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EXPLORING THE LINK BETWEEN IMF LOAN AND ECONOMIC VULNERABILITY IN PAKISTAN: IMPLICATION FOR POVERTY AND PRO-POOR GROWTH AGENDA

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ABSTRACT

The study aims to explore the relationship between IMF loans and economic vulnerability, which affects the pro-poor growth agenda in Pakistan. A time series Autoregressive Distributed Lag (ARDL) estimation approach is applied to analyze the data. By examining various factors in Pakistan, the study investigates the short- and long-term impacts of economic factors, government policies, and institutional factors on pro-poor growth and poverty reduction. The findings suggest that IMF loans increase poverty in Pakistan in the short and long run. Among economic factors, GDP per capita and foreign exchange reserves help reduce poverty, while the current account balance exacerbates it. Government policies play a positive role in poverty reduction, with Social Action Programs (SAP) and National Rural Support Programs (NRSP) contributing significantly to alleviating poverty. However, institutional factors fail to reduce poverty. Financial development and interest rates increase poverty in Pakistan. The study recommends that the government must prioritize the basic needs of low-income people in national development policies and focus on institutional and economic reforms.

Keywords: *IMF loan; Economic vulnerability; Government policies; Institutional factors; Poverty; Pro-poor growth; Pakistan.*

1. INTRODUCTION

Global authorities administer the World Bank and the International Monetary Fund. Their goals are to stabilize the global currency system, coordinate macroeconomic policies, and assist developing countries (Cormier et al., 2022). In

1944, following the Great Depression, the Bretton Woods Conference established the IMF. The IMF's Executive Directors represent 24 of its 190 member countries. Pakistan has been a member of the IMF since July 11, 1950, and received 23 IMF loans between 1958 and 2023 (Khan et al., 2024). Borrowing nations are subject to IMF limits. The borrowing government promises to implement specific policy measures under these "conditionality," or conditions. These economic policy measures aim to alleviate poverty, increase employment, stabilize macroeconomics, and strengthen emerging nations' balance of payments. The IMF prioritizes macroeconomic goals first, then implements austerity measures. Austerity policies raise taxes, cut expenditures, reduce the budget deficit, and implement structural adjustments to increase productivity, growth, and economic stability (Ray et al., 2020). Strict IMF requirements may impact both short—and long-term economic viability. These policies address economic vulnerabilities and restore macroeconomic stability, but inadequate implementation may result in social misery, inequality, unemployment, poverty, and long-term economic problems (Clark &Meyerrose, 2025).

Pakistan has utilized IMF programs to address fiscal and balance-of-payments difficulties. However, the IMF's financial conditions severely restrict Pakistan's economic viability. Strict monetary policies, good governance, debt sustainability, and fiscal, economic, and structural reforms are essential (Iqbal & Hussain, 2020). IMF policies priorities macroeconomic stability, such as inflation, foreign reserves, and exchange rates. To achieve these aims, the government has to reset and tighten its monetary and exchange rate policies. Pakistan's government instability prevents it from achieving macroeconomic goals such as poverty reduction, inflation control, and a positive balance of payments (Salman & Ali, 2022). Effective governance is critical to loan program success. It includes hiring officials, holding people accountable, changing government processes, protecting individual rights, and developing and executing policies. However, Pakistan's governance structure and policy implementation must be clarified. The country must combat corruption, strengthen institutions, and make public finance transparent (Mansoor et al., 2023). Due to Pakistan's massive national debt, the IMF may require debt sustainability measures. These might include debt restructuring or measures to reduce external borrowing. Budgetary indiscipline, high exchange rates, and high interest rates contribute to Pakistan's debt growth. To achieve debt sustainability, the country must cut spending to limit budget deficits, improve debt management to lower borrowing costs and risks, boost economic growth to increase revenue and lower debt-to-GDP ratios and implement structural reforms to improve economic efficiency and competitiveness (Sundus et al., 2022). Pakistan must implement fiscal, economic, and structural reforms to sustain its economy. This includes improving food subsidies, cash transfer programs, pensions, scholarships, and other financial help. Fiscal management should enhance revenue receipts while reducing government expenditure. The nation should also emphasizeprivatizing government institutions, attract private investment, and boost trade (Ul Haque et al., 2022).

IMF programs have hurt Pakistan's economy. Higher taxes, decreased government spending, and currency depreciation contribute to budget deficits, inflation, unemployment, and delayed economic progress. IMF measures also strain foreign debt, forcing the government to take out new loans. To break the cycle, Pakistan must modify its export policies, aggressively privatize to reduce costs, issue international bonds to raise foreign currency reserves and invest in dairy, agriculture, and livestock (Bozdar et al., 2023). IMF conditionalities have evolved throughout time to include concessional and non-concessional loans. Non-concessional loans have higher interest rates and include the Extended Fund Facility (EFF), which lasts 3-4 years to address balance-of-payment issues through structural economic reforms; Stand-By Arrangements (SBA), which last 12-18 months; the Structural Adjustment Facility (SAF) for liquidity needs; the Rapid Financing Instrument (RFI) for emergencies; and the Supplemental Reserve Facility. The Poverty Reduction and Growth Facility (PRGF) for long-term balance-

of-payment issues, the Stand-By Credit Facility (SCF) for short-term crises, and the Rapid Credit Facility (RCF) for emergencies are all interest-free concessional loans available to developing and underdeveloped countries (Stecher, 2018). There is a complex relationship between IMF capital and poverty reduction in Pakistan. Loan terms, policy efficacy, and economic conditions all impact poverty reduction. IMF loan conditions are structural and stabilization. Privatization, tax and revenue policy changes, fiscal management, labour, and institutional reforms are all examples of structural reforms. These economic stabilization techniques often result in inflation, inequality, poverty, and unemployment. These policies reduce government income, reducing spending on social services for low-income people (Khan et al., 2011). External debt promotes poverty; hence, the government must reduce it. Pakistan should focus on development to alleviate poverty (Ashraf et al., 2020). Macroeconomic stability, fiscal management, microfinance for small enterprises, skill development, and long-term economic growth may help reduce poverty and promote economic equality (Asghar et al., 2022).

Growth and poverty reduction are connected. Agriculture and employment are critical macroeconomic factors influencing pro-poor development in Asia. Exports indirectly contribute to economic development, and after accounting for the growth-poverty relationship, inflation does not impact poverty. Pro-poor growth initiatives should include agricultural development and job creation (Carstens and Palanivel, 2003). Trade deficits, inadequate economic and structural reforms, unstable macroeconomic conditions, and fiscal deficits drive Pakistan's poor economic development. The government promotes pro-poor development via social action, safety nets, and NGO funding. These projects provide disadvantaged people with primary education, healthcare, and clean water. The Pakistan Poverty Alleviation Fund (PPAF) and Khushali Bank (KB) provide farmers and small enterprises loans. Pakistan Bait-ul-Maal also distributes Zakat and Ushr to deserving individuals (Khan, 2002). Pakistan prioritizes poverty eradication, which aligns with the first Sustainable Development Goal. The Prime Minister Youth Program (PMYP), the Ehsaas Program, and the Benazir Income Support Program (BISP) aim to reduce poverty and empower the most vulnerable (Rizwan et al., 2023).

The study seeks to address the following research questions:

1. To what extent do IMF loans increase vulnerabilities in developing nations such as Pakistan, and what are their implications for poverty levels and the pro-poor growth agenda?
2. How effective are government policies in mitigating the adverse effects of IMF loans on poverty and the pro-poor growth agenda in Pakistan?
3. How do institutional factors influence the effectiveness of IMF loans in reducing poverty and advancing the pro-poor growth agenda in Pakistan?

