



# FINANCIAL SERVICES AND ECONOMIC GROWTH IN TANZANIA: ORDINARY LEAST SQUARE APPROACH

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**Abstract:** Purpose – The purpose of this study is to empirically study the relationship between financial services and economic growth, and contribute to the already available literature on the relationship of financial services or sectors to economic growth

**Design/methodology/approach** – The study used the Ordinary least square regression approach. The sample covered yearly time-series data from 1990 to 2022, i.e. 32 years. **Findings** – The results suggest that financial services related to economic growth were as Liquid liability as % of GDP and the commercial bank branch as per 100,000 positively correlated to the economic growth and investment and saving and capital formation negatively correlated to economic growth, given the financial liberation and reforms the country is currently enjoying, the country has not fully brought the desired positive effects on economic growth.

**Index Terms** – Economic growth, financial services, OLS Regression, Financial liberalization.

## I. INTRODUCTION

According to the **World Bank Report (2016)**, nations with more advanced financial systems typically experience quicker economic growth in a short time; financial development is a byproduct of economic expansion and a driving force behind it. Over the years, since the era of colonial authority to date in Tanzania, the financial system has undergone substantial modifications.

In 1905, the Deutsche Ostafrikanische Bank was established in Tanganyika by the German colonial authorities following Tanganyika's admission as a German colony, as Faustine K. Bee (2009) reported. The Tanganyika Commercial Bank opened to facilitate the commercialisation of the region's economy after Germany was defeated by Britain in the 1920s, displacing the Deutsche Ostafrikanische Bank.

Independence spurred the need for economic system reform. The socialist economic system, which the government promoted, was characterised by state control over the economy and all other significant means of production inside the nation. First National Bank of Tanzania, National Bank of Commerce (NBC), which subsequently became Tanzania's central bank, and Cooperative Rural Development Bank (CRDB) were established as a result of the government implementing the policy of development by providing concessional loans for agricultural enterprises. However, this development policy failed, it benefited a minuscule portion of Tanzania (**Yaron & McDonald Benjamin 1997**).

Failure of these policies leads to the development of financial liberalization policies in many developing countries including Tanzania. The financial sector's liberalisation made it easier for private financial institutions to participate, for public financial institutions to be re-structured and privatised, for interest rate regulations to be removed, and for credit to be allocated and targeted. Furthermore, the Bank of Tanzania was given more authority to oversee and control financial organisations. Commercial banks, development banks, insurance and social security funds, and capital markets were among the many diverse financial service providers that emerged after the financial sector was privatised. In terms of supervision, regulation, and price

stability, the central bank's role has been strengthened and redefined (**Faustine Bee, 2004; Robinson et al., 2011**).

Tanzania has seen the emergence of numerous financial markets as a result of financial liberalisation, including capital markets, money markets, foreign currency markets, and collective investment schemes. The rise of Tanzania's financial markets supports the country's economic expansion, increased foreign trade, competitive banking industry, and expansion of credit options—all of which support an expanding and productive economy.

As technology has advanced, we have seen the introduction of mobile money services that expand access to financial services. In Tanzania among other countries in Africa, mobile money services are widely utilised.

**Tavneet Suri & William Jack (2014)** and Finance for Development (2018) state that Mpesa services raised the per capita consumption level and pulled 194,000 Kenyans out of poverty, or 2% of the country's total population. These days, mobile money offers services including savings accounts, short-term loans, and other options that are also available through commercial banks. Many financial institutions have expanded their bank branches into interior rural areas following the government's policy for reducing poverty. The NBC Bank has expanded its cross-country branches, opening 47 branches and 9,254 banking agencies also (NBC,2022) CRDB Bank's annual report for 2022 listed 28,241 banking agencies and 75 branches (CRDB 2022) and 19,870 agencies and 227 branches For NMB for the year 2022, the majority of which were situated in rural areas. (NMB,2022)

This study is motivated by the arguments raised by **Demirgüç-Kunt & Levine, 2008** that financial services help to make sure that money goes to the best places where it can be used most effectively. This function is very important for helping people start their businesses and come up with new ideas, which are very important for making the economy grow. Additionally, businesses can grow and create more jobs by using credit and other financial options to increase their operations and production. This helps the economy to grow. For example, small and medium-sized businesses, which are important for the economy, need access to money services to grow and help the economy. Real-life proof shows how financial growth is connected to making the economy bigger. For instance, **Beck, Levine, and Loayza (2000)** discovered that when financial companies grow, the economy also grows in many different countries. Their study shows that countries with well-established financial systems tend to have faster economic growth over long periods of time.

## 2. LITERATURE REVIEW

### 2.1. Financial services

In his work, **Levin (1997)** concluded that the choice is neither bank nor financial market, they both provide complementary services with positive implications for the economy. The relationship between financial services and economic growth has been the subject of extensive academic research. Financial services, such as banking, investment, and insurance, play a crucial role in the economic development of a country by facilitating the allocation of resources, encouraging investment, and fostering an environment conducive to economic activity. In empirical literature studies addressing the relationship between financial services and economic growth, the studies are grouped into two prepositions, The first proposition includes the studies that support that the financial services development proceedings the economic growth and studies that suggest that it the economic growth proceeding the financial services development.

