Journal of Economics & Development (JED) 1(3): 1-11, 2025; ISSN: 3057-3416, www.saut.ac.

The Effects of Financial Development on Foreign Direct Investment in Tanzania

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Received September 15, 10, 2025; Revised November 2, 2025; Accepted November 26, 2025

Cite This Paper as Follows:
Wandela Edward, S;* Kilindo, AL**, Kongolo, M.**. *(2025). The Effects of Financial Development on Foreign Direct Investment in Tanzania. Journal of Economics & Development, 1(3): 1-11.*
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Abstract
This study examined the effect of financial development on foreign direct investment (FDI) in Tanzania, focusing on three aspects: the depth of financial institutions, the depth of financial markets, and access to financial markets. Annual time-series data for the period 1990-2021 were applied, and the analysis used regression models with Newey-West standard errors to adjust against heteroscedasticity and autocorrelation. The findings revealed that depth of the financial institutions was found to have a statistically significant adverse effect on FDI, indicating potential inefficiencies or structural issues in the industry that repels foreign investment. Conversely, financial market depth and access to financial markets had positive but statistically insignificant effects on FDI, such that while these areas can attract investment flows, the level of development of these areas seemed to be not high enough to attract meaningful foreign capital. Trade openness of the control variables had positive and significant effects on FDI, while lending interest rates had marginally significant negative effects. These findings underscore the need for policy reforms aimed at institutional deepening, increasing the depth and efficiency of financial markets, and ensuring access to finance in a bid to enhance the support for FDI inflows in the country.

Keywords: Financial development, Foreign direct investment, financial institutions, Tanzania

JEL Classification: G10, G11, G15, G18

1. Introducton

The global net foreign direct investment has been rising since the 1970's. However, since 2010, the global net foreign direct investment has been increasing at a decreasing rate. The global pandemic COVID 19 has also accelerated the decline of this flow. For example, in 2022, global foreign direct investment (FDI) fell by 12% to $1.3 trillion and in 2023 it fell by 7% to USD 1364 billion from 1.6 trillion in 2022 (UNCTAD, 2023). Foreign direct investment (FDI) contributes significantly in the development of any economy through its contribution in various sectors by providing capital, creating employment, transferring technology, development of human capital, transfer of managerial and entrepreneurial skills, by boosting export potential and the stimulation of competition and innovation (World Bank, 2020; Blomstrom & Kokko, 2003 and OECD, 2002). Financial development has a significant contribution in attracting foreign direct investment. Alfaro et al, (2004) found that countries with more open and developed financial markets attracts higher FDI inflows. This is because financial openness simplifies the movements of profits, improves risk sharing and leads to efficient capital allocations (Kose et al, 2009). In addition, a well-developed financial sector provide access to capital and offer risk management services leading into reduction of transaction costs and investment uncertainties (Levine, 2005). Studies found that financial development influences FDI positively only when a certain threshold is surpassed (Tsaurai & Makina, 2019; Kouassi, 2019). Nguyen (2024) found that financial market has positive effect on FDI. They found that long run financial markets have a positive significant influence on country's FDI.

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Given the above background, the aim of this study was to examined the effect of financial development on foreign direct investment (FDI) in Tanzania, focusing on three aspects: the depth of financial institutions, the depth of financial markets, and access to financial markets, using annual time-series data from 1990-2021.

1.1 The problem

The banking subsector remains the cornerstone of the banking system of every country. Tanzania accounts for over 70% of the total assets of the banking sector. In 2023, the total banking assets in the country reached at about TZS 54,396 billion, suggesting an increase of about 17.8% from 2022. The deposits also saw a rise of about 16.9%, totaling about TZS 38,076.5 billion for the country. This growth reflects heightened public confidence and effective deposit mobilization strategies. Profitability surged by 63.5%, with pre-tax profits climbing to TZS 1,527.9 billion, driven by improved operational efficiency and an expanding loan portfolio. FinScope (2023), argued that access to formal financial services increased to 89% in 2023 from 86% in 2017, while the usage rose to 76% from 65% over the same period. Tanzania has experienced a significant surge in Foreign Direct Investment (FDI) in recent years, reflecting its growing appeal as a prime investment destination in Africa. In 2024, the Tanzania Investment Centre (TIC) registered 842 projects valued at about $7.7 billion, marking the highest investment registration in the country since 1991. The manufacturing sector led with 377 projects worth $3.1 billion, followed by transport sector with 138 projects valued at $1.2 billion. These investments were anticipated to create approximately 248,078 direct jobs (TIC, 2024). As of December 2024, TIC had registered 901 projects valued at $9.31 billion, indicating significant progress toward the target of 1500 projects valued at $15 billion by December 2025. Mosenda, 2025). Tanzania's proactive approach and strategic initiatives have positioned it as an increasingly attractive destination for foreign direct investment, with a positive outlook for continued growth in the coming years. However, to what extent and which mechanism of influence of financial development on foreign direct investment is a subject to be studied. In a developing economy like Tanzania, improved depth and efficiency of financial institutions (banks, microfinance) and financial markets (bonds, equity, FX markets) can make the country more attractive to foreign investors. The main objective of this study was to examine the effect of financial development on foreign direct investment (FDI) in the country. The study is divided into the following five sections: section 2 provided the literature review, section 3 discusses methodology, section 4 presents results and discussion, section 5 concludes.

2. Literature Review

The Financial Intermediation Theory explains the role of financial intermediaries (e.g., banks, financial markets, non-bank institutions) is the bridging of the gap between savers and borrowers. This theory posits that intermediaries reduce the frictions and inefficiencies present in direct finance by addressing problems such as information asymmetry, transaction costs, and risk diversification. Formally introduced by Gurley and Shaw (1960) as '*Money in a Theory of Finance'*, the emphasis was the transformation role of financial intermediaries in the economy. The financial intermediaries exist because they can reduce the costs of channeling funds between borrowers and lenders, thus improving the efficiency of the financial system (Gurley & Shaw, 1960). A well-developed financial system lowers the cost of capital for investors by reducing investment risk via insurance and hedging instruments. It increases access to credit for multinational enterprises (MNEs) and enhances the location attractiveness of host countries by improving financial infrastructure.

Alfaro, et al. (2004) commented that financial development facilitates the external financing of firms and encourages investment activities, including FDI. Dung, et al. (2025) examined the impact of financial development on FDI and domestic investment on Asian nations using time series data from 2000 to 2020. Panel regression results using STATA 14 found that financial market depth, financial institution efficiency and financial market accessibility contributed to financial development and investments. Gokceli (2023) examined the impact of foreign direct investment on financial development in the OECD by analysing time series data from 1990 to 2020 and employing the system GMM model. The regression analysis revealed that FDI inflows exerted a larger positive significant effect on financial market index comparing to financial institution index. Pandey et al, (2024) determined the interplay among financial development, foreign direct investment and economic growth in Nepal using an ARDL bound testing model and Error Correction model. The study used annual time series data from the World Bank and the International Monetary Fund from 1980 to 2020. The

study found that there was a robust positive link between financial development and FDI inflows in enhancing economic growth of Nepal both in the short run and in the long run. Tajudeen & Adesina (2024) examined the effect of monetary policy and financial development on foreign direct investment (FDI) inflow in Nigeria using ARDL model. Data were from UNCTAD, World Bank and the Central Bank of Nigeria and covered the period from 1980 to 2021. The study found that financial development had a long run positive significant influence on FDI inflows but had a negative significant influence in the short run. The findings suggested that strong financial institutions attract more FDI inflows into the country.

Raphael (2024) investigated the causal relationship between financial development and FDI in Tanzania from 1990 to 2020 using VECM in the analysis. The study found no significant evidence of causality between FDI inflows and financial development, suggesting that during this period, FDI did not significantly influence financial development, and vice versa. Hungu (2024) examined the impact of financial liberalization on economic growth in Tanzania. The study found that financial liberalization had not yet exerted the expected effect on the Tanzanian economy. This suggests that while financial liberalization is intended to enhance financial development and attract FDI, its impact on economic growth may be limited in the short term.

3. Methodology

This study employed an explanatory research design as it seeks to establish the relationship between financial development and foreign direct investment. Annual time series data covering the period 1990 to 2021 were used. A quantitative approach was used to analyze the mechanism of influence of financial sector development on foreign direct investment in Tanzania. A deductive reasoning approach was used since it seeks to move from theory to empirical testing. The hypotheses were developed based on Financial Intermediation Theory and then tested using real-world data from the country. A positivism research philosophy was utilized because it employed an explanatory research design, based on quantitative research approach and a deductive reasoning approach. Table 1 summarizes the data type and their sources.

Table 1: Variable Description

Serial No.	Variable Name	Abbreviation	Measurement	Variable Category	Source
1	Foreign Direct Investment	FDI	Net Inflows (% of GDP)	Dependent	World Bank (WDI)
2	Financial Institution Depth	FID	Index	Independent	World Bank (WDI)
3	Financial Market Depth	FMD	Index	Independent	World Bank (WDI)
4	Financial Market Access	FMA	Index	Independent	World Bank (WDI)
5	Gross Domestic Product	GDP	Growth Rate	Control	World Bank (WDI)
6	Lending Rate	LENDR	Interest rate on Loans (%)	Control	World Data
7	Exchange Rate	EXR	TZS/USD	Control	Penn World Tables
8	Financial Development	FDE	Index	Control	World Bank (WDI)
9	Capital Formation	CAPF	Percentage of GDP	Control	World Bank (WDI)
10	Trade Openness	TO	Index	Control	World Bank (WDI)

Source: Author, 2025

In positivist research, hypotheses are derived from theory and tested through empirical, often numerical, data that are perfectly suited to the investigation of the influence of financial development on FDI. Tanzania is in an emerging economy whose institutional and financial structures are under transformation (World Bank, 2020).

Figure 1 the conceptual framework for the study. The independent variables are indicated by financial development indicators were represented by the depth of financial institution, the depth of financial market and the access of financial market. The control variables were included to isolate the true effect of financial development on foreign direct investment. Control variables included GDP Growth rate, Lending rate, Exchange rate, Capital formation, Financial development and Trade openness. The overall economic performance as measured by the GDP growth influences the inflow of FDI, whereas macroeconomic stability of the country in addition, attracts FDI inflows. Institutional quality and investor's confidence is enhanced by the political stability while the exchange rate dynamics accounts for currency risks and competitiveness. These control variables were included in order to make sure that the relationship between financial development and FDI is not confounded by broader macroeconomic or institutional factors.

Descriptive, correlation and unit root analysis were conducted in order to analyse the behavior of data so as to be able to choose the best model. To ensure that the regression model is statistically valid, the study checked serial correlation using Breusch-Godgrey LM test, tested for heteroskedasticity using White or Breusch-Pagan test, and checked for multicollinearity by using VIF test (Variance Inflation Factor). The study used linear- log regression analysis model to estimate variables.

$$y_t = \beta_0 + \beta_1 X_{1t} + \ldots + \beta_k X_{kt} + \epsilon_t \quad \ldots\ldots\ldots\

JB Chi2	0.766	0.654	6.812	43.650	6.744	3.943	4.175	1.022	9.155	8.156
p-value	0.682	0.721	0.033	0.000	0.034	0.139	0.124	0.600	0.010	0.017
Sum	81.444	2.055	0.542	0.150	3.065	158.608	38865.330	1057.960	617.403	885.522
SSD	62.511	0.012	0.003	0.000	0.011	120.518	12894953.946	2303.819	1303.238	1902.542
N	31	31	31	31	31	31	31	31	31	31

Source: Author, 2025

The average value of Foreign Direct Investment (FDI) was 2.627% with moderate variability (CV = 54.94%). The distribution was slightly right-skewed (0.264) and approximately mesokurtic (2.414). Values range from 0.000% (years with no inflows) to 5.664%. The Jarque–Bera test (p = 0.682) does not reject normality. Over the sample, FDI totals 81.444% of GDP, with an SSD of 62.511, corresponding to a variance of 2.084 and a standard deviation of 1.444. The mean FIDI was 0.066, with variability (CV = 30.11%). It is mildly right-skewed (0.213) with kurtosis near normality (3.037). Values range from 0.034 to 0.120 and the normality was not rejected (p = 0.721). The sum FIDI over the sample is 2.055, with an SSD of 0.012, indicated low dispersion (variance ≈ 0.000, SD = 0.020). The mean FMDI was 0.017, with the variability (CV = 53.16%). The distribution is positively skewed (1.070) and slightly leptokurtic (3.509). Values range from 0.006 to 0.041 and the normality was rejected (p = 0.033) at 5% level of significance. The sum of FMDI value was 0.542, with an SSD of 0.003; this produced a variance close to 0.000 and an SD of 0.009.

The mean FMAI was 0.005, with low variability of (CV = 9.94%). The distribution was highly left-skewed (-4.554) and extremely leptokurtic (24.128). this shows that there is a concentration of values with outliers with the range of 0.002–0.005. Normality was strongly rejected (p = 0.000). The total FMAI over the period is 0.150, with a minimal SSD of 0.000. The financial development index (FDEI) had a mean of 0.099, with moderate variability (CV = 19.19%). The distribution was slightly right-skewed (0.454) and moderately leptokurtic (5.466). ranging from 0.048 to 0.157 and the normality was rejected (p = 0.034) at 5% level. The cumulative FDEI was 3.065, with an SSD of 0.011, giving a variance close to 0.000 and SD = 0.019. The mean (GDP growth) was 5.116, with moderate variability (CV = 39.17%). It was slightly left-skewed (-0.770) with kurtosis close to normality (2.532). the range was 0.584–7.672 and the normality was not rejected (p = 0.139) at 5% level of significance. The total GDP growth was 158.608 percent, with an SSD of 120.518, giving a variance of 4.017 and an SD of 2.004.

The mean EXR was Tshs. 1,253.72, with high variability (CV = 52.29%). The distribution was slightly right-skewed (0.288) and platykurtic (1.931), ranging from 219.16 to 2,298.00. However, normality was not rejected (p = 0.124). at 5% level of significance. The cumulative sum of EXR was 38,865.33, with a large SSD of 12,894,953.946. The mean Trade Openness (TO) was 34.128%, with moderate variability (CV = 25.68%). The distribution was slightly right-skewed (0.349) and mesokurtic (2.898) ranging from 18.660 to 56.170% and normality not rejected (p = 0.600) at 5% level of significance. The total TO was 1,057.96%, with an SSD of 2,303.819, producing a variance of 76.794 and an SD of 8.763. The mean is LENDR was 19.916%, with moderate variability (CV = 33.09%). The distribution of LENDR was positively skewed (1.360) and slightly leptokurtic (3.723) with a range of 14.140 to 37.805%. however, normality was rejected (p = 0.010) at 5% level of significance. The cumulative LENDR was 617.403%, with an SSD of 1,303.238, which corresponds to a variance of 43.441 and an SD of 6.591. The mean CAPF was 28.565%, with moderate variability (CV = 27.88%). Slightly left-skewed (-0.192) and platykurtic (1.666). Ranging from 14.900 to 39.726% and normality was rejected (p = 0.017). The cumulative CAPF was 885.522%, with an SSD of 1,902.542, giving a variance of 63.418 and an SD of 7.964. The results of the Jarque–Bera normality test indicate that FMDI, FMAI, FDEI, LENDR, and CAPF deviate significantly from the normal distribution at the 5% significance level. The estimation techniques applied were robust to departures from normality, the variables were retained in their original form for the baseline analysis. Nevertheless, the robustness checks employing appropriate transformations of some variables into logarithmic were conducted to ensure that the empirical findings were not driven by distributional irregularities. Table 3 provides the correlation Analysis.

Table 3: Correlation Analysis

	FDI	FIDI	FMDI	FMAI	FDEI	LNGDP	DCAPF	LENDR	TO	LNEXR
FDI	1									
FIDI	-0.4034	1								
FMDI	-0.5092	0.706	1							
FMAI	0.1008	-0.0492	0.1343	1						
FDEI	-0.3861	0.7878	0.7892	0.2051	1					
LNGDP	0.6347	-0.3854	-0.7358	-0.1446	-0.5066	1				
DCAPF	0.0164	-0.0913	-0.2792	-0.0316	-0.0519	0.2149	1			
LENDR	-0.4648	0.0385	0.4983	0.1264	0.2772	-0.632	-0.4198	1		
TO	0.4378	-0.2325	-0.1425	0.2229	-0.2419	0.187	-0.1295	-0.0009	1	
LNEXR	0.3632	0.0117	-0.4376	-0.3846	-0.397	0.6526	0.1844	-0.7438	0.045	1

Source: Aouthor,2025

The correlation matrix reveals several notable relationships among the study variables. Foreign Direct Investment (FDI) shows a strong positive correlation with economic size (LNGDP, 0.6347) and trade openness (TO, 0.4378), suggesting that larger and more open economies tend to attract more FDI as negatively correlated with financial depth indicators such as FIDI (–0.4034), FMDI (–0.5092), and FDEI (–0.3861), suggesting that higher domestic financial sector depth does not necessarily coincide with increased FDI inflows in the sample period. The financial development sub-indices exhibited strong internal linkages, with particularly high positive correlations between FIDI and FMDI (0.706), FIDI and FDEI (0.7878), and FMDI and FDEI (0.7892). This reflects their conceptual and measurement overlap in capturing different aspects of financial development. In contrast, FMAI (financial market access) had generally weak correlations with other indices, suggesting that access does not necessarily move in tandem with depth or efficiency. GDP size (LNGDP) was negatively associated with FMDI (–0.7358) and FDEI (–0.5066), implying that larger economies in the sample may not have proportionally deeper or more efficient financial markets. LNGDP is positively correlated with exchange rate levels (LNEXR, 0.6526), consistent with scale effects in currency valuation. Lending rates (LENDR) exhibit a negative correlation with GDP size (–0.632) and exchange rates (–0.7438), suggesting that stronger currencies and larger economies tend to have lower borrowing costs. LENDR also shows a positive association with financial depth in markets (FMDI, 0.4983) and financial development (FDEI, 0.2772). Trade openness (TO) is modestly correlated with FDI (0.4378) and FMAI (0.2229) but show little connection to other macro-financial indicators. Exchange rates (LNEXR) have a strong negative correlation with lending rates (–0.7438). Overall, the correlation structure suggests potential multicollinearity risks among the financial development indices (FIDI, FMDI, FDEI) and between macroeconomic aggregates (LNGDP, LNEXR, LENDR). These relationships were considered in specifying regression models to avoid biased coefficient estimates. To test for statioarity, the following ADF test results were obtained which show that the variables were stationary.

Table 4: ADF Unit Root Test

	ADF_Zt	p_value
FDI	-2.2193	0.017529
FIDI	-2.93633	0.003356
FMDI	-2.65108	0.00663
FMAI	-3.33987	0.00123
FDEI	-3.74268	0.000435
LNGDP	-2.49101	0.009592
DCAPF	-3.53057	0.000785
LENDR	-1.84767	0.037817
TO	-2.58965	0.007648
LNEXR	-3.01186	0.002791

Source Author, 2025

4.1 Model Estimation

The study used the linear regression estimated using Ordinary Least Squares (OLS) and standard errors calculated using the Newey & West (1987) Heteroscedasticity and Autocorrelation Consistent (HAC) estimator.

This has been done so as to get the uniform estimates of the variance-covariance matrix of in the event of heteroscedasticity as well as autocorrelation of unknown form. This will guarantee that the statistical inference (t-tests, F-tests, confidence intervals) is valid even when the classical OLS assumptions of homoscedasticity and autocorrelation are not met (Newey & West 1987).

Table 5 Model Estimation

Regression with Newey-West standard errors — Number of obs = 31
maximum lag: 3 — F(9, 21) = 30.30
Prob > F = 0.0000

FDI	Coef.	Newey-West Std. Err.	t	P>|t|	[95% Conf.	Interval]
FIDI	-30.87902	13.8297	-2.23	0.037	-59.63945	-2.118594
FMDI	1.948805	47.11311	0.04	0.967	-96.02827	99.92588
FMAI	135.0504	154.4749	0.87	0.392	-186.1977	456.2985
FDEI	22.10004	18.79769	1.18	0.253	-16.9919	61.19198
LENDR	-.0873015	.0478023	-1.83	0.082	-.1867117	.0121088
TO	.0499271	.0185944	2.69	0.014	.0112579	.0885963
LNGDP	.8948756	.4645066	1.93	0.068	-.0711188	1.86087
LNEXR	-.0251438	.5338571	-0.05	0.963	-1.13536	1.085073
dcapf	-.1066805	.0816341	-1.31	0.205	-.2764479	.0630869
_cons	.7121155	4.907728	0.15	0.886	-9.494065	10.9183

Source: Author, 2025

The estimates of the regression analysis with the application of Newey-West standard errors in case of possible autocorrelation and heteroscedasticity show that the joint explanatory power of the independent variables on the levels of FDI inflows is statistically significant, which is demonstrated in the high F-statistic ($F(9, 21) = 30.3$, $p < 0.001$). The findings indicate that, financial indices depth index (FIDI) has negative and statistically significant data on FDI at the 5 percent mark. This implies that the tighter domestic financial institutions can lead to increased domestic financing capability that can save on the inflow of foreign capital. The study model has established that Trade openness (TO) was positive and significant at 5 percent and above indicating that the more open a country is to the global markets, the more it is capable of receiving FDI inflows. There is marginal significance of Lending rates (LENDR) and the size of GDP (LNGDP) with LENDR having an inverse correlation and GDP having a positive correlation indicating that more expensive it is to borrow money may reduce FDI, and a bigger domestic economy will stimulate FDI. The impacts of financial market depth index (FMDI), financial market access index (FMAI), financial development index (FDEI), exchange rate (LNEXR) and domestic capital formation (dcapf) are statistically negligible. It implies that in this model, these variables play a minimal direct role on a short-term basis. On the whole, the findings suggest the significance of the financial sector structure in determining FDI inflows, with other macro-financial indicators possibly having threshold or lagged impacts.

The adverse and significant coefficient on FIDI (-30.88, $p = 0.037$) implies that more financial institutions can decrease FDI. This agrees with the dependency theory that points out the potentials of inefficiency or the crowding-out effect due to overly dominant domestic financial systems, especially in the setting that lacks appropriate regulatory and absorption speediness (Demirguc-Kunt and Levine, 2001; Ndikumana, 2003). Greater domestic financial systems can reduce dependence on foreign capital, because local financing can become more available (Demirguc-Kunt and Levine, 2001). In addition to this, institutionalized financial systems can create regulatory inefficiencies or structural inflexibilities that discourage FDI. The coefficient of FMDI is not negative (1.95) but of very little significance ($p = 0.967$), in general, financial depth contributes to FDI, particularly in financial developed economies, but the effect may be conditional or nonlinear, positive up to a point but negative when it is too high (Desbordes and Wei, 2017; Doan and Bui, 2021). The weak but significant estimate of FMAI (135.05, $p = 0.392$) reflects the lack of agreement in the empirical studies.

Financial Development Index (FDEI) has a positive yet statistically inconsequential effect. This weighted index measures general financial development (depth, access, and efficiency), which tends to facilitate FDI inflows, particularly in the presence of effective institutions and markets (Doan and Bui, 2021). Trade openness is significant and positive (0.050, p = 0.014), which is consistent with a lot of empirical data in Ghana, Bangladesh, and China. These researches prove the advantageous role of liberalized trade policies in increasing FDI inflows through better market-integration, access, and investment climate. The empirical literature backs the observation that an increase in the trade openness is associated with an improvement in the FDI inflows. An example here is in Ghana, where trade openness increased by 1 percent and the FDI inflows increased by 2.2 percent as the liberalization brought in a good environment where multinational investments can be made (Asiendu, 2013). The same trends are witnessed in Bangladesh, where financial development augments the positive impact of trade openness on FDI and economic growth. The results are congruent with classical theories of trade-growth, according to which openness enhances productivity, technology, and an ideal investment climate (Rodrik, 2008).

The negative coefficient of LENDR (-0.087, p = 0.082) is found to be marginally significant and in line with empirical results that higher cost of borrowing may discourage FDI raising operation costs and creating signals of macroeconomic risks. The cost of capital is also high because of high domestic lending rates that may discourage FDI. The well-established effect of market size in drawing FDI has been substantiated by the positive value (0.895) and the percentage closeness (p = 0.068) of LNGDP. The larger the economy, the larger the consumer base and the infrastructure, and hence, these markets are more attractive to the investor, bigger the economy, the more FDI it is likely to get as a result of having larger markets, better infrastructure and more opportunities to invest. It has also been established that the growth of the GDP in Bangladesh has a positive impact on the FDI inflows whereas in Ghana, the same has been identified (Asiendu, 2013). The positive and influential impact of GDP in attracting foreign capital is also observed in the literature of cross-country analyses between BRICS and other emerging economies. The weak and insignificant coefficient of EXR (-0.025, p = 0.963) indicates the theoretical and empirical uncertainty in the relationship between the exchange rates and the FDI. Depreciation can either accelerate investment by reducing the cost depending on the expectations and volatility or discourage it by increasing the risk (Tiwari and Mutascu, 2011). The coefficient of domestic capital formation is negative (-0.107) and it is not significant (p = 0.205), the literature indicates the dynamics of both mixed FDI and local investment dynamics. Crowding-out effects are recorded in some studies; especially in cases in which capital market is dominated by foreign companies whereas complementarities are recorded in others through the mediation of institutional factors (Kilicarslan, 2018).

Post Estimation Analysis

Table 6 Multicollinearity Test

Variable	VIF	1/VIF
FDEI	6.65	0.150292
FMDI	6.05	0.165371
FIDI	5.40	0.185169
LNEXR	4.87	0.205302
LNGDP	3.82	0.261484
LENDR	3.42	0.292332
FMAI	1.43	0.697516
dcapf	1.40	0.716239
TO	1.24	0.804915
Mean VIF	3.81	

Source: Author, 2025

To investigate the potential multicollinearity among the explanatory variables in the regression model, the Variance Inflation Factor (VIF) was computed for all of the independent variables. VIF quantifies the extent to which the variance of a regression coefficient estimate is inflated due to multicollinearity. FDEI (Financial Development Index) having the highest VIF of 6.65, indicates a moderate level of multicollinearity but still acceptable since it is below the commonly accepted threshold value of 10. The corresponding tolerance (1/VIF) is 0.15, suggesting some correlation with the other variables. FMDI (Financial Market Depth) and FIDI (Financial Institution Depth) also show relatively high VIF values of 6.05 and 5.40, respectively, indicating moderate correlation among financial sector indicators. LNEXR (Log Exchange Rate) and LNGDP (Log GDP)

both show VIF figures of 4.87 and 3.82, respectively, pointing to moderate multicollinearity but not at harmful levels. Variables such as LENDR (Lending Rate), FMAI (Financial Market Access), dcapf (Domestic Capital Formation), and TO (Trade Openness) exhibit lower VIF values, ranging from 3.42 down to 1.24, indicating minimal multicollinearity concerns. The VIF mean of 3.81 overall shows that multicollinearity exists but is not so extreme as to seriously distort inference or coefficient estimation. Although some multicollinearity among the financial development variables is evident, the VIF diagnostics indicate that it is within acceptable limits and trustworthy interpretation of regression coefficients can be achieved without excessive bias or inflated standard errors.

Table 7: Heteroscedasticity Test

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of FDI

         chi2(1)      =     2.80
         Prob > chi2  =   0.0945
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Source: Author, 2025

The researcher conducted the Breusch-Pagan / Cook-Weisberg test to investigate whether there is a presence of heteroscedasticity in the regression model residuals. The null hypothesis (H_0) states that the variance of the errors is constant (homoscedasticity). Our test statistic is chi-square (χ^2) = 2.80 with 1 degree of freedom and associated p-value of p = 0.0945. Since the p-value is greater than the conventional significance level of α = 0.05, we cannot reject the null hypothesis at the 5 percent significance level. This suggests that we do not have strong evidence of heteroscedasticity in the residuals. Nonetheless, based on the p-value slightly above 0.05, there is a borderline case. Therefore, it is reasonable to apply robust standard errors to protect inference if there was a moderate form of heteroscedasticity.