With its agro-based economy, a developing country like Pakistan derives one-fifth of its GDP from the agricultural sector and employs a significant labour force. However, its economic development could be more stable due to dependence on foreign debt, weak political systems, and law-and-order challenges. Despite these issues, the government has implemented policies to reduce poverty and promote pro-poor growth. These efforts include investments in infrastructure, manufacturing, agriculture, and social safety net programs that create employment opportunities for people experiencing poverty, provide subsidies, and stabilize prices to alleviate poverty (Asghar et al., 2012).

Financial development and institutional quality are critical in fostering economic growth and reducing poverty in emerging and developing economies. Strong institutions support skill development, economic openness, and human capital enhancement, all vital for poverty alleviation. Prioritizing labour market flexibility policies can also help reallocate resources, thereby promoting economic development and reducing poverty. Financial development and GDP improvements have been shown to decrease poverty levels (Labony et al., 2024). The study focuses on the following objectives:

1. To assess the impact of IMF loans on poverty and identify the specific factors

contributing to increased vulnerabilities and a weakened pro-poor growth agenda.

2. To evaluate the effectiveness of government policies in alleviating the adverse effects of IMF loans on poverty.

3. To examine the role of institutional factors in shaping the outcomes of IMF loans concerning poverty reduction and the pro-poor growth agenda in Pakistan.

The study employed advanced econometric methods, such as the Autoregressive Distributed Lag (ARDL) model, using data from Pakistan to achieve these objectives. The IMF has played a significant role in providing financial assistance to Pakistan over the years, with numerous loans promoting the country's economic development. However, as of 2023, the economic outlook remains bleak. Poverty levels in Pakistan continue to be alarmingly high, and the economy has not shown substantial recovery as a result of the IMF's structural reforms. Poverty in Pakistan has worsened over the years, even with the support of IMF loans. Additionally, the government's role, policymaking and implementation, and the country's institutional and economic structures are crucial in fostering pro-poor growth and reducing poverty. This study explores the impact of IMF loans on poverty and pro-poor growth in Pakistan, focusing on a specific period for detailed analysis.

2. LITERATURE REVIEW

Developing nations often approach the International Monetary Fund (IMF) for assistance in managing their balance of payments. The IMF claims that poverty reduction is one of its goals; however, lending countries frequently experience higher poverty rates. IMF loan conditions typically include structural and stabilization reforms that raise unemployment, increase inflation, and cut government expenditures, thereby reducing relief for people experiencing poverty. Consequently, these agreements often exacerbate poverty in developing nations (Biglaiser & McGauvran, 2022). The earlier literature largely discussed the given issue, which need to be explored in the context of Pakistan. According to Easterly (2000), the number of World Bank and IMF adjustment loans demonstrates that structural adjustment lessens the impact of economic progress on poverty. Structural adjustment policies may give impoverished people extra opportunities and help them avoid losing jobs in formerly protected industries. Like inequality, greater adjustment loans diminish aggregate growth, benefiting low-income people. Based on cross-country data from 1960 to 1999, Polterovich and Popov (2003) discovered that foreign exchange reserves (FER) increase capital productivity and the investment-to-GDP ratio, which helps emerging economies flourish. Their findings suggested that FER accumulation-driven RER undervaluation might boost societal welfare. They employed a three-sector endogenous economic growth model—consumer products, investment goods, and export trade—to demonstrate how undervaluation might boost social welfare. The findings suggest that even a little decline in the equilibrium exchange rate might increase wealth. Oberdabernig (2013) described model uncertainty in his research on IMF financing programs, poverty, and inequality. From 1982 to 2009, the study examined the impact of IMF programs on poverty and inequality indicators in 86 low- and middle-income countries, considering endogenous selection. According to an average of more than 90 treatment-effect model assumptions, IMF agreements had a short-term negative impact on poverty and inequality throughout the sample. The 2000-2009 subsample had different findings, indicating that the early advantages may wane with time. Dreher (2006) investigated the IMF's theoretical impact on economic development via conditionality, program financing, and policy advice. The study used panel data from 98 countries from 1970 to 2000. The results show that growth rates fell when IMF programs became endogenous. Conditionality compliance mitigates this adverse effect. The study revealed that IMF funds had no statistically significant impact. Dreher and Walter (2010) empirically investigated how IMF assistance impacts currency crises. They specifically investigated the relationship between IMF engagement and the possibility of a currency crisis. Their findings suggested that IMF collaboration lowered crisis risk. In a crisis,

IMF policies significantly increase the chance of currency depreciation. No association was found between the loan amount and condition compliance. Fritz and Prates (2014) discovered that developing-country governments are increasingly concerned about capital influx booms. The IMF, which promotes financial liberalization, has proposed capital flow control. Based on case studies in South Korea and Brazil, the study found that the IMF's new framework needs to be revised in two key areas. Their results called for a third form of regulation for foreign currency (FX) derivative instruments to control foreign investor portfolio reallocations, particularly in emerging nations with mature and open financial markets.

Lang (2021) explored the impact of IMF loans on income inequality. To assess IMF program performance, a novel empirical approach was adopted, which combined the variable influence of IMF liquidity on loan distribution with difference-in-differences reasoning. The findings revealed that IMF activities worsen income disparities. According to decile-specific income figures, the effect is primarily due to absolute income losses among the poor rather than rises among the wealthy. The effect lasts up to five years and is more pronounced in democratic countries and programs with stricter regulatory limits, such as labour market reforms and social spending cutbacks. These findings suggest that IMF programs limit nations' distributional options. Hackler et al. (2020) investigated how the IMF, established in 1947 to manage the global monetary system, became a loan administrator for member countries during severe economic crises. The IMF offers conditional loans to help recipient nations recover and grow. The study analyzed data from 8,377 IMF loan conditions in 93 countries between 2000 and 2014 to see how compliance with specific loan terms affects real GDP growth rates. Complying with specific credit criteria boosted actual GDP growth. Carlos (2021) investigated how IMF loans and their conditions influenced economic development in 12 nations case from 1999 to 2019. This quantitative and empirical study examined the relationship between GDP per capita, government final consumer expenditure, IMF credit utilization, net domestic credit, and the current account balance. No statistically significant relationship was identified between IMF loan utilization and economic advancement. However, GDP performed well in some situations. The current account balance, government spending, and net domestic product positively impacted regional growth. Altayligil and Çetrez (2020) studied panel data to identify critical macroeconomic, institutional, and financial elements influencing current account balances. Their analysis collected data from 97 industrialized and developing nations from 1986 to 2013. The study found that fiscal balance, economic growth, terms of trade, exchange rate, trade openness, economic development stage, oil dependency, financial market development, macroeconomic stability, and institutional quality all impacted current account balance trends. Trade, inflation, and crude oil exports helped to minimize current account deficits. Macroeconomic stability and growth have the opposite effect on current account balances in developed nations. The legal system, property rights, voice and accountability, political stability, and political risks impacted current account balances.Based on the cited studies, the study's first hypothesis is as follows:

H1: Stringent IMF loan terms increase vulnerabilities in Pakistan, increasing poverty and decreasing pro-poor growth policies.

