



The Effect of Recurring Expenditure Financed by External Grants on Promoting Sustainable Economic Development of Sub-Saharan Africa Countries

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Abstract - This study examined the effect of recurring expenditure financed by external grants on sustainable economic development of sub - Saharan Africa Countries. This paper asks about the participation of external grants on the recurring expenditure as one of the source of funds, separately from international finance perspective; the mechanism of domestic did not talk about. This paper filled this gap in literature by determining the recurring expenditure financed by external grants. The study adopted a time series research design where by secondary data were used. The population of the study was external grants and Gross Domestic Product (GDP) from 1988/89 - 2019/20 financial years (Annual Data). The sample size of the research was 32 observations. Purposive sampling was used to choose the Tanzania as a study area of the research; data were collected from the Organization for Economic Co-operation and Development (OECD). The parameters tests such as test for co integration and unit root test was used to investigate co-integrating vectors. After that, Autoregressive Distributive Lag Model (ARDL) was carrying out to find the results. The finding shows that, recurring expenditure financed by external grants influence sustainable economic development; with P- Value of 0.002. At the same time as inflation rate looks to be insignificant with P- Value of 0.719. The study recommends in order encouraging sustainable economic development, government must proceed to promote the relationship with nations by giving development programs which are consistent with supporting programs. additionally, the research predict the requirement for introducing strong policies that will assist and promote strong collaboration with donor nations and spend more in substantial speculation and utilization expenditure in order to increase the level of production as which will affect the sustainable economic development.

I. Introduction

In 21st century, sub-Saharan African countries have attempted their greatest point to increase their technology, minimize level of dependency, minimize level of poverty, to boost investments and improve the standard life of their people. The United Nations Millennium Development Goals (MDGs) endorsed the promise in September 2000 that was to be attained by 2015. MDGs dedicated to fighting social irregularity such as discrimination against women, diseases, illiteracy, environmental degradation, hunger, and poverty. MDGs later changed into

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Sustainable Development Goals (SDGs) in September 2015 during the United Nations (UN) general assembly, which accepted 2030 program, focusing on SDGs. This new program give prominence on a holistic method intended to attain sustainable economic development for their people [8].

To attain this extensive objective, fewer developed nations proceeded to depend on external grants to finance for their government deficits budget, to maintain balance of payment, huge development investments, to support assistance, and paying off countries loans. Nations exaggerated by natural disasters and war proceeded to depends on external grants in form of peacemaking programs, food packages and emergency external grants [8]. Tanzania is one of the sub-Saharan African countries and need to improve the sustainable economic development, so far becoming the most popular in Africa continental by receiving external grants from donor nations and other friendly nations [2]. This external grants stream assists to maintain the government deficit budget, as a result as to attain the long term plan project for development. Tanzania has ongoing to get external grants from 1970s and still depend on external grants. Increase in Gross Domestic Product (GDP) affects cumulative essential needs of poverty, which declined from 29.2% in 2017, 24.4% in 2019 and to 22.7% in 2020 [3, 4]. This has been recommended by data from family budget review. It is still vital for the nation to go faster the development and reducing the number of poor which is still relatively high while most Tanzanians are weak to fall back in poverty should there be a slightest shock. Almost half of the people sustain the living under USD 1.90/ person in a day [10]. It is unsure if external grants in Tanzania are active in hopeful sustainable economic development and improving social welfare of the people due to the tendency of deficit in trade balances through poor technology [13].

Persistence discussion concerning external grants and its participating to their sustainable economic development in Tanzania has been increasing frequently. The discussion has been continuously and quickly connecting, supporting on different empirical and methodological perspectives. From one point of view, external grants looks to be helpful and add to their sustainable economic development by stimulating projects as important part of funds mobilization, as fitting the government deficit budget, on the other hand from previous studies have summarizing up external grants was insignificant and cause to add the corruption, dependency, bureaucracy and enlarge inequalities [5, 6]. Empirical evidence dedicated that a huge deal of serious experimental presentation discussion on how external grants influence or increasing sustainable economic development although their results are opposing and missing general critics [3].

