistan and India in both the long run and the short run. With Military expenditures, expenses of the country increase, but it has a positive effect on the business in the economy, which in turn indirectly reduces poverty. For Bangladesh, an increase in Military expenditure leads to reducing the element of poverty both in the long run and short run. Meanwhile, looking at the given results of Personal Remittances in Table 6, it shows that it has significantly negative results in the long run as well as in the short run for Pakistan and Bangladesh, while for India, the relation for Remittances is insignificant both in the long and short term. The long-run and short-run effects of personal remittances for Pakistan and Bangladesh are defined in terms of poverty reduction.

For Trade Openness, all three sampled countries show a significant negative impact in both the long run and short run, which means that poverty is reduced by increasing the element of Trade openness for Pakistan, India and Bangladesh in the long term and short term. As a consequence of the reduction in world oil prices on poverty, Table 6 shows positive and significant effects for Pakistan and India and insignificant effects for Bangladesh in the long path. Compared to the short term, all these coefficients show significantly positive impacts. This differentiates that an increase in World Oil Prices leads to an increase in poverty both in Pakistan and India in the longer run while for all countries in the shorter term.

Hereafter, the estimated results for ecmt-1 have significant and negative coefficients for Bangladesh, Pakistan, and India. This ensures that the convergence hypothesis is used for our study. The speed of adjustment for Pakistan is 47%, for India, it is 95% and 62% for Bangladesh. The disequilibrium in the ARDL bounds will be adjusted in 2.12 years (Pakistan), 1.05 years (India) and 1.61 years (Bangladesh). These empirical findings were supported on the basis of the results of Bannerjee et al. (1998). If any macroeconomic factor affects the economy and some disequilibrium appears, it will be restored in the given time period for the countries. After the presentation of short-run and long-run estimates, we have a look at the causal influence of variables. The causal effects of variables are checked by applying the Grange causality test. Table 7 presents the findings of the Granger causality test, which are as follows:

Table 7

Gragnger causality test

Short-run causality test Chi-Square statistics (probability values)						
Variables	**ΔPOVt**	**ΔLM3t**	**ΔLMEt**	**ΔLREMt**	**ΔLTOt**	**ΔLWOPt**
Pakistan						
ΔPOVt	-	0.01975(.0805)	.98416(.0355)	2.11453(.1083)	1.9649(.1578)	3.41706(.046)
ΔLM3t	2.22514(.10256)	-	5.24421(.01111)	.2746(.0701)	1.21107(0.0312)	5.74766(.0077)
ΔLMEt	6.09569(.006)	3.66431(.0377)	-	6.48038(.0046)	1.75433(.10903)	.82187(.04493)
ΔLREMt	.15131(.8602)	.3965(.6761)	1.9547(.1592)	-	3.51897(.0424)	.28636(.0753)
ΔLTOt	.39947(.0742)	1.62056(.2146)	1.42467(.2564)	.1172(.8898)	-	.84736(.0385)
ΔLWOPt	1.94476(.1003)	.63857(.5351)	.83516(.4436)	.61353(.5481)	1.19201(.3176)	-
India						
ΔPOVt	-	.26785(.0668)	.07089(.09317)	.93664(.4031)	.18834(.0293)	.27148(.0761)
ΔLM3t	3.08875(.0603)	-	.67164(.05184)	2.67831(.0851)	2.50816(.0983)	.44846(.0428)
ΔLMEt	.90528(.4152)	4.01747(.0284)	-	2.03568(.0482)	4.12279(.0262)	2.3382(.1138)
ΔLREMt	.70474(.5022)	.16483(.8488)	.69795(.5055)	-	4.12279(.0262)	2.59397(.0914)
ΔLTOt	5.59702(.3967)	1.55607(.2275)	2.16068(.1328)	.89128(.4207)	-	.89384(.4197)
ΔLWOPt	.95361(.3967)	.02031(.9799)	.41461(.6643)	1.15867(.3276)	2.56398(.0938)	-
Bangladesh						
ΔPOVt	-	.98321(.0385)	4.35344(0.0219)	3.96727(.0296)	.71441(.4976)	.77341(.0704)
ΔLM3t	4.13556(.0259)	-	.79697(.0046)	5.52223(.0091)	2.31893(.1158)	1.13337(.0335)
ΔLMEt	2.99482(.0653)	4.31524(.0225)	-	.97585(.08850)	.30102(.0423)	.22714(.0982)
ΔLREMt	2.99283(.0688)	2.11989(.1377)	6.45367(.0047)	-	2.16729(.1321)	18.0803(.0007)
ΔLTOt	2.42958(.1052)	1.99986(.153)	.27387(.7623)	.45128(.6411)	-	5.84193(.0072)
ΔLWOPt	2.42958(.146)	5.19983(.0115)	1.39747(.2629)	.80931(.4546)	.47601(.6259)	-