Table 8: Autocorrelation Test

Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	df	Prob > chi2
3	**2.202**	**3**	**0.5315**

HO: no serial correlation

Source: Author, 2025

The Breusch-Godfrey Lagrange Multiplier test was conducted to check for serial correlation in the regression's residuals up to lag 3. The null hypothesis (H_0) posits that there is no serial correlation up to lag 3. The hypothesis test statistic (χ^2) is 2.202 with 3 degrees of freedom and the p-value is 0.5315. Since the p-value is substantially above the significance level of 0.05, we do not reject the null hypothesis. This means that there are no statistically significant grounds for asserting the existence of autocorrelation in the residuals up to lag 3, suggesting no bias from serial correlation undermining the regression results.

Table 9: Ramsey RESET Test

```
Ramsey RESET test using powers of the fitted values of FDI
       Ho:  model has no omitted variables
                  F(3, 18) =      0.25
                  Prob > F =      0.8589
```

Source: Author, 2025

The Ramsey Regression Equation Specification Error Test (RESET) was performed to assess whether there was any omitted variable bias or model misspecification. The test's null hypothesis (H_0) is that the model is correctly specified, or in other words, there is no omitted variable. The resulting F-statistic is 0.25 with (3, 18) degrees of freedom. The p-value associated with this test is 0.8589. Since the p-value is considerably larger than the conventional cut-off of 0.05, we fail to reject the null hypothesis. This means that there is no evidence of omitted variable bias and the model is seemingly correctly specified based on the RESET test.

5. Conclusion and Recommendation

This study aimed to examine the effects of various dimensions of financial development on Foreign Direct Investment (FDI) in Tanzania, with a particular focus on the depth of financial institutions, the depth of financial markets, and financial markets access. In terms of the effect of Financial Institution Depth (FIDI) on FDI, the evidence shows that Financial Institution Depth (FIDI) statistically significantly and negatively affects FDI at the 5% level (coefficient = -30.88, p = 0.037). The implication is that more profound financial institutions in Tanzania may be associated with low foreign direct investment inflows. These may be due to the fact that well-developed domestic financial institutions may reduce dependence on foreign capital, or the fact that institutional complexities may deter foreign investors. Moreover, structural or regulatory inefficiencies in these financial institutions can also deter foreign investors. These findings are in line with some theoretical schools of financial development studies that caution that widening financial institutions alone without improving institutional quality and efficiency will fail to attract foreign capital (Demirgüç-Kunt & Levine, 2001; Ndikumana, 2003). In terms of the Impact of Financial Market Depth (FMDI) on FDI, the coefficient of FMDI is positive (1.95) but statistically insignificant (p = 0.967). This implies that while there is a positive correlation between the size of financial markets and FDI, there is no sufficient evidence to indicate a statistically significant effect in terms of the study period. Insignificance could result from the underdevelopment status of Tanzania's capital markets, which have poor market liquidity, low participation levels, and a small investor base that could stifle the capacity of financial markets to attract foreign investment.

This is consistent with the empirical results in such similar developing economies where capital market development is still at an infancy stage and exerts negligible effects on foreign capital inflows (Desbordes & Wei, 2017; Doan & Bui, 2021). About the Influence of Financial Market Access (FMAI) on FDI**,** Financial Market Access (FMAI) was positive but not statistically significant related to FDI (coefficient = 135.05, p = 0.392). It indicates that financial market access raises foreign investment in Tanzania throughout the given period without being distinctly quantifiable. Perhaps because of structural constraints in Tanzania's financial system, for instance, the reach of financial institutions geographically, infrastructure, or informational asymmetries that restrict effective market access even if financial products are available. The study finds a statistically significant and positive influence of trade openness on FDI inflows (coefficient = 0.05, p = 0.014), which confirms that greater trade liberalization and globalization promote foreign investment to a greater extent by reducing trade barriers and increasing market potential. The negative coefficient (-0.087) with borderline significance (p = 0.082) reveals that an increased domestic borrowing cost repels FDI since expensive credit raises the operation costs of foreign investors. A positive and borderline-significant coefficient (0.895, p = 0.068) both support the argument that greater FDI flows to larger economies is due to bigger markets and better infrastructure. The study recommends that thorough reforms should be initiated to improve the efficiency of the financial institutions. This includes applying international best practices in banking supervision and encouraging competition to bring about institutional development. Also, capital markets should be deepened through facilitation issuance of bonds, improving regulatory frameworks, and developing new innovative financial products that lure domestic as well as international investors.

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Journal of Economics & Development (JED), 1(3): 12 - 24, 2025. ISSN: 3057-3416, www.saut.ac.tz

Factors affecting enterprise sales performance in Tanzania

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Received October 16, 2025; Revised October 24, 2025; Accepted November 28, 2025

Cite This Paper as Follows:
Lubumbila P.G.T,* Fulgence, W.D.**, *Kongolo, M**. (2025). The impact of enterprise sales performance in Tanzania. Journal of Economics & Development,* 1(3): 12-24.
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Abstract

This study investigated factors affecting enterprise sales performance in Tanzania with emphasis on education, business experience, financial access, age and total sales of entrepreneur. Cross-sectional data from the 2022 Micro, Small, and Medium Enterprises (MSME) Survey by the National Bureau of Statistics were analyzed using robust regression techniques to account for heteroscedasticity and ensure reliable inference. The results indicated that education, business experience, financial access and age positively affected enterprise sales of both male and female entrepreneurs, with female slightly outperforming male enterprises, though the effect was marginally significant. The findings suggest that human capital factors, particularly education and business experience play a crucial role in improving entrepreneurial outcomes. Policy recommendations would include targeted training, mentorship programs, and practical business education to enhance the performance of entrepreneurs, especially women. This study recommends that further investigations be carried out on the factors that affect the sales performance among retail enterprise to assist them have a clearer picture of how sales performance can be realized effectively.

Keywords: *Enterprise Sales,* Sustainable Performance, *Education, Business Experience, Financial Access, Tanzania*

JEL Classification: L0, L11, L21, L23.

1. Introduction

Enterprise performance remains a critical driver of economic growth in developing countries, including Tanzania. Despite growing attention to small and medium enterprises (SMEs), the role of enterprise in influencing sales performance remains underexplored. Entrepreneurs have historically been facing various barriers such as limited access to finance, practical training, education, and business networks, which may affect their sales outcomes (Kantor, 2006). While some studies report persistent gaps among enterprises, recent evidence suggests narrowing disparities in entrepreneurial performance (Kibasomba, 2020; Meyer, 2018). Previous research highlights factors such as education, business experience, financial access, and age as determinants of enterprise performance. However, evidence from Tanzania remains fragmented, few studies comprehensively analyze enterprises alongside human capital and resource variables. The entrepreneurial environment in Tanzania has evolved a great deal since the 1990s due to socio-political reforms, economic reforms and a shift in the role of women in the business environment. This research background contextualizes the dynamics of enterprise sales performance in relation to the gender of entrepreneurs in Tanzania from 2022. The Tanzanian economic liberalization reforms started in the 1980s and 1990s with a boom of entrepreneurship in the country. The deregulation and encouragement of the role of the small and medium enterprises (SMEs) influenced the development of a more conducive environment with respect to small and medium enterprises (Maliyamkono & Mann, 2000). During this time the role of the entrepreneurial business started to pick up, but

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they met many obstacles. Most entrepreneurial activities were often impeded by culture, insufficient access to capital and restrictive policies that affected their business performance and overall performance (Hagberg, 2004). The early 2000s was marked by progress and challenges, a period in which there was a growing support for women entrepreneurship in Tanzania with government and non-governmental initiated programs to empower women in entrepreneurship (ILO, 2009). Although this initiative, the gap in the sales performance continued to persist as a result of the size of the business.

Small businesses were characterized by lower sales volume, while the large businesses had more sale volume **(**Kantor, 2006). Although women were making inroads into the entrepreneurial field, it was expected of them to behave in a way that allows them to access financial resources to contribute to country's economic growth (Meyer, 2018). Women contribution to the economy become more known during the 2010s with different initiatives of equality and empowerment of women by becoming more visible on the national agenda (World Bank, 2013). Those efforts started showing positive results as women's sales performance improved, especially in areas as trade, tourism, and agriculture (Snyder and Rwabuhemba, 2015). An improved business environment strategy developed in the country in 2024, emphasizing a significant understanding of the necessity of enterprise in economic development. The technological aspect became revolutionizing to the people in business to be able to access broader markets and increase their sales figures**.** This led to increase in the ratio of businesses with greater sales volumes (UNDP, 2021, Mshomba, 2022). Therefore, the main aim of this study was to investigate factors that affect enterprise sales performance among retail businesses in Tanzania using robust regression techniques to account for heteroscedasticity and ensure reliable inference.

1.2 Statement of the Problem

For all business enterprises, profit is a determinant factor for their existence in everchanging environment. The primary objective of each business enterprise is to make profit for its existence and also for expansion and diversification. Keeping other things constant, the profitability of an organization depends on its sales volume (Ahmed et al, 2022). Therefore, an examination of factors affecting enterprise sales volume is crucial because it helps the researcher to learn about the past and current sales trend and the overall profitability of the enterprises in the country. One always hopes for fluctuation in sales figures over the past years. Some of the challenges experienced by enterprises in Tanzania include cash flow mismanagement, poor reporting structures, financial availability, and accessibility. These challenges have been common in small business and retail industry of the ordinary Tanzanians (Kibasomba, 2020). Because they impact negatively on sale volumes, profitability, and business expansion. On the effectiveness of competition and how it affects sales performance among retail businesses, cannot easily and explicit be explained effectively how it can affect enterprise sales performance. It's important noting that evidence shows that customer loyalty affects the sales performance of the enterprise (Hagberg, 2004). Taking into consideration all these issues, it would lead to a great easiness of this milestone often experienced by small and medium enterprises for the business profitability. This also requires the government to do its part as the main actor in growth and development of the country. It is a crucial issue that requires the attention of the authority for investigation and intervention, to help curb declining trends in small and medium enterprise sales and profitability (Makene, et al., 2020). On the effectiveness on how competition affecting sales performance among retail businesses, it was not so explicit on how effective it affects it. It was very evident that customer loyalty affects the sales performance of the retail business.

2. Overview of the impact of enterprise sales performance in Tanzania

The convergence of sales performance of an enterprise is a field of research that has become extremely important since 1994. It is an overview of the changing roles in entrepreneurship and its impact on sales performance during the decades leading to the year 2022. Studies conducted in mid 1990s revealed that enterprises had major hurdles such as accessing capital and a lack of networking opportunity. According to Brush et al. (2001), such barriers usually led to poor sales performance by business enterprises. There were also gender biases to some extent in the entrepreneurial environment and social norms that created the perception that women were less efficient in a sales position, which ultimately prevented them from developing their business (Elam et al., 2020). According to Kelley et al., (2016), the number of starting up businesses in the country has been increasing, both men and women were taking part in such activities. Research also revealed that some entrepreneurs tended to use other forms of sales and methods of customer engagement that at times resulted in creative methods of boosting sales in particular markets. McKinsey & Company (2018)

posit that organizations that had more gender representation at the top level were much more successful in terms of profitability and performance, which implied that women leaders achieved higher sales performance. That the performance of different teams was mostly better and superior to that of homogenous teams, as a sign that indicated the emergence of the necessity to have fair representation in entrepreneurial activity. The COVID pandemic was a radical shift in the world of business, because it affected the process of sales greatly. Most entrepreneurs tried to fast adjust to digital technologies and Internet sales platforms, demonstrating strong resilience and innovation in a difficult time. This flexibility did not only sustain sales, but it resulted in growth even under outside pressure. During the 2025 year, an increased focus on intersecting business enterprises with other elements of socioeconomic status, race, and age, which intersect with entrepreneurial success (Bruni et al., 2020). Such complexities can be considered to give a more in-depth picture of the factors that affect the sales performance of the business enterprises in the country. In addition, there is a need to discuss the necessity to have supporting policies and programs that encourage inclusiveness in entrepreneurship, where all business would have equal opportunities.

3. Literature review

The theoretical foundation for studying the impact of enterprise sales performance was grounded in both entrepreneurship theories, human capital theory, and resource-based perspectives as discussed below:

The entrepreneurship theory underlines the difference between socio-cultural, institutional, and economic structures between entrepreneurs. It further asserts that the roles, norms and inequality in life can intervene in access to factors of business resources, networks, and markets which eventually influence business performance (Brush, de Bruin and Welter, 2009). The obstacles that are usually experienced by female entrepreneurs in Tanzanian often include poor access to finance, reduced mobility and market reach that might influence their sales performance relative to their male counterparts.

Human Capital Theory explains that the productivity of individuals including business owners that is determined by level of education, experience and abilities (Sweetland, 1996). The difference between level of education and training can lead to performance differences between business owners. Entrepreneurs who have less formal education and train in business might have worse sales results.

Resource Based View explains that the performance of a firm is influenced by its access and control over valuable, rare and inimitable resources (Barney, 1991). Entrepreneur may have impact on the availability of important resources, including capital, technology, and skilled labor. Structural barriers can also limit the resource base of entrepreneurs especially in developing countries such as Tanzania that can limit their growth and sales performance.

Institutional Theory is a social science framework that examines how organizations and individuals are shaped by the rules, norms, and values of their broader social and cultural environment to gain legitimacy and survive. It explains how structures like laws, social expectations, and professional standards become established guidelines for behavior, and it highlights how organizations often conform to these institutional pressures, not just for efficiency, but to gain social acceptance and legitimacy (Scott, 2001). In the context of entrepreneurship it implies laws, social norms, regulatory bodies and financial systems that are critical in the creation of opportunities and limitations to business owners. The theory has been used in the Tanzanian case study to understand the reasons why entrepreneurs usually struggle to attain high sales performance because of some imposed barriers on access to credit, market information, and business connections as well as limited property rights, gender-biased financial systems, inability of representation in decision making platforms and inflexible cultural norms (URT, 2020; UN Women, 2021). These institutional restrictions inhibit the success of women to grow their businesses and compete with men on an equal level in the market, which in effect affects their sales output. In addition, non-formal organizations like societal norms that value men in business may demoralize women to join high growth industries or increase their clientele base thereby supporting gender inequality in firm performance (Brush et al., 2009). Institutional Theory then offers a basis upon which gaps in performance of gender in business can be analysed through reference to structures of the system.

Network Theory - offers a useful perspective in which one can view gender disparities in enterprise sales performance. It also highlights that access and utilization of social and business networks by entrepreneurs to a large extent affect their business performance in terms of market access, access to information, and access to capital and customers. Good and robust network can promote the visibility of an enterprise, its competitive edge hence increasing its sales performance (Aldrich and Zimmer, 1986).

The empirical review in this section offers valuable information on the performance of enterprises locally and internationally, in terms of sales performance. The majority of the studies revised indicate the disparities in performance of business often attributed to differences in resources, networks, capital, and market opportunities. The National Bureau of Statistics (NBS, 2023) argued that most small and medium businesses in the country tend to declare lower average monthly sales. This lack of performance has been attributed to limited access to finance, limited market penetration, and lesser degrees of formal business training amongst women entrepreneurs. Batonda (2024) studied SMEs owned by women in Mwanza City, he discovered that the gender-based restrictions, particularly the strategic decision-making, competition in the marketplace, and financial management, had a profound impact on sales and profitability of these enterprises. On the same note, a study by UN Women (2021) in the East African Region indicated that women entrepreneurs were often constrained by social norms and institutional barriers to venture in higher-value markets, which directly affects their revenue performance. Klyver & Grant (2010) discovered that there are key relevant factors for entrepreneur to succeed, such as access to credit and educational that add the differences in business performance. Entrepreneurs like woman operate in the low growth sectors such as the retail and informal services where they are likely to yield less sale opportunities (Amornkitvikai & Harvie, 2018).

Mbwambo (2022) found that enterprises that have diversified sales teams are more likely to perform better compared to those that have homogenous sales teams, since diverse viewpoints may result into new ways of doing things and connecting with customers. Mwombeki (2022**)** used the World Bank enterprise survey data to determine variables that affected the increase in revenue among Tanzanian SMEs. The research established that female forms of ownership, finances, and talent in labour played a major institutional role in influencing the growth of revenues, which implied gender-specific barriers to sales performance.

4. Methodology

4.1 Research Design

The choice of methods and techniques to be used in the research process was known as a research design. This paper employed a quantitative research design based on secondary cross-sectional data. The design enables the analysis of relationship between enterprise sales performance while controlling for other enterprise and entrepreneur characteristics (Gujarati, 2004). A systematic empirical analysis of observable occurrences utilizing statistical, mathematical and computer methods is known as a quantitative research strategy. Using mathematical models, ideas and hypotheses to explain the events being studied was the aim of quantitative research design (Creswell, 2014).

4.3 Data types and Sources

Data was collected from a sample of enterprises at one point in time to examine the variations in sales performance of male and female owned business (Creswell, 2014). The sample comprised heterogeneous groups of small and medium enterprises (SMEs) in different sectors including trade, services, manufacturing, and agriculture in different locations including Dar-es-Salaam, Mwanza, Arusha and Mbeya. The sampled enterprises were diverse with respect to ownership (gender), size, years of operation, access to finance, level of education of the owner and geographical location. These attributes enabled the study to collect diverse profiles of enterprises and determined how these factors interacted each other to impact sales performance (NBS, 2023). The study was based on secondary cross-sectional data used to test how gender impacts on the performance of enterprises sales in Tanzania. Cross-sectional data are observed at one point in time and thus it can be used to compare the various enterprises or individuals, without following them across time. The data was collected from the National Bureau of Statistics (NBS) Micro, Small, and Medium Enterprises (MSME) Survey Report (NBS, 2022). It is a nationally foremost information on enterprise features, ownership detail, performance metrics as well as socio-economic factors of business proprietors in all areas in Tanzania. The data used suit the research because it gives specific answers on such variables as gender, sales revenue, education level, and access to finance, business location, and number of employees, owner age, and business experience. The secondary data was used due to its accessibility, comprehensiveness and cost-effectiveness. It also enables the researcher to analyze it on the basis of big and representative sample of enterprises and this increases the external validity and generalization of the results.

4.4 Conceptual Framework

The study conceptual framework is shown in figure 1. It shows the relationship between the performance of enterprise in sales including other variables that might mediate or moderate this relationship. In the center, the independent variable is the enterprise (owner) and the dependent variable is enterprise sales performance, which is measured in terms of monthly or annual revenue.

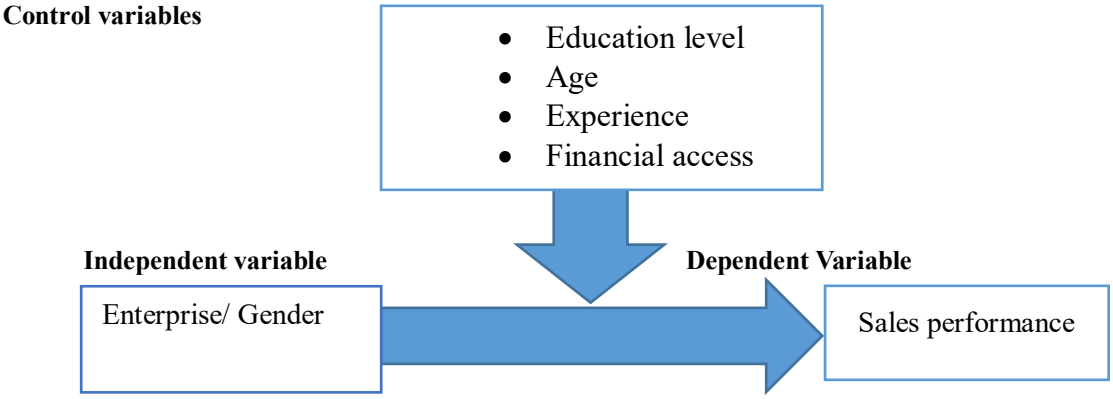

Figure1: Conceptual Framework (Source: Researcher formulation, 2025)

The framework also takes into consideration a number of control or intervening variables that affect the results of business irrespective of the owner. They include finance accessibility, education level, number of years of operation, location of the business, and industry (Batonda, 2024; NBS, 2023). All these are merged to help explain the presence of the disparities in sales performance that are a result of inequality of access to resources and opportunities. The theoretical framework of the conceptual model is based on entrepreneurship hypothesis that female entrepreneurs face disproportional socio-cultural, institutional and economic challenges, which often restrain their potential to develop their businesses (Brush et al., 2009). This paradigm assists in testing the hypothesis that type of owner of enterprise makes a significant impact on the enterprise sales performance, it also determines the pathways in which such impact happens. It helps in directing of the research by revealing how the independent variable (Owner/gender) can have an impact on the dependent variable sales performance (monthly / annual revenue, sales volume, or profit margins) possibly with other control variables, such as Age of the owner/manager, Education level, Access to finance, Experience in business, Business size (number of employees, capital), Location (urban/rural).

4.5 Data analysis

The analysis of the date was conducted following the study's objectives, questions/hypotheses. The descriptive statistics were used to summarize the basic characteristics of the data which included means, standard deviations, frequencies and percentages of the continuous and categorical variables. Bivariate analysis was conducted to investigate the initial connections between the sales performance and the individual explanatory variables. Multiple linear regression model through Ordinary Least Squares (OLS) technique was used to analyze the effect of enterprise sales performance together with control factors (education level, age, Experience, access to finance, business size, and business location). In order to achieve validity of the model, significant diagnostic tests were performed, including the Variance Inflation Factor (VIF) to determine multicollinearity, the Breusch-Pagan test to determine heteroscedasticity, the Shapiro-Wilk test to determine the normality of the residuals and the Ramsey RESET test to determine the model specification. Logarithmic transformation of the dependent variable and robust standard errors was used where appropriate to increase the accuracy of the model. The regression results was tabulated and explained in accordance with the study hypotheses but it was accompanied with graphical illustrations in order to improve information about the findings.

4.6 Model Specification

A multiple linear regression model by Bardasi, Sabarwal, and Terrell (2011) was employed to determine the effect of the sales performance of enterprises. The model is based on the Social Role Theory (Eagly, 1987),

which identifies the societal expectations in defining the enterprise's roles and their effect in economic behavior. The sales performance and enterprise relationship model is given in equation (1)

.

$$U_i = f(X_i, P_i, Z_i) \quad \ldots\ldots\ldots\

Experience	Control	Continuous: Number of years in business	+	Experience increases skills, networks, and strategic thinking.
Access to Finance	Control	Dummy: 1 = Has access to finance, 0 = No access	+	Access to finance enables capital investment and growth.

Source: Researcher's Construction (2025)

5. Results and Discussions

5.1 Results

Table 5.1: Descriptive Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Log sales	859	12.25	1.13	8.01	16.52
Gender(female=1, 0=otherwise)	2811	1.43	1.07	-9	2
Education (years)	3105	3.72	3.43	-9	11
Education squared	3105	25.59	29.32	1	121
Age	3105	30.35	17.64	-9	84
Experience (years)	3105	2.44	7.06	-9	66
Experience squared	3105	55.82	193.49	1	4356
Financial access 1 (1-if money lenders,0-otherwise)	3105	1.31	2.52	-9	2
Financial access 2 (1-if microfinance,0-otherwise)	3105	1.30	2.58	-9	2
Financial access 3 (1-if friends/relatives,0-otherwise)	3105	1.18	2.57	-9	2

Source: World enterprises Survey (2022)

Table 5.1 shows a descriptive summary of variables used of the study after eliminating invalid entries (-9). The dependent variable, log sales had a mean of 12.25 and a standard deviation of 1.13 with 859 reports. The values were 8.01-16.52 indicating moderate variations in the enterprise sales performance. With the explanatory variables, enterprise was rated in terms of female =1 and otherwise = 0. The mean was 1.43, and the standard deviation was 1.07 and valid range was 0-2, which showed that the sample represented both classes. The mean number of years that the respondents had attended school was 3.72 with the standard deviation of 3.43 and the highest and lowest values obtained were 0 and 11 respectively. The mean of squared term of education was 25.59, with a range of 1 to 121 as it covers any non-linear effects. The average age of the respondents was 30.35 years with the standard deviation of 17.64, the lowest age in the sample is 0, the highest age was 84, which is enough evidence of both young and old entrepreneurs. On the same note, the mean experience was 2.44 years with a standard deviation of 7.06 with a range of 0 to 66 years. The squared term of its means was 55.82 and the range was between 1 and 4,356, which is a high level of heterogeneity especially among highly experienced people. As far as the financial access is concerned, there were three indicators. The mean access to money lenders stood at 1.31 (SD = 2.52), microfinance institutions were at 1.30 (SD = 2.58), and friends/relatives stood at 1.18 (SD = 2.57). All the variables were between 0 and 2, indicating that those who had financial access and those who did not.

5.1.2 Regression Analysis results: Model estimation

The results of the regression analysis are discussed here in terms of the magnitude and direction of the estimated coefficients, their statistical significance to determine the validity of the hypotheses of the research.

Table 5.2: Regression Analysis Results: Model estimation

Variable	Coefficient (Coef.)	Std. Error	t-value	p-value	95% Confidence Interval	
Enterprise (1-female,0-otherwise)	0.0918	0.0413	2.22	0.026	0.0108	0.1729
Educ	0.0255	0.0166	1.54	0.125	-0.0071	0.0581
educ_squared	0.0073	0.0018	4.09	0.000	0.0038	0.0108
Age	0.0002	0.0034	0.05	0.957	-0.0065	0.0069
Exper	0.0222	0.0100	2.22	0.027	0.0025	0.0419
Exper squared	-0.0007	0.0004	-1.91	0.057	-0.0014	0.00002
Financial access 1(1-money lenders,0-otherwise)	-0.0259	0.0427	-0.61	0.545	-0.1097	0.0580
Financial access 2(1-microfinance ,0-otherwise)	-0.0085	0.0423	-0.20	0.841	-0.0915	0.0746
Financial access 3(1-friends/relatives,0-otherwise)	-0.0532	0.0441	-1.21	0.228	-0.1398	0.0334
Constant	11.9075	0.1368	87.05	0.000	11.6390	12.1761

Source: World enterprises Survey (2022)

Table 5.2 shows the results of Ordinary Least Squares (OLS) regression analysis of the model. In case of heteroskedasticity, the estimated coefficients were not biased, the standard errors were inefficient and non-uniform, resulted in the inefficient t-statistics and p-values.

5.1.3 Heteroscedasticity Test

Heteroscedasticity testing hypothesis is presented as:
H_0: $\rho=0$, Constant Variance of the residuals-Homoskedastcity
H_1:$\rho\neq0$, Non-constant variance of the residuals-heteroskedasticity
The criterion for this test is to fail to reject the null hypothesis, which assumes that the residuals have constant variance.

Table 5.3: The Breusch-Pagan/Cook-Weisberg Test for Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance of the residuals
Variables: fitted values of Total sales
chi2(1) = 4.87
Prob > chi2 = 0.0273

Source: STATA Estimation (2025)

The Breusch Pagan / Cook Weisberg test was used to test whether the residuals in the regression model had constant variance which is a major assumption under Ordinary Least Squares (OLS) estimation. The null hypothesis of the test is that there is a constant variance of the errors (homoscedasticity).

As shown in Table 5.3, the test results reveal a Chi-squared statistic of 4.87 and a corresponding p-value of 0.0273. Since the p-value is less than the 5% level of significance, the null hypothesis is rejected. This indicates that there is evidence of heteroscedasticity in the model. Therefore, the assumption of constant variance is not satisfied, and the model estimates in not reliable and inefficient making the need to apply robust standard errors.

5.1.4 Multicollinearity test

Multicollinearity should be checked to make sure that the regression results are consistent and estimated coefficients can be deemed consistent and interpreted (Gujarati and Porter, 2009). To evaluate the concept of multicollinearity, the Variance Inflation Factor (VIF) was obtained of each independent variable. The VIF values are represented in Table 5.5.