Empirical evidence conducted a study concerning external grants and sustainable economic development, Tanzania experience with recurring expenditure". The study revealed that, the recurring expenditure helped in reducing poverty, also significant result on sustainable economic development but only when other determinants are there, such as improve in project, firm political,

accomplishment of sound macroeconomic policies and economic environments [11]. Previous study done in Arabic nations shows that there is relationship between external grants and sustainable economic development [17]. According to [1] found that out external grants negatively affected sustainable economic development as an alternative of encourage and cautionary the government to think the kind of external grants it receive from donors or development friendly. According to [3, 7, 11, 17, 19] revealed that external grants is ineffective on promoting sustainable economic development. Although the empirical evidence that have been put forward by various studies, the diverse winding up by validate a requirement to re-assess the effect of external grants on promoting sustainable economic development, particularly in Tanzania where there is stream of external grants to stimulate sustainable economic development. the majority of the previous studies paying attention on investigating the contribution of this external grants, and unsuccessful to assess the effect of recurring expenditure financed by external grants, which will obtain addicted to account the inducement mechanisms by connecting the allotment of external grants to the method it is being used. From this reality, this research intends to plug this gap, by determining the effect of recurring expenditure financed by external grants on promoting sustainable economic development of sub-Saharan Africa Countries.

II. Literature Review

According to [16] has analyzed the objective and institutions for Japan recurring expenditure financed by external grants, the study shows that on the diversification of the objective and goals of recurring expenditure financed by external grants. Recurring expenditure by external grant goals have been diverse because o the lack of an entity managing it. Additional, lack of clear priorities has intended weak coordination between and among sectors and different agencies involved in external grants. Currently, emphasis has ~~be~~ on sustainable economic development and “productivity oriented grants” towards successful development as an alternative of unclear poverty reduction. This propensity fits the traditional method of Japan. Empirical evidence shows that the Japanese government should clarify its grant philosophy using the idea of human community. An external grants control center is needed, and should be under a national strategy reflection council, free from any sectors or agencies. According to [4] found that the recurring expenditure financed by external grants enhances the preparing future investments and infrastructure development while the public sector needs to improve development assistance programs.

According to [18] used Tanzanian case to show the association of external aid and development as well as poverty issue. The results stimulated significant dependence between GDP growth and external grants inflows and aid insignificant impact on poverty resulted by aid. It advises the Tanzanian Institution to look for other sources of financing as aid flows are decreasing due to global financial woes. According to [9] found that recurring expenditure financed by external grants had

no positive effect on the sustainable economic development while expenditures in areas of transport and communication increased sustainable economic development. Previous study revealed that growth of output is positively exaggerated by aggregate spending of the Nation. While consumption spending shows no significant output growth effect. Previous study indicated positive and statistically significant relationship between the share of the government expenditure in gross domestic product (GDP), and the share of the net disbursement of overseas recurring expenditure financed by external grants [14]. Empirical evidence reported that there is long run positive relationship between external grants and per capita income in Nepal, Sri Lanka, Bangladesh and Pakistan [12]. Previous study revealed that recurring expenditure financed by external grants has positive effect on sustainable economic development [7]

III. Research Methodology

This paper opted quantitative research approach since employ the external grants and economic development from Tanzania. The study adopted a time series research design where by secondary data were used. The population of the study was external grants and economic development from 1988/89 - 2019/20 financial years (Annual Data). The sample size of the research was 32 observations. Purposive sampling was used to choose the Tanzania as a study area of the research; the reason for picking Tanzania as study location is due to the fact that the Tanzania is one of the Sub-Saharan Africa countries which received high amount of external grants compared to other countries in Sub-Saharan Africa Countries. Data were collected from the Organization for Economic Co-operation and Development (OECD).

Econometric Model Development: Multiple Linear Regression model was used determining the effect of recurring expenditure financed by external grants on promoting sustainable economic development of sub-Saharan Africa Countries. The reason of choosing the multiple linear regression model is due to the reality that the dependent variable of the research is “*continuous in nature*” therefore; the multiple linear regression model is fitting for this study.

$$Y_{EG} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \dots \dots \dots (i)$$

Whereby: Y_{EG} = External Grants; β_0 = Intercept Term, $\beta_1; \beta_2$ = Intercept of Variables, X_1 = Recurring Expenditure Financed by External Grants, X_2 = Inflation Rate (Controllable Variable of the Study)

IV. results and discussion

Table 1 explained descriptive statistics on the variables used on the analysis. It consists of the summary statistics namely, Observations, Mean, Standard Deviation,

Minimum and maximum.