Most of the variables mentioned in Table 5 indicate a unidirectional relationship with Poverty for all three countries, i.e. Bangladesh, India and Pakistan. The empirical findings in respect of this study conclude that financial development (FD), remittances, and trade openness (TO) have a significantly negative impact on

the reduction of poverty for all three countries except for India, whereas personal Remittances are insignificant for both long-term and short-term in our findings. Both Military expenditure (ME) and World oil Prices have positive significant coefficients for all three countries except for Bangladesh in the longer run. In contrast to the short run, it shows a significant relationship.

Discussions and Conclusion

This research paper evaluated the effect of poverty on financial development, military expenditure, remittances, trade openness and world trade oil. Time series data was used to measure the above impact, depending on the time scale from 1980 to 2016, which was collected from the World Development Indicator (WDI). Initially, Augmented Dicky Fuller Phillip-Perron of unit root tests are implemented to analyze the stationary of variable, and the results show the order of integration is mixed for dependent (DV) as well as independent variables (IVs). Following these results, the researcher applied the ARDL approach, which shows that the longer-run association exists for poverty as well as its indicators for all three countries. The long-run coefficients based on the ARDL approach depict that all indicators have a significant impact on poverty in Pakistan. In India, financial development (FD), military expenditure (ME), trade openness (TO) and world oil prices (WOP) have a significant impact on poverty (POV) reduction in the long run, while for Bangladesh, financial development (FD), military expenditure (ME), remittances, trade openness (TO) have significant effect while world oil prices (WOP) has insignificant impact on poverty (POV) reduction in long-run. According to diagnostic tests, our model is normally distributed, functional form is correctly specified, there is no heteroscedasticity, and well is no serial correlation issue. According to ECM, if a macroeconomic shock occurs, the speed of adjustment for Pakistan will be 47 per cent (2.12) years. For India, the speed of adjustment is 95 per cent (1.05) years and for Bangladesh, 62.62 per cent (1.61) years.

Study Implications, Practical Recommendations and Future Directions

As all variables significantly impact poverty reduction in the case of Pakistan, there is a need to have a developed financial system, good trade policies, and a good flow of remittances to enhance military expenditure and bring stability to world oil prices. In India, financial accessibility to the poor and good financial inclusion can reduce poverty, elastic trade policies, reduction of military expenditure, and stability of world oil prices, which will also have a significant impact on poverty reduction in the country. In Bangladesh, there is a need for an established financial system for poverty reduction, but military expenditure will reduce poverty in the case of Bangladesh compared to India. Free trade policies and a good inflow of remittances will also help the country to reduce its poverty level. This study has societal and policy implications as well. The poverty (POV) reduction problem is among the most substantial global challenges, and SDGs have been put forth to replace MDGs. At the same time, poverty (POV) eradication has remained dominant in the post-2015 agenda. Therefore, the demand to solve POV reduction/eradication has increased among academicians to identify central economic factors which may prove a remedy to this issue. These economic factors vary across various regions, exclusively in middle/lower-income regions Khan et al. (2022). Like any other researcher, this study is also subject to a few limitations as the data considered for this study was taken from three developing countries, Pakistan, India, and Bangladesh, due to resource constraints. Future researchers can consider the data from other contexts of developing and developed countries and increase the sample size to determine the difference in findings. This study considered a few variables relevant to poverty reduction. Future researchers can explore additional macroeconomic variables in their investigation that impact poverty reduction in different contexts of the countries.