Table 5.5: Multicollinearity test Results

Variable	**VIF**	**1/VIF**
Financial access(1-friends/relatives,0-otherwise)	5.18	0.1930
Financial access(1-money lenders,0-otherwise)	4.53	0.2206
Financial access(1-Micro finance,0-otherwise)	4.45	0.2248
Exper	2.52	0.3976
exper2	2.10	0.4753
educ_sq	1.46	0.6831
Educ	1.45	0.6917
Age	1.28	0.7834
Gender(1-female,0-otherwise)	1.07	0.9359
Mean VIF	2.67	—

Source: STATA Estimation (2025)

Table 5.5 gives the outcome of the multicollinearity test with Variance Inflation Factor (VIF). The VIF is used to indicate the amount of relation that an independent variable has with the rest of the explanatory variables within the model. In general, when the VIF is more than 10, then there is a severe issue of multicollinearity (Gujarati and Porter, 2009). The maximum VIF in this research is 5.18 with the financial access of friends/relatives and then 4.53 with the financial access of money lenders and 4.45 with the microfinance access. VIF values of all the other variables, experience, education, age and gender among others lie below 3. VIF of 2.67 provides yet another evidence that multicollinearity is not a grave issue in the model. On the whole these findings indicate that there is no strong correlation between the explanatory variables and regression coefficients can be read using the regression.

Table 5.6: Summary of Hypothesis Verification

Hypothesis	**Null Hypothesis (H_0)**	**P-value**	**Decision**	**Conclusion**
H_1	Financial access has no significant influence on total sales	0.774	Fail to reject H_0	Financial access does not significantly affect total sales
H_2	Education has no significant impact on total sales performance	0.000	Reject H_0	Education significantly and positively influences total sales
H_3	Business experience has no significant effect on total sales	0.049	Reject H_0	Experience significantly affects total sales, though with diminishing returns

H_4	The age of the entrepreneur has no significant influence on total sales	0.960	Fail to reject H_0	Age has no significant impact on total sales performance

Source: Researcher's Construction (2025)

Hypothesis testing based on the robust regression model shows that education and business experience are the most important predictors of sales performance, while financial access and age were not statistically significant. These findings support the argument that human capital, represented by education and experience, are essential to successful entrepreneurship. The findings align with prior studies in Tanzania and other developing countries that highlight the importance of education, training, and mentoring for entrepreneurs versus only finding ways to support entrepreneurs with finance.

5.2 Discussion

This study examined the impact of enterprise on sales performance in business in Tanzania using cross-sectional data from the Micro, Small, and Medium Enterprises (MSME) Survey (NBS, 2022) were analyzed using robust regression techniques to account for heteroscedasticity and ensure reliable inference. Main focus was on how access to finance, education, business experience, and age affect entrepreneurs' total sales performance. The estimated regression results with robust standard errors provided inference by controlling for the heteroscedasticity established in the baseline model. The findings showed that enterprise's coefficient of 0.0918 with a p-value of 0.080, suggested that female entrepreneurs receive little sales compared to other entrepreneurs, although its effect was significant at the margin. This finding validates the argument by Kibasomba (2020) that to some extent female entrepreneurs are competing better with male entrepreneurs in the market economy. However, the lower level of significance after controlling for heteroscedasticity implies that enterprise alone may be a poor predictor of sales once other dimensions of doing business are factored out. This contrasts with earlier work by Kantor (2006), who concluded that persistent gender differences in sales performance existed due to differing access to resources, but it also points towards the prevailing trends in Tanzania of diminishing gender gaps for entrepreneurs. Education had a mixed but generally positive effect on total sales. Education coefficient was positive (0.0255) and on the boundary of being significant ($p = 0.064$), and its squared term was highly significant and very significant (0.0073, $p = 0.000$). Meaning that higher levels of education contribute more to business success than basic education. The finding is consistent with human capital theory Kibasomba (2020) who indicated that education-knowledge and skills improve productivity and management capacity. Similarly finding was expressed by Mutandwa and Kinyangi (2017) that education improves business decision-making and competitiveness Business experience had a positive and significant coefficient (0.0222, $p = 0.049$), indicating that business experience impact on sales performance. But the experience term squared was negative and only significant (–0.0007, $p = 0.074$), suggesting decreasing returns as experience increases beyond a certain point.

This suggests that while initial years of experience contribute towards better business decisions and management efficiency, its payoff diminishes over time unless the entrepreneur continues to innovate. This is in line with Mushongah and Zahra (2020), who explained that experience enhances performance up to a certain point, after which more learning is better than experience length. The age coefficient was positive but statistically insignificant (0.0002, $p = 0.960$), indicating that the age of an entrepreneur does not influence total sales much. This implies that younger and older entrepreneurs perform equally once other characteristics such as education and experience are accounted for. This result aligns with Kibasomba (2020) who indicated that age does not significantly contribute to variations in business performance. However**,** Nguyen and Luu (2020) did not find any significant effect of age on sales growth for small firms. Financial access indicators money lenders, microfinance institutions, and relatives or friends all obtained negative coefficients (–0.0259, –0.0085, and –0.0532 respectively) and were not significant. This indicates that these sources of funding do not play a substantial role in sales performance. Non-significance may be due to such factors as high interest charges, small loan amounts, and ineffective investment management. These findings are supported by Nguyen and Luu (2020), who confirmed that informal financial sources have a tendency of underperforming in inducing small business growth due to inefficient utilization of borrowed funds. But findings contradict financial inclusion theory expectation which pointed out that microfinance access positively affects business performance when funds are properly utilized (World Bank, 2013).

Diagnostic tests confirmed the model stability. The Breusch–Pagan test confirmed the presence of heteroscedasticity, which was resolved by applying robust standard errors. This ensured that coefficient estimates and significance levels were valid. The test of multicollinearity confirmed that all Variance Inflation Factor (VIF) values were below 10, indicating that multicollinearity was absent and that results could be interpreted safely. In respect to the research hypotheses pertaining to the current study, it was found that financial access had no significant impact on total sales in favor of the first null hypothesis. Education had a positive effect, thus leading to the rejection of the second null hypothesis. Business experience had a positive and significant effect on total sales, thus necessitating the rejection of the third null hypothesis. Age had no significant impact on total sales, thereby confirming the fourth null hypothesis.

Overall, the findings are consistent with some previous literature and theoretical hypotheses. They validate the salience of experience and education as key drivers of business performance, as proposed by human capital theory, and reduce the assumption that access to finance and age are key determinants of success. The results also show that female entrepreneurs in Tanzania are closing performance gaps with their male counterparts at a rising rate, which reflects changing social and economic circumstances. The study offers proof that education and experience are the primary drivers of business sales performance in Tanzania. Gender positively influences performance but has limited impact, as is age and access to money, which remains statistically insignificant. These findings again confirm that human capital-related factors principally knowledge, ability, and experience are more crucial to business success than demographic features or access to funds.

6. Conclusion and Recommendations

6.1 Conclusion

The aim of this study was to analyse factors affecting enterprise sales performance in Tanzania. The findings showed that enterprise's coefficient of 0.0918 with a p-value of 0.080, suggested that female entrepreneurs receive little sales compared to other entrepreneurs, although its effect was significant at the margin. This finding validates the argument by Meyer (2018) and Kibasomba (2020) that to some extent female entrepreneurs are competing better with male entrepreneurs in the market economy. Kantor (2006) argued that persistent differences in sales performance existed due to differing access to resources. The coefficient of variable education had a mixed but generally positive effect on total sales. Education coefficient was positive (0.0255) being significant ($p = 0.064$), and its squared term was highly significant and very significant (0.0073, $p = 0.000$). Meaning that higher levels of education contribute more to business success than basic education. Therefore, education is an important determinant of sales growth based on this research.

Business experience had a positive and significant coefficient (0.0222, $p = 0.049$), indicating that business experience impact on sales performance. But the experience term squared was negative and only significant (–0.0007, $p = 0.074$), suggesting decreasing returns as experience increases beyond a certain point. This suggests that while initial years of experience contribute towards better business decisions and management efficiency, its payoff diminishes over time unless the entrepreneur continues to innovate. This is in line with Kinyangi (2018) who explained that experience enhances performance up to a certain point, after which more learning is better than experience length. He also agrees that experienced entrepreneurs understand better the market conditions and consumers' needs and therefore better sales capacity. The age coefficient was positive but statistically insignificant (0.0002, $p = 0.960$), indicating that the age of an entrepreneur does not influence total sales much. This implies that younger and older entrepreneurs perform equally once other characteristics such as education and experience are accounted for. This result aligns with Nguyen and Luu (2020 who indicated that age does not significantly contribute to variations in business performance. Financial access indicators money lenders, microfinance institutions, and relatives or friends all obtained negative coefficients (–0.0259, –0.0085, and –0.0532 respectively) and were not significant (Meyer, 2018; Kibasomba, 2020). Generally, the findings confirm that education, experience, and entrepreneurship know-how are the most important factors of human capital affecting enterprise sales performance. This supports the hypotheses that entrepreneur's education, and experience have an important role in increasing des sales performance of the firm.

6.4 Policy Recommendations and Implications

Based on the above study conclusion, some policy implications are offered in order to maximize the effect of enterprise sales performance in the country. by intervening in experience, education, and gender.

Firstly, the positive effect of enterprise on business sales signifies the need for greater empowerment and support for all entrepreneurs in business. It is recommended that the government through relevant Ministry and in collaboration with the Small and Medium Enterprises Development Agency (SMEDAN), to set up business training an mentorship programs, to help increase business knowledge of the small operators. These programs should be directed at imparting functional skills, business strategy, and market access to enable women business owners to maximize their full potential in facilitating sales expansion.

Secondly, as education is highly necessary, specialized entrepreneurial education programs for both current and aspiring entrepreneurs need to be designed and presented by the Ministry of Education and Vocational *Training*. Such programs need to emphasize higher-level business skills, financial literacy, and innovation competencies that directly affect enterprise performance. Tertiary education institutions and vocational training institutions can serve as centers for offering these educational interventions.

Thirdly, evidence suggests that that business experience enhances sales performance, albeit at declining rates. This implies that intentional knowledge-sharing and mentoring programs are essential. It is recommended that business organizations in the country (the Tanzania Chamber of Commerce, Industry, and Agriculture (TCCIA) in particular, organize mentorship programs where experienced entrepreneurs would be mentoring the less experienced ones. This would enable sharing of practical experience, encourage innovation, and help young entrepreneurs to be capable of overcoming obstacles.

Finally, since age and finance availability are cannot add to total sales performance, it is suggested that policy intervention should not depend on provision of credit alone. Microfinance institutions and commercial banks must design financial products in a way that captures exactly what entrepreneurs need, complemented by training in effective fund utilization, business planning, and risk management so that access to finance is best placed to affect sales performance.

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Journal of Economics & Development (JED), 1(3): 25-34, 2025, ISSN: 3057-3416, www.saut.ac.

Lasting Community Economic Development Impacts of the Millennium Villages Project: Evidence from Mbola, Tanzania

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Received December 16, 2025; Revised December 22, 2025; Accepted December 27, 2025

Cite This Paper as Follows:
*Musa A, Ligembe (2025). Lasting Community Economic Development Impacts of the Millennium Villages Project: Evidence from Mbo*la, Tanzania . *Journal of Economics & Development, 1(3):**25-34.***

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Abstract
This paper evaluates the long-term community economic development impact of the Millennium Villages Project (MVP) in Mbola, Tanzania. Key informant interviews together with direct observation analysis were the key elements used in quantitative – qualitative methods of analysis through integrated, multisectoral interventions in health, education, agriculture, and infrastructure. The findings revealed that while the MVP contributed to short term improvements in infrastructure and service delivery, its long-term impact on sustained economic growth and poverty reduction is still not available. The findings also pointed to the project key challenges which included limited/poor financial capacity for income generation groups to support their activities, poor characteristics of income generation group members that can support effective participation for efficient economic performance and collapsing of technological innovation established to support economic activities established at Mbola Millenium village project. The study concludes with recommendations for designing future rural economic development programs that prioritize long lasting community ownership, and systemic integration beyond the economic project lifecycle between financial sustainability, characteristics of income generation group members and technology innovated for economic development activities.

Keywords: *Community Economic development, Income Generation Groups, Millenium Village project,* Mbola, Tanzania

JEL Classification: 01, 010, 013, 02, 021

1. Introduction

The Millennium Villages Project (MVP), initiated by the Earth Institute at Columbia University in collaboration with the United Nations Development Programme and Millennium Promise, aimed to demonstrate how integrated, community-based development strategies could accelerate progress toward the Millennium Development Goals (MDGs) in rural Africa. Implemented across ten countries, including Tanzania, the MVP targeted multi-sectoral interventions in agriculture, health, education, infrastructure, and economic development. The Millennium Villages Project is a systematic approach to achieving the MDGs in rural Africa through community-led development with simultaneous, integrated, and science-based interventions in five key areas: agriculture, education, health, infrastructure, and business development. The overarching goal of the project was to achieve the MDGs in the Millennium Village sites in ways that were rigorously documented, replicable, and scalable (Sachs, 2019). One of the Tanzanian sites selected for the MVP was the cluster of Mbola villages in Uyui District, Tabora Region. Prior to the intervention in 2006, the area was characterized by low living standards, limited infrastructure, and poor human development indicators. The MVP in Mbola, which operated from 2006 to 2015, aimed to improve socio-economic conditions through enhanced access to basic services, capacity-building initiatives, and sustainable livelihood strategies. The project covered 6,068 households with a population of approximately 38,445 beneficiaries. The overall intention was to implement coordinated interventions to enable communities to attain the MDGs by 2015.

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The Sustainable Livelihoods Framework (SLF) provides a holistic perspective on poverty and economic development by emphasizing the interconnection between human, social, natural, physical, and financial capital assets required for sustainable outcomes (Chambers & Conway, 2022). This framework is highly relevant to the MVP model, which sought to address multiple sectors simultaneously. In addition, Endogenous Development Theory emphasizes the use of internal community resources, knowledge, and institutions to promote long-term self-reliance (Ray, 2018). Participatory Development Theory further argues that meaningful community involvement in decision-making enhances sustainability and effectiveness of development interventions (Chambers, 1994). Integrated Rural Development (IRD) Theory complements these perspectives by highlighting the importance of multisectoral and area-based approaches to addressing complex rural poverty challenges (Rondinelli, 1983). Together, these theoretical perspectives provide a strong foundation for assessing the long-term economic outcomes of the MVP.

Despite the extensive investments and initial achievements of the MVP, questions remain regarding the sustainability of its economic outcomes after donor withdrawal. This article therefore evaluates the lasting community economic development impacts of the Millennium Villages Project in the Mbola villages. The main objective of this study is to assess whether the MVP's economic interventions have translated into sustained improvements in community economic development nearly a decade after the project's conclusion. Specifically, the study examines financial sustainability of income generation groups, characteristics of group members, and technical sustainability of the economic interventions implemented under the MVP.

1.2 Statement of the Problem

The Millennium Villages Project (MVP) was implemented across rural Africa with the expectation that intensive, integrated, and donor-supported interventions would generate sustainable community economic development beyond the project lifecycle (Sachs, 2019). Several studies and official reports document notable short-term improvements in agriculture, health, education, and infrastructure during the implementation period of the MVP (URT, 2018). A large-scale retrospective endline evaluation across multiple Millennium Village sites also reported favourable impacts on several development indicators, though impacts on consumption-based poverty measures were limited, raising concerns about the durability of economic gains after project completion (Mitchell et al., 2018).

Despite these documented achievements, empirical evidence on the long-term sustainability of MVP economic interventions after donor withdrawal remains limited and mixed. Independent evaluations, including studies from Northern Ghana, report modest or uneven effects on core welfare and income outcomes, highlighting variation across contexts and implementation settings (Itad & IDS, 2018). In Tanzania, and particularly in the Mbola Millennium Villages Project, income generation groups and technological innovations were introduced to promote lasting community economic development. However, more than a decade after the project's conclusion, it remains unclear whether these interventions resulted in sustained income generation, financially viable community groups, and continued use of introduced technologies. This lack of rigorous post-project evidence constitutes a critical knowledge gap for policymakers and development practitioners, which this study seeks to address by examining the lasting community economic development impacts of the MVP in Mbola villages.

2. Literature Review

Community Economic Development (CED) emphasizes locally driven economic initiatives aimed at enhancing income generation, employment creation, and community resilience through collective action and effective utilization of local resources. Sustainable CED outcomes depend not only on external financial inputs but also on internal community capacity, institutional arrangements, and long-term ownership of development initiatives (Chambers & Conway, 2022). Income generation groups are widely used in rural development programs as mechanisms for promoting livelihoods; however, their long-term success is often undermined by weak financial sustainability, limited managerial capacity, and overdependence on donor support.

The Millennium Villages Project (MVP) represents one of the most ambitious integrated rural development interventions implemented in sub-Saharan Africa. Existing literature documents substantial short-term achievements during the implementation period, including improvements in agricultural productivity, access to health services, school attendance, and infrastructure development (Sachs, 2019). A comprehensive

retrospective evaluation across ten Millennium Village sites reported significant positive impacts on several development indicators, though effects on income poverty and consumption were not statistically significant, raising questions about the project's ability to generate self-sustaining economic development (Mitchell et al., 2018).

Other independent evaluations provide a more critical perspective on MVP outcomes. Evidence from Northern Ghana suggests that while some social indicators improved, impacts on household income and welfare were modest, and sustainability beyond donor funding was uncertain (Itad & IDS, 2018). Scholars have further highlighted methodological and design challenges in evaluating integrated development projects such as MVP, including difficulties in attribution, comparator selection, and long-term impact measurement, which complicate assessments of sustained economic outcomes.

Financial sustainability, group member characteristics, and technological sustainability are consistently identified as key determinants of long-term success in community-based development initiatives. Weak access to finance, poor group composition, limited participation, and inappropriate or poorly maintained technologies often lead to project collapse after external support ends (Chambers, 1994; Ray, 1998; Rondinelli, 1983). Although government reports acknowledge MVP contributions to rural development in Tanzania, there remains limited empirical evidence assessing whether financial, social, and technological components of the project have jointly supported lasting community economic development at the village level (URT, 2017; URT, 2018). This study contributes to the literature by empirically examining these dimensions in the context of the Mbola Millennium Villages Project.

3. Methodology

This study employs a quantitative method approach to comprehensively assess the lasting economic development impact of the Millennium Villages Project (MVP) in Mbola villages. The approach allows triangulation of findings, ensuring robustness and contextual depth in understanding economic changes. The research is conducted in Mbola cluster, located in Uyui District, Tabora Region, Tanzania, which was a beneficiary of the Millennium Villages Project from 2006 to 2015. The Mbola cluster was chosen due to its representative status in the MVP framework and the availability of baseline and endline data.

Purposive sampling applied to reach targeted respondents quickly hence helped to get easily the feedback of targeted groups. Therefore, purposely the study involved thirty members from each of eight income generation groups/projects established during MVP intervention. Thus 240 sample size drawn from each IGG which located at each of eight villages. Convenient and snowball sampling cooperated effectively whenever was potential for important scales. Selection criteria considered the following factors; time frame of the study, financial resources, coverage of the society, and accuracy of information, reliability of information and precision of information. Structured questionnaires administered to 30 respondents per each group from eight villages as per sample size, but one village from the eight ones is a neighbor village at which CED Impacts expected to spread. Data collected from the study area by using questionnaire. The study applies self-completed delivery and collection questionnaires by distributing them to several selected purposely respondents. The researcher used non-participant observation which involves the researcher spending a period of time making field visits at each village. The observation is structured. The observations recorded in terms of a predetermined schedule by using a check list and observed impacts associated with the MVP Poverty reduction interventions. In depth interview as data collection tool conducted with key informants who determined in the field hence making sense of the results obtained through the survey. These interviews included open ended questions and probing questions. The data handled quantitatively and analyzed via SPSS. Data from different variable scales coded and their values entered into the software. Pilot testing of instruments ensures clarity and appropriateness. Triangulation of data sources and methods enhances validity. Regular debriefings with local collaborators help refine interpretations and validate emerging findings.

4. Results

The section was guided by the question 'What are the lasting community economic development impact of the Millennium Villages Project in the Mbola villages, Uyui District, Tabora Region?" The researcher collected data from the income generation groups at each of eight villages within Mbola area. Every income generation group contained thirty respondents. Thus 240 respondents appeared. Looking for the lasting/sustaining Millenium Village Project economic impacts the researcher based on three variables that leads to economic

impacts such as Income Generation Group members characteristics, financial sustainability and technical sustainability of Income Generation Group from eight villages. Basing on these the findings reports as follows.

Table 1: Respondents demographic data
Demographic Profile/ characteristics of the Respondents

CHARACTERISTICS	FREQUENCY	PERCENT
Age group of Respondents		
18-35 years	22	10.4
36-45 years	101	42.1
46-60 years	117	47.5
Total	240	100.0
Education level of Respondents		
Standard seven	225	94.6
Form four	5	1.8
Diploma	10	3.6
Total	240	100.0
Gender of Respondents		
Male	180	75.5
Female	60	24.5
Total	240	100.0
Marital status of Respondents		
Married	197	80.9
Single	43	19.1
Total	240	100.0
Association with MVP economic development intervention		
Livestock keeping IGG member	72	36.0
Crop cultivation IGG member	168	64.0
Total	240	100.0

Source: Field Data (2025)

4.1 Financial sustainability of Income generation groups per each of eight villages

The analysis within the below table involves the data from 240 respondents who are income generation group members established 05% strongly agree that income generation group members have financial sustainability, 05% normally agree also income generation group members have financial sustainability, 33% disagree and 57% strongly disagree that there is financial sustainability on this MVP poverty eradication income generation group members established. A total of 10% agree that financial sustainability exists hence a total of 75% disagree on financial sustainability.

Table 2: Financial sustainability of income generation groups
"(1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree)"

No	STATEMENT	1	2	3	4	5	Total%
1	Organizational capacity to implement activities to produce effects after the cooperation	69	31	0	0	0	100
2	Sense of ownership towards the project sufficiently ensured	52	33	0	7	8	100
3	Budget secured	60	40	0	0	0	100
4	Probability that the budget increases in the future through the implementation of the project	42	24	0	18	16	100
5	Sufficient measures to secure the budget	62	38	0	0	0	100
	Average	57	33	0	5	5	100

Source: Field Data (2025)

4.2 Characteristics of Community Economic Development (CED) Income Generation Groups
Characteristics of Community Economic Development (CED) income generation group members play a critical role in determining the sustainability and lasting economic impacts of the Millennium Villages Project. The study assessed the characteristics of 240 selected income generation group members participated in Mbola MVP interventions if were suitable as per community economic development, philosophies or whatever, so as to support economic impact sustainability of project goals. This assessed on several aspects as in the below table.

Table 3: Characteristics of Community Economic Development (CED) Income Generation Groups in Mbola Millennium Villages Project
"(1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree)"

No	STATEMENT	1	2	3	4	5	Total%
1	Community owns the Income generation group	58	35	0	7	0	100
2	Income generation group members are below 10	74	26	0	0	0	100
3	Full physical participation of members implementing economic activities under the same mission, objectives and vision as agreed	37	63	0	0	0	100
4	Income generation groups under MVP limited growth time for succession and growth	53	47	0	0	0	100
5	Community needs assessment for income generation group under MVP conducted before starting the project	69	23	0	0	8	100
6	Support of resources in terms of material for establishing income generation groups	16	0	0	46	37	100
7	Geographical Proximity for MVP poverty reduction intervention	0	0	0	39	61	100
8	Targeting immediate change on community economic development	0	0	0	19	81	100
	Average	38	24	0	14	23	

Source: Field Data (2025)

The analysis on the below table shows that 240 respondents who are members of Income generation groups established 23% strongly agree that characteristics of IGG members where suitable, 14% normally agree that characteristics of IGG members where suitable for impact sustainability, 24% disagree and 38% agree that characteristics of IGG members where suitable for impact sustainability. A total of 37% agree that characteristics of IGG members where suitable for impact sustainability hence a total of 62% disagree on characteristics of IGG members suitability for impact sustainability. Through that MVP IGG's members selected due to their demographic data as provided before, they are not suitable for impact sustainability of the planned MVP poverty eradication planned economic goals.

4.3 Technical sustainability on MVP IGG groups

The applied technology within the CED activities can determine the impact sustainability and growth of the project interventions. Under the Mbola MVP poverty eradication interventions, groups established for economic intervention. The study assessed technology applied if nourishes the impact sustainability by looking methods of technology transfer used in the project, maintenance and management plan for that equipment which will be introduced in the project appropriateness, project contain a mechanism for its dissemination, probability that the implementing agency can maintain the mechanism for its dissemination and technology one that can be disseminated to other sites for sustainability as the attraction of learning and replicability.

Table 4: Technical sustainability on MVP poverty eradication intervention percentage "(1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree)"

No	STATEMENT	1	2	3	4	5	Total
1	methods of technology transfer used in the project	61	39	0	0	0	100
2	maintenance and management plan for that equipment which will be introduced in the project appropriateness	57	43	0	0	0	100
3	project contain a mechanism for its dissemination	56	44	0	0	0	100
4	probability that the implementing agency can maintain the mechanism for its dissemination	37	29	0	11	23	100
5	technology one that can be disseminated to other sites	53	24	0	11	12	100
	Average	53	36	0	4	7	100

Source: Field Data (2025)

The analysis on the below table shows that out of 240 respondents who are members of IGG for IGA established 07% strongly agree that technological sustainability exists, 04% normally that technological sustainability exists for impact sustainability, 36% disagree and 53% strongly disagree that technological sustainability exists where suitable for impact sustainability.

Table 5: Lasting community economic development impact of the Millennium villages project in Mbola Villages.

	N	Minimum	Maximum	Mean	Std. Deviation
FN	278	1.00	2.80	1.6719	.56874
TN	278	1.00	2.80	1.7662	.63622
CC	278	2.00	3.00	2.5971	.28204
Overall mean				2.0118	.44776

Source: Field Data (2025)

4.4 Correlation Analysis between Variables

Lasting CED impacts = f (Financial Sustainability of IGG (FSI)+ Characteristics of IGG (CI) + Technical Sustainability on MVP (TSM))

Before assessing the lasting community economic development impacts, a Pearson correlation analysis was conducted to examine the relationships between financial sustainability of income generation groups, characteristics of group members, technical sustainability of MVP interventions, and lasting community economic development impact.

Table 6: Correlation Analysis between Financial Sustainability, Group Characteristics, Technical Sustainability, and Lasting Community Economic Development Impact

		FSI	CI	TSM	LCEDI
FSI	Pearson Correlation	1	.583**	.321**	.365**
	Sig. (2-tailed)		.000	.000	.000
	N	240	240	240	240
CI	Pearson Correlation	.583**	1	.630**	.297**
	Sig. (2-tailed)	.000		.000	.000
	N	240	240	240	240
TSM	Pearson Correlation	.321**	.630**	1	-.365**
	Sig. (2-tailed)	.000	.000		.000
	N	240	240	240	240
LCEDI	Pearson Correlation	.365**	.297**	-.365**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	240	240	240	240

Source: Field Data (2025)

FSI = Financial Sustainability of Income Generation Groups; CI = Characteristics of Income Generation Group Members; TSM = Technical Sustainability of MVP Interventions; LCEDI = Lasting Community Economic Development Impact

The analysis shows that Correlation is significant at the 0.01 level (2-tailed). The correlation between FS1 and LCEDI is low and positive with value of 0.365 and statistically significant. The correlation between CI and LCEDI is poor and positive with value of 0.297 and statistically significant. The correlation between TSM and LCEDI is low and positive with value of 0.365 and statistically significant. Therefore, no similarities or close relationship between the LCEDI variables; this allows the evaluation of lasting CED impacts on Mbola MVP to come out with expected results.

4.5 Model estimation findings

The researcher used the statistical significance of results to determine the variation between independent variables and the dependent variable. The Researcher checked the statistical significance of the results by using ANOVA based on comparing the variance between the data samples to the variation within each particular sample. If the between-group variance is high and the within-group variance is low, this provides evidence that the means of the groups are significantly different as indicated in Table 05. The results show that the regression model was significant because the p-value is less than 5% ($p < 0.05$).