**King and Levine (1993)** contend that financial development promotes economic growth through improved risk management, more technical innovation, and better resource allocation. They highlight how financial institutions promote capital formation and boost capital utilisation efficiency, which eventually boosts economic growth. Also, **Levine (1997)** also offers an extensive analysis of the literature as well, demonstrating that efficient financial systems promote economic growth by channelling funds from savers to entrepreneurs and investors. This process leads to more significant investment in productive activities and innovations, which are essential for sustainable economic growth. more example, research by **Levine (2023)** shows that nations with more advanced financial systems expand economically more quickly because they can more easily get money for both consumers and enterprises. Moreover, the research conducted by **Demirgüç-Kunt et al. (2022)** emphasises that the establishment of strong financial services facilitates financial inclusion, which in turn promotes increased economic growth and participation. Furthermore, **Sahay et al. (2021)** offer actual data demonstrating how developments in financial technology (FinTech) have expanded the accessibility and efficiency of financial services, thereby expediting economic growth. These developments have made it easier for small and medium-sized businesses (SMEs) to obtain finance, which has aided in the growth of the economy. Finally, Beck, Demirgüç-Kunt, and Levine's thorough analysis (2020) underscore the importance of financial stability and regulatory frameworks in sustaining economic growth. Their findings suggest that sound

financial services, supported by appropriate regulatory measures, can mitigate risks and promote sustained economic development

In addressing the second proposition that economic development or economic growth proceeds the financial development, **(King & Levine, 1993)** Studies have indicated a strong correlation between financial development and economic growth. The studies indicate that the resources required for financial institutions to grow and enhance their services can be obtained through economic expansion. The demand for financial services and products rises with economic growth, propelling the expansion of financial markets and institutions Furthermore, economic expansion frequently results in higher income levels, which can improve investments and savings and support the banking industry (Levine, 1997) also according to **Greenwood and Jovanovic (2015)** show that there is a positive two-way causal relationship between economic growth and financial market. On one hand, the growth process stimulates higher participation in financial markets thereby facilitating the creation and expansion of financial institutions. On the other hand, by collecting and analysing information from many potential investors, financial institutions allow investment projects to be undertaken more efficiently and, hence, stimulate investment and growth.

### 2.1.1. Savings and Investment as the Financial Services Indicators

Saving is the part or a portion of income accumulated for future uses or investments. According to Smith J (2020), Savings contribute to the pool of funds available for investment in various sectors, spurring economic growth and development. According to the assumption laid down by **Harrod Domar's model**, people should save to invest, with increases in investment, Savings rates provide insights into the economic stability of a population. Higher savings indicates confidence in the economy and a buffer against financial uncertainty in Tanzania, from the country data, The average increase of national savings as % a of GDP from 1990 to 1995 was 7.69 % in 1995 to 2000 an increase of 14.55% and from 2001 to 2005 an increase of 22.51% and 2006 to 2010 an increase of 25.49% and 2011 to 2015 an increase of 25.56% and from 2016 to 2020 an increase of 31% (Also illustrated in figure 4 below). The basic assumption is that saving contributes to capital formation, comparing capital formation with saving. considering the previous data there was a decline in capital formation from the period 1990 to 1995 by 14.97% and in 1996 to 2000 an increase in capital formation by 24.74% in the years 2001 to 2005 the increase of capital formation from 28.01% and the increase of 28.01% and an increase of 65.22% for the period of 2006 to 2010 and an increase of 53.23% for the period 2011 to 2015 and an increase of 39.14% for the period of 2016 to 2020. also, the (Illustrated in figure 5 below)