In Latin America, targeted poverty reduction, especially cash transfers, has replaced broad social protection, said Lavinas (2015). The study criticizes this pro-market stance for failing to build social cohesion and reduce poverty and inequality. The findings emphasize the need for social protection policies that reduce poverty and promote sustainable development. IMF's influence on low-income economies' social security health and education spending was examined by Stubbs and Kentikelenis (2018). The study criticizes the IMF's targeted social aid and policy frameworks for limiting social welfare. Through an empirical study of 48 nations (1988–2014) for education and 59 countries (1995–2014) for health, the study questions the IMF's claims of improving social safety and highlights methodological flaws. The study recommends universal social welfare to address structural inequalities. Engström (2023)

critiques the IMF's worldwide social protection efforts within human rights discourse. The research exposes the IMF's ambivalence regarding social protection as a rights-based policy. Kentikelenis and Stubbs (2024) also criticize the IMF's austerity-driven policies, noting that while social expenditure ceilings protect against budget cuts, the Global South has yet to see the promised transformational changes in social expenditure policies. Brollo et al. (2024) indicate that budgetary constraints prevent SSNs from reducing poverty. The study calls for large money and targeted transfers to low-income households, especially in low-income nations where short-term budget increases are challenging. Rahman and Pingali (2024) investigate India's social welfare system over decades and suggest that SSNs must be flexible to adapt to economic and demographic changes. Since the Soviet era, disconnected foreign interventions have progressively reformed Srpska (Gajic, 2025). Gerovska and Bornarova (2024) evaluate North Macedonia's social policy development and argue that structural reforms are needed to improve social service delivery regardless of political ideology. Bezada (2023) urges the IMF to change its policies to protect vulnerable people in crises after examining the harmful impact of IMF programs on global food security. James Nyarkoh (2023) uses Ghana as a promising example of equitable progress despite challenges. IMF interventions like fiscal consolidation and inflation management have stabilized the macroeconomy. Sumadi (2023) highlights coordination shortcomings between Indonesian ministries and recommends customized SSN implementation to meet community needs. Based on the cited literature, the study's second hypothesis is as follows:

H2: Effective strategies may help Pakistan reduce the detrimental effects of IMF loans on poverty and the pro-poor economic agenda.

Wardana et al. (2023) showed how a strong finance sector boosts Indonesian economic growth and poverty reduction. Bayar (2023) emphasizes the three-way relationship between financial development, income distribution, and poverty reduction in Turkey and the importance of equitable financial activity. According to Bopape (2023), if financial development benefits local communities, it can reduce poverty in South Africa and boost GDP. The study's conclusion includes ideas on low-income accessibility policy. Tabash et al. (2023) studied 28 Sub-Saharan African nations and found that financial expansion reduces poverty to varying degrees, with lower-income individuals benefiting the most. Lemnge and Raphael (2023) study Sub-Saharan Africa and conclude that affluence promotes poverty, emphasizing the need for income equality and educational infrastructure. Hossin (2023) suggests deregulating interest rates to facilitate Bangladesh's financial operations and economic growth. Lu and Dilanchiev (2023) found that private-sector loans increase household spending and alleviate poverty in six Black Sea economies. Financial measures enhance the money supply, but Obinna and Innocent (2024) note that the private sector dominates; therefore, little change has occurred. Rauff and Adegboye (2024) suggest that financial development helps reduce poverty over time, but transparent financial laws and long-term limits are needed. Based on the findings provided, the third hypothesis is as follows:

H3: Institutional characteristics considerably affect how well IMF loans reduce poverty and promote pro-poor economic approaches in Pakistan.

The IMF provides financial assistance to indebted countries to address balance-of-payments issues, alleviate poverty, promote stability, and establish the foundation for sustainable and equitable development (Bird, 2003). The IMF's financing initiatives are frequently depicted as catalysts for economic recovery; however, their impact on inclusive growth and poverty remains a matter of considerable debate. The influence of IMF funding on various macroeconomic indices has been the subject of significant research. IMF-supported policies exacerbate poverty in developing countries (Makedonas et al., 2015), while others emphasize the positive effects on economic development and debt ratios but the negative effects on inflation (Dicks-Mireauxet al., 2000). On the other hand, Barro et al. (2005) argue that IMF lending programs have a

detrimental effect on inflation, investment, government consumption, trade openness, and governance. They also suggest that the expansion of loan arrangements could impede economic development. Country-specific variables, such as political stability and institutional integrity, frequently influence the impact of IMF loans. When coupled with institutional reform, Binder and Bluhm (2017) demonstrate that IMF loans stimulate economic growth independently. Ivanova et al. (2003) contend that bureaucratic inefficiencies, volatile political climates, and a lack of political consensus jeopardize the implementation of programs. Additionally, Bird and Rowlands (2001) establish that political and institutional dynamics and economic factors greatly influence a nation's decision to participate in IMF accords. Despite these substantial contributions, prior research, such as that conducted by Makedonas et al. (2015), Dicks-Mireaux et al. (2000), Barro et al. (2005), and Binder and Bluhm (2017), has primarily focused on the isolated effects of IMF finance on economic growth, institutional advancement, and poverty alleviation. However, the critical convergence of IMF programs with pro-poor growth—a strategy that prioritizes poverty alleviation in conjunction with equitable economic development—has yet to be adequately investigated. This study's objective is to examine the complex relationship between economic fragility and IMF loans and their aggregate influence on poverty and pro-poor growth in Pakistan. In contrast to previous research, this study encompasses governmental, economic, and institutional components to provide a comprehensive analysis of the influence of IMF financing on the overarching objectives of sustainable and inclusive growth and poverty reduction. This research contributes to the broader discourse on the role of international financial institutions in fostering equitable and robust development outcomes by offering an empirical and policy-focused analysis of these dynamics.

3: DATA AND METHODOLOGY

The study uses poverty (POV) as the dependent variable and other indicators as independent factors. The variables' data comes from the World Bank (2023), published in the World Development Indicators (WDI). The headcount ratio indicates the percentage of people living below the national poverty line. Further, the amount of financial assistance the International Monetary Fund (IMF) loans nations to stabilize their economies or balance payments is an independent variable measured in current US dollars. In times of economic crises, this statistic shows global financial system reliance. GDP per capita (constant 2015 US$) is another major independent variable that indicates economic well-being and living standards. The Gini coefficient in percentage shows income inequality (IIEQ), which measures income distribution. Higher Gini coefficients, which increase inequality, may aggravate poverty. The annual percentage change in the consumer price index (CPI) measures inflation, which affects purchasing power and cost of living. The real effective exchange rate index (FER) (2010=100) measures a central bank's foreign currency assets and calculates foreign exchange reserves. These reserves, which include government securities and gold, maintain economic stability and exchange rate balance. The current account balance (CAB) is calculated in US dollars by summing up the trade balance, net current transfers, and net income from abroad. This statistic shows all foreign currency transactions in a nation. Social safety nets (SSN) are measured by the Zakat contribution in the country, which is calculated by deducting 2.5 percent of GDP. Zakat, Ushr, and welfare money reduce poverty by supporting the most vulnerable. A National Rural Support Program (NRSP) statistic is measured by the percentage of the population using clean fuel and cooking technology. This proxy emphasizes rural development activities that improve quality of life and reduce poverty. The education expenditures measure the Social Action Program (SAP) as a percentage of GDP invested in social services, including education, healthcare, water distribution, and sanitation, which improve human capital and reduce poverty. Economic activity and investment choices are affected by interest rates (IR), represented as a percentage of the deposit interest rate, and represent the cost of borrowing and savings return. The share of GDP from broad money is a proxy for financial development (FD). This statistic shows financial

markets' scope, resource mobilization, and economic progress.