Table 7: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.145	3	.048	153.960	.000[b]
	Residual	.086	274	.000		
	Total	.230	277			

Source: Field Data (2022)

4.6 Model Summary

LCEDI= $\mathbf{B_0}$ + $\mathbf{B_1}$, FSI + $\mathbf{B_2}$, CI + $\mathbf{B_3}$, TSM + e

A) Predictors: (Constant), FSI, CC, TSM

b) Dependent Variable: LCEDI

The R-value of 0.792 shows that there is a strong and positive correlation among the three variables as seen on Table 14, The R-squared value of 0.628 shows that about 62.8 percentage changes in LCEDI is explained by FSI, CC and TSM jointly, while a less part of about 37.2 percentage is captured by the error term. This shows that the model has a good fit. Adjusted R-squared value of 0.624 shows that about 62.4 percentage changes in LCEDI, is explained by FSI, CI and TSM jointly, while a small of about 37.6 percentage is captured by the error term. This also shows that the model has a good fit.
The Durbin-Watson statistic measures the evidence of autocorrelation in the residuals. The acceptable DW range of no autocorrelation within 1.45 and 2.44, Thus, the fitted regression line result showed that there is no evidence of autocorrelation as indicated by DW statistic value of 2.010

Table 8: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.792[a]	.628	.624	.01769421	2.010

Source: Field Data (2023)

The result confirms that the overall regression model is significant for the data, and this was captured by the ANOVA (F-statistic) value of 153.960 and its associated probability value of 0.00b (F=153.960, p<0.00b), that was found to be significant at 5% level.

5. Discussion

Trough table 1, shows that, 33% disagree and 57% strongly disagree that there is financial sustainability on this MVP poverty eradication IGG established. A total of 10% agree that financial sustainability exists hence a total of 75% disagree on financial sustainability. Furthermore, the income generation groups suffering financial constraints due to the fact that IGG's capacity to implement activities to produce effects after the cooperation is poor, Sense of ownership towards the project sufficiently is not ensured, no Budget secured, no Sufficient measures to secure the budget and there is no probability that the budget increases in the future through the implementation of the project. Comes to the area of the study there was the Mbola Millenium Saccos owned by the MVP where the IGG members and their groups use to keep fund, collapsed and the members didn't refund their money. The fruits processing factory at Mbola villages also collapsed due to poor service of machines as the results of financial constraints. The house where incubators for chicken keeping also collapsed due to inefficiency of running maintaining costs.
About the characteristics of income generation group members, the analysis within table shows that 240 respondents who are members of income generation group members established 62% disagree on characteristics of income generation group members income generation group members suitability for impact sustainability. Through that MVP income generation group members selected due to their geographical location but they are not suitable for impact sustainability of the planned MVP poverty eradication planned economic goals. There was poor selection of members to be participated on income generation group members economic development activities. This hinders the impact sustainability as a lot of established activities failed up to now. No income generation group members resulted from the established ones and no any income generation group members continues to operate in Crop cultivation and livestock keeping as planned.
The applied technology within the CED activities can determine the impact lasting and growth of the project interventions. Under the Mbola MVP poverty eradication interventions, groups established for economic intervention. The study assessed technology applied if nourishes the impact lasting by looking methods of technology transfer used in the project, maintenance and management plan for that equipment which will be introduced in the project appropriateness, project contain a mechanism for its dissemination, probability that the implementing agency can maintain the mechanism for its dissemination and technology one that can be disseminated to other sites for sustainability as the attraction of learning and replicability. A total of 11% agree that technological sustainability exists where suitable for impact sustainability hence a total of 89% disagree on that technological sustainability exists for impact sustainability.

5.1 The innovation container

Named after Chombo cha Kuvumbua Maisha this was for the production of high current electricity to run the incubators for reproduction of chicken eggs settled at two buildings at Mbola mashariki village where income generation group members used to work for entrepreneurship. Until now the container is there but doesn't work hence some tool read stolen. **(Figure 1)**

Source: Field Data (2025)

Finally, table four shows that the analysis that involves the data from 240 respondents who are members of income generation group members disagreed that income generation group members have financial sustainability on this MVP poverty eradication income generation group members established. Its scale is 1.6719 that addressing respondents' disagreement on this. The technology innovated to support the CED activities during the intervention also respondents disagree on its sustainability. 1.7662 is the scale from it that implies respondents strongly disagree. Respondents disagree on the supporting characteristics of CED income generation group members, this observed through its scale which is 2.5971. The overall average on this objective is 2.0118 which within the scale imply respondents disagreed on existence of Lasting Community Economic Development Impact of the Millennium Villages Project in Mbola villages, Uyui district at Tabora region. This is due to the MVP poverty eradication activities under the income generation group members suffered financial constraints, technical support hence characteristics of CED income generation group members do not meet good requirements of CED Group Practitioners. This hinders Lasting Community Economic Development Impact of the Millennium Villages Project in Mbola villages.

6. Conclusion and recommendations

Basing on the study, the findings concludes that there is no the Lasting Community Economic Development Impact of the Millennium Villages Project in Mbola villages, Uyui district at Tabora region. This is due to the fact that the all determinants of economic impact established failed, no financial sustainability of established income generation groups to make them sustain and expand for a long period of time. Millenium village Saccos where they kept their money collapsed. The innovation technology to support economic production also collapsed Solar Electricity via innovation container, the eggs incubators laboratory for Chicken production and its facilities collapsed. Bee keeping classes established collapsed, fruits processing industry also collapsed. The characteristics of income generation group members do not qualify to support effective economic activities associated within. Respondents whom where group members are not thinking of utilizing what they obtained for economic development but they are waiting for the other donor to come and sponsor them again. MVP expected the expansion of their economic development plan to other nearby villages. But even the MVP involved villages economic activities via income generation group members established already collapsed. There is no continuing economic activity that attracts sustaining of economic goals. The study recommends that, on achieving the economic goals through donor fund projects in collaboration with community beneficiaries through groups, the financial sustainability, characteristics of participating members should be under control of community economic development principles to enable efficiency on them which paving the way to longer lasting of specified economic goals and technology innovated to ensure the economic activities

continues forever. Stakeholders like government authorities must be engaged as a part of supervision and monitoring of established community economic activities.

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Journal of Economics & Development (JED), 1(3): 35 - 44, 2025. ISSN: 3057-3416, www.saut.ac.

Determinants of balance of trade of forest products in Tanzania (1990–2024)

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Received November 28, 2025; Revised December 12, 2025; Accepted December 18, 2025

Cite This Paper as Follows:
Emmanuel G. Mgimwa , Stephen M. Kapunda, Francis C. Nyoni, Godfrey Mwalyego. (2025). Determinants of balance of trade of forest products in Tanzania (1990–2024). *Journal of Economics & Development, **1**(3): 35-44.*
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Abstract
This study examined the determinants of the balance of trade of forest products in Tanzania from 1990 to 2024. The research aimed at identifying how macroeconomic factors namely exchange rate, domestic income, foreign income, inflation, and the forest sector's contribution to GDP affect trade performance in forest-related goods. Using annual time series data outsourced from the Bank of Tanzania (BoT) and Tanzania Forests Services Agency (TFS) and the Autoregressive Distributed Lag (ARDL) model, both short-run and long-run relationships were estimated. The results revealed that foreign income and the forest sector's contribution to GDP had a significant positive influence on the trade balance, while domestic income and inflation exerted negative effects. The exchange rate had an insignificant impact. These findings imply that foreign market demand, sectoral productivity, and macroeconomic stability are major drivers of forest product trade outcomes in Tanzania. The study recommends policies that enhance value addition, stabilize inflation, support forest-based industries, and expand access to foreign markets.

Keywords: *Balance of trade, forest products, Tanzania, ARDL model, exchange rate, domestic income, foreign income, inflation*

JEL Classification: F1, F10, F19.

1. Introduction

1.1 The problem

The balance of trade is an important part of a country's balance of payments and shows the difference between the value of exports and imports, where a surplus indicates strong competitiveness while a deficit may reflect structural weaknesses such as low productivity or high dependence on imports (Krugman and Obstfeld, 2018). In Tanzania, this issue is especially important in the forest sector, which covers about 48 million hectares, equivalent to nearly 55 percent of the country's total land area, yet contributes only about 4 percent to national GDP (MNRT, 2021; IMF, 2023). Forest products include timber, pulp, paper, and non-wood products such as honey and medicinal plants, but Tanzania mainly exports low-value unprocessed logs and sawn timber while importing higher-value processed goods such as paper, veneer, and furniture, leading to a persistent trade deficit in forest products (Abdallah, 2018). This continued imbalance represents a serious economic problem because it reduces foreign exchange earnings, limits industrial development and value addition, and weakens the contribution of the forest sector to rural livelihoods and sustainable development. Despite the importance of the sector, most existing studies have focused on forest resources, deforestation, and governance issues, with limited empirical attention given to the macroeconomic factors influencing forest products trade in Tanzania. Therefore, the main objective of this study is to examine the determinants of the balance of trade of forest products in Tanzania from 1990 to 2024, with specific objectives of assessing the relationship between the exchange rate and forest products trade balance, analyzing the effects of domestic income, examining the influence of foreign income, and determining how the percentage contribution of forest products trade to GDP

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affects the trade balance. Based on these objectives, the study tests the null hypotheses that exchange rate movements, domestic income, foreign income, and the contribution of forest products trade to GDP have no significant effect on the balance of trade of forest products. The study is guided by international trade and macroeconomic theories, including the New Trade Theory (Krugman, 1979; Helpman and Krugman, 1985), the Heckscher–Ohlin theory, the Product Life Cycle theory, the Marshall–Lerner condition, the J-curve effect, the monetary approach, and the Mundell–Fleming model, which explain trade behavior under different economic conditions. The scope of the study is limited to Tanzania and uses annual time-series data for the period 1990–2024 obtained from national institutions such as the Bank of Tanzania, the Ministry of Natural Resources and Tourism, and the National Bureau of Statistics, focusing only on forest products trade and selected macroeconomic variables, with the aim of providing clear and sufficient background information that allows readers to understand and evaluate the study's findings without referring to earlier studies.

2. Literature review

The literature on the balance of trade, particularly in resource-based sectors such as forest products, combines insights from international trade theory and empirical macroeconomic analysis. Classical and modern trade theories explain persistent trade imbalances through structural and macroeconomic mechanisms. The New Trade Theory emphasizes economies of scale, product differentiation, and technological advantages, explaining why resource-rich but industrially constrained countries like Tanzania continue to export low-value forest products while importing high-value processed goods (Krugman, 1979; Helpman & Krugman, 1985; FAO, 2022). Complementarily, the Heckscher–Ohlin theory links Tanzania's export of primary forest goods to its abundance of land and labor relative to capital and technology (Heckscher & Ohlin, 1933), while the Product Life Cycle theory suggests that developing countries may eventually shift toward exporting processed forest products as production technologies mature and relocate (Vernon, 1966). Macroeconomic theories further clarify trade balance dynamics, with the Marshall–Lerner condition predicting long-run trade balance improvement following currency depreciation if export and import demand elasticities are sufficiently high (Mahmud et al., 2004), and the J-curve hypothesis explaining short-run deterioration before long-run improvement in trade balance after devaluation (Isard, 1995; Hacker & Hatemi, 2004). The monetary approach highlights the role of money supply, inflation, and capital flows in shaping trade outcomes, particularly in developing economies where excess liquidity can worsen trade deficits through inflation and import expansion (Duasa, 2007). The Mundell–Fleming model further demonstrates how exchange rate regimes, capital mobility, and policy choices determine short-run trade and output responses in small open economies (Mundell, 1963; Fleming, 1962; Krugman et al., 2018). Empirically, studies from developed economies show mixed but generally significant long-run exchange rate effects on forest products trade, with limited evidence of a J-curve in the short run (Bolkesjø, 2005; Baek, 2006; Buongiorno & Uusivuori, 1991). African evidence, particularly from Nigeria, confirms the long-run importance of domestic and foreign income while showing weaker or insignificant exchange rate effects on forest products trade balance (Sulaiman, 2015). In Tanzania, empirical research has largely focused on forest governance and deforestation rather than macroeconomic determinants of forest trade, though available evidence confirms rising imports of processed forest products and continued reliance on low-value exports (Abdallah, 2018; Blomley et al., 2008; Mwalyosi & Hussein, 2017). This gap in country-specific empirical analysis motivates the present study, which extends existing literature by jointly examining exchange rate movements, income effects, inflation, relative prices, and the sector's contribution to GDP in explaining Tanzania's forest products trade balance over the period 1990–2024

3. Methodology

3.1 Research Design

The study adopted a quantitative research design using annual time series data from 1990-2024. It relied on secondary data from the Bank of Tanzania (BoT), the National Bureau of Statistics (NBS), the Ministry of Natural Resources and Tourism (MNRT), and the Tanzania Forest Services Agency (TFS).

3.2 Estimation Model

The study used the ARDL method to analyze both short- and long-term relationships between the balance of trade of forest products and its macroeconomic determinants. The estimated model was presented as follows:

$$\Delta \ln BoTfp = \beta_0 + \beta_1 \sum \Delta \ln BoTfp_t + \beta_2 \sum \Delta \ln RER_t + \beta_3 \sum \Delta lnTGDP_t + \beta_3 \sum \Delta Ln\ INF_t + \beta_4 \sum \Delta lnPCFP_t + \beta_5 \sum \Delta ln\ RPFP_t + \beta_6 \sum \Delta ln\ BoTfp_{t-1} + \beta_7 lnRER_{t-1} + \beta_8 Ln\ TGDP_{t-1} + \beta_9 Ln\ INF_{t-1} + \beta_{10} lnPCFP_{t-1} + \beta_{11} Ln\ RPFP_{t-1} + et \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

- **BoT_{fp}** = Balance of trade of forest products
- **RER** = Real exchange rate
- **TGDP** = Domestic income (Tanzania GDP)
- **FGDP** = Foreign income (China GDP)
- **INFL** = Inflation rate
- **PCFP** = Percentage contribution of forest products trade to GDP
- **εt** = Error term

The expected signs are as follows: foreign income (+), forest sector GDP contribution (+), domestic income (–), inflation (–), and exchange rate (±).

3.3 Model Specification

The relationship between the balance of trade of forest products (BoT_{fp}) and its determinants is specified as:

$BoT_{fp} = \beta_0 + \beta_1 RER + \beta_2 TGDP + \beta_3 FGDP + \beta_4 INFL + \beta_5 PCFP + \beta_6 RPFP + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots (2)$

3.4 Analytical Technique

The Autoregressive Distributed Lag (ARDL) model was applied following Pesaran et al. (2001). The ARDL method was chosen because it can be used when variables are a mix of I (0) and I (1), and it performs well in small samples. The bounds test approach was employed to check for co integration (long-run relationship), followed by estimation of both long-run and short-run coefficients. Diagnostic tests including serial correlation, normality, and multicollinearity were conducted to ensure model reliability.

3.5 Data Description

All variables were measured in their natural logarithms to stabilize variance. The balance of trade was measured as the difference between the value of exports and imports of forest products. The exchange rate was measured as Tanzanian shillings per U.S. dollar, and inflation was represented by annual CPI changes.

4. Results

4.1 Descriptive Statistics

A descriptive summary of the variables is presented below.

Table 1: Descriptive Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
BoT_{fp}	35	-1.80e+10	2.16e+10	-7.60e+10	2.00e+10
FGDP	35	6420.083	6202.601	395.33	18273
GDP	35	31.608	25.14638	4.26	88.11
RER	35	1312.451	709.3527	195.06	2300
INFL	35	11.124	9.371717	3.2	35.83
PCFP	35	5.662857	3.109008	2.4	14.2
RPFP	35	.5886573	.2050731	.1973684	1.019417

Source: Computed from World Bank (2025)

The results show moderate variation among variables, suggesting stable macroeconomic behavior during the study period.

4.2 Stationarity Tests

The Augmented Dickey-Fuller (ADF) unit root test was performed to determine the order of integration

Table 3: Dickey-Fuller Unit Root Test Results

Dickey-Fuller test for unit root **Number of obs = 34**

-------- Interpolated Dickey-Fuller -------						
Variable	**Probability Z(t)**	**Order of Integration**	**Test Statistics**	**1% Critical Value**	**5% Critical Value**	**10% Critical Value**
Balace of trade of forest product (BoT_{fp})	0.0026	I(0)	-3.831	-3.689	-2.975	-2.619
Foreign income (FGDP)	0.0004	I(1)	-4.314	-3.696	-2.978	-2.620
Tanzania's domestic income (TGDP)	0.0575	I(1)	-2.806	-3.689	-2.978	-2.620
Real exchange rate (RER)	0.0012	I(1)	-4.040	-3.696	-2.978	-2.620
Inflation rate (INFL)	0.0000	I(1)	-5.181	-3.696	-2.978	-2.620
Percentage contribution of forest product (PCFP)	0.0001	I(1)	-4.757	-3.689	-2.978	-2.620
Relative price of forest product (RPFP)	0.0300	I(0)	-3.056	-3.689	-2.975	-2.619

Source: Computed from World Bank (2025)

The results indicate that variables are integrated of mixed orders I (0) and I (1), justifying the use of the ARDL approach.

4.3 Lag Length Selection

Lag length was determined using the Akaike Information Criterion (AIC).

Table 4: Lag Selection Criteria

Selection-order criteria
Sample: 1994 - 2024 Number of obs = 31

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-1498.51				3.6e+33	97.1298	97.2353	97.4536
1	-1316.28	364.47	49	0.000	7.2e+29	88.534	89.3784	91.1245*
2	-1270.58	91.397	49	0.000	1.5e+30	88.747	90.3303	93.6041
3	-1192.13	156.91*	49	0.000	1.5e+30	86.8468*	89.1689*	93.9705
4	.	.	49	.	-3.6e-48*	.	.	.

Endogenous: BOT FGDP GDP RER INFL PCFP RPFP

Taking into account the need to capture sufficient dynamics of the variables while maintaining model reliability, the study adopts a lag length of 3 for the ARDL model.

4.4 ARDL Bounds Test for Cointegration

The F-statistic from the bounds test exceeded the upper critical value, confirming the existence of a long-run relationship among variables.

Table 5: ARDL Bounds Test Results

$$F = 4.746$$

$t = -4.757$

	Critical-values						P-value	
	10%		5%		1%			
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	(1)
F	2.472	3.800	3.004	4.529	4.321	6.324	0.028	0.137
T	-2.530	-4.001	-2.906	-4.469	-3.689	-5.445	0.000	0.005
H_0: no level relationship								

Source: Computed from World Bank (2025)

4.5 Long-Run and Short-Run Estimation Results

The estimated long-run coefficients are summarized below.

Table 6: ARDL Model Estimation Results

			Number of obs = 32 R-squared = 0.6495 Adj R-squared = 0.5276 Root MSE = 1.726e+10	
Equation	**Variables**	**Coefficient**	**t-statistics**	**Probability p> |t|**
ADJ (Coint-eq)	D.Bo_{TFP} (L1.)	-1.195583	-5.84	0.000
Long run Coefficients				
	lnFGDP	1086423	2.43	0.039
	TGDP	-4.12e+08	2.38	0.046
	lnRER	3434736	0.17	0.864
	INFL	-6.85e+08	-2.58	0.045
	PCFP	7.74e+08	2.32	0.048
	lnRPFP	2.58e+10	1.61	0.121
Short-run Coefficients				
	lnFGDP (D1.)	4.73e+07	2.73	0.013
	Constant	-3.15e+10	-0.95	0.350

Source: Computed from World Bank (2025)

In the long run, foreign income and the forest sector's contribution to GDP positively and significantly affect the balance of trade of forest products. Domestic income and inflation negatively influence the trade balance, while exchange rate effects are insignificant. In the short run, the error correction term (ECT) is negative and significant, indicating a stable adjustment toward long-run equilibrium.

Short-Run ARDL and Error Correction Results

The results of the short-run ARDL model and the error correction term are shown in Table 6. The error correction term has a coefficient of -1.196 with a t-statistic of -5.84 and a p-value of 0.000. This indicates that any deviation from the long-run equilibrium is corrected quickly, with about 119.6 percent of the short-term disequilibrium adjusted within one year. The negative and significant coefficient confirms the presence of a stable long-run relationship between the balance of trade of forest products and its determinants.

In the short run, foreign GDP (lnFGDP) has a significant positive effect on the balance of trade of forest products. Its coefficient is 4.73×10^7, with a t-statistic of 2.73 and a p-value of 0.013. This means that a 1 percent increase in foreign GDP leads to an increase of approximately 47.3 million units in the balance of trade in the short term. The constant term is not statistically significant, indicating that the included variables account for most of the short-run variation.

The model fits the data reasonably well, with an R-squared of 0.6495 and an adjusted R-squared of 0.5276. This implies that about 53-65 percent of the variation in the balance of trade of forest products is explained by the model. The root mean square error of 1.726×10^{10} reflects the typical size of the prediction errors.

However, the results suggest that foreign GDP is an important driver of the balance of trade in the short term, while deviations from equilibrium are corrected quickly, showing a strong adjustment toward the long-run relationship.

4.6 Diagnostic Tests

The robustness of the model was confirmed through several diagnostic tests.

Table 7: Serial Correlation Test Results

Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	1.518	1	0.2180
	H0: no serial correlation		

Source: STATA Estimation (2025)

Since the p-value is greater than the 5 percent significance level, we fail to reject the null hypothesis of no serial correlation. This indicates that the residuals from the model are not serially correlated, meaning that the error terms are independent across time. In practical terms, this suggests that the ARDL model's estimates are reliable, and the standard errors of the coefficients are not biased due to autocorrelation.

Table8: Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr (Kurtosis)	adj chi2(2)	Prob>Chi2
residuals	34	0.2512	0.7574	1.51	0.4704
Ho: Residuals are normally distributed					

Source: STATA estimation (2025)

The results of the Skewness/Kurtosis test for normality presented in Table 12 show that the probability value (Prob > Chi2) is 0.4704, which is greater than the 0.05 significance level. Based on this result, the null hypothesis that the residuals are normally distributed cannot be rejected. This means that the residuals of the estimated model follow a normal distribution.

Table 9: Multicollinearity test Results

Variable	VIF	1/VIF
RPFP	6.48	0.154401
dGDP	5.54	0.180574
dRER	3.45	0.290185
dFGDP	2.44	0.409009
BoT_{fp} L1.	2.23	0.448283
dINFL	1.13	0.884892
dPCFP	1.12	0.891589
Mean VIF	3.20	

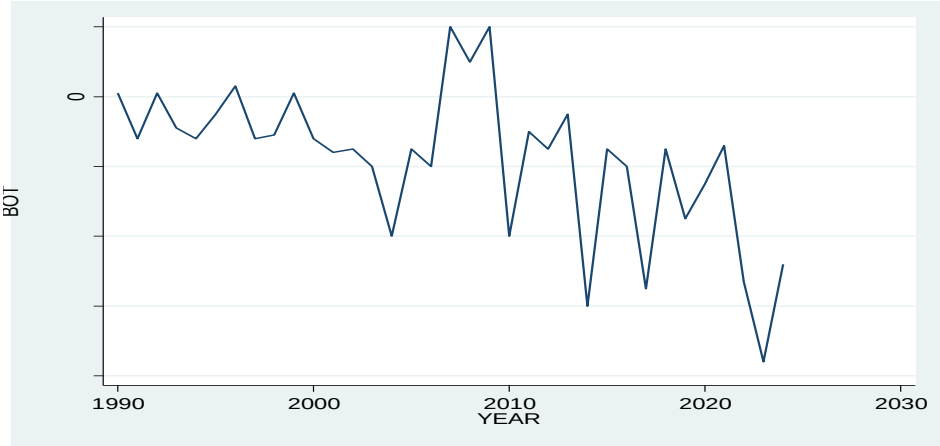
Source: STATA estimation (2025)

The results show that all VIF values are now below the critical threshold of 10, indicating that multicollinearity is not a serious problem in this model.

4.7 Trend Analysis

The overall trend of Tanzania's forest product trade balance between 1990 and 2024 is shown below.

Figure 3: Trend of Balance of Trade in Forest Products (1990–2024)



Source: Computed from World Bank (2025)

The graph shows persistent trade deficits, with slight improvements in recent years due to higher exports of processed forest goods.

5. Discussion

The findings of this study on the *Determinants of the Balance of Trade of Forest Products in Tanzania (1990–2024)* provide a deeper understanding of how macroeconomic and sectoral factors interact to shape the performance of Tanzania's forest products trade. The results reveal that the balance of trade is significantly influenced by domestic income, foreign income, inflation, and the forest sector's contribution to GDP, while the exchange rate shows no significant effect. The insignificance of the exchange rate implies that fluctuations in the value of the Tanzanian shilling do not strongly affect forest product exports or imports. This may be because most forest products traded are unprocessed raw materials with low price elasticity, meaning that exchange rate changes do not easily alter trade volumes. Similar findings were reported by Baek (2006), who found that forest product trade is less responsive to currency movements. However, the results differ from Sharma and Pan (2015), who observed significant effects in other developing economies. This divergence may reflect Tanzania's structural characteristics such as limited industrial processing and dependence on primary exports that make exchange rate policy less effective in influencing trade outcomes. The significant negative effect of domestic income on the trade balance suggests that as Tanzania's economy grows, local consumption of forest products increases, leading to higher imports and a reduction in trade surplus. This finding aligns with Zhang (2017), who noted that domestic income growth in resource-based economies may weaken export performance when domestic demand expands faster than export capacity. The result also highlights the structural limitations of Tanzania's forest sector, including weak value addition, inadequate processing technology, and low diversification of products. These factors restrict the country's ability to take advantage of domestic income growth to expand export production.

Foreign income, on the other hand, has a strong positive effect on Tanzania's forest products trade balance both in the short run and long run. This indicates that economic growth in partner countries boosts demand for Tanzanian exports, particularly raw timber and related products. The finding agrees with Sulaiman (2015) and Adams and Opoku (2018), who found that rising foreign income stimulates natural resource exports in developing countries. However, the short-lived impact in Tanzania suggests that while global demand influences exports, the lack of diversified and value-added products limits sustained trade gains. Strengthening forest sector productivity and promoting processed wood exports could enhance the long-term benefits of foreign income growth. The significant positive effect of the forest sector's contribution to GDP confirms that improvements in the sector's output and competitiveness translate into better trade performance. A larger sectoral contribution reflects stronger production capacity and export potential, consistent with global evidence from advanced forest economies like Finland and Canada (FAO, 2020). This emphasizes the importance of increasing investment in forest-based industries, enhancing technology adoption, and improving supply chain efficiency to raise export competitiveness.

Conversely, the negative impact of inflation on the trade balance underscores the importance of macroeconomic stability. Higher domestic prices increase production costs, reduce export competitiveness, and discourage international buyers. This result is consistent with economic theory, which links inflation to reduced price competitiveness and deteriorating trade performance. Maintaining stable prices through sound fiscal and monetary policies is therefore critical for supporting the forest products trade. The error correction term indicates a rapid adjustment to long-run equilibrium after short-term shocks, demonstrating that the forest products trade balance in Tanzania is relatively stable and capable of self-correction. This stability reflects a certain degree of structural resilience, although it also points to the need for sustained policy interventions to strengthen long-term competitiveness. While the model performed well and passed key diagnostic tests, several limitations were identified. The reliance on secondary data may have introduced data quality issues, and the exclusion of other potentially influential variables such as trade policies, infrastructure quality, or global price changes may limit the completeness of the analysis. Moreover, the ARDL model, though effective in capturing both short- and long-run dynamics, does not account for structural breaks or policy shifts that may have occurred over the study period.

Overall, the study contributes to the growing body of literature on trade determinants in resource-based sectors. It supports the view that macroeconomic stability, foreign market growth, and sectoral productivity are crucial for improving trade performance in developing economies. Future research should therefore incorporate a broader set of variables and apply alternative econometric methods to capture policy impacts and structural changes over time. However, the discussion highlights that Tanzania's forest products trade balance is primarily driven by foreign economic conditions, domestic consumption patterns, inflationary trends, and sectoral performance rather than exchange rate movements. Enhancing value addition, stabilizing prices, and expanding export markets remain essential strategies for achieving a sustainable and competitive forest products trade balance in Tanzania.