References

Abdin, J. (2016). Financial Development and Poverty Reduction: Exploring the Links between the Issues Using Evidence from Bangladesh. *International Journal of Financial Research*, 7(4). https://doi.org/10.5430/ijfr.v7n4p44

Adams, R. H., & Cuecuecha, A. (2013). The Impact of Remittances on Investment and Poverty in Ghana. *World Development*, *50*, 24–40. https://doi.org/10.1016/j.worlddev.2013.04.009

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

Agusalim, L. (2017). The Dynamic Impact of Trade Openness on Poverty: An Empirical Study of Indonesia's Economy. International Journal of Economics and Financial Issues, 7(1), 566-574. https://dergipark.org.tr/en/pub/ijefi/issue/32002/353239

Akhtar, Q., & Butt, S. (2022). Sequential Mediation Between Night Shift and Job Performance in The Context of Pakistan. *International Journal of Management Research and Emerging Sciences*, *12*(4), 83–102. https://doi.org/10.56536/ijmres.v12i4.344

Akhtar, R., Liu, H., & Ali, A. (2017). Influencing factors of poverty in Pakistan: Time series analysis. *International Journal of Economics and Financial Issues*, 7(2), 215-222. https://www.econjournals.com/index.php/ijefi/article/download/3349/pdf/11570

Apanisile, O. T., & Okunlola, O. C. (2014). An empirical analysis of effects of military spending on economic growth in Nigeria: A bound testing approach to co-integration 1989-2013. *Journal of Public Administration, Finance and Law*, 3(6), 117-130. https://www.jopafl.com/uploads/issue6/AN_EMPIRICAL_ANALYSIS_OF_EFFECTS_OF_MILITARY_SPENDING_ON_ECONOMIC_GROWTH_IN_NIGERIA.pdf

Azam, M., Haseeb, M., & Samsudin, S. (2016). The Impact of Foreign Remittances on Poverty Alleviation: Global Evidence. *Economics & Sociology*, *9*(1), 264–281. https://doi.org/10.14254/2071-789x.2016/9-1/18

Bayar, Y. (2017). Financial development and poverty reduction in emerging market economies. *Panoeconomicus*, *64*(5), 593–606. https://doi.org/10.2298/pan150403014b

Bayar, Y., & Sezgin, H. F. (2017). TRADE OPENNESS, INEQUALITY AND POVERTY IN LATIN AMERICAN COUNTRIES. *Ekonomika*, *96*(1), 47. https://doi.org/10.15388/ekon.2017.1.10663

Butt, S., & Yazdani, N. (2023). Implementation of Quality Management Practices and Firm's Innovation Performance: Mediation of Knowledge Creation Processes and Moderating role of Digital Transformation. *Pakistan Journal of Humanities and Social Sciences*, *11*(4). https://doi.org/10.52131/pjhss.2023.1104.0658

Butt, S., Mubeen, I., & Yazdani, N. (2024). Exploring the Lived Experiences of Individuals to manage and Cope with Type 2 Diabetes applying IPA. *Pakistan Languages and Humanities Review*, *8*(2), 526–539. https://doi.org/10.47205/plhr.2024(8-II)46

Chitiga, M., Fofana, I., & Mabugu, R. (2012). The poverty implications of high oil prices in South Africa. *Environment and Development Economics*, *17*(3), 293–313. https://doi.org/10.1017/s1355770x11000428