Pakistan's economic and historical relevance influenced the study's choice. After joining the IMF in 1950, Pakistan requested a loan in 1958 to address its budget and current account imbalances (Ahmad et al., 2016). Since Pakistan has had balance-of-payments concerns since the 1970s, sometimes needing IMF assistance, 1975 was chosen as the start (Naz, 2022). Despite economic growth, IMF measures must be evaluated since poverty has remained flat since the 1970s. Despite the 1980s and 2000s pro-poor growth, institutional failures and credit mismanagement have hampered sustainable poverty reduction (Omer & Jafri, 2008; Hussain, 2012; Chandio, 2006). This study examines how IMF loans affect poverty and pro-poor development in Pakistan from economic, institutional, and policy perspectives. Further, it examines government policies and institutional structures to illuminate the opportunities and challenges of IMF-backed initiatives to boost economic development and decrease poverty.

The study uses Governance Theory, the Trickle-Down Hypothesis, and Pro-Poor Growth Theory to provide a multifaceted view of these complex relationships. Job creation and income growth are central to Pro-Poor Growth Theory's economic policies and activities to help people experiencing poverty. In the 1950s, the World Bank's "Redistribution with Growth" initiative introduced this concept (Page, 2006). Pro-poor development is characterized by the relative approach, which ensures people with low incomes get more advantages than the non-poor, and the absolute method, which tracks income increases (Harmacek et al., 2017). Kakwani& Son (2008) noted that pro-poor development encourages low-income individuals to participate in economic activities, increasing their income benefits. This reduces economic inequality and poverty. The Trickle-Down Hypothesis states that increased investments and employment will "trickle down" from the wealthiest to the poorest. According to this view, the government should provide wealthy company owners with financial incentives to engage in the economy and generate employment (Ho, 2018; Sowell, 2013). Expanding businesses provide jobs and greater wages, improving quality of life. Critics argue that helping people experiencing poverty improve their income has a higher impact on overall well-being, as Norton et al. (2002) found. Todaro (1997) stressed the theory's basic thesis that economic progress may significantly eliminate poverty. Governance Theory provides a broader perspective on how societies are organized, governed, and conducted economically and socially. Governance comprises rule formation, order maintenance, collaborative decision-making, state institutions, public administration, political science, and development studies (Chhotray et al., 2009). Governance theory, initially Steuerungs theory in Germany, explains how governments alter society and the economy. It examines decision-making frameworks and their consequences on stakeholders in light of changing social, economic, and technological situations (Mayntz, 2003). Governance theory helps this study determine how effectively institutional processes and policies are managed by poverty alleviation and IMF loan program management.

The study verifies empirical findings using unit root testing, cointegration analysis, and Auto-Regressive Distributed Lag (ARDL). Each method's distinct contribution to variable connections across short and long periods enhances time series and panel data analysis. The unit root test is a simple statistical method for assessing whether a time series variable is stationary in its level form or after first differencing. Stationarity is necessary for time series analysis since non-stationary data may mislead regression results. The Augmented Dickey-Fuller (ADF) and Dickey-Fuller (DF) are standard stationarity tests. Both methods search for data unit roots (Cochrane, 1991). Two primary unit root testing rounds occur in panel data. A second generation considers cross-sectional interdependence, admitting data interconnection across units, unlike the first generation, which assumes variable independence (Choi, 2001). Panel dataset variables must be stable after initial differencing to derive accurate conclusions regarding their relationships.

Cointegration indicates that variables move in the same direction throughout time, maintaining equilibrium even when changes occur. Three common cointegration tests—

Engle-Granger, Johansen, and Phillips-Ouliaris—find long-run correlations differently (Dolado, 1990). Cointegration analysis may help assess economic policies and structural changes by determining inter-variable dynamics' persistence and durability.The ARDL econometric approach investigates short- and long-term variable connections simultaneously. For datasets with mixed orders of integration (e.g., I(0) and I(1)), ARDL is a suitable match since it does not impose stationarity requirements like other techniques (Pesaran et al., 2001). The ARDL framework creates a dynamic model that captures independent factors' short- and long-term impacts on the dependent variable. Its two-fold feature makes ARDL useful for policy analysis and forecasting since it lets researchers isolate transitory changes from long-term patterns. These methodologies work together to ensure the study's analytical framework can handle stationarity and long-run equilibria and show temporal dynamics in depth. Since it employs advanced econometric methods to understand complicated variable connections, the study is supported by data. The study developed three broad models, i.e.,

Model -1: IMF Loans and Poverty/Economic Vulnerability

$$logPOV_t = \alpha_o + log\Sigma\beta_1\Delta POV_{t-1} + log\Sigma\beta_2 IMF_t + log\Sigma\beta_3\Delta IMF_{t-1} + Log\Sigma\beta_4 GDP_t + log\Sigma\beta_5\Delta GDP_{t-1} + log\Sigma\beta_6 INF_t + log\Sigma\beta_7\Delta INF_{t-1} + log\Sigma\beta_8 IIEQ_t + log\Sigma\beta_9\Delta IIEQ_{t-1} + log\Sigma\beta_{10} FER_t + log\Sigma\beta_{11}\Delta FER_{t-1} + log\Sigma\beta_{12} CAB_t + log\Sigma\beta_{13}\Delta CAB_{t-1} + \mu_t \quad (1)$$

Model-2: IMF Loans and Poverty/Government Policies

$$logPOV_t = \alpha_o + log\Sigma\beta_1\Delta POV_{t-1} + log\Sigma\beta_2 IMF_t + log\Sigma\beta_3\Delta IMF_{t-1} + log\Sigma\beta_4 GDP_t + log\Sigma\beta_5\Delta GDP_{t-1} + log\Sigma\beta_6 IIEQ_t + log\Sigma\beta_7\Delta IIEQ_{t-1} + log\Sigma\beta_8 SSN_t + log\Sigma\beta_9\Delta SSN_{t-1} + log\Sigma\beta_{10} NRS_t + log\Sigma\beta_{11}\Delta NRS_{t-1} + log\Sigma\beta_{12} SAP_t + log\Sigma\beta_{13}\Delta SAP_{t-1} + \mu_t \quad (2)$$

Model -3: IMF Loans and Poverty/Institutional Factors

$$logPOV_t = \alpha_o + log\Sigma\beta_1\Delta POV_{t-1} + log\Sigma\beta_2 IMF_t + log\Sigma\beta_3\Delta IMF_{t-1} + log\Sigma\beta_4 GDP_t + log\Sigma\beta_5\Delta GDP_{t-1} + log\Sigma\beta_6 IIEQ_t + log\Sigma\beta_7\Delta IIEQ_{t-1} + log\Sigma\beta_8 IR_t + log\Sigma\beta_9\Delta IR_{t-1} + log\Sigma\beta_{10} FD_t + log\Sigma\beta_{11}\Delta FD_{t-1} + \mu_t \quad (3)$$

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Auto-Regressive Distributed Lag (ARDL) can examine short-term dynamics and long-term interactions among variables with a limited sample size. This approach is practical for real-world datasets having variables with I(0), I(1), or a combination of the two since it can handle variables with different integration orders (Baharumshah et al., 2009). The ARDL approach begins with standard unit root tests (1) to validate that all variables are integrated, at least up to the first level. ARDL calculates both short-run and long-run coefficients simultaneously to understand variable interactions across time horizons fully. ARDL utilizes boundary testing to cointegration, often with the Wald test, to establish long-term connections. The Wald test evaluates the combined significance of lagged-level variables to assess whether the model variables have a stable equilibrium relationship. This step is crucial to ensuring the identified correlations are lasting. Small sample sizes are a significant limitation of empirical research, yet ARDL is adaptable and robust. Its capacity to isolate short-run fluctuations from long-run equilibrium dynamics makes it useful for policy studies while maintaining statistical rigor. The ARDL technique captures complex variable interactions to integrate short-term impacts with long-term trends in financial, social, and economic studies.