5. Conclusion and recommendations

The findings of this study show that the performance of Tanzania's balance of trade in forest products between 1990 and 2024 is strongly shaped by both macroeconomic trends and the productivity of the forest sector itself. The results reveal that foreign income and the forest sector's contribution to GDP play a positive role in improving the trade balance, meaning that when international markets grow and the local industry becomes stronger, Tanzania is able to export more and reduce deficits. In contrast, domestic income and inflation exert negative effects: as the local economy expands, domestic demand for forest goods tends to rise faster than production, leading to increased imports, while high inflation raises production costs and erodes the competitiveness of Tanzanian products in global markets. The exchange rate was found to have no significant impact, suggesting that the country's heavy dependence on exporting raw and low-value forest products makes trade volumes less sensitive to currency movements. Overall, the results highlight that the sector faces persistent challenges limited value addition, rising local consumption, inflationary pressures, and weak diversification that keep the trade balance in deficit despite the country's large forest resource base.

Based on these insights, the study recommends several practical steps to strengthen the sector and improve Tanzania's trade performance. First, the government and private actors should invest more in value addition by expanding processing industries such as furniture, plywood, and paper production, which would increase export earnings and reduce reliance on raw log exports. Second, enhancing productivity through better forest management, modern harvesting technologies, and efficient supply chains can help the sector contribute more strongly to GDP and support exports. Third, stabilizing inflation through consistent monetary and fiscal policies is essential for maintaining competitiveness and reducing production costs for forest-based industries. Fourth, Tanzania should work to expand its access to foreign markets by strengthening trade partnerships, promoting forest products internationally, and tapping into emerging global markets. Fifth, sustainable forest management must remain a priority to ensure long-term supply, emphasizing reforestation, controlled harvesting, and community-based forest programs. Finally, greater investment in research and innovation can help the country diversify its products, modernize production techniques, and improve global competitiveness. By adopting

these measures, Tanzania can move toward a more stable, sustainable, and competitive forest products trade sector and reduce its long-standing trade deficit.

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Received November 28, 2025; Revised December 12, 2025; Accepted December 25, 2025

Cite This Paper as Follows:
Mgimwa, D. (*), Warioba, R. (**), Safari, I (2025). Determinants of foreign direct investment inflows in Tanzania: A Macroeconomic analysis (1990-2024). *Journal of Economics & Development, 1(3): 45-51.*
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Abstract:
Foreign Direct Investment (FDI) is an engine for economic growth, industrialization, and technological advancement in developing nations like Tanzania. However, the country has experienced lower and more volatile FDI inflows compared to its regional peers, despite significant policy reforms. This study examines the key macroeconomic determinants of FDI in Tanzania from 1990 to 2024. Using the Autoregressive Distributed Lag (ARDL) model, the analysis reveals that trade openness has a strong, positive long-run effect on attracting FDI. In contrast, GDP growth, interest rates, exchange rates, and inflation showed minimal or statistically insignificant impacts. The error correction term was significant and negative, indicating a rapid adjustment to long-run equilibrium following short-term shocks. The study concludes that structural and policy-focused factors, especially trade liberalization, were far more critical for attracting FDI to Tanzania than short-term economic conditions. Consequently, it is recommended that policymakers prioritize enhancing trade facilitation, ensuring policy stability, and implementing long-term structural reforms to strengthen Tanzania's competitiveness and attract sustainable investment.

Keywords*: Foreign Direct Investment, Tanzania, Trade Openness, GDP Growth, Exchange Rate, ARDL Model*

JELClassification: E2, E20, E22.

1. Introduction

1.1 The problem

Foreign Direct Investment (FDI) is universally recognized as a critical driver of economic growth, capital formation, technology transfer, and employment generation in developing economies (World Bank, 2022; UNCTAD, 2023). For Tanzania, with its vast natural resources and growing market potential, attracting stable and substantial FDI is indispensable for accelerating structural transformation and building a competitive, industrialized economy, which are the central pillars of the national development agenda as enshrined in the Tanzania Vision 2050 (The United Republic of Tanzania, 2025). Despite implementing policy reforms since the 1990s, including trade liberalization, privatization, and the establishment of the Tanzania Investment Centre (TIC), the country's FDI performance has been uneven and volatile, averaging 2.43percent on average, contributing to the country's GDP (World Bank, 2023; UNCTAD, 2023). This persistent underperformance raises critical questions about the specific macroeconomic factors that drive FDI inflows in the Tanzanian context. While classical economic theory and existing literature point to macroeconomic variables such as GDP growth, exchange rates, inflation, and trade openness as key determinants, their individual and combined impact in Tanzania remains ambiguous and often contradictory in empirical studies (Moshi & Kilindo, 2019; Rutasitara, 2018). For instance, while robust GDP growth signals market potential, its effect can be dampened by perceptions of regulatory risk or infrastructure deficits. Similarly, the role of exchange rate volatility and inflation is debated, with some studies highlighting their deterrent effect, particularly in the manufacturing sector (Muganda, 2023).

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This ambiguity creates a critical knowledge gap, leaving policymakers without a clear, evidence-based roadmap for attracting foreign investment.

This study, therefore, aims to empirically investigate the determinants of FDI inflows in Tanzania, focusing specifically on GDP growth, interest rates, exchange rates, inflation, and trade openness from 1990 to 2024. By employing the Autoregressive Distributed Lag (ARDL) model, the research provides robust, country-specific evidence to inform targeted policy interventions. The findings are crucial for enhancing Tanzania's investment climate, fostering sustainable FDI inflows, and supporting the nation's broader economic development objectives. Following this introduction, Section 2 presents a review of the related literature. Section three outlines the methodology, and section four contains the analysis and interpretation of results. The final section concludes the study with policy recommendations.

2. Literature Review

The Eclectic (OLI) Paradigm, as proposed by Dunning (1980), provides a robust theoretical foundation for this study. The paradigm posits that a firm's decision to engage in FDI is influenced by three sets of advantages: Ownership (O), Location (L), and Internalization (I). For Tanzania, Location-specific advantages are particularly relevant. These include market size (proxied by GDP growth), macroeconomic stability (inflation, interest rate, and exchange rate), and trade policies (openness). A stable macroeconomic environment reduces risk and uncertainty for foreign investors, making the host country more attractive to them. Conversely, volatility in key indicators like inflation and exchange rates increases perceived risk, deterring investment.

The nation's consistent GDP growth, averaging 5-7%, signals market size and potential, serving as a key attraction for market-seeking investors in sectors like fast-moving consumer goods and telecommunications, as evidenced by firms such as the Azam Group and Vodacom. However, this potential can be undermined by weaknesses in other L-advantages, namely macroeconomic stability. Volatility in key indicators such as inflation and the significant depreciation of the Tanzanian Shilling increases perceived risk and operational costs, thereby deterring investment, especially in import-dependent manufacturing. Conversely, the policy-driven L-advantage of trade openness, enhanced by memberships in the EAC and AfCFTA, has proven to be a powerful magnet for efficiency-seeking FDI. By integrating Tanzania into regional and global value chains, trade openness transforms it into an export platform, a fact underscored by the growth in textile and agro-processing investments. Thus, the OLI Paradigm effectively frames Tanzania's FDI challenge: its ability to attract diversified and sustainable investment is contingent on strengthening and stabilizing these Location-specific factors to outweigh the perceived risks for foreign investors.

Empirical studies on FDI determinants in Tanzania and similar economies offer mixed results, underscoring the context-specific nature of these relationships. Moshi and Kilindo (2019), in a study titled "Foreign Direct Investment and Economic Growth in Tanzania," found a positive long-run relationship between FDI and GDP growth using an ARDL model. However, they noted the relationship was weak in the short term, attributed to Tanzania's heavy reliance on extractive industry FDI, which offers limited spillovers. Focusing on inflation, Mwamba and Nyoni (2021) applied a Nonlinear ARDL approach and identified an inflation threshold of 7.2% for Tanzania. Their findings suggested that inflation below this level does not significantly deter FDI, but beyond it, the impact becomes severely negative, especially for manufacturing investments. On exchange rates, Rutasitara and Mwambuli (2021) conducted a sectoral analysis and found that exchange rate volatility significantly curtails manufacturing FDI but has negligible effects on mining sector FDI. This was attributed to the dollar-denominated revenues in the extractive sector, which act as a natural hedge. Regarding trade openness, Mwakyusa and Mwambuli (2022) employed a threshold regression analysis and discovered that trade openness positively impacts FDI only when the trade-to-GDP ratio exceeds 40%. Their study concluded that this effect is more pronounced for manufacturing FDI than for resource-seeking investments. Kweka and Ndege (2020) investigated interest rate fluctuations and found a negative long-run relationship between high real interest rates and FDI, with short-run volatility having an even larger discouraging effect. This ambiguity and the sector-specific nature of prior findings underscore the necessity for a comprehensive macroeconomic analysis that captures the combined short- and long-run effects within a unified framework, which this study provides.

3. Methodology

This study used an explanatory and non-experimental design based on quantitative time-series secondary data from 1990 to 2024. The data on FDI inflows (% of GDP), GDP growth (annual %), inflation (CPI annual %),

real interest rate (%), and trade openness ([Exports + Imports]/GDP%) were sourced from the World Bank's World Development Indicators and the Bank of Tanzania. To effectively address the research objectives, the Autoregressive Distributed Lag (ARDL) model was utilized, specifically employing the bounds testing approach along with a dynamic Error Correction Model (ECM). The ARDL model is advantageous as it can be applied regardless of whether the variables are integrated of order I(0) or I(1), and it efficiently estimates both short-run and long-run relationships.

3.1 Model Specification

The functional relationship between the FDI inflows in Tanzania and its macroeconomic determinants is specified as:

$$FDI= \beta_0+\beta_1GDP+\beta_2INF\ \beta_3EXR+\ \beta_4INR\ +\ \beta_5TOP\ +\ \varepsilon \ldots\ldots\ldots\ldots\ldots\ 1$$

Where:
FDI = Foreign Direct Investment Inflows (% of GDP)
GDP = GDP growth rate (%)
INF = Inflation rate (%)
EXR = Exchange rate (TZS/USD, log)
INR = Real interest rate (%)
TOP = Trade openness (% of GDP)
ε= Error term

The ARDL model is specified as:
The ARDL method was chosen because it can be used when variables are stationary at a mix of I (0) and I (1), and it performs well in small Observations

$$\Delta \ln FDI= \beta_0 + \beta_1 \sum \Delta\ ln GDP_t + \beta_2 \sum \Delta\ ln INF_t + \beta_3 \sum \Delta\ ln EXR_t + \beta 4 \sum \Delta\ ln TOP_t + \beta_5 \sum \Delta\ ln\ INR + \beta_6 \sum \Delta\ ln\ GDP_{t-1} + \beta_7 ln INF_{t-1} + \beta_8 Ln\ EXR_{t-1} + \beta_9 Ln\ TOP_{t-1} + \beta_{10} ln INRt\text{-}1 + \mu ECT_{t-1} + et \ldots\ldots\ldots\ldots\ldots 2$$

Where Δ is the difference operator, the sums (Σ) represent the short-run dynamics with their respective lag lengths, and ECT~t-1~ is the error correction term, which measures the speed of adjustment back to the long-run equilibrium.

The ARDL method was chosen because it is used when variables are stationary at a mix of I (0) and I (1), and it performs well in small, samples with observation from 30 to 80

4. Results

4.1 Descriptive Analysis

The descriptive statistics for the variables based on 35 observations are presented in Table 1. The results show that Tanzania experienced an average GDP growth of 5.40% with moderate fluctuations. FDI inflows averaged 2.43% of GDP but showed significant volatility (Std. Dev. 1.47). Inflation averaged 11.16% with high variability, while the exchange rate exhibited a clear depreciating trend over the period.

Table 1: Descriptive Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Gdp	35	5.402901	1.88936	.399007	8.464381
Top	35	37.57479	8.598877	23.98912	56.16612
Fdi	35	2.433714	1.471924	0	5.66
Inf	35	11.16072	9.40187	3.06	35.9
Exr	35	1339.984	726.4617	196.6	2544.25
Inr	35	6.96425	4.165044	-1.201762	14.747

Source: Researcher work (2025)

The null hypothesis of normal distribution was rejected at the 1% level.

4.2 Unit Root Test

The ADF unit root test results (Table 2) indicate that all variables are stationary either at level I(0) or first difference I(1), confirming the suitability of the ARDL approach. FDI and the interest rate (INR) are I(0), while GDP, inflation (INF), exchange rate (EXR), and trade openness (TOP) are I(1).**Table 2: Unit Root Test Results**

Dickey-Fuller test for unit root **Number of obs = 34**

-------- Interpolated Dickey-Fuller -------						
Variable	**Probability Z(t)**	**Order of Integration**	**Test Statistics**	**1% Critical Value**	**5% Critical Value**	**10% Critical Value**
GDP growth rate (dgdp)	0.0000	I(1)	-8.263	-3.696	-2.978	-2.620
Trade Openness(dtop)	0.0038	I(1)	-3.721	-3.696	-2.978	-2.620
Foreign Direct Investment (FDI)	0.0378	I(0)	-2.970	-3.689	-2.975	-2.619
Inflation rate(dinf)	0.0000	I(1)	-5.335	-3.696	-2.978	-2.620
Exchange rate (dexr)	0.0000	I(1)	-5.921	-3.696	-2.978	-2.620
Real interest rate(inr)	0.0316	I(0)	-3.037	-3.689	-2.975	-2.619

Source: STATA Estimation (2025), Author's computation (indicates stationarity at 5% significance level)

4.3 Cointegration Test

The results of the ARDL bounds test for cointegration are presented in Table 3. The calculated F-statistic (4.127) exceeds the upper critical value at the 10% significance level, leading to the rejection of the null hypothesis of no long-run relationship. This confirms the existence of a stable long-run relationship among the variables.

Table 3: ARDL Bounds Test Results

$$F = 4.127$$

	Critical-values						**P-value**	
	10%		**5%**		**1%**			
	I(0)	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**I(1)**	**I(0)**	**(1)**
F	2.591	3.855	3.151	4.594	4.518	6.388	0.016	0.077
t	-2.559	-3.860	-2.925	-4.304	-3.685	-5.223	0.001	0.023
H_0: no level relationship								

Source: STATA Estimation (2025)

ARDL Long-Run and Short-Run Results

The estimated long-run coefficients and the error correction model are presented in Table 4.

Table 4: ARDL Model Estimation Results: Co-integrating and Long-Run Relationship

Number of obs = 32 R-squared = 0.4976 Adj R-squared = 0.3771 Root MSE = 1.0112				
Equation	**Variables**	**Coefficient**	**t-statistics**	**Probability p greatergreaterp> |.t|**
ADJ (Coint-eq)	D.fdi (L1.)	-.8607136	-4.76	0.000
Long-run Coefficients				
	Gdp	.0893219	0.42	0.679
	Top	.0876218	2.27	0.032
	Inf	-.1475703	-2.30	0.030
	Exr	-.001297	-2.75	0.011
	Inr	-.0222157	-0.32	0.752
Short-run Coefficients				

	Constant	1.962871	1.36	0.186

Source: STATA Estimation (2025)

Note: denote significance at 1% and 5% levels, respectively.
The long-run results show that trade openness (TOP) has a positive and statistically significant effect on FDI inflows, with a coefficient of 0.0876. This implies that a 1% increase in trade openness leads to a 0.088% increase in FDI Inflows as a share of GDP in the long run. Inflation (INF) and the exchange rate (EXR) have negative and significant long-run effects, showing that macroeconomic instability deters foreign investment. Conversely, GDP growth and the interest rate (INR) are statistically insignificant, suggesting that6ty7 they are not primary determinants of FDI in Tanzania in the long run. The error correction term (ECT(-1)) is -0.8607 and highly significant (p=0.000). This indicates a very high speed of adjustment, with approximately 86% of any deviation from the long-run equilibrium being corrected within one year.

4.4 The diagnostic tests

The diagnostic tests confirm the robustness of the model. The Breusch-Godfrey test and the ARCH test indicate no evidence of serial correlation or multicollinearity. The Jarque-Bera test fails to reject the null hypothesis, suggesting that the residuals are normally distributed.

Table 5: Multicollinearity test Results

Variable	VIF	1/VIF
Inf	3.61	0.276668
Exr	2.41	0.415419
Gdp	1.88	0.531877
Inr	1.55	0.644428
Top	1.51	0.661312
Mean	VIF	2.19

Source: STATA Estimation (2025)

Based on the findings in table 5 above, the VIFs are between 1.51 and 3.61, with a mean of the VIFs being 2.19. As per the standard VIF value greater than 10 is considered extreme multicollinearity, whereas 5 to 10 is a concern (Kennedy, 2008). All the VIF values in this study are below 5, hence there is no sign of strong multicollinearity between the independent variables. This result implies that the explanatory variables do not affect the approximation of the coefficients in the ARDL model and that the personal contributions that GDP growth, trade openness, inflation, exchange rate, and interest rate have to FDI inflows can be interpreted.

4.5 Serial Correlation Test

A serial correlation test is conducted to determine whether the residuals (error) term of the estimated ARDL model is correlated with time. Serial correlation may give biased and inefficient estimates in case it exists, hence it should be tested. The null hypothesis of the test is that the residuals of the model do not show any serial correlation was tested using the Breusch-Godfrey test (Godfrey, 1978) to confirm serial correlation of the different lags of the residuals.

Table 6: Serial Correlation Test Results

Breusch-Godfrey LM test for autocorrelation			
lags(p)	**chi2**	**df**	**Prob > chi2**
1	**2.068**	**1**	**0.1505**
	H0: no serial correlation		

Source: STATA Estimation (2025)

Table 6 shows the outcome of the Breusch-Godfrey LM test on serial correlation that was conducted to determine whether the residuals (error) term of the estimated ARDL model is correlated with time. Serial correlation may give biased and inefficient estimates in case it exists, hence it should be tested. The null hypothesis of the test is that the residuals of the model do not show any serial correlation. Test value indicates that the chi-square value is 2.068, and the degree of freedom is 1, and a probability value (p-value) of 0.1505.

We do not reject the null hypothesis because the p-value exceeds the typical levels of significance (0.01, 0.05, or 0.10)

4.6 Normality test

The main assumption in the regression analysis is that the residuals are normally distributed, making the standard errors valid and the hypothesis test reliable (Gujarati and Porter, 2009).

Table 7: Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr (Kurtosis)	adj chi2(2)	Prob>Chi2
Residuals	35	0.7202	0.8580	0.16	0.9230

Ho: Residuals are normally distributed

Source: STATA estimation (2025)

Table 7 indicates that the p-values of skewness and kurtosis are 0.7202 and 0.8580, respectively, and the adjusted chi-square is 0.16, the p-value of which is 0.9230. The p-value of the overall value greater than 0.05 does not allow rejecting the null hypothesis of normality. This finding shows that the ARDL model residuals are normally distributed, which supports the validity of the estimated coefficients and makes the inferences made on the impact of GDP growth, trade openness, inflation, exchange rate, and interest rate on FDI inflows reliable.

4.7 Discussion

The empirical results offer nuanced insights into the macroeconomic drivers of FDI in Tanzania. The finding displayed a strong positive long-run relationship between trade openness and FDI inflows. This aligns with the Eclectic (OLI) Paradigm, where trade openness enhances Location-specific advantages by integrating Tanzania into global value chains, such as bilateral and multilateral economic integrations, such as EAC, SADC, making it a more attractive base for efficiency-seeking FDI that aims to serve regional and international markets.

The statistical insignificance of GDP growth is a critical finding that warrants discussion. While classical theory suggests market size is a key attractor, this result implies that for Tanzania, the signal of market potential sent by GDP growth may be overshadowed by structural impediments such as infrastructure deficits, regulatory risks, or the specific composition of FDI, which is heavily weighted towards the extractive sector. Resource-seeking FDI in mining and natural gas may be less responsive to short-term GDP fluctuations and more influenced by geological potential and contractual terms.

The negative long-run effects of inflation and exchange rate depreciation confirm the importance of macroeconomic stability in preventing the deterrence of investment, particularly for market-seeking and efficiency-seeking investments in sectors like manufacturing that are sensitive to cost and price stability. However, their role appears to be more about mitigating risk than actively stimulating inflows. This aggregate finding may mask sectoral nuances, as suggested by Rutasitara & Mwambuli (2021), who found the extractive sector to be less affected by exchange rate volatility due to dollar-denominated revenues.

5. Conclusion

This study examined the macroeconomic determinants of FDI inflows in Tanzania from 1990 to 2024. The ARDL estimation results reveal that trade openness is the most significant and positive determinant of FDI in the long run. Inflation and exchange rate depreciation have significant negative effects, while GDP growth and interest rates are not statistically significant drivers. The highly significant error correction term confirms a stable long-run relationship and a rapid adjustment process. These findings lead to two central conclusions. First, structural and policy-focused factors, particularly the degree of integration into the global economy, are far more critical for attracting sustainable FDI to Tanzania than short-term macroeconomic conditions. Second, while macroeconomic stability (low inflation, stable currency) is important, its role is more about preventing deterrence than actively stimulating inflows.

6. Policy Recommendation

Based on these conclusions, the following policy recommendations are proposed: Firstly, to enhance trade facilitation through the Ministry of Trade and Industry which should prioritize further trade liberalization and reduce bureaucratic hurdles at borders. Streamlining import and export processes and actively engaging in regional trade agreements like the AfCFTA will strengthen Tanzania's appeal to efficiency-seeking FDI.
Secondly, to ensure macroeconomic stability. The Bank of Tanzania should maintain its focus on controlling inflation and minimizing excessive exchange rate volatility. A predictable macroeconomic environment reduces investor risk, even if these factors are not the primary attractors.
Thirdly, to implement long-term structural reforms. Policymakers at the Tanzania Investment Centre (TIC) and the President's Office Planning Commission should focus on long-term structural reforms that improve the overall investment climate. This includes enhancing institutional quality, investing in infrastructure, and ensuring policy consistency and predictability to build investor confidence beyond short-term economic fluctuations.
By prioritizing trade openness and a stable, predictable policy environment, Tanzania can more effectively attract the foreign investment necessary to drive its industrial transformation and sustainable economic growth.

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Journal of Economics & Development (JED), 1(3): 52-59, 2025, ISSN: 3057-3416, www.saut.ac.

Examination of Participation Methods at Millennium Villages Project in Mbola villages, Uyui district, Tanzania

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Received December 16, 2025; Revised December 22, 2025; Accepted December 27, 2025

Cite This Paper as Follows:

Musa A, Ligembe (2025). Examination of Participation Methods at Millennium Villages Project in Mbola villages, Uyui district, Tanzania. Journal of Economics & Development, 1(3): 52-59.

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Abstract
This study examines the varying modes of community participation active, passive, and stakeholder driven within the context of the Millennium Villages Project (MVP), focusing on the Mbola villages in Tanzania. The research investigates how each form of participation influenced the planning, implementation, and sustainability of the development initiatives introduced by the MVP. Using quantitative, qualitative methods, including interviews and direct observations, the study reveals that passive, stakeholder and active community involvement became more pronounced as the project matured but not during its processes from the initial phase. However, inconsistencies in participatory practices often limited the community's ownership and long-term commitment to project outcomes. The findings underscore the importance of fostering meaningful, inclusive participation that moves beyond consultation to genuine engagement and shared decision-making. This case study contributes to the broader discourse on participatory development by highlighting the complex dynamics and impacts of different poor participation modalities in large-scale, donor-driven interventions.

Key Words: Active, Passive, Stakeholder Involvement, Uyui District, Tanzania.

JEL Classification: Z0, Z19

1. Introductions

Community participation has long been recognized as a cornerstone of successful development initiatives, particularly in the context of sustainable rural transformation. The Millennium Villages Project (MVP), launched in 2005 by the Earth Institute at Columbia University in partnership with the United Nations and Millennium Promise, sought to achieve the Millennium Development Goals (MDGs) through a holistic, community-based approach across sub-Saharan Africa (Sanchez et al., 2007). Jeffery Sachs, Director if the Earth Institute in Columbia University, co-founder of Millennium Promise and Special Adviser to the United Nations Secretary- General Ban Ki-Moon, has founded the project in 2006 and believed that the project can make a change. The MVP was initially planned as a 5-year project but then a second phase has been added for 2011 to 2015. There are 12 original Millennium Villages (MVs) in 10 different countries in Sub-Saharan: Sauri and Dertu, Kenya; Koraro, Ethiopia; Mbola, Tanzania; Ruhiira, Uganda; Mayange, Rwanda; Mwandama, Malawi; Pampaida and Ikaram, Nigeria; Potou, Senegal; Tiby, Mali and Bonsaaso, Ghana. Each MVP consist several villages and experts were sent to these MVs to implement community-led development strategies, which includes partnership with local governments. Based on the different challenges in the different sites, the MVP has adjusted their interventions in each particular MV. All 191 United Nations member states, and at least 22 international organizations, committed to help achieve the following Millennium Development Goals by 2015 which were to eradicate extreme poverty and hunger, to achieve universal primary education, to promote gender equality and empower women, to reduce child mortality, to improve maternal health,

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to combat HIV/AIDS, malaria, and other diseases, to ensure environmental sustainability and to develop a global partnership for development.

A critical aspect of the MVP's strategy involved the integration of participatory methods to ensure that local populations were actively involved in the design, implementation, and monitoring of interventions.
Participation in development can be broadly categorized into active, passive, and stakeholder-specific methods. Active participation involves community members in decision-making processes and fosters empowerment, while passive participation generally entails limited engagement, often restricted to receiving information or services (Pretty, 1995). Stakeholder participation, on the other hand, emphasizes the inclusion of various actors

such as local governments, NGOs, and donor agencies whose interests and influence shape project outcomes (Reed, 2008).

While the MVP aimed to promote inclusive and sustained participation, there remains ongoing debate regarding the effectiveness and equity of its participatory mechanisms. Some critics argue that despite the project's intentions, participation was often top-down and technocratic in nature (Clemens & Demombynes, 2011). Others highlight examples where community-led engagement fostered localized innovation and accountability (Barnes et al., 2009). It's noted that MVP engages many interventions parallel at some villages in Mbola area as per MVP goals. Health and Education interventions integrated with government activities but other remained under MVP interventions only and the community. Due to this some interventions within the community since 2015 when MVP phased out, their progress expected is different from the existing poor situation.

1.2 Statement of the Problem

Central to the Millennium Village Project framework is the involvement of community members and other stakeholders through various participation approaches, including active participation, passive participation, and stakeholder involvement. However, the effectiveness and balance of these participation approaches in achieving the intended project outcomes in the Mbola area remain insufficiently understood. In the Mbola area, it is unclear to what extent community members were actively involved versus passively engaged in MVP activities, and how these approaches influenced project effectiveness and continuity after external support. Limited empirical evidence exists on how stakeholder involvement complemented or constrained active community participation within the MVP context in Mbola. The extent of active, passive, and stakeholder participation approaches employed under the Millennium Village Project in the Mbola area needs to be examined. Understanding these participation dynamics is essential for assessing their contribution to project outcomes and sustainability, and for informing future community based development initiatives in similar rural contexts.