Dagume, M. A. (2021). FACTORS INFLUENCING POVERTY IN SOUTH AFRICA: TIME SERIES ANALYSIS. *International Journal of Economics and Financial Issues*, *11*(5), 86–95. https://doi.org/10.32479/ijefi.11629

Dewi, S., Abd. Majid, M. S., & Kassim, S. (2018). Dynamics of Financial Development, Economic Growth, and Poverty Alleviation: The Indonesian Experience. *South East European Journal of Economics and Business*, *13*(1), 17–30. https://doi.org/10.2478/jeb-2018-0002

Dhrifi, A. (2013). Financial development and poverty: what role for growth and Inequality. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(4), 119-129. https://doi.org/10.6007/IJARAFMS/v3-i4/362

Duarte, L. D. R. V., Kedong, Y., & Xuemei, L. (2017). The Relationship between FDI, Economic Growth and Financial Development in Cabo Verde. *International Journal of Economics and Finance*, *9*(5), 132. https://doi.org/10.5539/ijef.v9n5p132

Fambeu, A. H. (2021). Poverty reduction in sub-Saharan Africa: The mixed roles of democracy and trade openness. *The Journal of International Trade & Economic Development*, *30*(8), 1–19. https://doi.org/10.1080/09638199.2021.1946128

Gaaliche, M., & Gaaliche, M. Z. (2014). The causal relationship between remittances and poverty reduction in developing country: using a non-stationary dynamic panel data. *Atlantic Review of Economics: Revista Atlántica de Economía*, *1*(1), 1. https://dialnet.unirioja.es/descarga/articulo/5318214.pdf

Geng, L., Abban, O. J., Hongxing, Y., Ofori, C., Cobbinah, J., Ampong, S. A., & Akhtar, M. (2023). Do military expenditures impede economic growth in 48 Islamic countries? A panel data analysis with novel approaches. *Environment, Development and Sustainability*, 1–35. https://doi.org/10.1007/s10668-023-03413-8

Henderson, E. A. (1998). Military Spending and Poverty. *The Journal of Politics*, *60*(2), 503–520. https://doi.org/10.2307/2647920

Ho, S.-Y., & Iyke, B. N. (2017). Does Financial Development Lead to Poverty Reduction in China? Time Series Evidence. *Journal of Economics and Behavioral Studies*, *9*(1), 99. https://doi.org/10.22610/jebs.v9i1.1561

Huay, C. S., & Bani, Y. (2017). DOES REMITTANCES REDUCE POVERTY? AN EMPIRICAL EVIDENCE IN SELECTED DEVELOPING COUNTRIES. *Journal of Islamic*, *2*(6), 92-101.

Idrissi, B. I., & Kawkaba, S. (2023). The Impact of International Remittances on Poverty: Evidence From The Southern and Eastern Mediterranean Countries. *Migration & Diversity*, *2*(2), 203–220. https://doi.org/10.33182/md.v2i2.2876

Ismail, S. (2017). Military Expenditure and Economic Growth in South Asian Countries: Empirical Evidences. *International Journal of Economics and Financial Issues*, *7*(3), 318-325. https://dergipark.org.tr/tr/download/article-file/365382

Jalilian, H., & Kirkpatrick, C. (2005). Does Financial Development Contribute to Poverty Reduction? *Journal of Development Studies*, *41*(4), 636–656. https://doi.org/10.1080/00220380500092754

Justice, E., OrLu, L., & Nwala, Y. G. (2023). The Impact of Financial Development on Poverty in Nigeria. *International Journal of Economics and Financial Management*, *8*(4), 40-53. https://iiardjournals.org/get/IJEFM/VOL.%208%20NO.%204%202023/The%20Impact%20of%20Financial%202.pdf

Kaidi, N., Mensi, S., & Ben Amor, M. (2018). Financial Development, Institutional Quality and Poverty Reduction: Worldwide Evidence. *Social Indicators Research*, *141*(1), 131–156. https://doi.org/10.1007/s11205-018-1836-0