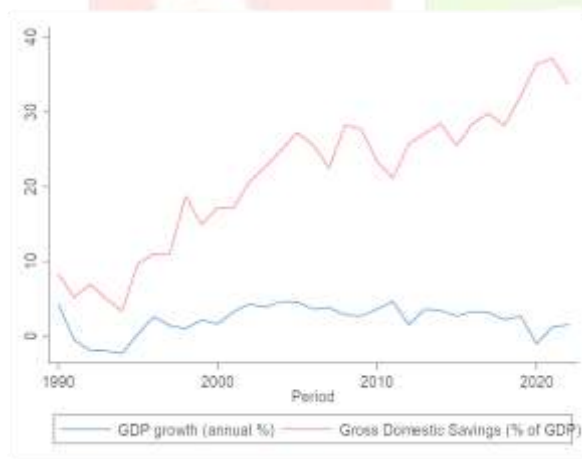


Figure 4: GDP Growth and GDSD

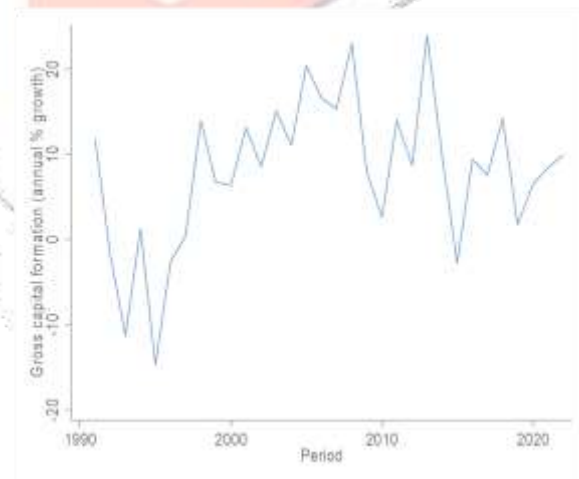


Figure 5: GCFA Growth Vs Period

The figure above indicates that gross capital formation has been higher than the levels of savings in most cases. This indicates the contributions of foreign capital in augmenting local savings and thus, placing capital formation higher than gross domestic savings in Tanzania. However, the Gross Capital Formation (GCF) trend line declined during the 1990s. Gross domestic savings have been relatively stable with no significant improvement. GDP growth rates have fluctuated from negative to positive territories, with These trend lines showing no positive correlation; however, an empirical analysis is needed to examine the actual relationship between them.

## 2.2. Economic growth

The economic system of Tanzania has undergone substantial changes since the year 1961, in 1967 The country decided to undertake the socialization or ujamaa form of the economic system, the system is modelled from the Chinese system. With Ujamaa economic system state control is the major means of production.

According to Nord et al, 2009 Cited by **Saganga M (2019)** Tanzania during the period of the socialist economy experienced poor economic performance, a lack of goods and an inflationary economy

There were major economic issues during the 1970s. The 1973 oil crisis and the ensuing worldwide economic slump made the nation's financial problems worse. The Uganda-Tanzania War (1978–1979) also made Tanzania's economy more vulnerable. Severe economic stagnation resulted by the late 1970s from both external economic constraints and socialist model inefficiencies (**Widner, 1992**). Tanzania started to change its policy in the 1980s in response to harsh economic realities. Tanzania started structural adjustment programmes (SAPs) in response to pressure from foreign institutions including the World Bank and the Foreign Monetary Fund (IMF). These changes were intended to promote the expansion of the private sector, lessen governmental intervention in the economy, and liberalise it. Although some economic recovery was brought about by these methods, social discontent and inequality also rose (**Lofchie, 2014**).

Tanzania's economy became stronger throughout the 2000s thanks to many sectoral reforms. Through investments in mining, natural gas, tourism, and agriculture, the nation diversified its economy. The finding and use of natural resources, including gold and gas, have a big impact on economic expansion. during this time, the GDP grew at an average yearly rate of about 6-7% (**IMF, 2013**). Tanzania concentrated on industrialization and infrastructural development as the 2010s approached. To assist the expanding economy, significant infrastructure projects were built, such as energy facilities, railroads, and highways. Efforts to increase agricultural production and agribusiness included the Southern Agricultural Growth Corridor of Tanzania (SAGCOT). In addition, Tanzania's government's Vision 2025 sought to promote industry in order to make the country a middle-income nation (**World Bank, 2016**).

The years 2020–2023 have brought with them both chances and difficulties. Tanzania was not an exception to the devastating effects of the COVID-19 Pandemic on the world economy. Nonetheless, several economic downturns were lessened by the nation's strong industries, such as agriculture, and comparatively young population. Tanzania continues to prioritise sustainable economic growth in 2023 by fostering digital innovation, strengthening trade links both regionally and internationally, and boosting education (African Development Bank, 2023).

To the best of this review's ability and in light of Tanzania's financial liberalisation and reforms, not much is currently known in Tanzania regarding how financial services development affects economic growth.

## 3. METHODOLOGY

### 3.1 Data and variables

Data for this study came from the World Bank Indicators Databank, IMF, the analysis covers 33 years (1990–2023). The analysis was performed by STATA-SE 12. Economic growth is the dependent variable which is measured as GDP growth percentage. Because of limitations of data, only six financial services indicators are used, such indicators include the ratio of Deposited money bank assets as % of GDP (DMBAG) to provide insights into the accessibility and utilization of banking services, Gross Domestic Saving as per cent of GDP (GDSG); Gross capital formation as a percentage of GDP (GCFA); Liquid Liability as % of GDP (LLG), Total Investment as % of GDP (TINVEG) and Commercial Bank Branch as per 100,000 adults (CBB). Another variable that may affect economic growth and is often included as a control variable is the inflation rate, with higher inflation economic growth is expected to have a negative effect, the interest rate, the increase in the interest on borrowing debts, the increase in the total debt and in the long run debt does affect the economic growth, population size, unemployment rate and education level.