2. Literature review

Community participation is widely recognized as a critical factor for the success and sustainability of development interventions. Participatory development theory argues that involving beneficiaries and stakeholders enhances project relevance, accountability, and long-term ownership (Chambers, 1997; Cornwall, 2008). Participation is commonly categorized into **active participation**, **passive participation**, and **stakeholder involvement**, depending on the degree of influence exercised by local actors. The **Millennium Villages Project (MVP)**, implemented in selected rural areas of sub-Saharan Africa including **Mbola in Uyui District, Tanzania**, adopted participation as a guiding principle in its effort to achieve the Millennium Development Goals (Sanchez et al., 2007). Consequently, the Mbola MVP provides an important empirical case for examining how different participation approaches were applied in practice. Evidence shows that local communities participated through **village meetings, sectoral committees, and farmer groups**, particularly in agriculture, health, and education interventions (Massawe, 2016). Farmers in Mbola were actively involved in demonstration plots, training on improved agricultural practices, and adoption of new technologies, reflecting hands-on engagement rather than passive reception of services (Sanchez et al., 2007). scholars argue that the MVP followed a **pre-packaged, expert-driven development model**, where key decisions on sector priorities, budgets, and timelines were determined by external actors such as donors and international experts (Clemens & Demombynes, 2011; Roodman, 2012). In Mbola, this resulted in communities mainly receiving services such as farm inputs, health facilities, and educational infrastructure, with limited ability to shape project design (Massawe, 2016). Empirical literature highlights challenges related to **power imbalance among stakeholders**. Although multiple actors were formally involved, decision-making authority remained concentrated among project managers and donors (Koch, 2015). Some government officials reportedly viewed the MVP as a parallel initiative rather than a fully integrated public development program, limiting institutional ownership and long-term commitment (Massawe, 2016).

3. Methodology

This study employed a descriptive case study design to examine the nature and extent of community participation categorized into active, passive, and stakeholder participation in the Millennium Villages Project (MVP) in the Mbola Villages, Tanzania. The case study approach enabled in-depth exploration of local

perspectives and participation methods within a real-life context. The research was conducted in Mbola, one of the Millennium Villages located in Tabora Region, Tanzania. The village cluster was selected due to its involvement in the MVP and its diverse socio-economic background, which provided a suitable context for assessing participation dynamics. A total of 240 respondents were selected using purposive sampling. This non-probability sampling technique was adopted to ensure that only individuals with direct knowledge, involvement, or experience in MVP activities were included in the study. Participants comprised project beneficiaries who were community members from eight Cluster villages of Mbola area, and relevant stakeholders such as government representatives and project coordinators. Data was collected using a self-administered questionnaire.

The questionnaire was structured and included both closed ended and open-ended questions to capture both quantitative and qualitative data. It was designed to assess the respondents' awareness, level of involvement, perceptions, and attitudes toward the different forms of participation in MVP initiatives. Prior to distribution, the questionnaire was pre-tested on a small sample from a neighboring village to ensure clarity, relevance, and reliability of the questions. Necessary modifications were made based on the feedback received during the pilot phase. Participants were provided with printed questionnaires and briefed on how to complete them. Due to varying literacy levels, assistance was provided where necessary, particularly for respondents who had difficulty understanding certain terms or questions. The data collection process was conducted over a period of two weeks to ensure all selected participants had adequate time to respond. Quantitative data from the questionnaires were coded and analyzed using descriptive statistics, including frequencies and percentages, with the help of statistical software (e.g., SPSS). Ethical clearance was obtained from the relevant research authority. Informed consent was sought from all participants prior to data collection. Respondents were assured of the confidentiality of their responses, and participation was voluntary with the option to withdraw at any time without consequences.

4. Findings

The study assessed the nature and extent of participation active, passive, and stakeholder in the Millennium Villages Project (MVP) in the Mbola cluster using a purposive sample of 240 respondents. Data collected through self-administered questionnaires provided insight into how local communities engaged with and perceived the MVP interventions.

4.1 Active Participation

The analysis shows that among 240 respondents who are also members of intervention groups established from eight villages did not actively participate on MVP intervention activities on the issue of joint analysis, and formation of interventions, development of income generated activities, taking control of decision making for IGA, updated on every activity concern with the IGA implemented and monitoring and evaluation of the IGA. This can be seen on the below table

Table 1, Active Participation on Millennium Village Project intervention percentage. "(1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree)"

No	STATEMENT	1	2	3	4	5	Total
1	Community participated in joint analysis, and formation of interventions	49	35	0	4	12	100
2	Community participating in development of MVP generated activities	41	44	0	11	4	100
3	Community Being consulted and external people listen to views and may modify these in the light of people's responses without their permission.	41	48	11	0	0	100
4	Community participating in taking control of decision making for MVP activities	57	32	11	0	0	100
5	Community updated on every activity concern with the MVP intervention implemented	29	63	0	4	4	100

6	Community participated in monitoring and evaluation of the MVP interventions	16	34	0	27	23	100
	Average	39	43	4	7	7	

Source: Field Data (2025)

4.2 Passive Participation method

The below table reveals the percentage at which passive participation situation occurs during MVP interventions at Mbola cluster villages.

Table 2, Passive participation on Millenium Village Project Intervention percentages "(1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree)"

No	STATEMENT	1	2	3	4	5	Total
1	Community participated through unknown representatives to CED official activities	8	4	0	27	62	100
2	Community participated by being told what has been decided or already done	8	4	0	30	58	100
3	Community participated by providing their opinions on matters that have already decided	8	4	0	47	42	100
4	Community participated through unknown representatives	4	0	0	28	68	100
5	Community updated on every activity timely concern with the CED group activities.	8	19	4	31	38	100
	Average	8.8	16	0.8	33	54	

Source: Field Data (2025)

These respondents received project benefits such as agricultural inputs, healthcare services, or educational materials, but were not involved in decision-making processes. Many expressed that they were merely informed of project activities or received services without prior consultation. This group often lived on the peripheries of the villages or belonged to minority or marginalized groups who felt excluded from mainstream project activities.

4.3 Stakeholder Involvement

Within MVP activities stakeholders had a great contribution on growth and sustainability of established activities. For example political, government and religious leaders can provide more support technically and financially towards MVP activities if they are consulted. Several respondents expressed concern over elite capture, with a recurring sentiment that project decisions were heavily influenced by a small group of individuals with close ties to MVP staff or local leadership. This expressed through the below table

Table 2, Stakeholders involvement on Millennium Village Project Poverty Eradication Intervention percentage, (1 = Strong disagree; 2= Disagree; 3 = Not sure; 4 = Agree; 5 = strongly agree).

No	STATEMENT	1	2	3	4	5	Total
1	Chain of communication from MVP administrators and stakeholders in every activity	61	39	0	0	0	100
2	MVP consultation with stakeholders in every activity	49	51	0	0	0	100

3	Stakeholders involved in decision making concerns with several matters of MVP interventions	57	20	0	19	4	100
4	Stakeholders involved on implementing several activities of MVP interventions	37	12	0	44	7	100
5	Stakeholders feel ownership of MVP intervention	57	43	0	0	0	100
	Average	52	33	0	13	2	100

Source: Field Data (2025)

5. Findings discussion

Under this study MVP interventions for conducted through participating the community members from the Mbola area and its cluster villages. Community projects prosperity depends on how the community members participated from initial to the last point of interventions. Three community participation approaches such as Active, Passive and Stakeholders Involvement assessed so as to oversee how far the members and community in general participated on MVP intervention hence the followings observed.

5.1 Active Participation method applied within the MVP interventions

Across all six statements, the majority of respondents chose "strongly disagree" (average 39%) and "disagree" (average 43%). This suggests a strong perception of exclusion from meaningful involvement in MVP processes. Statement 4 shows the lowest engagement, where 89% (57% + 32%) disagreed that the community was involved in decision-making. This indicates top-down control of the project without shared governance. In Statement 3, 89% disagreed that external stakeholders listened and modified actions based on community input. This reflects a lack of meaningful dialogue or adaptive feedback loops, pointing to tokenistic participation. Statement 6 shows higher positive engagement (27% agree, 23% strongly agree), indicating some inclusion in monitoring and evaluation. This may suggest the project engaged the community more at later stages. In Statement 5, a significant 92% (29% + 63%) disagreed that the community was regularly updated, highlighting poor communication practices.

Very Few Strongly Positive Responses across the board, only about 7% strongly agreed with any statement. This signals weak trust and ownership, crucial components for the sustainability of development interventions.

5.2 Passive Participation method applied within the MVP interventions,

Statements 1 and 4 show a high level of agreement (89% and 96%, respectively) that the community participated through unknown representatives. This suggests that decision making was largely conducted through intermediaries who may not have been well-known or directly accountable to the wider community. This kind of participation limits direct community influence.

Statement 2 indicates that 88% of respondents agreed that the community was told what had been decided or done implying top-down communication rather than genuine participatory processes. The community appears to be more of a recipient than a contributor to planning and decision-making. In statement 3, 89% agreed that the community could provide opinions, but only after decisions had already been made. This reflects tokenistic participation, where input is solicited but not influential. Statement 5 shows a more varied response, with only 69% (agree + strongly agree) feeling they were updated in a timely manner. A notable 31% disagreed or were unsure, highlighting some communication or transparency gaps in project implementation. The average scores reinforce that participation was predominantly passive, with the community mainly informed or used as symbolic participants rather than being empowered in the decision-making process.

5.3 Stakeholders involvement

The analysis from the below table reveals that 240 respondents who are community members engaged in data collection and below are the discussion.

Communication Between MVP Administrators and Stakeholders, Strongly Disagree (61%), Disagree (39%), This shows a complete lack of agreement among respondents about the effectiveness of communication between MVP administrators and stakeholders. A 100% negative response (no neutral or positive ratings)

suggests severe breakdowns in communication, which is foundational for project success. This may lead to misinformation, low trust, and lack of coordination.

MVP Consultation with Stakeholders analysis shows Strongly Disagree (49%), Disagree (51%) which means Similar to the first statement, all respondents disagree with the idea that stakeholders are being consulted in MVP activities. The absence of any agreement indicates that stakeholders feel excluded from planning and feedback processes, which could reduce their motivation to support or align with the intervention's goals.

Stakeholder Involvement in Decision-Making, Strongly Disagree (57%), Disagree (20%), Agree (19%), Strongly Agree (4%). While still largely negative (77%), this statement shows a small proportion (23%) of stakeholders feel involved in decision-making. This suggests that involvement may be selective, limited to a few individuals or specific decisions. It reflects a top-down approach with minimal participatory governance.

Stakeholders Involved in Implementation, Strongly Disagree (37%), Disagree (12%), Agree (44%), Strongly Agree (7%). This is the most balanced response across all five statements. Here, a majority (51%) agree or strongly agree that stakeholders are involved in implementation. This could imply that while they are not engaged in planning or decision-making, stakeholders are utilized as implementers or laborers in project activities. There may be a functional but not strategic level of inclusion.

Stakeholders Feel Ownership of MVP Interventions, Strongly Disagree (57%), Disagree (43%). A unanimous lack of ownership perception among stakeholders. This is critical feeling ownership is often linked to long-term sustainability. The failure to foster this implies that once MVP withdraws, community engagement or continuity might be lost.

5.4 Examination of Active, Passive, and Stakeholder Participation Methods in the Millennium Villages Project interventions at Mbola Cluster villages

Table 4, Active, Passive and stakeholder Participation

	N	Minimum	Maximum	Mean	Std. Deviation
AP	240	1.17	3.00	2.0156	.54016
PP	240	1.00	2.80	4.1921	.95097
SI	240	1.00	2.80	1.7957	.55614
Overall mean				2.6678	.39135

Source: Field Data (2025)

5.5 Descriptive Statistics Summary

Participation Type	Mean	Std. Deviation	Interpretation
AP (Active Participation)	2.0156	0.54016	Moderate active involvement
PP (Passive Participation)	4.1921	0.95097	Very high passive engagement
SI (Stakeholder Involvement)	1.7957	0.55614	Low to moderate stakeholder inclusion
Overall Mean	2.6678	0.39135	Moderate participation overall

5.5.1 Interpretation of the Findings

Passive Participation (PP) is the Highest, with a mean of 4.1921, PP is significantly higher than the other forms. This suggests that the community members were more likely to be informed or consulted rather than directly involved in decision making or project implementation. A high standard deviation (0.95097) also indicates considerable variability, suggesting that some community members may have experienced much higher levels of passive participation than others.

5.5.2 Active Participation (AP) is Moderate

The mean score of 2.0156 for AP shows moderate involvement, such as attending meetings or helping implement certain aspects of the project. This level is lower than passive participation, implying that while the community may have been aware of the MVP activities, fewer were directly involved in shaping or executing them.

5.5.3 Stakeholder Involvement (SI) is the Lowest

SI has the lowest mean (1.7957), indicating that key stakeholders such as local leaders, NGOs, or sectoral representatives were not extensively engaged in project planning or execution. This is notable because effective development interventions often require deep collaboration with key stakeholders to ensure sustainability and local ownership.

5.5.4 Overall Mean

The overall mean of 2.6678 with a relatively low standard deviation (0.39135) suggests that while participation was relatively consistent across respondents, it was skewed toward passive forms of engagement.

6. Conclusion and recommendations

The data suggests that the MVP in this context suffered from low community involvement, particularly in critical areas like decision-making, planning, and consultation. Most activities appear to have been externally driven, with limited transparency and minimal effort to build community agency. For future interventions, improving participatory mechanisms through structured consultations, transparent updates, shared decision making, and local capacity building is essential for both effectiveness and sustainability.

The data paints a concerning picture of limited stakeholder involvement in most stages of the MVP intervention except some modest inclusion in implementation. For poverty eradication projects like MVP to be sustainable and impactful, they must shift from a top-down model to a community-led approach. Without stakeholder trust, inclusion, and ownership, long-term outcomes are at risk.

While community involvement was present, it was largely passive and representative-based, rather than active or empowering. This can undermine the sustainability and local ownership of development interventions. Enhancing inclusive, direct, and timely engagement is critical for more effective and democratic development outcomes.

This data suggests that while the Millennium Villages Project was successful in engaging communities at a basic level, it fell short in promoting meaningful and inclusive participation, particularly among key stakeholders including community members Future development interventions should aim to balance participation methods, ensuring that community voices are not only heard but actively shape the development process.

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Journal of Economics & Development (JED), 1(3): 60-71, 2025. ISSN: 3057-3416, www.saut.ac.

The impact of manufacturing sector on economic growth in Tanzania (1990-2024)

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Received September 20, 2025; Revised November 8, 2025; Accepted November 28, 2025

Cite This Paper as Follows:

Alcado,M.R, Banjamin, M.G*, Banard, K.Z*,Wilbroad, F.E*, Ng'Holongo, J.R*. & Kongolo, M.**(2025). The impact of manufacturing sector on economic growth in Tanzania (1990-2024). Journal of Economics & Development, 1(3): 60-71.*
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Abstract
The aim of this study was to examine the role of the manufacturing sector in supporting economic growth in Tanzania from 1990-2024. Time series data obtained from both the World Bank, the Bank of Tanzania, the National Bureau of Statistics, and the IMF were used. The Autoregressive Distributed Lag (ARDL) model was applied to estimate both short-term and long-term relationships. Stationarity was tested using the Augmented Dickey-Fuller (ADF) method, while Granger causality tests were used to determine the direction of influence between the variables. The findings suggested that although manufacturing output had increased over time, its long-run impact on economic growth was statistically insignificant. In the short run the funding on manufacturing output showed a negative effect on GDP, which may have been caused by inefficiencies, adjustment costs, or delays in investment returns. The Granger causality test revealed an unidirectional relationship, where manufacturing output helped predict GDP growth, while GDP did not significantly predict changes in manufacturing. The study concluded that manufacturing sector has a potential for economic growth in the country, although the sector has been limited by poor infrastructure, low investment levels, weak productivity, and limited access to finance. It is recommended that more investment in infrastructure, access to credit especially for small and medium-sized enterprises and skills development can support manufacturing value-added growth.

Keywords: Economic growth, Manufacturing sector, ARDL model, and Granger causality, Tanzania

JEL Classification: 01, 014, 016, 025

1. Introduction

The manufacturing sector plays an essential role in the economic development of many countries. It supports job creation, encourages innovation, adds value to natural resources, and helps increase exports (Naudé & Szirmai, 2012). Across the world, especially in developing countries, manufacturing has helped economies grow by moving them from a focus on agriculture toward industrial production. Countries like China, India, Malaysia, and Vietnam have shown how investment in manufacturing and the use of modern technology can lead to higher productivity, improved incomes, and stronger global competitiveness (Szirmai, 2013). These achievements are often linked to digital advancements under what is known as Industry 4.0, which combines automation, data, and smart technologies to improve production (Rahman & Ismail, 2022). However, research findings on the impact of manufacturing on economic growth have not always been consistent. In countries like Malaysia, the relationship has been strong and positive, but in others such as Romania and Iran, studies have shown only limited or insignificant effects (Chioveanu & Dima, 2019). In Pakistan and parts of Latin America, the link between manufacturing and growth has been found to change depending on the time period and the specific economic conditions under which the studies were carried out (Bernal et al., 2017). These mixed findings show that the influence of manufacturing sector on economic growth is complex and

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often depends on a country's internal structures and policy environment. In some countries like Nigeria and Ghana, manufacturing sector has been a positive force for economic growth, especially when supported by policy reforms and stable macroeconomic environments (Oyinlola & Olaifa, 2018). While South Africa struggles with low investment, limited diversification, and skills shortages in the sector (Nchake et al., 2016). Poor infrastructure and weak trade policies across Africa have further slowed industrial progress (Seck et al., 2022). These problems make it difficult for African countries to fully benefit from the potential of manufacturing (Wangwe et al., 2014). The Tanzanian manufacturing sector has been recognized as a potential engine for economic transformation since the country gained independence in 1961 (Silver, 2019). Given the

above background, the purpose of this research was to empirically examine how manufacturing output impacted Tanzania's economic growth.

1.1 Statement of the problem

Although Tanzania has made many efforts to promote industrialization through national plans like the Sustainable Industrial Development Policy, Vision 2025, but the manufacturing sector still contributes very little to the country's economic growth, remaining around 8% of GDP for many years (World Bank, 2022). This has been different from countries like China and Malaysia, where manufacturing plays a big role in economic growth and development. Challenges such as poor infrastructure, low investment, outdated technology, and weak links with other sectors continue to limit its growth (Mwinuka & Mwangoka, 2023). Also, previous studies have shown mixed results: with some suggesting a strong positive link between manufacturing and economic growth (Rahman & Ismail, 2022; Nkinga et al., 2017), while others indicating weak link (Chioveanu & Dima, 2019). Research shows that the Tanzanian manufacturing sector has potential for growth, but it faces serious barriers like high production costs and unreliable energy (Kwayu et al., 2018). Therefore, there is a need to examine the real contribution of the manufacturing sector into Tanzania's economic growth quantitatively by means of data analysis. This study is organized as follows: Section 2 presents Literature review, section 3 gives methodology, section 4 discusses empirical results, section 5 Concludes with Recommendations and Policy Implications.

1.2 Objectives

This study will be guided by both the General and the specific objectives as follows:

1.3.1 General Objective

To examine the impact of the manufacturing sector on economic growth in Tanzania from 1990 to 2024.

1.2.1 Specific Objectives

The study will be guided by three specific objectives as follows

i. To analyze the trends and patterns of the Manufacturing sector in Tanzania over the period 1990–2024
ii. To Evaluate the Long-run and Short-run effect of Manufacturing sector on Economic growth of Tanzania.
iii. To determine the direction of causality between Manufacturing sector and economic growth using Granger causality tests.

1.2.2 Research Hypotheses

i. **H_0:** There is no significant trend or pattern in the Manufacturing output in Tanzania over the period 1990–2024.
ii. **H_0:** Manufacturing sector does not have a significant Long-run and Short-run influence on the overall economic growth in Tanzania.
iii. **H_0:** There is no Granger causality between Manufacturing sector and economic growth in Tanzania.

2. Literature review

The manufacturing sector plays an important role in economic development by contributing to gross domestic product (GDP), employment creation, technological advancement, and export expansion. Several economic theories have been developed to explain the role of the manufacturing sector in fostering economic growth. The Kaldorian theory of economic growth (Kaldor, 1957), provides a foundational explanation of the relationship between manufacturing and overall economic expansion. This theory states that economic growth is strongly linked to the performance of the manufacturing sector. That that GDP growth is positively related to manufacturing output growth. Kaldors's second law suggests that the manufacturing sector benefits from increasing returns to scale, leading to enhanced productivity. Its third law implies that as the manufacturing sector expands, it boosts productivity in other sectors of the economy. Mercan et al., (2015) and Olamade and Oni (2016), provide empirical support for Kaldor's laws, particularly in the context of developing countries. This theoretical framework is relevant for understanding Tanzania's push toward industrialization as outlined in its Vision 2025. The industrialization theory underscores the importance of building a strong industrial base as a pathway to economic development. This theory supports the rationale behind Tanzania's industrialization policies, which aim to reduce poverty, create jobs, and diversify the economy. Various empirical studies have

examined the relationship between the manufacturing sector and economic growth. For instance, Jeon (2006) tested Kaldor's laws in China using time series and panel data, finding a significant positive relationship between manufacturing output and economic growth. In India, Chakravarty and Mitra (2009) applied a vector autoregressive (VAR) model and concluded that the manufacturing sector was a major contributor to economic development. While Dasgupta and Singh (2006) used the ordinary least squares (OLS) technique in their study and noted that the signs of deindustrialization in low-income areas continued to have importance capital in manufacturing. Oburota et al, (2017) used OLS to test both Kaldor's laws and endogenous growth theory. Their results indicated that manufacturing output, technology, and capital positively affected both short-term and long-term growth. Tsoku et al. (2017) applied Johansen cointegration methods in South Africa and found a long-run relationship between manufacturing and economic growth. In contrast, Andronicеanu et al (2023) found weak evidence supporting Kaldor's laws in Kenya, suggesting that contextual factors can influence the role of manufacturing in economic development. Several studies have shown the importance of the manufacturing sector in Tanzania. Saidi et al, (2020) found that a one percent increase in manufacturing output results in a 1.2 percent increase in GDP, confirming the sector's strong contribution to economic growth.

3. Methodology

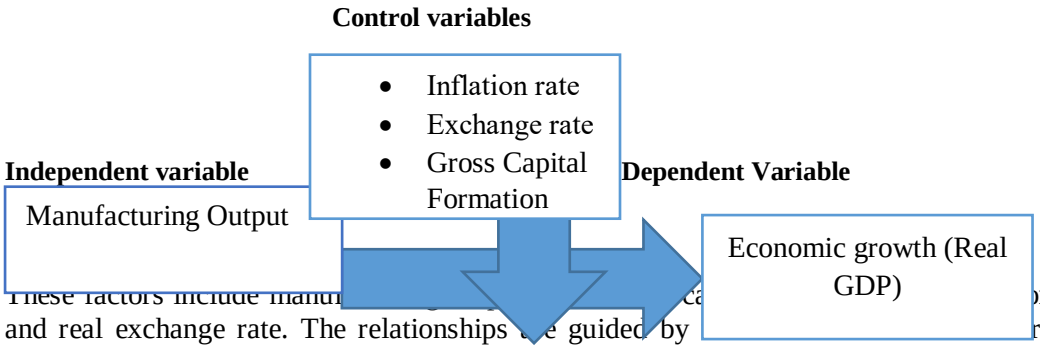
3.1 Research Design

The study used a quantitative research design to examine the impact of manufacturing sector on Tanzania's economic growth from 1990 to 2024. The choice of a quantitative design is made because the study aims to gather numerical data, which provides an objective understanding of the effects of manufacturing sector on economic growth in Tanzania. Kothari (2004) noted that quantitative data is more objective than qualitative data because it presents the results in the form of numbers and percentages, which are easier to analyze and interpret. The study used time-series data from 1990 to 2024, sourced from the World Bank and the Tanzania Investment Centre. For data analysis, the study employed econometric techniques, specifically the Autoregressive Distributed Lag (ARDL) model. This method helped to analyze the dynamic relationships between Manufacturing sector and Economic growth, while also accounting for other macroeconomic factors like Manufacturing Output, inflation, Real Exchange rates, Labor force and Gross Fixed Capital Formation (GCF)

3.2 Conceptual Framework

The conceptual framework for this study explains how selected macroeconomic factors influence economic growth in Tanzania, as measured by real GDP. The study conceptual framework is shown in figure 1.

Figure 1: Conceptual Framework *(Source: Research group formulation, 2025)*



These factors include manuf[illegible]ca[illegible]r force, inflation rate, and real exchange rate. The relationships are guided by [illegible]ries and supported by empirical literature. Manufacturing output was expected to positively influence economic growth. According to Kaldor's First Law (1957), the manufacturing sector is key to increasing productivity, generating employment, and driving long-term economic growth. Therefore, an increase in manufacturing output is likely to raise GDP.

3.3 Data Analysis

This study applied both descriptive and inferential statistical methods to analyze the time series data spanning from 1990 to 2024, in line with the research objectives and hypotheses used. The analysis was conducted using

STATA version 15, a widely used statistical software for time series econometric analysis. Descriptive statistics such as the mean, median, standard deviation, minimum, and maximum were used to summarize the key characteristics of each variable. Additionally, line graphs and trend charts were used to represent the behavior of real GDP, Manufacturing Output, interest rate, exchange rate, Labor force, and Gross fixed capital formation over time, helping to identify long-term patterns, fluctuations, and potential relationships among variables. Before conducting inferential analysis, stationarity tests using the Augmented Dickey-Fuller (ADF) test was performed to determine the order of integration of each variable. Based on the stationarity results, the study employed the Autoregressive Distributed Lag (ARDL) model, to analyze the relationships among variables that were integrated of order I(0) and I(1). The ARDL model was used to estimate both short-run and long-run effects of the independent variables on economic growth. Furthermore, the necessary diagnostic tests including tests for autocorrelation, heteroscedasticity, multicollinearity, and normality of residuals were conducted to validate the robustness and reliability of the model results.

3.4 Model Specification

This study adopts and modifies a model commonly used in empirical literature to assess the relationship between the manufacturing sector and economic growth. One of the widely used models was derived from Kaldor's Growth Laws (Kaldor, 1957), which emphasize the central role of manufacturing in driving the overall economic performance. The model is supported by recent empirical studies (AfDB, 2020). The mode specified includes manufacturing output as the core explanatory variable, along with other control variables that influence economic growth in Tanzania. Based on the conceptual framework and empirical relevance, the model includes gross capital formation (as a proxy for investment), labor force participation (as a proxy for labor input), inflation rate (to capture macroeconomic stability), and real exchange rate (to reflect trade competitiveness). The functional form of the model is expressed as follows:

$$RGDPt = f(MANOt, GCFt, INFt, EXRt) \quad \ldots\ldots (1)$$

The linear econometric form of the model is specified following equation 1 as follows:

$$RGDPt = \beta 0 + \beta 1 MANOt + \beta 2 GCFt + \beta 3 INFt + \beta 4 EXRt + \epsilon t \quad \ldots\ldots (2)$$

where by $RGDPt$ Is the Real Gross Domestic Product (proxy for economic growth), $MANOt$ is the Manufacturing output (is the value added by manufacturing sector, in constant prices), $GCFt$ is the Gross capital formation (% of GDP), $INFt$ is the Inflation rate (% annual change in CPI), $EXRt$ is the Real exchange rate (adjusted for inflation, TZS per USD), ϵt stands for Error term, $\beta 0$ is the Constant term, and $\beta 1, \beta 2, \beta 3,$ and $\beta 4,$ are the Coefficients of the explanatory variables.

3.5 Estimation Method

The model in this study was estimated using the Autoregressive Distributed Lag (ARDL) approach. This method is suitable because the study used time series data from 1990 to 2024, and the variables may not all be stationary at the same level. Before estimating the model, the Augmented Dickey-Fuller (ADF) test was conducted to check the stationarity of each variable. After confirming that all variables are either I (0) or I (1), the optimal lag length will be selected using the Akaike Information Criterion (AIC). To make sure the results were reliable, several diagnostic tests were performed, including the Breusch-Godfrey LM test for autocorrelation, the Breusch-Pagan test for heteroscedasticity, the Jarque-Bera test for normality of residuals, and the Variance Inflation Factor (VIF) for multicollinearity. Data analysis and estimation were done using STATA version 15. The general linear regression model estimated is given in equation 3:

$$ln(RGDPt) = \beta 0 + \beta 1 ln(MANUFt) + \beta 2 ln(GCFt) + \beta 3 INFt + \beta 4 ln(REXRt) + \epsilon t \ldots\ldots\ldots (3)$$

Where the variables can be transformed into natural logarithms (except inflation, which is already in percentage form) to interpret the coefficients as elasticities and to stabilize variance. This log-linear form also helps reduce the effect of outliers and non-linearity in time series data. This model makes economic sense as it captures the most influential factors of growth, with a focus on the manufacturing sector (Kripfganz & Schneider, 2023).