Keho, Y. (2017). Financial Development and Poverty Reduction: Evidence from Selected African Countries. *International Journal of Financial Research*, *8*(4), 90. https://doi.org/10.5430/ijfr.v8n4p90

Khaleefah, A. S., Palliam, R., & Al-Salem, A. (2016). Sustaining Standard of Living Amidst Volatile Oil Prices – Lessons from the Gulf Countries. *Dspace.auk.edu.kw*, *15*. https://doi.org/10.7916/D81G0M3Z

Khan, M., & Majeed, M. T. (2023). Financial sector development and energy poverty: empirical evidence from developing countries. *Environmental Science and Pollution Research*, *30*(16), 46107–46119. https://doi.org/10.1007/s11356-023-25585-6

Khan, R., Zeeshan, Haque, M. I., Gupta, N., Tausif, M. R., & Kaushik, I. (2022). How foreign aid and remittances affect poverty in MENA countries? *PLOS ONE*, *17*(1), e0261510. https://doi.org/10.1371/journal.pone.0261510

Law, S. H., & Singh, N. (2014). Does too much finance harm economic growth? *Journal of Banking & Finance*, *41*(41), 36–44. https://doi.org/10.1016/j.jbankfin.2013.12.020

Li, Z., Hasan, M. M., & Lu, Z. (2023). Studying financial inclusion, energy poverty, and economic development of South Asian countries. *Environmental Science and Pollution Research*, *30*(11), 30644-30655. https://doi.org/10.1007/s11356-022-24209-9

Mahesh, M. (2016). The Effect of Trade Openness on Income Inequality: Evidence from Developing Countries. *SSRN Electronic Journal*, *36*(3), 1751–1761. https://doi.org/10.2139/ssrn.2736721

Markowski, S., Chand, S., & Wylie, R. (2017). Economic Growth and Demand for Military Expenditure in the Indo-Pacific Asia Region. *Defence and Peace Economics*, *28*(4), 473–490. https://doi.org/10.1080/10242694.2016.1274059

Mirza, F., Hashmi, M., Iqbal, S., & Iqbal, A. (2014). Foreign Remittances and Household Poverty: Evidence from Pakistan. *Forman Journal of Economic Studies*, *10*, 155–166. https://doi.org/10.32368/fjes.20141007

Munđar, D., Matotek, D., & Jakuš, M. (2012, January). Quantitative research methods participation in the information sciences papers in Croatia. In *23rd Central European Conference on Information and Intelligent Systems, CECIIS*.

Muthalib, A. A., Adam, P., Saenong, Z., & Suriadi, L. O. (2018). The influence of fuel prices and unemployment rate towards the poverty level in Indonesia. *International Journal of Energy Economics and Policy*, *8*(3), 37-42. https://doaj.org/article/91bf9b7ae3dd4897887ec0764842684d

Naranpanawa, A., & Bandara, J. S. (2012). Poverty and growth impacts of high oil prices: Evidence from Sri Lanka. *Energy Policy*, *45*, 102–111. https://doi.org/10.1016/j.enpol.2012.01.065

Nawoba, O. E., Nwonu, C. O., & Agbaeze, E. K. (2017). Impact of Fallen Oil Prices on the Nigeria Economy. *Journal of Poverty Investment and Development*, *33*, 75-82. https://www.iiste.org/Journals/index.php/JPID/article/download/36225/37223

Nessa, H.-T. -, & Imai, K. S. (2023). Trade openness and working poverty: empirical evidences from developing countries. *International Trade, Politics and Development*, *7*(2), 58–76. https://doi.org/10.1108/itpd-08-2022-0018

Obinna, O., & Innocent, E. (2024). Does Financial Development Lead to Poverty Reduction in Nigeria? Evidence from Toda Yamamoto Causality Test. *Journal of Economics and Allied Research (JEAR)*, 392.