### 3.2. Model Specification

in this study, the regression method has been used to test the relationship between financial services and economic growth, all the independent variables are assumed to have equal importance. This study uses the linear regression method by taking the Gross Domestic Saving (GDSG), Gross Capital Formation (GCFA), and Commercial Bank Branches per 100,000 adults (CBB), Total investment as % of GDP (TINVEG) into consideration to make a comprehensive analysis to test the hypothesis also, the control variables were used to address factors such as inflation rate, population growth unemployment, etc. Beta ( $\beta_0$ ) is the intercept, and  $\beta_1$  to  $\beta_n$  are the coefficients for each independent variable and  $\varepsilon$  var epsilon is the error term.

Hence the linear regression equation expression is shown as

$$\text{LnGDPG} = \beta_0 + \beta_1 \text{LnGDSG} + \beta_2 \text{LnGCFA} + \beta_3 \text{LnCBB} + \beta_4 \text{LnTINVEG} + \beta_5 \text{LnLLG} + \beta_6 \text{LnDMBAG} + \beta_7 (\text{Controls}) + \varepsilon$$

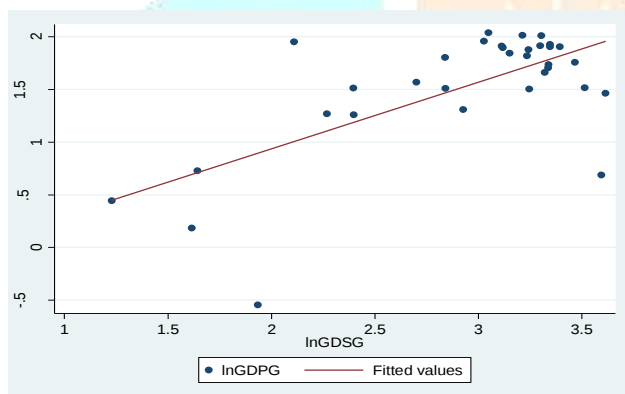
Whereas GDPG(Gross Domestic Product) dependent variable, is the measure of economic growth, Gross Domestic Saving as % of GDP (GDSG) indicates the ratio of a country's savings (how much it doesn't spend) compared to its gross domestic product, this variable capture all the information about saving, following the Harrod dormer model savings creates investment which as far as economic growth is concerns is a very important indicator, Gross Capital Formation as % of GDP (GCFA) which indicates the percentage of GDP spent on additions to fixed assets and net changes in the capital; the variable used to determine the economic growth as the increases in the fixed assets signifies the increase in the investment and ultimately impact the economic growth, Commercial Bank Branches per 100,000adults(CBB) the indicators was used to assess the financial inclusivity and accessibility, hence is the Total annual investment as % of GDP was also used to measure the economic growth.

### 3.3 Assumptions

#### 3.3.1. Linearity

The relationship between the independent variables (financial services) and the dependent variable (economic growth) is linear. A test of residual scatterplots was employed to test the assumption of linearity as suggested by Smith. J (2020), dependent variable (GDPG) and independent variable (GDSG) were used. The result of the assumption in the graphical presentation indicates the assumption of linearity between the stated variable is met. The linearity assumption is very important to be checked since violating this assumption will lead to biased estimates of the coefficient of linear regression.

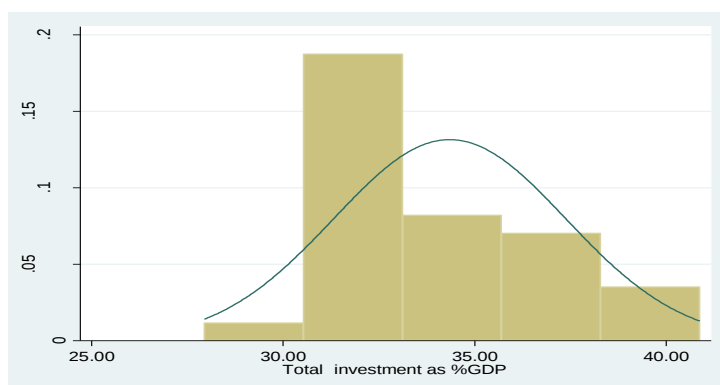
**Figure 1: The scatter plot for linearity**



#### 3.3.2 Normality

The next assumption to be checked is the assumption of normality of the error term, the data are assumed to follow a normal distribution, meaning symmetrically distributed around the mean According to Johnson (2019) The evaluation of linearity can be performed using a histogram plot of the residuals, Q-Q plots, or statistical tests such as the Shapiro-Wilk test or the Kolmogorov-Smirnov tests, the implication of non-normality can residually affect the validity of hypothesis tests and confidence intervals.

**Figure 2: Histogram Normality test**



Given data according to the histogram shown above the data exhibits normal distribution with a very slight positive skew.