3.6 Variables measurement and expected sign

Table 1 below summarizes the names of the variables, how they are measured, their expected signs, and the theories that support their use, the hypothesized effects, and the reasoning behind each assumption.

Table 1: The Variables Measurement and Expected Sign

Variable	Measurement	Expected Sign	Theoretical Linkage	Hypothesized Effect on Real GDP	Reason
Economic Growth	Annual growth rate of real GDP (%)	Dependent	Kaldorian Theory	–	Measures changes in overall economic performance
Manufacturing Output	Manufacturing output as % of GDP	(+)	Kaldor's First Law (1957)	Increase in manufacturing → ↑ GDP	Manufacturing increases productivity and job creation
Gross Fixed Capital Formation	% of GDP invested in physical capital	(+)	Productivity Theory (Smith, Ricardo)	More investment → ↑ GDP	Capital investment increases production and efficiency
Inflation Rate	Annual % change in Consumer Price Index (CPI)	(−)	Structuralist Theory (Prebisch, 1950s)	High inflation → ↓ GDP	High inflation reduces purchasing power and confidence
Real Exchange Rate	TZS per USD adjusted for inflation	(+)	Import Substitution Theory (Myrdal, 1960s)	Depreciation → ↑ GDP	Competitive rate encourages exports and local production

Source: Researcher's Construction (2025)

As shown in the table 1 above, this study used The five key variables used to examine the impact of manufacturing sector on economic growth in Tanzania are shown in table 1.

4. Empirical results

4.1 Descriptive Summary Statistics

Before analyzing the data, it was important to assess the statistical properties of each variable by calculating descriptive statistics. This helped in understanding how the variables did behave for all the 35 observations.

Table 2: Descriptive Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp	35	5.166	1.91468	.58	7.67
mano	35	7.967714	1.814225	4.32	11.07
exr	35	1339.984	726.4617	196.6	2544.25
inf	35	11.12	9.375227	3.06	35.83
gcf	35	27.93429	9.867592	10.3	41.1

Source: STATA Estimation (2025)

Table 2 shows that gdp is the Real GDP (proxy for economic growth), mano is the Manufacturing output (% of GDP), gcf is the Gross capital formation (% of GDP), inf is the Inflation rate (% annual change in CPI), and exr is the Real exchange rate (adjusted for inflation, TZS per USD). The descriptive statistics presented in Table 2 summarize the key characteristics of the variables used in this study over the 35-year period. The results show that the average real GDP growth rate for Tanzania was about 5.17%, with a standard deviation of approximately 1.91. Suggesting that the country experienced a moderate economic growth on average, with some fluctuations over time. The minimum observed growth rate was 0.58%, which may correspond to years of economic slowdown, possibly due to domestic shocks or global economic disturbances (Mammadov, 2025).

The maximum growth rate of 7.67%, indicated periods of strong economic performance, which could be attributed to favorable macroeconomic conditions, increased investment, or strong export performance. Measured as a percentage of GDP, the manufacturing sector had a mean value of 7.97% ranged between 4.32% and 11.07%. This indicates that manufacturing has maintained a relatively modest but fluctuating contribution to the national output. The observed variations may reflect changes in industrial policy, foreign investment in manufacturing, or structural challenges such as infrastructure constraints and limited access to finance. A standard deviation of 1.81 suggests moderate variability in the sector's performance over the years.

The real exchange rate, which reflects the price of one US dollar in Tanzanian shillings adjusted for inflation, had an average value of 1,339.98. However, the large standard deviation of 726.46 indicates considerable volatility in the exchange rate over the study period. The exchange rate ranged from a low of 196.6 to a high of 2,544.25, signifying significant currency depreciation over time. This depreciation may be linked to macroeconomic instability, rising demand for foreign currency, trade imbalances, or inflationary pressures. Inflation, measured as the annual percentage change in the Consumer Price Index (CPI), had a mean value of 11.12% with a standard deviation of 9.38. This relatively high average and large variability suggest that Tanzania experienced periods of both moderate and extreme inflation. The minimum inflation rate recorded was 3.06%, while the maximum was 35.83%. High inflation rates may be associated with supply shocks, exchange rate depreciation, fiscal deficits, or poor monetary control in certain periods.

Conversely, lower inflation levels might reflect successful stabilization programs or favorable external conditions. Gross capital formation (GCF), which serves as a proxy for investment and is expressed as a percentage of GDP, averaged 27.93% with a standard deviation of 9.87. This indicates that, on average, nearly 28% of the country's output was reinvested into productive assets such as infrastructure, machinery, and buildings. The wide range from 10.3% to 41.1% reflects differences in investment levels across years, which could result from varying government policies, donor inflows, domestic savings rates, or the availability of credit for the private sector. Overall, the descriptive statistics highlight the dynamic nature of Tanzania's macro-economic indicators over the study period. These variations are critical to consider in subsequent econometric analysis, as they may influence both short-run and long-run relationships among the variables under investigation

4.2 Unit root Test

Table 3: Unit Root Test Results for Dickey-Fuller test for unit root Number of Obs = 33

-------- Interpolated Dickey-Fuller -------						
Variable	**Probability Z(t)**	**Order of Integration**	**Test Statistics**	**1% Critical Value**	**5% Critical Value**	**10% Critical Value**

GDP growth (lgdp)	0.0000	I(1)	-7.754	-3.696	-2.978	-2.620
Manufacturing output(mano)	0.0000	I(1)	-6.452	-3.696	-2.978	-2.620
Exchange rate (exr)	0.0000	I(1)	-5.921	-3.696	-2.978	-2.620
Inflation rate(inf)	0.0000	I(1)	-5.181	-3.696	-2.978	-2.620
Gross capital formation (gcf)	0.0000	I(1)	-5.579	-3.696	-2.978	-2.620

Source: STATA Estimation (2024)

The results in table 3 indicate that all variables become stationary after first differencing, meaning that they were integrated of order one, I (1). This has been supported by the test statistics for each variable, which were all negative than the 1%, 5%, and 10% critical values. Additionally, the associated p-values for all variables were 0.0000, which were well below the conventional significance levels of 1%, 5%, and 10% levels. The null hypothesis of a unit root for all variables after first differencing was rejected. The real GDP growth rate (lgdp) had a test statistic of -7.754, significantly lower than the 1% critical value of -3.696, confirming stationarity at first difference. Similarly, manufacturing output (mano) becomes stationary after differencing, with a test statistic of -6.452. The exchange rate (exr), inflation rate (inf), and gross capital formation (gcf) also exhibit stationarity at the first difference, with test statistics of -5.921, -5.181, and -5.579, respectively. These findings imply that all the variables used in the model are integrated of order one, I (1), and none is integrated of order two, I (2).

4.4 ARDL Co integrating and long run form: Model Estimation

Table 4 below presents the findings from an ARDL (Autoregressive Distributed Lag) model, which estimates both the long-term and short-term relationships between variables. The model includes an error correction term (ADJ), which indicates how quickly the dependent variable adjusts back to equilibrium after being disturbed. This term reflects the average time needed for the effects of external shocks or imbalances to be fully transferred from independent variables to the dependent variable (Kripfganz & Schneider, 2023).

Table 4: ARDL Model Estimation Results: Co integrating and Long-Run Relationship

Equation	Variables	Coefficient	t-statistics	Probability
ADJ (Coint-eq)	Lgdp (L1.)	-1.50632	-9.74	0.000
Long run Coefficients				
	Mano	-.028871	-0.22	0.829
	Exr	-.0027728	- 4.82	0.001*
	Inf	-.2139545	-5.84	0.000*
	Gcf	0.0924885	2.82	0.017*
Short-run Coefficients				
	mano(LD.)	-.3864612	-3.21	0.008*
	exr (L2D.)	.0087177	5.57	0.000*
	inf (L3D.)	.1681395	2.89	0.015*
	gcf(L3D.)	-.1258391	-3.15	0.009*
	Constant	11.9089	6.00	0.000

Source: STATA Estimation (2025) Note: From table 5 above, Star * indicate 5%, significance Level

Table 4 shows the results from the ARDL model, which explains how changes in manufacturing output, exchange rate, inflation, and capital formation affect real GDP growth, both in the long run and short run The coefficient of the error correction term (Lgdp L1.) is -1.506 and statistically significant at the 5% level. This means that there is a strong long-run relationship (co integration) between the variables. The negative sign confirms that if the system moves away from equilibrium, it will return back quickly. In fact, about 1.506% of the previous year's imbalance is corrected within one year, showing a fast adjustment toward the long-run equilibrium

4.6 Granger Causality Test Results

The Granger causality test is used to determine whether *one variable can predict or cause changes in another* over time. In this context, it tests whether changes in manufacturing output help predict future changes in GDP growth, and vice versa. This is useful for identifying *directional relationships* (causality) between variables, which cannot be detected by correlation or co integration tests alone (Bayer & Hanck, 2013).

Table 5: Granger causality Wald tests

H_0: Manufacturing Output does not Granger-cause Economic growth
H_1: Economic growth does not Granger -cause Manufacturing Output

Equation	Excluded	Chi2	Df	Prob>Chi2
Gdp	Mano	15.311	4	0.004
Gdp	ALL	15.311	4	0.004
Mano	Gdp	7.2694	4	0.122
Mano	ALL	7.2694	4	0.122

Source: Stata estimation (2025)

Table 5 shows that manufacturing output (mano) Granger-causes GDP growth, as the Chi-squared statistic is 15.311 with a p-value of 0.004 less than 0.005 which is significant at the 5% level. This means we reject the null hypothesis and conclude that past values of manufacturing output help predict future GDP growth in Tanzania. This result suggests a unidirectional causality running from manufacturing output to economic growth, supporting the idea that industrial development can be an engine for broader economic performance.

On the other hand, the reverse relationship from GDP growth to manufacturing output is not statistically significant. The Chi-squared value is 7.269 with a p-value of 0.122, is above the 1% significance level. Therefore, we fail to reject the null hypothesis, implying that GDP growth does not Granger-cause manufacturing output. This suggests that while growth in the manufacturing sector can influence the economy, general economic growth does not necessarily drive changes in the manufacturing sector.

4.7 The Trend analysis of Manufacturing Output inflows in Tanzania (1990-2024)

Figure 2 illustrates the historical trend of manufacturing output as a percentage of GDP in Tanzania over the 35-year period from 1990 to 2024. The overall pattern shows that manufacturing output has experienced noticeable fluctuations but has generally followed a modest upward trend over the long term.

Figure 1: The Trend analysis of Manufacturing Output in Tanzania

Source: STATA Estimation (2025).

From the above figure 2, we can observe that during the 1990s, manufacturing output was unstable and contributed little to the national economy. This may have been due to economic difficulties, low investment, and the effects of structural adjustment policies during that time. In the early to mid-2000s, there was a slow improvement in manufacturing output. This improvement might be linked to economic reforms, increased private sector involvement, and government efforts to support industrial development. The upward trend continued gradually, showing that the sector was slowly recovering and gaining importance in the economy (Rodrik, 2009). Between 2015 and 2020, the manufacturing sector experienced ups and downs. This uneven pattern could be the result of challenges such as poor infrastructure, power supply problems, or changes in the global market. From 2020 to 2024, a slight increase in manufacturing output was observed. This recent growth may be due to government policies focused on industrialization, better support to local industries, and regional trade opportunities (Warwick, 2013). In general, the trend shows that while manufacturing has not played a major role in Tanzania's economy in the past, it has started to grow slowly, although such growth was not stable. To make manufacturing a strong part of the economy, there is a need for consistent investment, good infrastructure, and strong support from the government and private sector (Dang & Pheng, 2015).

4.8 Post Estimation Test

Serial Correlation Test

The Breusch-Godfrey test for serial correlation was performed to check for serial correlation between the different lags of the residuals. The serial correlation of the residuals can lead to biased results **(**Schwartz & Whitcomb, 1977). The test was based on the following hypothesis used to analyze the results:

H_0: ρ=0, No serial correlation

H_1:ρ≠0, There is serial correlation

The decision criteria here was that we want to fail to reject the null hypothesis for the residuals to be serially uncorrelated in order to arrive to efficient unbiased estimates.

Table 6: Serial Correlation Test Results

Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	02.429	1	0.1191
	H0: no serial correlation		

Source: STATA Estimation (2025)

Table 6 presents the results of the Breusch-Godfrey LM test for serial correlation, which was used to check whether the residuals (errors) from the estimated ARDL model are correlated over time. Serial correlation, if present, can lead to biased and inefficient estimates, so it is important to test for it. The null hypothesis of the test is that there is no serial correlation in the model's residuals. The test result shows a Chi-square value of 2.429 with 1 degree of freedom, and a probability value (p-value) of 0.1191. Since the p-value is greater than

the common significance levels (0.01, 0.05, or 0.10), we fail to reject the null hypothesis. This means that there is no evidence of serial correlation in the model. In other words, the errors in the model do not follow a pattern and are randomly distributed, which confirms that the model is correctly specified in terms of autocorrelation (Griffith & Plant, 2022).

4.8.1 Heteroscedasticity Test

This is the test for constant variance; where the assumption is that residuals have a constant variance in both the Ordinary Least Square estimation and ARDL model. This test is done to check whether the residuals produces efficient estimation since a model with heteroskedastic residuals produces inefficient estimation (Tse, 2002).

The hypothesis testing for heteroscedasticity is given as follows:

H_0: $\rho=0$, Constant Variance of the residuals-Homoskedastcity

H_1:$\rho\neq0$, Non-constant variance of the residuals-heteroskedasticity

The criterion for this test is to fail to reject the null hypothesis, which assumes that the residuals have constant variance (Garson, 2012).

Table 7: The Breusch-Pagan/Cook-Weisberg Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance of the residuals
Variables: fitted values of gdp
chi2(1) = 0.35
Prob > chi2 = 0.5542

Source: STATA Estimation (2025)

The Breusch-Pagan/Cook-Weisberg test was conducted to determine whether the residuals in the regression model exhibited constant variance, which is a key assumption in Ordinary Least Squares (OLS) estimation. The null hypothesis of the test assumes that the error terms have constant variance (homoskedasticity).

As shown in Table 7, the test results reveal a Chi-squared statistic of 0.35 and a corresponding p-value of 0.5542. Since the p-value is greater than the 5% level of significance, the null hypothesis cannot be rejected. This indicates that there is no evidence of heteroskedasticity in the model. Therefore, the assumption of constant variance is satisfied, and the model estimates can be considered reliable and efficient without the need to apply robust standard errors.

5. Conclusion and Policy Implications

5.1 Conclusion

This study examined the impact of the manufacturing sector on economic growth in Tanzania for the period 1990 to 2024. Time series data were applied to Autoregressive Distributed Lag (ARDL) model alongside Granger causality tests to explore the trends within the manufacturing sector and its contribution to economic growth in both the short and long run, and the causal relationship between manufacturing output and GDP growth. The findings revealed that Tanzania's manufacturing sector has experienced a gradual upward trend over the 35-year period, the sector had little improvements in the early 2000s and some growth after 2020. These trends reflect both progress and persistent challenges such as limited investment, poor infrastructure, and inadequate access to credit and technology. The ARDL model results showed that in the long run, the effect of manufacturing output was not statistically significant on economic growth in Tanzania. Which suggested that, over time, the sector did not contribute meaningfully to sustained economic expansion, possibly due to structural inefficiencies or underutilization of industrial capacity.

These findings are consistent with Shirima and Mlaki (2022), who noted that Tanzania's manufacturing sector has contributed positively to GDP despite facing challenges such as inadequate infrastructure and limited financing. Nchimbi and Mwakalinga (2021) have also highlighted similar concerns, emphasizing that poor infrastructure, limited credit access, and a shortage of skilled labor continue to undermine sector performance.

Overall, the trend analysis supports the view that the sector is growing but remains fragile and underutilized. These findings differ from Saidi et al. (2020) and Kwayu et al. (2018), who found a strong positive relationship between manufacturing output and GDP growth. The divergence may result from methodological differences or updated data reflecting recent policy or market conditions. The findings of this study underscore the importance of the manufacturing sector as a potential engine of economic growth in Tanzania. However, the sector's contribution remains limited, particularly in the long run, due to structural weaknesses and policy constraints. The study recommends that important policy measures be put in places in support of ongoing efforts to achieve sustainable economic growth.

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Journal of Economics & Development (JED), 1(3): 72-81, 2025. ISSN: 3057-3416, www.saut.ac.

Le développement de l'agriculture-Faire retourner la RDC sur la voix du progrès économique et social.

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Received November 28, 2025; Revised December 8, 2025; Accepted December 15, 2025

Cite This Paper as Follows:
Kongolo M.* & Katujudi J.M** (2025). Le développement de l'agriculture-Faire retourner la RDC sur la voix du progrès économique et social. *Journal of Economics & Development, 1(3): 72-81.*
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RESUME: *L'objet principal de cet article était de répresenter agriculture comme une importante source de croissance économique parmis toutes les sources de croissance éxistantes. L'article est basé sur les information secondaires et il est descriptive. Dans le temps, l'agriculture de subsistance représentait environ la moitié de la production nationale. L'agriculture commercialisée était intense et d'une grande extension au Congo (RDC). Le développement de la production agricole commercialisée était dû à l'action persuasive de l'administration coloniale mais aussi à la possibilité accrue, pour les milieux indigènes, d'échanger cette production contre des biens de consommation durables. Dès lors, agriculture commercialisée a totalement perdue son empleur, abandonée jusqu'à sa disparution. Sa disparution et celle del'agriculture de plantation est conditionnée par la disparution des réseaux de distribution de la production vers les regions, comme conséquence de l'insécurité et de la détérioration de l'infrastructure. L'importance relative de l'agriculture des plantations n'est pas à négliger. Son potential pour contribuer à la production agricole totale commercialisée est plus grand. Nouvelles stratégies pour augmenter la production agricole commercialisée et de subsistence ontpour but le la croissance économique du pays.*

ABSTRACT : *The main purpose of this paper was to demonstrate the importance of the agricultural sector as an important source of economic growth among all sources of growth that exist. The paper is based on secondary information collected from various sources, and it is descriptive. In the past, subsistence agriculture represented about half of the national production. Commercial agriculture was intense and it was cultivated in almost all parts of the Congo (DRC). The development of commercial agriculture depended on colonial administration's action following its importance. Also on increased possibility for rural people to exchange its production against durable consumption of goods and services. Since then, commercial agriculture has been in a total decline and it has lost its momentum, abandoned, and neglected till the point of being completely lost. The disparution of commercial agriculture and that of plantation has been conditioned by the disparution of the distribution channels of production to the regions of DRC, as a consequence of the insecurity and infrastructure deterioration. The relative importance of agriculture of plantations should not be undermined and neglected. Its potential to contribute to the total commercial agricultural production is very huge. New ways and strategies should be found in order to promote and increase both production of commercial and subsistence agriculture in the country.*

Mot Clefs: *Agriculture, stratégie, développement, progress, économique et social, RDC.*

JEL Classification: 010, 013, 04, Q01, Q13

1. INTRODUCTION

La République démocratique du Congo (RDC) also connue comme Congo-Kinshasa et Zaire, est un vaste pays au centre de l'Afrique, a une population d'environ 112 million d'habitants. Le nom du pays vient du Fleuve Congo (Congo river), qui coule à travers le pays. Par sa superficie, la RDC est numero deux grand pays

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en Afrique, apres Algérie, et le 11eme large pays au monde (Wikipedia, 2023). Avec un grand nombre d'habittants, la RDC est un pays populaire des pays qui constituent la Francophonie dans le monde. La Capital est Kinshasa, qui est aussi le centre économique. Le pays est entouré par le République Centre Africaine, le Soudan du Sud, l'Uganda, le Rwanda, le Burundi, la Tanzanie (à travers de Lake Tanganika), la Zambia, l'Angola, le Cabinda englve de l'Angola ainsi que l'Ocean Atlantiquedu Sud (Wikipedia, 2023). Il est un des pays les plus riches du monde en ressources, telles que ressources naturelles, avec des secteurs such as minier, agriculture, forestier et hydraulique qui offrent beaucoup et normes potentiels de croissance économique (Banque Mondiale, 2023). Les effets de la guerre de l'Est du pays continue à affecter negativement l'économie, détruisant les infrastructures ainsi que le system social du pays en tuant beaucoup des personnes (Jacquemot, 2017). Environ plus de six millions personnes ont trouvé la mort durant toute la période de la guerre (Reuters, 2008). Comme resultat, les indicateurs de la vie sociale et économique pour le développement humain et l'espérance de vie sont tous très fortement degradés à cause de l'incidence de la guerre (Alesina et al, 1992).

Il existe environ une cinquantaine minerais mise en évidence en RDC, mais seulement une dizaine est exploitée. Il s'agit du cuivre, du cobalt, du zinc, du diamant, de l'or, de l'étain, du niobium, du manganèse, du fer, du lithium et actuellement le coltan. Comme dans tous les cas, toute la production minière est exportée et elle constitue la principale source de devises du pays. L'appropriation de la richesse en minerais de la RDC est la cause qui constitue indiscutablement l'un des enjeux majeurs de la guerre, notamment dans l'Est du pays (Jackson et Médard, 2014). Elle est aussi l'objet d'une lutte acharnée à laquelle assistent et participentles pays voisins afin de contrôler la production, le commerce et obtenir des devises (Akitoby and Matthias, 2004; USAID, 2014). La contribution du secteur minier au PIB était d'environ 5.4 % en 2003 (USAID, 2014). Le pays a de l'immense potentiel de s'attaquer contre les causes profondes de l'extrême pauvreté ainsi que de la violence et trouble. Avec la bonne volonté et la bonne approache à la gestion, la RDC pourrait constituer une opportunité de progrès substantiels, non seulement dans le pays, mais aussi à travers les pays voisins (Jackson et Médard, 2014). Pour ce faire, les acteurs nationaux du développement doivent mettre en œuvre une stratégie coordonnée qui améliore la gouvernance politique, social et économique, tout en renforçant les capacités humaines et le bien-être de la population (USAID, 2014). Éradiquer l'extrême pauvreté et diminuer la fragilité du pays ne peuvent se faire sans qu'on aborde les questions de légitimité, des institutions faibles et corrompues et la dynamique de l'enracinement au pouvoir (Ragasa et al. 2012). Le renforcement de la capacité des institutions congolaises pour répondre de manière transparente aux besoins des citoyens est essentielement pour établir une légitimité. Les pauvres sont des ruraux qui, en cas d'exode, viennent ocupper les quartiers les plus regulés des villes (Ragasa et al. 2012). Dans l'ensemble, les agriculteurs est un groupe très important dans la lutte contre la pauvreté. Ils valorisent le secteur agricole pour répondre à l'exode rural et à l'urbanisation grandissante. L'agriculture est un enjeu stratégique pour la RDC (Badibanga & Ulimwengu 2013). Le pays doit revoir une fois de plus des institutions afin de les rendre capables et responsables de facon à renforcer la stabilité du sector agricle, d'attirer des investissements nécessaires pour sa croissance économicque (USAID, 2014).

1.1 Le probleme

Dans le temps, l'économie de la RDC (Congo) dépendait de l'étranger pour ses débouchés. Dans ce temps là, les exportations représentaient environ 45 % du PIB. La prédominance du secteur primaire, representait environ 50 % du PIB dans les structures de production qui se retrouvait dans la composition des exportations, comprennait environ 60 % de produits miniers et 40 % de produits de l'agriculture de plantation (Kongolo et Katujudi, 2022). L'infrastructure de transports était essentiellement orientée vers l'exportation de ces produits. Axée vers l'extérieur, l'économie du Congo accusait une grande sensibilité à l'évolution de la conjoncture mondiale (Réseau Circle, 2009), qui était cependant atténuée par la diversification des produits primaires exportés. Les mines ensemble avec l'agriculture de plantation représentaient environ 26 % du PIB, puisqu'ils etaient sous le contrôle de sociétés européennes, et leur production était de 85 % pour les mines et 50 % pour l'agriculture (Kongolo et Katujudi, 2022). Le potentiel agricole de la RDC était considerable, le pays a une superficie cultivable d'environ 75 millions d'hectares dont moins de 10 millions d'hectares sont exploités (Chausse et al. 2012). "Cette disponibilité foncière et les énormes ressources en eau dont dispose le pays avec le bassin hydrographique du fleuve Congo permettent d'entretenir l'espoir d'une meilleure autosuffisance alimentaire que les Congolais ont toujours réclamée avec insistence" (Lebailly et al, 2014). Ce potential fait de la RDC une proie particulière convoitée pour l'accaparement des terres et d'autant que le sous-

sol du pays qui possède d'importantes ressources minières (De Putter et Decrée 2013). Dans ce context, le secteur agricole du pays était considéré comme un moyen de développement susceptible de contribuer sa croissance. Avec enthousiasme des capitaux necessaire et les énergies ont été mobilisé, après c'était les despoirs comme rien n'evolueaint pas. Le pays n'était plus à mesure de valoriser son potentiel agricole étant des ressources naturelles importantes dont la population ne bénéficie pas (Dumoulin et al. 2001). Les problèmes causés par l'insecurité politiques ont été accentués par les mouvements de la population, qui ont causé la baisse de produits agricoles, la destruction des infrastructures de base, le non accès aux services sociaux comme la santé, l'eau et l'éléctricité. La grande majorité de la population rurale dans l'ensemble reste condamnée à l'agriculture de subsistance, caractérisée par une productivité extrêmement faible des coûts de commercialization (Peemans 2014).

Pour les consommateurs congolais, le manioc, le maïs, le riz et les haricots sont les principales cultures vivrières du pays. Le manioc et le maïs dominent dans l'alimentation des Congolais car elle sont les cultures vivrières cultivés dans toutes les régions du pays (Lebailly et al, 2014). Les autres comme blé, farine de blé, les produits carnés et les poissons jouent une grande importance dans la vie des Congolais. Malgré le potentiel agricole de la RDC, la majorité de la population vie dans l'insécurité alimentaire, avec la faim et la malnutrition (Chausse et al. 2012). La RDC est un pays doté d'énorme potentiel pour le développement de l'agriculture durable comprenant des millions d'hectares de terres cultivables, suite à sa diversité de climats, avec un important réseau hydrographique, ainsi qu'un énorme potentiel en matière de pêche et d'élevage. Etant donné toutes ces possibilités, le pays est classée parmi les pays à faible revenu et à déficit vivrier (PAM 2014). "Le développement de l'agriculture n'est pas seulement une question de ressources naturelles ou financières. Puisque le capital humain est très important, il sera mesuré par la capacité des hommes et des femmes capables de s'organiser, d'innover, et d'assumer des responsabilités afin de s'adapter.

La formation et le progrès technique qui en découle sont les meilleurs gages pour une stratégie de lutte contre la pauvreté" (Lebailly et al, 2014). Le sector agricole est un secteur intensif en main-d'œuvre. Les revenus qui en découlent peuvent être dépensés aux biens et services produits localement, car ils ont un effet multiplicateur important sur l'économie locale. L'augmentation de la productivité agricole a un effect important de réduire les prix des denrées alimentaires, par fournir ainsi des transferts invisibles dans l'ensemble de la population et aussi à d'autres secteurs de l'économie (Lebailly et al, 2014). La croissance des revenus ruraux a un effet de réduire non seulement la pauvreté rurale, mais aussi la pauvreté urbaine (Chausse et al. 2012). Ainsi, notre but dans cet article est de produire une évidence qui éclaire les manifestations les plus marquantes de développement de l'agriculture en RDC et d'en isoler les faits remarkables afin de montrer leur interaction. D'une facon generale, l'objet fundamental de cet article est de montrer que de toutes les sources de croissance existantes, agriculture a le plus grand potential de réduire la pauvreté, de réduire l'insecurité alimentaire, de créer l'emploi, et de promouvoir la croissance.