RESULTS AND DISCUSSION

Table 1 shows the descriptive statistics of the variables. The descriptive analysis summarizes the dataset by displaying the distribution, range, and key patterns of variables crucial to understanding the study's subject.

Table 1: Descriptive Statistics of Variables

Variables	Mean	Maximum	Minimum	Standard Deviation	Skewness	Kurtosis
POV	31.78636	64.30000	17.30000	10.99039	0.905530	3.1216
IMF	2.80E+09	1.03E+10	4.38E+08	2.82E+09	1.421329	3.63222
GDPPC	948.2482	1440.425	588.1595	221.6439	0.251681	2.32683
IIEQ	31.49886	37.30000	26.90000	2.495260	0.651712	2.49007
INF	8.048096	20.28612	2.529328	3.672746	0.777132	4.0439
FER	138.6351	237.525	96.48692	45.41188	0.929567	2.19573
CAB	-2.82E+09	3.85E+09	-1.89E+10	4.49E+09	-2.115476	7.7140
SSN	3.61E+09	7.91E+09	1.00E+09	1.96E+09	0.488698	2.1568
NRS	7.470455	22.30000	4.500000	4.858761	1.670045	4.63960
SAP	2.348073	3.022300	1.767590	0.334275	0.007561	2.12458
IR	3.090871	8.680833	1.634167	2.380133	1.245139	2.9318
FD	45.01815	58.8676	33.99584	5.962050	0.330521	2.33846

Source: Author's estimation. Note: POV is poverty, IMF is International Monetary Fund, GDPPC is Gross Domestic Product per capita, IIEQ is Income inequality, INF is Inflation, FER is Foreign Exchange Reserve, CAB is Current Account Balance, SSN is Social Safety Nets, NRS is National Rural Support program, SAP is Social Action program, IR is Interest rate, and FD is Financial development.

The dependent variable, poverty (POV), has a mean of 31.79 and a range of 64.30 to 17.30, indicating a wide range of poverty levels in the sample. Poverty has a 10.99 standard deviation. IMF financial assistance or allocations vary among the independent variables from 1.03E+10 to 4.38E+08, showing much variation. A standard deviation of 2.82E+09 indicates the large dispersion of IMF statistics. GDP per capita ranges from 588.16 to 1440.43, averaging 948.25. Economic production and quality of life vary greatly, as seen by the 221.64 standard deviation. The income difference ranges from 26.90 to 37.30, averaging 31.50. This variable is less volatile than others due to its 2.50 standard deviation. Inflation is somewhat erratic, averaging 8.05 and ranging from 2.53 to 20.29, with a standard deviation 3.67. Foreign currency reserves average 138.64, with values ranging from 96.49 to 237.53. A standard deviation of 45.41 indicates significant dispersion. The data is unstable, as the current account balance averages -2.82E+09 and ranges from -1.89E+10 to 3.85E+09. The standard deviation is 4.49E+09. Social safety net allocation variability is 1.96E+09, ranging from 1.00E+09 to 7.91E+09. The mean is 3.61E+09. The National Rural Support Program (NRSP) standard deviation is 4.86, with a range of 4.50–22.30. The mean is 7.47. The Social Action Program (SAP) has a lower mean of 2.35 and a standard deviation of 0.33, ranging from 1.77 to 3.02. Interest rate fluctuations are moderate, with a mean of 3.09, a range of 1.63 to 8.68, and a standard deviation of 2.38. Finally, financial development exhibits some financial sector growth volatility with a standard deviation of 7.86 and a range of 33.99 to 58.87. The low mean value of SAP and the high mean value of GDP per capita reflect different impacts on poverty alleviation. The large standard deviation in GDP per capita suggests that productivity and workforce size may reduce poverty. The outcomes emphasize reducing inequality and using economic growth to improve society. Table 2 shows the correlation matrix.

Table 2: Correlation Matrix

Model -1: IMF Loans and Poverty/Economic Vulnerability							
	POV	IMF	GDPPC	INF	IIEQ	FER	CAB
POV	1.000 ------						
IMF	0.052 (0.737)	1.000 ------					
GDPPC	0.054 (0.726)	0.769 (0.000)	1.000 -------				
INF	-0.007 (0.962)	0.114 (0.464)	-0.039 (0.799)	1.000 ------			
IIEQ	-0.174 (0.263)	-0.481 (0.001)	-0.605 (0.000)	-0.035 (0.823)	1.000 -------		
FER	-0.199 (0.200)	-0.463 (0.002)	-0.783 (0.000)	-0.059 (0.703)	0.554 (0.0001)	1.000 -------	
CAB	0.121 (0.438)	-0.437 (0.003)	-0.637 (0.000)	-0.211 (0.174)	0.249 (0.106)	0.275 (0.073)	1.000 -------
Model-2: IMF Loans and Poverty/Government Policies							
Methods	POV	IMF	GDPPC	IIEQ	SSN	NRS	SAP
POV	1.000 ------						
IMF	0.017 (0.908)	1.000 -------					
GDPPC	-0.012 (0.938)	0.771 (0.000)	1.000 -------				
IIEQ	-0.118 (0.442)	-0.492 (0.0007)	-0.622 (0.000)	1.000 -------			
SSN	0.063 (0.680)	0.814 (0.000)	0.989 (0.000)	-0.592 (0.000)	1.000 -------		
NRS	-0.102 (0.509)	0.811 (0.000)	0.842 (0.000)	-0.347 (0.020)	0.880 (0.000)	1.000 ------	
SAP	-0.566 (0.0001)	0.0002 (0.999)	0.168 (0.273)	-0.0054 (0.972)	0.091 (0.559)	0.024 (0.875)	1.000 ------
Model -3: IMF Loans and Poverty/Institutional Factors							
Methods	POV	IMF	GDPPC	IIEQ	IR	FD	
POV	1.000 ------						
IMF	0.017 (0.908)	1.000 ------					
GDPPC	-0.012 (0.938)	0.771 (0.000)	1.000 ------				
IIEQ	-0.118 (0.442)	-0.493 (0.0007)	-0.622 (0.000)	1.000 ------			
IR	0.103 (0.505)	0.890 (0.000)	0.727 (0.000)	-0.430 (0.004)	1.000 ------		
FD	-0.069 (0.655)	0.623 (0.000)	0.776 (0.000)	-0.424 (0.004)	0.754 (0.000)	1.000 ------	

Source: Author's estimation. Note: ( ) shows probability of variables.

In Model 1, poverty is positively correlated with CAB, GDPPC, and IMF finance. This shows a link between growing poverty and these issues. POV, IMF assistance, and CAB positively

correlated because of structural imbalances and external financial dependency on poverty reduction. Inflation, income disparity, and foreign currency reserves all negatively affect poverty. Lower poverty rates result from greater inflation, income equality, and foreign currency reserves; as inequality decreases and foreign currency reserves rise, a more stable economy with more equally dispersed resources may alleviate poverty. Strategic activities targeting these attributes may reduce poverty as they are negatively correlated. In Model 2, GDPPC, IIEQ, NRSP, and SAP are inversely related to low income. Increased economic productivity, inequality reduction, and stronger social support systems help reduce poverty. SAP's high correlation value shows its local poverty-fighting potential. Poverty increases with SSNs and IMF support. Policymakers must be careful since this conclusion may indicate implementation inefficiencies or short-term trade-offs. In Model-3, poverty is negatively correlated with GDPPC, IIEQ, and FD. This illustrates that poverty reduction requires economic growth, reduced inequality, and a healthy banking sector. These results suggest that inclusive economic development and financial access may help reduce poverty. However, poverty is strongly connected with interest rate (IR) and IMF assistance, implying that higher interest rates and dependency on external financial aid increase poverty. While the positive correlation between IR and IMF assistance shows conditional aid programs' complexity and socioeconomic effects, the positive correlation between IR and POV suggests that higher borrowing costs could worsen financial burdens, especially for low-income households. Table 3 shows the results of the ADF unit root test.