**Table 1: Data Skewness and Kurtosis tests**

|     | Percentiles | Smallest   |            |           |
|-----|-------------|------------|------------|-----------|
| 1%  | -0.5447271  | -0.5447271 |            |           |
| 5%  | 0.1823216   | 0.1823216  |            |           |
| 10% | 0.6881346   | 0.4446858  | Obs        | 33        |
| 25% | 1.463255    | 0.6881346  | Sum of Wgt | 33        |
| 50% | 1.736951    |            | Mean       | 1.516462  |
|     |             | Largest    | Std.Dev    | 0.5946353 |
| 75% | 1.906575    | 1.958685   |            |           |
| 90% | 1.958685    | 2.010895   | Variance   | 0.3535912 |
| 95% | 2.014903    | 2.014903   | Skewness   | -1.867716 |
| 99% | 2.037317    | 2.037317   | Kurtosis   | 6.152697  |

| Skewness/Kurtosis Tests for Normality |     |                 |               |          |           |
|---------------------------------------|-----|-----------------|---------------|----------|-----------|
|                                       |     | -----Joint----- |               |          |           |
| Variable                              | Obs | Pr (Skewness)   | Pr (Kurtosis) | Adj Chi2 | Prob>Chi2 |
| GDP                                   | 33  | 0.0001          | 0.0052        | 16.98    | 0.0002    |

Also, further investigation on the skewness of data shows a skewness value of 0.0001 which is very close to 0, suggesting that the distribution is nearly symmetric. There is a very slight positive skew, almost negligible which shows no impact in a real-world situation, in light of this test the data can be processed using linear regression.

### 3.3.3 Homoscedasticity

This is the assumption that the variance of residual is constant across all levels of independent variables. Homoscedasticity is important because it affects the validity of statistical tests and the reliability of standard error estimates (Gujarati & Porter, 2009). Violating this assumption leads to a condition known as heteroscedasticity, heteroscedasticity can result in inefficient estimates and biased standard errors, leading to invalid conclusions (Wooldridge, 2013). Common methods for detecting heteroscedasticity include the Breusch-Pagan test and visual inspections of residual plots (Breusch & Pagan, 1979). By plotting the standardized residual against the predicted value as shown below.

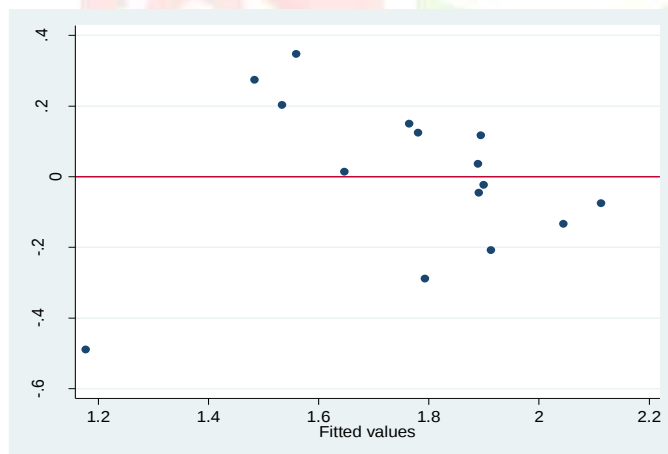
**Figure 2: Scatter – diagram -Homoscedasticity**

Figure 2 above indicates there is a chance for heteroskedastic which means the variance of an error term is not constant across all variables, the circumstance may impact the OLS model used, in the correction of the effect of heteroscedasticity a robust standard error was established, the use of robust standard error increases the p-value of the variable to more than 5% which signifies rejection of the null hypothesis.

### 3.3.4 Multicollinearity

The statistical phenomenon known as multi-collinearity occurs when two or more explanatory variables in a multiple regression model have a high degree of correlation, which allows one to be predicted linearly from the others with a non-trivial degree of accuracy. In this case, even slight modifications to the model or the data may cause the coefficient estimates to fluctuate unpredictably. Removing a variable is one way to address multicollinearity. It is possible to create a model with significant coefficients by removing an explanatory

variable. When a significant variable is left out, the coefficient estimates for the remaining explanatory variables become skewed. Multicollinearity has been examined between independent variables using VIF(Variance inflation factor) as shown in Table 2

**Table 2: VIF of Variable and Tolerance Value**

| Variables | Collinearity assumptions |                      |
|-----------|--------------------------|----------------------|
|           | VIF                      | 1/VIF<br>(Tolerance) |
| LnDMBAG   | 17.20                    | 0.058145             |
| LnLLG     | 12.59                    | 0.079431             |
| LnCBB     | 7.84                     | 0.127485             |
| LnGDSG    | 7.21                     | 0.138690             |
| LnUNEMP   | 6.72                     | 0.148871             |
| LnGCFA    | 5.23                     | 0.191235             |
| LnTINVEG  | 3.58                     | 0.279153             |
| INFLA     | 3.09                     | 0.323260             |
| Mean VIF  | 7.93                     |                      |

The result in Table 1 indicates that multicollinearity does not exist among all independent variables because the tolerance values are more than 0.10 and the VIF values are less than 10. The results suggest that the current study does not have any problem with the multicollinearity and this allows for standard interpretation of the regression coefficient