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1.2 La structure de l'économie de la RDC

Au niveau du marché des biens et services, il s'observe le regain de l'activité économique, lequel est resté principalement marqué par les performances enregistrées au niveau du secteur primaire (principalement l'extraction minière). Le secteur secondaire (manufacture, bâtiments, industrie alimentaire) s'est aussi montré résilient avec une contribution moyenne (OECD, 2005). Selon ***la*** RDC (2023(a), la structure de l'économie du pays est fortement concentrée sur les 5 branches d'activité suivantes : (i) l'extraction, (ii) l'agriculture, la forêt, l'élevage, la chasse et la pêche, (iii) l'industrie manufacturière, (iv) le commerce et (v) le transport et la communication (RDC, 2023(a). Pour renverser la tendance actuelle de la structure de l'économie Congolaise dominée par le secteur primaire, le Gouvernement à travers de la mise en œuvre du Plan National Stratégique de Développement se propose de mettre en place la stratégie de diversifier son économie en s'appuyant sur le développement des secteurs et filières qui suivent:

i. L'agriculture et la chaine agro-alimentaire ;
ii. La forêt et les industries de transformation et de commercialisation du bois ;
iii. Les mines ;
iv. Les bâtiments et matériaux de construction ;
v. Le tourisme et l'hôtellerie ; et
vi. Les services financiers (RDC, 2023(a).

Dans une perspective de développement équilibrée des régions, la stratégie de diversification se traduira à travers la création de Points Lumineux de Développement « PLD » qui contiennent des Parcs Agro - industriels et/ou des zones économiques spéciales (RDC, 2023(a). Compte tenu des atouts naturels du pays et de la localisation géographique des ressources naturelles, le Gouvernement envisage le développement de Pôle de Croissance qui sont en réalité les PLD, de vingt (20) parcs agro-industriels (USAID, 2014). Avec économie du pays restant très dépendante du secteur minier, soumis aux aléas des cours internationaux, est un Etat qui reste en situation de fragilité (OECD, 2005). Les perspectives de croissance restent toutefois plus favorables. La baisse des cours des matières premières a fortement fragilisé le cadre économique au point de nécessiter l'intervention d'urgence du FMI. La remontée rapide des cours internationaux courant a permis à l'économie de se contenir et d'afficher une légère croissance d'environ +1,7 % en 2022 (USAID, 2014).

2. Literature rélevante

Le valeur du secteur agricole dans les économies de plusiers pays n'a pas diminuer depuis deux siècles. Jusqu'à ces jours, l'agriculture représente environ plus de 23 % du PIB dans les pays à bas revenus, 10 % du PIB dans les pays intermédiaires et 2 % dans les pays à hauts revenus. En outre on note que la part des agriculteurs dans la population active dans les pays à bas revenus dépasse 30 % que dans les pays intermédiaires et dans les pays à hauts revenus (Berthelier et Lipchitz, 2005). Le mouvement d'ensemble est general et guidé au transfer des leurs ressources (en main-d'œuvre et en capital) vers l'industrie, puis le tertiaire, créant un cycle vertueux de croissance à être engendré. Ainsi, l'agriculture était considérée un élément majeur dans la modification et l'amélioration de la structuration des économies. Mais le rythme de ces changements structurels, et leur impact sur la croissance et le développement des économies semblent très variables selon les pays, et souvent très incertains, beaucoup plus que ce que la théorie standard permettait d'anticiper (Berthelier et Lipchitz, 2005). Selon (AEC, 2012), l'agriculture est un facteur essentiel de croissance économique. En 2018, elle représentait environ 4 % du produit intérieur brut (PIB) mondial et, dans certains pays en développement sa part dépassait environ 25 % du PIB. Les questions liées aux politiques de développement de secteur agricole, à la production d'aliments et de sécurité alimentaire sont généralement placées premieres sur la liste de priorités des regions. Puisque agriculture est un secteur important dans la croissance économique et sociale, non seleument en RDC mais aussi dans d'autres pays (AEC, 2012). La plupart des pays ont observé avec interet la diversification de l'économie qui s'est produite ces dernières décennies, l'émergence et la croissance d'autres secteurs tels que le tourisme et les services professionnels (AEC, 2012).

Dans le temps, l'économie Congolaise dépendait de l'étranger pour ses debouchés, les exportations représentaient en moyenne 45 % du P.I.B. La prédominance du secteur primaire representait dans les structures de production environ 50 % du P.I.B. et se retrouvait dans la composition des exportations qui comprenneaint environ 60 % de produits miniers et 40 % de produits agricoles et de l'agriculture de plantation (Lebailly et al, 2014). Dans l'ensemble les mines et l'agriculture de plantation représenteaint environ 26 % du P.I.B. Les deux secteurs étaient sous le contrôle de sociétés étrangères, et le contrôle était entre les mains de Union minière avec 85 % de la production minière et Unilever avec 50 % de la production agricole de plantation (Kongolo et Katujudi, 2022). Comme l'agriculture commercialisée était d'une grande extension pour atteindre les deux tiers du total de production, la production commercialisée comprenait des produits alimentaires vendus sur les marchés urbains, et aussi des produits exportés dont surtout le coton (Kongolo et Katujudi, 2022).

Mais la degradation était toujours plus sensible dans les domaines de la sécurité publique et des transports ou l'État n'a pu maintenir l'ordre; d'un côté la rébellion et de l'autre côté le banditisme ce sont développés tant dans les villes et dans des régions. L'infrastructure n'a plus été entretenue; le réseau routier était détruit à 80%. Le trafic intérieur ferroviaire et fluvial avez diminué à 70 % ,jusqu' à ces jours, constutuant un important obstacle pour le développement du pays (Lebailly et al, 2014). Cet obstacle est grandement due à l'insécurité dans des régions, ainsi qu'au départ des techniciens conscients et aux difficultés d'importation de pieces des rechanges. Selon les développements économiques des dernieres années, on a pu observé le manque d'une cohérence politique économique durant les années passées (Kongolo et Katujudi, 2022). La RDC dispose de 80 millions d'hectares de terres arables très riches, mais seulement environ 1 % de cettesuperficie est exploitée, suite à une dégradation des infrastructures, du manque de capitaux des exploitants et de l'absence de politiques d'appui des autorités (Lebailly et al, 2014). Sile secteur agricole contribue moins la moitié du PIB,c'est en raison de la forte baisse des productions manufacturière et minière durant les années de conflit, car en volume, la

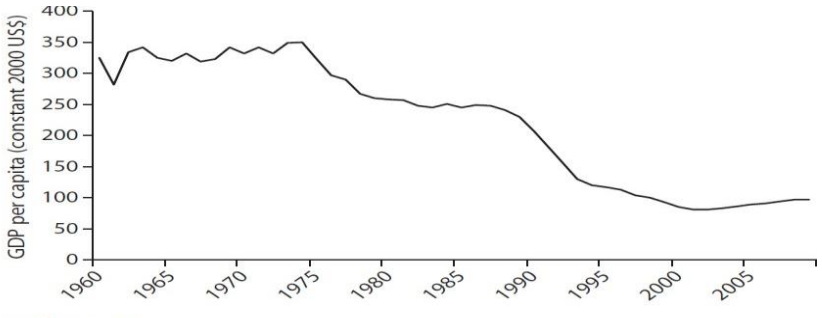
production des principales cultures (maïs, riz paddy, plantes sarclées, haricots, bananes plantains et fruits) a diminué. Les producteurs utilisent à nouveau les techniques traditionnelles de production, sans engrais, et emploient la main-d'œuvre familiale (Lebailly et al, 2014). Comme conséquence, la plupart des cultures traditionnelles, à l'exception du café et du bois, ont disparu de la liste des produits exportés, et la production vivrière ne couvre plus les besoins de la population. Malgré l'amélioration de l'approvisionnement et des liaisons entre Kinshasa et les lieux de production, la production agricole n'a que très légèrement augmenté depuis le retour de la paix (Lebailly et al, 2014).

Etant donnée sa position stratégique d'être située au centre d'Afrique et partageant ses frontières avec neuf pays Africain, la RDC a une importance géopolitique et le potentiel d'être l'un des meilleurs contributeurs africain à une telle renaissance économique (World Bank, 2010). Le pays est bien placé pour prendre la direction des efforts d'intégration économique régionale étant donné qu'il est le deuxième pays d'Afrique en superficie et le quatrième en population, aussi, il a des richesses naturelles incomparables. Le pays produit 50% de la production mondiale de cobalt, et dispose d'abondantes ressources en eau, suffisantes pour la consommation, l'agriculture et la protection de l'environnement, mais aussi peut alimenter toute l'Afrique. Il possède le deuxième potentiel en agriculture du continent, plus de 60 % du deuxième plus grand bassin forestier et de stock de carbone dans le monde, ainsi que des ressources halieutiques et d'élevage importantes (Stephen et Médard, 2014). En réalité, ce que la RDC possède, compte beaucoup pour le future de toute l'Afrique (USAID, 2014; Tilouine et al, 2017). La RDC est aussi dans l'intérêt de certains pays du monde de l'avoir devenir stable et prospère, capable d'aider l'Afrique à atteindre son potentiel économique, tandis que les autres aiment tout simplement piller en voler ses richesses et rendre ses habitants les plus pauvres au monde. Par consequent, étant donnée toutes ces richesses dont le pays dispose, la RDC est l'un des pays les plus pauvres du monde. En 2005, plus de 75 % des Congolais vivaient encore avec un dollar par jour et la majorité de population n'avaient pas accès à l'eau potable (OECD, 2006; World Bank, 2013).

3. Discussion

Dans le temps, l'économie du Congo dépendait de l'étranger pour ses debouchées, ainsi les exportations représentaient en moyenne 45 % du P.I.B. La prédominance du secteur primaire representait dans les structures de production environ 50 % du P.I.B. et se retrouvait dans la composition des exportations qui comprenneaint 60 % environ de produits miniers et 40 % de produits de l'agriculture de plantation (Burgess, 2010; Lebailly et al, 2014). Dans l'ensemble les mines et l'agriculture de plantation représenteaint environ 26 % du P.I.B. Les deux secteurs été sous le contrôle de sociétés étrangères. Leur contrôle était entre les mains de deux grandes sociétés, l'Union minière avec 85 % de la production minière et Unilever avec 50 % de la production agricole de plantation (Burgess, 2010; Kongolo et Katujudi, 2022). Comme l'agriculture commercialisée avez une grande extension pour atteindre les deux tiers du total de production, la production commercialisée comprenait des produits alimentaires vendus sur les marchés urbains, et aussi des produits exportés dont surtout le coton (Burgess, 2010). Le développement de la production agricole commercialisée était dû à l'action persuasive de l'administration coloniale mais aussi à la possibilité accrue, pour les milieux indigènes, d'échanger cette production pour consommation (Wikipedia, 2023). L'un des portraits les plus révélateurs des luttes économiques en RDC est le

Figure 1: L'un des portraits les plus révélateurs des luttes économiques en RDC



Source: World Bank 2010.

Source : World Bank, 2010 and USAID, 2014

La baisse est plus remarquable et parfois tragique. La figure montre que le Congolais moyen possède seulement un tiers de ce qu'il possèdait il y a environ 40 ans (USAID, 2014). Plus de 85 %t de la population continue de vivre dans une extrême pauvreté, environ 80 % des ménages vivent dans une incapacité à répondre aux besoins de base. Meme si les estimations de population varient, on peut dire qu'environ 50 million de personnes au pays vivent dans l'extrême pauvreté (USAID, 2014). Ce chiffre poura continuer à croitre de facon exponentielle alors que la croissance de la population s'accélèrera au cours des années (USAID, 2014). La dégradation était toujours plus sensible dans les domaines de la sécurité publique et des transports ou l'État n'a pas pu maintenir l'ordre; d'un côté la rébellion et de l'autre côté banditisme ce sont développé tant dans les villes que dans les régions. L'infrastructure n'a jamais été maintainue; le réseau routier était détruit à 80% (USAID, 2014). Le trafic intérieur ferroviaire et fluvial était non existant jusqu' à ces jours, constutuant un important obstacle pour le développement du pays (Reuters (2008).

Le programme relatif à la réhabilitation des infrastructures et des routes lancé sous le nom de "Programme multi-sectoriel d'urgence de reconstruction et de réhabilitation (PMURR)" est une bonne initiative. Le problème des infrastructures, notamment dansle domaine des transports, est devenu capital en RDC car il conditionne les possibilités du retour à une situation normale dans la distribution des produits agricoles et d'autres (RDC, 2023(b). Avec un réseau routier d'environ 57 700 km, le pays a environ 2 800 km seulement qui sont asphaltés, et les autres sont dans un état très mauvais et impraticable par manque d'entretien. De plus, le trafic fluvial sur fleuve Congo et ses affluentsétait presque inexistant pour plusières années à cause du risque de rançonnement des voyageurs et des marchandises (RDC, 2023(b). La non-existance de traffic fluvial sur le fleuve Congo avait coupé les liaisons de contact entre Kinshasa et les régions . Ces régions sontalors très importantes pour l'approvisionnement des produits vivriers à Kinshasa. A ceci s'ajoute la question des installations portuaires suffisantes qui n'existe pas en eaux profondes. Les régions de l'Est et le Sud du pays sont complètementenclavés, comme le trafic maritime se fait seleument par les ports de Dares-Salaam en Tanzanie et de Lobito en Angola (RDC, 2023(b). Il est très important pour que le programme vise à mettre en place de grands travaux dans les domaines des infrastructures du transport, de l'eau, de l'assainissement et de l'énergie électrique pour approvionner les milieux urbains (Kongolo et Katujudi, 2022).

L'évolution de l'agriculture en RDC est conditionnée par la disparition des réseaux de distribution vers les régions, conséquence elle-même de l'insécurité et de la détérioration de l'infrastructure. Les possibilités d'échange offertes aux populations de l'intérieur ont totallement diminuées, l'influence de l'administration privée de techniciens agricoles, s'est fait bien sentir. Ainsi il en résulta en 2002 une baisse de la production agricole commercialisée estimée à plus de 50 % en moyenne (Lebailly et al, 2014). Au contraire la production de l'agriculture de subsistance a augmenté, conte tenu de la disparition des réseaux de distribution, pour couvrir les besoins alimentaires des populations de l'intérieur. Une charactéristique de manifestation des symptômes d'une malnutrition au pays. Ainsi on peut conclure que une augmentation de la production de subsistence n'est pas sufusante pour couvrire les besoins alimentaire du pays. La diminution de l'importance de l'agriculture commercialisée a entraînée une baisse totale du niveau de vie des populations de l'intérieur (Lebailly et al, 2014). Ainsi, les plus jeunes et les plus aptes personnes commencerent à émigrer vers les grands centres, augmentant serieusement les nombres des populations. Une partie de ces migrants trouvent du travail soit dans des industries en développement, soit dans les services publics; une autre partie fait du commerce; mais nombreux sont ceux qui ne trouvent pas d'emploi.

Tous vivent généralement entassés dans des conditions de confort et d'hygiène déplorables. Coupés de leur milieu traditionnel et de leur système de valeur, ils n'ont plus de règles de vie (Kongolo et Katujudi, 2022). Les populations restées dans des régions sont de plus en plus isolées et rejetées vers l'agriculture de subsistance. Ceci accroît l'inertie du milieu rural en confirmant chez les habitants le bien-fondé de leur mode de vie, de production traditionnelles et la résistance qu'ils opposent à l'introduction de méthodes modernes (Kongolo et Katujudi, 2022). La disparition de formes d'organisation de la production telles que le paysannat (qui élevait la productivité) et les coopératives (qui favorisaient les contacts avec le secteur d'échange) sont des conséquences de cette attitude (Berthelier et Lipchitz, 2005). Il est toutesfois impossible de se laisser entendre que le secteur agricule décline rapidement dans la toute RDC et de ne rien faire pour remedier à la situation. Mais depuis peu, avec les préoccupations naissantes concernant la production alimentaire durable, la sécurite alimentaire et les

prix des aliments qui affectent de regions, on recommence à prôner et à promouvoir le développement orienté vers l'agriculture (AEC, 2012). Alors qu'on connaissait bien que le développement de l'agriculture était un élément essentiel de la croissance économique du pays. On reconnaît aussi que le développement du secteur agricole a un impact significatif et considérable sur la production alimentaire nationale, la sécurité alimentaire, la réduction de la dépendance à l'égard des exportations (importations) d'aliments ainsi pour le bien-être économique et social en general (AEC, 2012).

Le pays doit dans l'ensemble maintenir les niveaux de production dans l'agriculture et les mines. Sur base des statistiques du commerce extérieur l'on peut admettre que l'agriculture de plantation, après avoir connu un net fléchissement dans les années 2000 – 2010, n'a pas opérée un redressement necessaire en de 2010 - 2022 (Lanotte, 2010). L'agriculture de plantation a baissée dans des proportions beaucoup plus fortes que la production des commercialisées. L'importance relative de l'agriculture des plantations n'est pas à négliger, son potential pour augmenter la production totale des commercialisées est plus grand. Comme les importations excèdent les exportations la balance des payments de la RDC n'apparaît pas être équilibrée. Dans d'autres mots, la balance des payments est deficitaire (Mukoko, 2003). L'ajustement du déficit nécéssite que les exportations excèdent les importations (Berthelemy et al, 1996). La baisse générale de la production agricole ainsi que celle des autres secteurs, entraîne celle des exportations, résultant ainsi à un déséquilibre dans lebalance des payments. Dans cette situation, la demande des produits importés augmentera souvent ainsi que les dépenses relatives aux importations. Dans d'autres mots, la baisse de la production agricole commercialisée entraîne un accroissement des importations alimentaires destinées à subvenir aux besoins des Congolais. A savoir, le caractère artificiel du déséquilibre dans le balance des payments apparaît dans l'évolution du cours de change du franc congolais au marché de change monétaire (Berthelemy et al, 1996).

La Théorie du Surplus définie te réservoir de main-oeuvre agricole comme carburant de la croissance économique**.** Selon Berthelier et Lipchitz (2005) cette théorie se fonde sur les travaux d'Arthur Lewis (1954), inspiré par l'éconoumie politique classique. La théorie explique que "à long terme, l'accumulation de capital dépend de la part du profit par rapport au salaire et à la rente foncière. Quand cette part augmente, l'accumulation s'accélère et le pays se développe." Lewis a proposé une thèse dans laquelle la mise au travail de l'excédent de main-d'œuvre agricole permet d'engendrer des profits croissants (Berthelier et Lipchitz, 2005). "Un secteur agricole traditionnel de subsistance disposant d'un excédent structurel de main-d'œuvre coexiste avec un secteur moderne capitaliste en gestation." La productivité marginale du travail est nulle dans le secteur agricole: mais sa production ne se réduit pas quand on lui soustrait la force de travail en excédent". L'excédent potentiel de main-d'œuvre résulte de l'effet combiné de la croissance démographique, du progrès technique dans le secteur agricole et de l'extension des droits de propriété, et il doit être impérativement libéré afin d'asseoir les bases de 'industrialisation (Berthelier et Lipchitz, 2005).

Les modalités de transfert du surplus vers l'industrie s'explique par la transition agricole qui s'appuie sur des facteurs structurels affectant la demande. "L'amélioration de la productivité agricole permet une baisse des coûts de production agricoles, qui se traduit par une baisse des prix relatifs agricoles" (Berthelier et Lipchitz, 2005). En effet, selon la loi d'Engel, quand "l'élasticité-revenu de la demande de produits alimentaires est inférieure à 1, l'amélioration de productivité dans l'agriculture profite à l'industrie. La baisse des prix agricoles n'est pas intégralement absorbée par une augmentation équivalente de la demande en produits agricoles, qui se reporte sur les produits industriels (Berthelier et Lipchitz, 2005). Une augmentation des revenus se traduit alors par une augmentation de la demande des produits industriels et des services et une diminution des prix relatifs des biens alimentaires". "Cela facilite beaucoup le transfert de la main-d'œuvre agricole excédentaire vers le secteur industriel, dans lequel la productivité marginale de la main-d'œuvre est positive" (Berthelier et Lipchitz, 2005).

La théorie de Arthur Lewis W. sur le développement économique est basée sur un pilier fundamental qui dit que "l'importance de la production des produits agricoles est pour soutenir la croissance économique (AEC, 2012). Pour Lewis, le développement de l'agriculture est fondamentalement un composant de la croissance économique et social. Dans son travail intitulé "*Repenser l'agriculture : le défi de la Caraïbe)"* , il montre que "toutes les forces qui sont en train de remodeler l'agriculture et la dépendance continue à l'égard

des importations d'aliments, font qu'il est absolument indispensable de reconcevoir les approches du développement agricole (Levitt , 2023). Dans le cas du Congo, on est amené à se demander : "Quelles stratégies peuvent être efficacement utilisées pour produire les revenus et gains provenant de l'agriculture qui nous font cruellement défaut?". Les stratégies de éveloppement de l'agriculture ne sont pas une nouveauté. Il existe un certain nombre de stratégies en faveur de la promotion et de la croissance de ce secteur. Le défi auquel se heurtent les décideurs est de concevoir de nouvelles stratégies de développement de l'agriculture pour améliorer la productivité agricole, relancer la production alimentaire nationale et renforcer le bien-être économique national (Levitt , 2023). La croissance économique est assez fortement liée au rythme de la transition agricole, et donc aux politiques agricoles (Berthelier et Lipchitz, 2005)

Il exist des liens actifs, "en amont et en aval", entre l'agriculture et les autres industries aussi bien que les rapports étroits entre l'agriculture, le commerce, la croissance économique et développement. La croissance du secteur agricole peut donc contribuer efficasement au développement de l'industrie agro-alimentaire en RDC, ouvrir ainsi de nouvelles voies à l'innovation, fournir des moteurs de croissance alternatifs, encourager la production locale et offrir des possibilités d'exportations et substitutions des importations (AEC, 2012). Les politiques devraient donc envisager des actions destinées à exploiter l'avantage concurrentiel du pays, en particulier la richesse de ses ressources naturelles, à attirer plus d'investissements et à accroître la production alimentaire dans des regions, pour ainsi avoir la sécurité alimentaire dans tout le pays. Il faudrait aussi exiger des proximités plus intégrées et complètes dans les quelles la politique commerciale jouerai un rôle central en liaison avec d'autre politiques sectorielles, nationales et regionals (AEC, 2012).

Compte tenu de l'importance économique et sociale de l'agriculture, tous les plans, stratégies ainsi toutes les autres initiatives de développement de l'agriculture devront être mis en œuvre aux niveaux national et regional. Selon les exigences de la coopération et de concertation, la RDC supporteras et soutiendras le développement des initiatives agricoles qui en premier lieu cherchent à améliorer la situation économique et sociale des régions et du pays en general, sur base des produits vivriers locaux: le manioc, le mais, les haricots, le riz, tomates, oinions ainsi que d'autres (DRC, 2007; AEC, 2012). Ces produits occupent une place de choix parmi les principaux produits cultivés et consommés dans le pays. Ils sont une source importante d'énergie, riche en vitamins et en minéraux, et d'un bon marché. Etant donné que le pays est actuellement confrontés au problème de la réduction des volumes de produits alimentaires importés pour répondre aux demandes croissantes de la population et des secteurs industriels, augmentation dans la production de ces produits diminuera les volumes des importations alimentaires (DRC, 2007). Comme consequence, la balance des payments regagneras sa position d'equilibre avec une augmentation des exportations. Tout ceci a pour objet d'influencer la conception et l'application de politiques de développement agricole visant à encourager la production locale d'aliments be base largement consommés par la population. Les retombées de ces initiatives auront une portée nationale et elles offriront en outre la possibilité de remonter la productivité, renforcer le commerce régional grâce aux échanges de produits agricoles, aux liens sectoriels et au développement de l'industrie agro-alimentaire.

L'agriculture est très importante pour le bien-être économique et social de la RDC (DRC, 2007), ainsi, il ne faut pas qu'on laisse sa production décliner. Une bonne stratégie serai de concevoir, de mettre en œuvre et de soutenir les initiatives et les politiques agricoles associées aux politiques de développement national, ensemble avec les politiques commerciales pour améliorer et renforcer la croissance économique et le bien-être de nos nations (AEC, 2012). Le taux de participation de main-d'oeuvre féminine en DRC est estimée à 62% environ dans l'agriculture. Etant donner un nivau de participation dans l'agricuture si élevé, les femmes gagnent considerablement moins par rapport aux hommes et possessent aussi moins des actifs (Halonen, 2023). En 2021, le Report de Diagnostic de Genre en RDC avez identifié les factors suivants comme importants contributeurs à la persistance et importance écart entre les sexes au pays, à savoir: le control de la terre, voix et agence, risque et incertain et vulnerabilité (OECD, 2006). La femme Congolese est exposée aux barriers significants aux opportunités économiques et d'autonomisation, et d'un taux élevé de la violence sexiste ainsi que à la discrimination (USAID (2014). Selon Halonen (2023), les femmes jouent un rôle vital dans la santé des terres. De leurs mains, elles ont façonné et entretenu la vie sur notre planète. Pourtant, leur contribution est souvent peu rémunérée, et elles n'ont généralement pas accès à la terre et ont rarement le contrôle de celle qu'elles cultivent.

Dans le monde entier, les terres se dégradent quotidiennement par l'effet conjugué de la sécheresse et de la désertification, mettant en péril la production alimentaire et la vie de ceux qui en vivent (Halonen, 2023). Les pratiques agricoles non durables érodent les sols à une vitesse 100 fois supérieure à celle qu'il leur faut pour se régénérer naturellement, et jusqu' à 40 % des terres de notre planète sont désormais dégradées. Ces conditions représentent un immense défi et, pourtant, nous connaissons déjà l'une des solutions cruciales: "les femmes". **Faire progresser les droits fonciers des femmes est un effort commun (Haslonen , 2023)**

4. Conclusion

La transition agricole permettant d'accroître la productivité totale de l'économie est un élément essentiel de la croissance à soutenir. Le développement économique et social de la RDC pourait donc nécessairement être guidé par l'essor du secteur agricole (AEC, 2012). L'amelioration de la productivité dans ce secteur amenera à un changement profound et favorable dans les conditions de vie au pays (DRC, 2011). Cette dernière pourra se réaliser dans les mêmes conditions que celles observée dans les pays avancés. Avec une croissance agricole d'environ 30 % au moins, le pays poura atteindre un certain niveau de croissance. Il est vraiment impossible pour qu'un pays puisse accroître économiquement et socialement sans pour autant faire face à une transition agricole (Halonen, 2023). La croissance économique dépends toujous du secteur agricole, mais ce dernier doit aussi être accompagné d'un accroissement dans d'autres secteurs, pour contenir les sorties des populations du secteur agricole. Sans cela, le processus de transition sera bloqué (World Bank, 2012). L'augmentation des produits agricoles augmentera les conditions de vie des paysants par augmenter leur revenues et la création d'emploi, et réglera le problème du développement des secteurs d'activités accueillant la main-d'œuvre libérée dans d'autres secteurs (Berthelier et Lipchitz, 2005). La transition agricole est souvent lié à l'importance du surplus de main-d'œuvre agricole, qui s'explique en terme de la dynamique de l'investissement ou accumulation de capital dans l'économie et par la politique agricole de l'État Congolais (Andrews, 2013). Il est vraiment tres important de dynamiser le secteur agricole pour offrir à la population agricole active la possibilité de s'orienter vers d'autres secteurs rémunérateurs (Berthélemy et al', 1996). La croissance du secteur agricole peut donc contribuer efficasement au développement de l'industrie agro-alimentaire en RDC, ouvrir ainsi de nouvelles voies à l'innovation, fournir des moteurs de croissance alternatifs, encourager la production locale et offrir des possibilités d'exportations et substitutions des importations (AEC, 2012). Les politiques devraient donc envisager des actions destinées à exploiter l'avantage concurrentiel du pays, en particulier la richesse de ses ressources naturelles, à attirer plus d'investissements et à accroître la production agricole dans des regions, pour ainsi avoir la sécurité alimentaire dans tout le pays (Akitoby and Matthias, 2004).

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