Table 3: Unit Root Estimates

Methods	POV	IMF	GDPPC	INF	IIEQ	FER	CAB
At Level							
Constant	-2.3054 (0.1750)	0.0254 (0.9558)	1.5760 (0.9993)	-5.5959 (0.0000)	-2.4958 (0.1235)	-1.6112 (0.4687)	-2.6519 (0.0903)
Constant & Trend	-2.3557 (0.3965)	-3.6679 (0.0351)	-0.4199 (0.9839)	-5.8557 (0.0001)	-3.2258 (0.0930)	-1.3078 (0.8732)	-4.3128 (0.0070)
None	-1.3355 (0.1656)	1.0048 (0.9144)	6.6650 (1.0000)	-1.5782 (0.1068)	-0.6124 (0.4462)	-1.8680 (0.0594)	-1.8828 (0.0576)
At First Difference							
Constant	-6.9830 (0.0000)	-5.2181 (0.0001)	-4.7582 (0.0003)	-8.7503 (0.0000)	-7.0677 (0.0000)	-5.3871 (0.0000)	-6.7793 (0.0000)
Constant & Trend	-6.8994 (0.0000)	-5.3588 (0.0004)	-4.9622 (0.0011)	-8.7969 (0.0000)	-6.9341 (0.0000)	-4.4337 (0.0050)	-6.7046 (0.0000)
None	-7.0155 (0.0000)	-4.9968 (0.0000)	-2.9393 (0.0042)	-8.8786 (0.0000)	-7.1043 (0.0000)	-5.1349 (0.0000)	-6.8299 (0.0000)
Decision	I(1)	I(1)	I(1)	I(0)	I(1)	I(1)	I(0)
Methods	POV	IMF	GDPPC	IIEQ	SSN	NRS	SAP
At Level							
Constant	-2.3054 (0.1750)	-0.5382 (0.8738)	1.5760 (0.9993)	-2.4958 (0.1235)	5.3412 (1.0000)	-2.9960 (0.0443)	-3.1286 (0.0313)

Constant & Trend	-2.3557 (0.3965)	-3.9596 (0.0172)	-0.4199 (0.9839)	-3.2258 (0.0930)	0.9523 (0.9998)	-2.3615 (0.3927)	-3.0958 (0.1194)
None	-1.3355 (0.1656)	0.4656 (0.8113)	6.6650 (1.0000)	-0.6124 (0.4462)	12.8703 (1.0000)	0.1811 (0.7339)	-0.3322 (0.5603)
At First Difference							
Constant	-6.9830 (0.0000)	-5.5203 (0.0000)	-4.7582 (0.0003)	-7.0677 (0.0000)	-1.6664 (0.4409)	-1.8954 (0.3313)	-5.4685 (0.0000)
Constant & Trend	-6.8994 (0.0000)	-5.5930 (0.0002)	-4.9622 (0.0011)	-6.9341 (0.0000)	-5.2098 (0.0006)	-2.4651 (0.3430)	-5.3839 (0.0003)
None	-7.0155 (0.0000)	-5.3721 (0.0000)	-2.9393 (0.0042)	-7.1043 (0.0000)	-0.0477 (0.6614)	-1.7183 (0.0811)	-5.5275 (0.0000)
Decision	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)

Methods	POV	IMF	GDPPC	IIEQ	IR	FD
At Level						
Constant	-2.3054 (0.1750)	-0.5382 (0.8738)	1.5760 (0.9993)	-2.4958 (0.1235)	-1.0914 (0.7117)	-2.4933 (0.1235)
Constant & Trend	-2.3557 (0.3965)	-3.9596 (0.0172)	-0.4199 (0.9839)	-3.2258 (0.0930)	-2.5023 (0.3257)	-3.5254 (0.0484)
None	-1.3355 (0.1656)	0.4656 (0.8113)	6.6650 (1.0000)	-0.6124 (0.4462)	-0.1102 (0.6405)	0.2072 (0.7420)
At First Difference						
Constant	-6.9830 (0.0000)	-5.5203 (0.0000)	-4.7582 (0.0003)	-7.0677 (0.0000(	-0.8086 (0.8049)	-5.8250 (0.0000)
Constant & Trend	-6.8994 (0.0000)	-5.5930 (0.0002)	-4.9622 (0.0011)	-6.9341 (0.0000)	0.1173 (0.9963)	-5.7973 (0.0001)
None	-7.0155 (0.0000)	-5.3721 (0.0000)	-2.9393 (0.0042)	-7.1043 (0.0000)	-0.8349 (0.3474)	-5.8974 (0.0000)
Decision	I(1)	I(1)	I(1)	I(1)	I(-)	I(1)

Source: Author's estimation. Note: ( ) shows probability of variables.

The unit root test results show that inflation, foreign exchange reserve, current account balance, financial development, and social action programs are stationary at the level, meaning that they do not have a unit root and are stationary over time. Poverty, IMF, GDP per capita, income inequality, social safety nets, national rural support program, and interest rate are stationary at the first difference, meaning that they are non-stationary at the level. However, after taking the first difference, they become stationary. This result indicates that a trend or unit root occurs in the original series, but the series becomes stationary after taking the first difference. This information is valuable for choosing the suitable econometric model to evaluate the data. Table 4 shows the lag length criteria. The lag length criteria show the number of lags that can be used for the ARDL estimation.

Table 4: Lag Length Selection Criteria

Model-1					
Lag	LR	FPE	AIC	SC	HQ
0	NA	2.25e+48	131.2015	131.5001	131.3087
1	384.4901	1.19e+44	121.3115	123.7002*	122.1685
2	64.31070	1.29e+44	121.1447	125.6235	122.7516
3	80.86888*	2.92e+43	118.9005	125.4694	121.2574
4	62.59428	4.90e+42*	115.1539*	123.8129	118.2607*
Model-2					
Lag	LR	FPE	AIC	SC	HQ
0	NA	2.05e+41	114.9912	115.2837	115.0977
1	705.8230	1.19e+33	95.99282	98.33331*	96.84510
2	111.0192*	2.26e+32*	94.11310	98.50151	95.71112*
3	53.59794	2.75e+32	93.68240*	100.1187	96.02616
Model-3					
Lag	LR	FPE	AIC	SC	HQ
0	NA	5.33e+26	78.56852	78.82445	78.66034
1	318.9362	1.62e+23	70.44791	72.23944	71.09070
2	93.82270	3.19e+22	68.68550	72.01263	69.87925
3	53.26610	2.07e+22	67.86835	72.73107	69.61305
4	46.08946	1.18e+22	66.42240	72.82072	68.71806
5	60.45282*	3.03e+20*	60.71195*	68.64586*	63.55857*

The AIC, FPE, and HQ criteria all recommend using an ideal two-lag length for coefficient estimates, according to the results of the lag length criteria for the variables in this study. For variable estimation, one lag length should be utilized, according to the SIC and LR criteria. Based on these estimates, the study has decided to use the AIC criterion for additional estimation. The appropriate number of lags in all three models is 4, 3, and 5, as it is given by the greatest number of criteria, especially by the Akaike information criterion (AIC). The estimation technique is ARDL, which takes into account the mixed order of integration of variables discovered using the unit root test. The number of lags is determined through a lag length structure. Table 5 shows the ARDL estimates for Model-1.