## 4.0 DISCUSSION AND FINDINGS

### 4.1. Correlation Matrix.

**Table 3: Correlation Matrix of dependent variable and independent variable**

|         | LnGDP<br>G | LnLGDS<br>G | LnGCF<br>A | LnLL<br>G  | LnTINVE<br>G | LnCB<br>B  | LnDBMA<br>G | UNE<br>M   | INFL<br>A  |
|---------|------------|-------------|------------|------------|--------------|------------|-------------|------------|------------|
| LnGDPG  | 1.0000     |             |            |            |              |            |             |            |            |
| LnGDSG  | 0.6612     | 1.0000      |            |            |              |            |             |            |            |
| LnGCFA  | 0.4396     | 0.4072      | 1.0000     |            |              |            |             |            |            |
| LnLLG   | -0.2004    | -0.1421     | -0.1665    | 1.000<br>0 |              |            |             |            |            |
| LnTINVE | -0.2417    | 0.1512      | -0.0396    | 0.129<br>1 | 1.0000       |            |             |            |            |
| LnCBB   | -0.2815    | 0.4638      | -0.4032    | 0.100<br>7 | 0.3414       | 1.000<br>0 |             |            |            |
| LnDBMA  | -0.1198    | 0.0156      | 0.0269     | 0.876<br>5 | 0.1195       | 0.7939     | 1.0000      |            |            |
| UNEMP   | -0.6079    | -0.7962     | -0.3659    | 0.024<br>6 | -0.2352      | -          | -0.1571     | 1.000<br>0 |            |
| INFLA   | 0.5400     | -0.8844     | -0.3319    | 0.362<br>9 | -0.0913      | -          | 0.2504      | 0.710<br>5 | 1.000<br>0 |

Following the analysis of variables shown in Table 3 above, LnDMBAG (Deposit Money Bank Assets as % of GDP), LnTINVEG (Total Investment as % of GDP), LnLLG (Liquid Liability as a % of GDP) and UNEMP (Unemployment as % of Total Labor force) and LnCBB (Commercial Bank Branch as per 100,000(CBB) show a negative correlation with the change in GDP growth were as LnGDSG (Gross Domestic Saving as % of GDP), INFLA (Inflation on consumer prices) and LnGCFA (Gross Capital Formation as % of GDP) show the strong and positive correlation with increases in GDP growth on top of this, some of variables shows negative correlation with other independents variables.

### 4.2. Ordinary least square model

In this model, the  $R^2$  (coefficient of determination) value for the regression analysis is 0.9210 or 92.10% which means that the independent variable, financial services explains 92.10% of the variance in the growth of GDP, the standard linear regression also provides the adjusted  $R^2$  value of 0.8157 or 85.57% which indicates the fitness of the model.

**Table 4: ANOVA Table**

| Source        | SS         | df | MS          | F | Prob > F |
|---------------|------------|----|-------------|---|----------|
| Between-group | 11.3149169 | 32 | 0.353591153 | 5 | 0.0009   |
| within groups | 0          | 0  | 0           |   |          |
| Total         | 11.3149169 | 14 | 0.353591153 |   |          |

The terms "sum of squares," "degrees of freedom," and "mean squares" are represented by the letters "SS," "df," and "MS," respectively. According to the ANOVA analysis, between the groups, the observed values of LnGDPG differ from the expected values of LnGDPG by 11.3149169 within the group the observed values of LnGDPG have no difference with the predicted values. The analysis also shows, the degree of freedom (maximum fluctuation of logical independent value) between the groups of 32 whereas within the group there is no variation of LnGDPG. Furthermore, The analysis also shows the mean sum of squares value, which is obtained by dividing the sum of squares by the degree of freedom to be 0.353591153 Between the groups, The data also show that the p-value of 0.0009 which is less than 0.005 which suggest strong evidence for the rejection of the null hypothesis. Also, the analysis provides the Root MSE of 0.14077 which suggests that the observed value of LnGDPG deviated from the regression line by the average of 0.3751 points.

**Table 5: Model Summary (Descriptive statistics)**

| LnGDPG   | Coef.      | Robust Std. Err. | T     | P> t  | [95% Conf. Interval] |           |
|----------|------------|------------------|-------|-------|----------------------|-----------|
| LnGDSG   | -2.275099  | 0.6282488        | -3.62 | 0.011 | -3.812368            | 0.7378296 |
| LnGCFA   | -0.2839804 | 0.1058544        | -2.68 | 0.036 | -0.5429969           | 0.0249639 |
| LnLLG    | 3.727934   | 1.122722         | 3.32  | 0.016 | 0.9807327            | 6.475136  |
| LnTINVEG | -0.9660995 | 0.8640815        | -1.12 | 0.306 | -3.080431            | 1.148232  |
| LnCBB    | 0.5659045  | 0.3410774        | 1.66  | 0.148 | -0.268682            | 1.400491  |
| LnDBMAG  | -5.883582  | 1.065696         | -5.52 | 0.001 | -8.491247            | -3.275918 |
| UNEMP    | -1.172648  | 0.1847967        | -6.35 | 0.001 | -1.624829            | 0.7204667 |
| INFLA    | -0.0019268 | 0.0108956        | -0.18 | 0.865 | -0.0285875           | 0.0247339 |
| _CONS    | 21.44979   | 4.358665         | 4.92  | 0.003 | 10.78452             | 32.11506  |