Ojikutu, O. T., Onolemhemhen, R. U., & Isehunwa, S. O. (2017). Crude Oil Price Volatility and its Impact on Nigerian Stock Market Performance (1985-2014). *International Journal of Energy Economics and Policy*, *7*(5), 302-311.

Oluwatayo, I. B., & Alagbe, S. A. (2015). Fuel Price Hike and Vulnerability of Households in Nigeria: Empirical Evidence from Ibadan Metropolis. *Journal of Social Sciences*, *43*(3), 301–309. https://doi.org/10.1080/09718923.2015.11893448

Pradhan, B. K., Sahoo, A. (2002). *Oil Price Shock and Poverty in a CGE Framework*. Discussion Paper Series No. 18. New Delhi: National Council of Applied Economic Research.

Rewilak, J. (2017). The role of financial development in poverty reduction. *Review of Development Finance*, *7*(2), 169–176. https://doi.org/10.1016/j.rdf.2017.10.001

Reyes, C. M., Sobrevinas, A. B., Bancolita, J., & De-Jesus, J. (2009). *Analysis of the Impact of Changes in the Prices of Rice and Fuel on Poverty in the Philippines*. Discussion Paper Series No. 2009-07, The Research Information Staff, Philippine Institute for Development Studies.

Saari, M. Y., Dietzenbacher, E., & Los, B. (2016). The impacts of petroleum price fluctuations on income distribution across ethnic groups in Malaysia. *Ecological Economics*, *130*, 25–36. https://doi.org/10.1016/j.ecolecon.2016.05.021

Sehrawat, M., & Giri, A. K. (2018). The impact of financial development, economic growth, income inequality on poverty: evidence from India. *Empirical Economics*, *55*(4), 1585–1602. https://doi.org/10.1007/s00181-017-1321-7

Semančíková, J. (2016). Trade, Trade Openness and Macroeconomic Performance. *Procedia - Social and Behavioral Sciences*, *220*, 407–416. https://doi.org/10.1016/j.sbspro.2016.05.515

Setyawan, D. (2014). The Impacts of the Domestic Fuel Increases on Prices of the Indonesian Economic Sectors. *Energy Procedia*, *47*, 47–55. https://doi.org/10.1016/j.egypro.2014.01.195

Tahir, M., & Pg Haji Omar Ali, D. H. N. B. (2014). Trade Openness and Economic Growth: A Review of the Literature. *Asian Social Science*, *10*(9), 137. https://doi.org/10.5539/ass.v10n9p137

Tajammal, R., & Butt, S. (2024). Precarious Tightrope Between External Debt and Economic Growth: A Comparative Analysis of Bangladesh and Sri Lanka. *Deleted Journal*, *13*(2), 76–90. https://doi.org/10.62345/jads.2024.13.2.6

Umair, T., & Butt, S. (2023). The Role of Packaging in Consumer Purchase Intentions:Evidence from Packed Milk Industry of Pakistan. *Journal of Applied Research and Multidisciplinary Studies*, *4*(2). https://doi.org/10.32350/jarms.42.06

Vacaflores, D. E. (2018). Are remittances helping lower poverty and inequality levels in Latin America? *The Quarterly Review of Economics and Finance*, *68*, 254–265. https://doi.org/10.1016/j.qref.2017.09.001

Zahonogo, P. (2016). Financial Development and Poverty in Developing Countries: Evidence from Sub-Saharan Africa. *International Journal of Economics and Finance*, *9*(1), 211. https://doi.org/10.5539/ijef.v9n1p211

Zhong, M., Chang, T., Goswami, S., Gupta, R., & Lou, T.-W. (2016). The nexus between military expenditures and economic growth in the BRICS and the US: an empirical note. *Defence and Peace Economics*, *28*(5), 609–620. https://doi.org/10.1080/10242694.2016.1144897