Table 5: ARDL Estimates for Model 1

Variables	Short Run Results	Long Run Results
IMF	1.94E-09 (0.0230)	2.10E-09 (0.0771)
GDPPC	1.032233 (0.0000)	-0.501483 (0.0000)
INF	0.978337 (0.0008)	-0.469207 (0.1857)
IIEQ	-2.299009 (0.0000)	-1.109077 (0.0047)
FER	-0.531888 (0.0000)	-0.394753 (0.0002)
CAB	-6.94E-10 (0.0072)	-3.75E-09 (0.0000)
COINTEQ01	-1.929826 (0.0000)	-------

C	823.6957 (0.0000)	-------
F-Statistics	-------	34.122

Source: Author's estimation. Note: ( ) shows probability of variables.

Research shows a clear positive association between IMF loans and short- and long-term poverty rates. This supports the economic idea that borrowing from the International Monetary Fund (IMF) frequently requires decreasing subsidies, boosting taxes, and slashing government spending. These budget cutbacks are meant to stabilize the economy and ensure debt payments, but they hurt people experiencing poverty the most. Cuts to government subsidies and assistance programs increase poverty, especially among low-income people. Stubbs et al. (2022) and Buddendieck (2011) agreed that IMF loan programs increase poverty in developing nations by imposing austerity measures on them.Poverty and GDPPC have different short- and long-term patterns. GDPPC's short-term positive correlation with poverty may be explained economically. This occurs when economic growth does not increase wealth distribution. High income disparities, employment insecurity, and ineffective social service delivery may prevent people with low incomes from benefiting from economic advancement. The long-term negative relationship between GDPPC and poverty shows that economic growth reduces poverty. Higher average incomes enhance living conditions and fundamental needs. According to previous research, increased GDP per capita improves living standards and reduces poverty (Liddle, 2017; Emmanuela et al., 2018).Because of its negative economic repercussions, inflation (INF) is strongly linked to poverty. Because of inflation, the cost of essential goods is cutting into people's purchasing power, particularly low-income groups. Inflation hurts low-income families' ability to live comfortably. This supports earlier findings indicating that higher inflation rates hurt disadvantaged populations economically and lower their buying power, which promotes poverty (Yolanda, 2017; Siyan et al., 2016).Economic contexts show that income inequality (IIEQ) negatively affects poverty. Wealth concentration may boost company investments, industrial expansion, and infrastructural development. These investments indirectly assist low-income people by creating employment, which reduces poverty. According to Amponsah et al. (2023) and Bergstrom (2022), wealth disparities may reduce poverty by boosting economic development and employment creation. Foreign exchange reserves (FER) negatively correlate with poverty, indicating their relevance to economic progress. With higher foreign currency reserves, governments may spend on infrastructure and social welfare, boosting economic growth, job creation, and living standards. Public service spending improves healthcare, education, and transportation, reducing poverty. Our findings support earlier studies that state that high foreign currency reserves are essential for long-term poverty reduction economic strategies (Cornia, 2006; Emmanuel et al, 2018).The negative association between poverty and current account balance (CAB) emphasizes the necessity for economic stability. CAB increases indicate better trade balances, decreased import dependency, and more competitive exports. These things boost the economy and provide employment, which reduces poverty. However, a current account deficit may indicate deeper economic issues like excessive foreign goods imports and low local productivity, which may increase poverty. King and Handa (2003) and Chude et al. (2019) showed that improved CABs reduced poverty to various degrees.The Error Correction Model (ECM) shows a short-term equilibrium with a statistically significant negative coefficient and 192.9% adjustment speed. This quick adjustment rate corrects any deviations from the long-term equilibrium to keep the model stable. ECM coefficient indicates significant variable interdependencies and how the model is swiftly nearing equilibrium.Finally, an F-statistic value over the top limit suggests a long-term relationship between variables, which the bound test confirms. This indicates cointegration, which implies the variables change together and remain together throughout time. Cointegration

proves that these interactions are economic and that the model is stable and consistent in describing poverty's origins and dynamics. Table 6 shows the ARDL estimates for Model-2.

Table 6: ARDL Estimates for Model 2

Variables	Short Run Results	Long Run Results
IMF	2.85E-09 (0.0006)	1.75E-09 (0.0737)
GDPPC	------	-0.198874 (0.0000)
IIEQ	------	0.524809 (0.2978)
SSN	9.23E-08 (0.0000)	6.73E-08 (0.0000)
NRS	-29.30910 (0.0002)	-5.157367 (0.0041)
SAP	8.958710 (0.0026)	-22.99871 (0.0025)
COINTEQ01	-0.958512 (0.0000)	------
C	136.4542 (0.0000)	------
F-Statistics	--------	6.619

Source: Author's estimation. Note: ( ) shows probability of variables.

In Model 2, the IMF has a positive coefficient, suggesting that IMF loans cause poverty. IMF loans increase poverty in the short- and long term. IMF conditions typically require currency depreciation from borrowing countries, justifying it. Currency depreciation raises import prices, which raises inflation and requirements for people experiencing poverty. IMF loan schemes worsen poverty since the poorest do not qualify for adjustment programs, as Easterly (2000) said. Biglaiser and McGauvran (2022) note that IMF loans may jail more impoverished people, particularly in emerging nations. The negative coefficient of GDPPC shows the inverse relationship between GDPPC and POV. GDPPC increases may support healthcare, education, monetary transfers, and job creation. These actions assist the poor in meeting their basic needs, reducing poverty, according to De Janvry and Sadoulet (1996) and Agrawal (2007). POV has positive and statistically significant short- and long-term relationships with social safety nets (SSN). SSN programs sometimes fail to reduce poverty because of poor targeting, ineffective bureaucracies, and limited program coverage. These issues hinder social safety net programs' ability to aid the neediest. According to Masud-All-Kamal and Saha (2014), social safety net measures fail to reduce poverty when they do not reach low-income populations. Beegle et al. (2018) noted that SSN initiatives fail to meet the demands of low-income people.Poverty negatively impacts the National Rural Support Program (NRSP) over time. Community involvement in NRSP's decision-making, planning, and execution improves local ownership and program responsiveness. In the long term, this technique reduces rural poverty by providing consistent income streams. According to Iqbal et al. (2018), NRSP initiatives reduce poverty by creating employment and improving access to food, healthcare, and education.SAP affects poverty differently in the short and long run. Ineffectiveness may be due to institutional inefficiencies, corruption, and implementation delays. SAP has a long-term inverse relationship with POV, with a coefficient of -22.998. Effective SAP initiatives to reduce poverty focus on community participation, infrastructure development, human capital investment, and empowerment programs, particularly for

women. These programs promote economic involvement and self-sufficiency to reduce poverty. Richardson & London (2007) and Celikary and Gumus (2017) found that social programs may reduce poverty by boosting income, self-sufficiency, and structural inequality.The error correction term has a negative and statistically significant short-run coefficient, indicating a 95.8% faster equilibrium adjustment than the previous quarter. The ECM coefficient shows that the model converges to equilibrium. The limit Test shows that the model is cointegrated since the F-statistic (6.619) exceeds the upper limit. The variables' simultaneous change shows their long-run equilibrium. Table 7 shows the ARDL estimates for Model-3.