Table 5 above shows the information about the relationship between each predictor variable and the outcome variable. The row labelled “\_cons” tells us about the intercept, but we are usually focused on the slope coefficients. The column labelled “Coefficient” displays the estimated slope for each variable in the model. The analysis indicates the coefficient of Gross domestic saving as % of GDP(GDSG) of -2.275099, Gross capital formation as % of GDP(GCFA) of -0.2839804 and Total investment as % of GDP of -0.9660995 and Deposited Money Bank as % of GDP(DBMAG) of -5.883582, Unemployment as % total labour force (UNEMP) of -1.172648 and Inflation consumer prices (annual %) INFLA of -0.0019268, these coefficients signifies for unity increases in gross domestic saving, gross capital formation, total investment, deposited money bank, unemployment and inflation results to a decreasing in the growth of GDP by 2.275099, 0.2839804, 2.275099, 0.2839804, 0.9660995, 5.883582, 1.172648 and 0.0019268 respectively and for Liquid liability as % of GDP (LLG) and Commercial Bank Branches as % of GDP(CBB) for every increase in a unit of LLG and CBB results to the increases in the growth of GDP by 3.727934 and 0.5659045 respectively. the common expression for the regression equation is stated as follows

$$\text{LnGDPG} = 21.45 - 2.27\text{LnGDSG} - 0.28\text{LnGCFA} + 3.72\text{LnLLG} + 0.56\text{LnCBB} - 0.96\text{LnTINVEG} - 5.88\text{LnDMBAG} + \varepsilon$$

In light of the p-value from the analysis, The findings indicate except for the variables CBB (Commercial Bank Branch as per 100,000) and Total Investment as % of GDP and Control variable (Total population growth and inflation), the rest of the variables are statistically significant in determining the economic growth which is measured by the growth of GDPG. The predictor variable is represented by the p-value (P>|t|) which is less than 0.05.

## 5.0 CONCLUSION

The focus of this paper was to assess the relationship between financial services indicators and economic growth in Tanzania. The analysis was based on six indicators of financial services. The evidence indicated that the type of variable mattered in affecting economic growth. The study of variable, correlation matrix showed some of variables show opposite directions among themselves and in affecting growth. This evidence partly explains why there are conflicting results from the existing literature. The evidence confirms a negative relationship between gross domestic saving, Gross capital formation, investment and economic growth. These results are not surprising to an economy, following Keynes's (1936) present views on how excessive saving can reduce consumption and aggregate demand, potentially leading to lower GDP growth and also for investment, the result conforms with the findings of Mankiw (1995) who addresses the circumstance in which investment may not always accelerate the growth of GDP and one in particular the GDP fall or negative GDP emphasise loss confidence to the people and discourage investment also according to Swaby 2007, there may be circumstances in public investment that may result in overcrowding in private investment and negatively affect economic growth, Warner 2014 advises instead of using total public investment in measuring economic growth, developing countries are advised to use FDI (foreign direct investment) to measure the growth of GDP also Barro (1991) provides a cross-sectional analysis suggesting that higher levels of capital formation may not always lead to expected economic growth, the emphasis needs to be placed not only on quantity but also on qualities of financial services and regulation, financial liberalisation, financial sector reforms, level of interests and policies on management of deposit mobilisation and credit allocation mechanisms to be able to realise the mobilisation capacity and resources-channelling efficiency of the financial system to productive investments and industries

## REFERENCE

- [1] African Development Bank (2023). African Economic Outlook 2023: <https://www.adb.org/en/documents/publications>
- [2] Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics*, 106(2), 407-443.
- [3] Bee, F.K (2007) Rural financial markets in Tanzania: an analysis of access to financial services in Babati district, Manyara Region:
- [4] Beck, T., Demirgüç-Kunt, A., & Levine, R. (2020). Financial Institutions and Markets across Countries and over Time. The Updated Financial Development and Structure Database
- [5] Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and Legal Constraints to Firm Growth: Does Firm Size Matter? *Journal of Finance*, 60(1), 137-177.
- [6] Beck, T., Levine, R., & Loayza, N. (2000). Finance and the Sources of Growth. *Journal of Financial Economics*, 58(1-2), 261-300.
- [7] Breusch, T.S and A. R. Pagan (1979) A simple test of heteroscedasticity and random coefficient variation: <https://www.jstor.org/stable/1911963>, [Vol. 47, No. 5 \(Sep. 1979\)](#), pp. 1287-1294 (8 pages)
- [8] CRDB(2022) Annual Report: <https://crdbbank.co.tz/storage/app/media/2022%20CRDB%20Annual%20Report.pdf>
- [9] Demirgüç-Kunt, A., & Levine, R. (2008). Finance, Financial Sector Policies, and Long-run Growth. World Bank Commission on Growth and Development.
- [10] Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19. World Bank Group.
- [11] Gujarati, D.N. and Porter, D.C. (2009) Basic Econometrics. 5th Edition, McGraw Hill Inc., New York.
- [12] Greenwich & Jovanovich. (2020) What causes income inequality: economic growth or financial development. Volume: 19 Issue: 2, 327 - 364, 12.03.2021.
- [13] IMF. (2013). Tanzania Country Report.
- [14] Johnson, N.L. (1949) Systems of Frequency Curves Generated by Methods of Translation. *Biometrika*, 36, 149-176. <https://doi.org/10.1093/biomet/36.1-2.149>
- [15] K., & Yousefi, S. R. (2021). Rethinking Financial Deepening: Stability and Growth in Emerging Markets.
- [16] IMF Economic Review, 69(2), 221-247. doi:10.1057/s41308-020-00124-2.
- [17] Keynes, J. M. (1936). The General Theory of Employment, Interest, and Money.
- [18] King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics*, 108(3), 717-737.

- [19] Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35(2), 688-726.
- [20] Levine, R. (2005). Finance and Growth: Theory and Evidence. *Handbook of Economic Growth*, 1, 865-934.
- [21] Levine, R. (2023). Finance, Growth, and Economic Development. *Journal of Economic Literature*, 61(2), 487-598. doi:10.1257/jel.20211234: [https://books.google.co.tz/books/about/Rural\\_Financial\\_Markets\\_in\\_Tanzania.html?id=l9IpOAAACAAJ&redir\\_esc=y](https://books.google.co.tz/books/about/Rural_Financial_Markets_in_Tanzania.html?id=l9IpOAAACAAJ&redir_esc=y).
- [22] Lofchie, M. F. (2014). The Political Economy of Tanzania: Decline and Recovery.
- [23] Mankiw, N. G. (1995). The Growth of Nations. *Brookings Papers on Economic Activity*, 1995(1), 275-310.
- [24] Moshi, H. P. B. (1991). The Political Economy of Tanzania's Economic Reforms.
- [25] NBC(2022) Annual Report: <https://nbc.co.tz/en/annual-reports/>
- [26] NMB(2022) Annual Report: <https://www.nmbbank.co.tz/investor-relations-nmb/financial-and-regulatory-reports/annual-reports>
- [27] Obstfeld, M. (1994). Risk-taking, Global Diversification, and Growth. *American Economic Review*, 84(5), 1310-1329.
- [28] Rajan, R. G., & Zingales, L. (1998). Financial Dependence and Growth. *American Economic Review*, 88(3), 559-586.
- [29] Robinson, D.O., Gaertner, M. and Papageorgiou, C. (2011), "Tanzania: growth acceleration and increased public spending with macroeconomic stability", *Yes Africa Can*, p. 21.
- [30] Rousseau, P. L., & Wachtel, P. (1998). Financial Intermediation and Economic Performance: Historical Evidence from Five Industrialized Countries. *Journal of Money, Credit, and Banking*, 30(4), 657-678.
- [31] Saganga M.K.(2020) Financial development and economic growth in Tanzania: an ARDL and bound testing approach: <https://www.emerald.com/insight/content/doi/10.1108/AJEB-09-2020-0063/full/html>.
- [32] Sahay, R., Čihák, M., Núñez, L. M., Barajas, A., Bi, R., Gao, Y., Kyobe, A., Nguyen, L., Saborowski, C., Sviryzdenka,
- [33] Schneider, G. E. (2007). The Political Economy of
- [34] Smith, J. (2020). *Introduction to Linear Regression Analysis*. New York, NY: Academic Press.
- [35] Tanzania: From Socialism to Liberalization.
- [36] Swaby, R. (2007), "Public investment and growth in Jamaica", Fiscal and Economic Programme Monitoring Department, Bank of Jamaica.
- [37] Tavneet Suri & William Jack (2014). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution, <https://www.aeaweb.org/articles?id=10.1257/aer.104.1.183>
- [38] Warner. A. M. (2014). Public Investment as an Engine of Growth. IMF Working Paper 14 (148). <https://doi.org/10.5089/9781498378277.001>
- [39] Widner, J. A. (1992). Economic Change and Political Liberalization in Sub-Saharan Africa.
- [40] World Bank (2016) Tanzania economic update <https://www.worldbank.org/en/publication/wdr2019>
- [41] Wooldridge J.M.(2013) Econometric analysis of cross-section and panel data : <https://ipcig.org/evaluation/apoio/Wooldridge%20-%20Cross-section%20and%20Panel%20Data.pdf>
- [42] Yaron & McDonald Benjamin (1997). Developing rural financial markets: <https://www.imf.org/external/pubs/ft/fandd/1997/12/pdf/yarn.pdf>