Table 7: ARDL Estimates for Model 3

Variables	Short Run Results	Long Run Results
IMF	-7.74E-09 (0.0005)	-7.43E-09 (0.0564)
GDPPC	0.336381 (0.0005)	-0.291062 (0.0000)
IIEQ	1.213559 (0.0065)	0.513112 (0.3928)
IR	-14.91226 (0.0000)	9.680678 (0.0396)
FD	1.438800 (0.0004)	-0.166631 (0.6639)
COINTEQ01	-2.034470 (0.0000)	-------
C	360.5230 (0.0000)	-------
F-Statistics	------	5.731

Source: Author's estimation. Note: ( ) shows probability of variables.

In model 3, the results show that poverty and IMF loans are strongly negatively correlated in the short and long term. More IMF loans reduce poverty. This is justified by IMF budget deficit reduction, exchange rate stability, and inflation control programs. These methods support sustainable economic growth, benefiting everyone, even those with low incomes. Morris and Ozigbu (2020) found that the Asian Development Bank and IMF loans reduce poverty over time. Oberdabering (2013) noted that IMF deals have multiple effects, including poverty reduction. Poverty is strongly inversely related to GDPPC over time. This association links lower poverty rates to higher GDP per capita. GDPPC increases simplify infrastructure investment, leveling the playing field and closing regional imbalances. Further, they make social services more accessible, which benefits the disadvantaged by closing educational and financial inequalities and improving living conditions. Adams (2004) and Klasen (2004) agreed that higher GDP per capita boosts economic growth and inclusive growth, reducing poverty. Income inequality (IIEQ) and poverty are positively correlated in the short term. According to Jamal (2006) and Amar and Pratama (2020), income inequality must be reduced to reduce poverty. Interest rates (IR) positively correlate with poverty with a long-term correlation coefficient of 9.68 and p-value of 0.039. IR inversely affects poverty in the short run. High interest rates hurt businesses and jobs by limiting investment and consumer spending. The effect is increased poverty. Madzimure and Mbedzi (2021) stated that higher interest rates worsen poverty, while Oyewale and Musiliu (2015) found that lower real interest rates may reduce it. Financial development (FD) increases short-term poverty. Financial growth that benefits the affluent at the cost of the poor may worsen poverty. Seven

and Coskun (2016) and De Haan et al. (2022) found that financial development that overlooks people experiencing poverty may worsen poverty. The Error Correction Model (ECM) shows a 203.4% speed increase over the previous quarter due to the error correction term's negative coefficient of -2.034. The model's quick convergence to equilibrium is displayed. The limit test proves cointegration in the second model since the F-statistics value (5.731) exceeds the upper limit. This supports the hypothesis that the variables co-evolve and maintain their relationship. Table 8 shows the diagnostic test estimates.

Table 8: Diagnostic Test Estimates

Test	Value	Probability Value	Decision
Model 1			
LM Test	0.782	0.489	The issue of autocorrelation does not exist in the data
Jarque-Bera Test	0.621	0.733	There is no normality issue in error term
Model 2			
LM Test	1.783	0.175	No autocorrelation issue in the data
Jarque-Bera Test	1.702	0.427	There is no normality issue in error term
Model 3			
Jaque-Bera Test	0.475	0.788	No normality issue in the error term
LM Test	3.247	0.111	No autocorrelation issue in the data

Source: Author's estimation.

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The results confirmed that the model is free from autocorrelation issue and the residual is normally distributed in all three models. Hence, the results safely be interpreted with long-term policies. Table 9 shows the summary of hypotheses for ready reference.

Table 9: Summary of the Hypothesis

Hypothesis No	Statements	Decision	Results supported
H_1	The stringent conditions attached to IMF loans tend to heighten vulnerabilities in developing nations such as Pakistan, leading to elevated poverty rates and a diminishing focus on pro-poor growth strategies.	Partially Accepted	Stubbs et al, (2022) Emmanuel et al., (2018) Chude at al., (2019)
H_2	Effective government policies can help alleviate the adverse effects of IMF loans on poverty and the pro-poor growth agenda in Pakistan.	Accepted	Iqbal et al., (2018) Celikary& Gumus (2017) Beegle et al., (2018)
H_3	Institutional factors have a substantial influence on the	Accepted	Morris &Ozigbu, (2020) Amar & Pratama, (2020)

Hypothesis No	Statements	Decision	Results supported
	efficacy of IMF loans in diminishing poverty and advancing pro-poor growth strategies in developing nations, such as Pakistan.		Madzimure & Mbedzi (2021)

5. CONCLUSIONS AND POLICY RECOMMENDATION

The aim of the study is to examine the dynamic linkages between IMF loan received and Pakistan's economic stability and evaluate the pro-poor growth scenario in Pakistan The results of Model 1 advise against trusting international financial institutions like the IMF. Overusing IMF programs may diminish their poverty-reduction efficacy. Borrowing nations should improve their socioeconomic conditions instead of imposing structural reforms that hurt low-income people. It can minimize foreign debt and enhance exports by managing inflation and keeping a stable real exchange rate, encouraging people to retain their assets in the local currency. Model 2 prioritizes rural earnings and living conditions since most of Pakistan's poor live there. Hybrid seeds and other contemporary technologies may increase agricultural productivity, enabling this agenda. Public health and education infrastructure must be prioritized for equitable access to essential services. Additionally, governments should prioritize the leading causes of poverty via various approaches. Collaboration with NGOs and community-based groups and public engagement in project conception, execution, and monitoring are essential. National development strategies should prioritize microfinance, entrepreneurship, and the poor's necessities. Model 3 showed that fiscal policy should target GDP growth for low-income people, particularly those not active in foreign trade. Microfinance organizations, digital financial services, and rural banking growth are important ways to enhance financial access. Lower transaction costs and internet access may boost financial inclusion and economic involvement in disadvantaged areas.

The United Nations 2030 global agenda to alleviate extreme poverty is crucial for growing nations. Pakistan is one of several countries that have worked with the IMF on concessional and non-concessional loans. IMF initiatives and poverty reduction efforts have complex and frequently conflicting consequences. IMF loan conditions have increased Pakistan's poverty due to tight policies. The development, execution, and lack of alignment with targeted social policies can hinder macroeconomic stabilization measures needed to achieve these conditions. Pakistan has had these issues throughout its IMF lending arrangements. In the first scenario, budgetary discipline has trumped economic measures that assist people experiencing poverty, and IMF loan requirements have frequently worsened poverty. Others, such as GDP per capita and foreign currency reserves, have helped battle poverty by promoting economic development and stability. Poverty increases with the current account deficit, emphasizing the necessity for balanced fiscal and external policy. The second paradigm prioritizes government anti-poverty efforts. Pakistan's national rural support program, structural adjustment programs, and social safety nets have reduced poverty. These initiatives have increased employment opportunities, direct financial help, healthcare, education, and economic growth. Administrative inefficiency and program implementation delays have sometimes reduced their efficacy. However, the government's actions have helped Pakistan meet its poverty reduction objectives and mitigate the IMF's loan requirements. The third approach emphasizes strong institutions to reduce poverty. Pakistan's economic growth has not permanently reduced poverty. High interest rates encourage savings and investment, which temporarily reduce poverty, but their long-term effects must be handled. Institutional inefficiency and financial inequity hinder long-term poverty alleviation.

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