Table 1: Descriptive Statistic Results

Variable	Observation	Mean	Std. Dev.	Min	Max
Ln GDP	32	23.4936	0.9220	22.172	24.8692
Recurring Expenditure	26	219.8231	571.3857	0	2388.9
Inflation Rate	32	13.5234	10.3898	3.45	35.9

Source: STATA, 2021

Table 1 shows the summary statistics for independent and dependent variables. Where GDP observations are 32 and the observations of recurring expenditure financed by external grants are 26 and the observation of natural logarithm of inflation rate are 32 which were annually ranging from the year 1988 to 2020. The natural logarithm of GDP records the percentage mean of 23.4936 with a minimum of 22.172 and a maximum of 24.8692 while the recurring expenditure shows the highest percentage mean of 219.8231 with a minimum of 0 and a maximum of 2388.9, and the natural logarithm of inflation rate show the highest percentage mean of 13.5234 with a minimum of 3.45 and a maximum of 35.9.

Estimation Results: This section explains estimation results related to the effect of recurring expenditure financed by external grants on sustainable economic development in Tanzania. The results are explained in six major steps; Lag length selection, unit root test, co-integration test, co-integrating vectors, Autoregressive Distributive Lag Model.

Unit root test: The ADF and PP tests results indicated in Table 2 and 3 reveal that all variables were not stationary at their levels, as proof by their test statistics which are bigger to their equivalent critical values at 5% levels of significance. Nevertheless, after taking their first differences GDP and recurring expenditure financed by external grants become stationary, as carried by their test statistics which are now less than their corresponding critical values at 5% levels of significance. Consequently, the null hypothesis of the unit root or non-stationary was rejected at 0.05 levels of significance; suggesting that all variables of attention are included of order one 1(1).

Table 2: Show the Test for Stationarity for Augmented Dickey Fuller (ADF) Test

Variable	Level		First Difference		Order of Integration
	Test Statistics	Critical Value	Test Statistics	Critical Value	
	Ln GDP	-0.487	-2.986	-3.653	
Recurring ex	-2.501	-3.00	-3.739	-3.000**	I(1)
Inflation	-1.687	-2.986	-5.555	-2.989	I(1)

Source: STATA, 2021

NOTE: GDP: the natural logarithm of GDP; Recurring expenditure financed external grants: Inflation rate; and ** shows the “null hypothesis of non-stationary “at 5% level of significance.

Table 3: Show the test for Stationarity for Phillips Person (PP) Test

Variable	Level		First Difference		Order of Integration
	Test statistics	Critical value	Test statistics	Critical value	
	Ln GDP	0.122	-2.983	-4.561	
Recurring ex	-3.266	-3.750	-6.733	-3.00**	I(1)
Inflation	-1.653	-2.983	-5.314	-2.986	I(1)

Source: STATA, 2021

NOTE: GDP: the natural logarithm of GDP; Recurring expenditure financed external grants: Inflation rate; and ** shows the “null hypothesis of non-stationary “at 5% level of significance.

Lag Length Selection: The suitable number of lags was chosen basing on selection-order criteria and the results have been informed in table 4. From the table 4 the suitable number of lags according to Akaike Information Criterion (AIC), Hannan-Quin Information criterion (HIQC) and Schwarz Bayesian Information Criterion (SIBC) is four. Therefore lag 4 is favorite for this choice due to the fact that the minimum value of all four criterions lies at lag 4.

Table 4: Show the Lag Length Selection for Sustainable Economic Development and Recurring Expenditure Financed by External Grants

Lag	LL	LR	Df	P	FPE	AIC	HQIC	BIC
0	-247.809				1.60E+06	22.8008	22.8359	22.9496
1	-196.31	103	9	0	34060.1	18.9372	19.0774	19.5324*
2	-191.192	10.236	9	0.332	51286.7	19.2902	19.5355	20.3316
3	-184.86	12.665	9	0.178	75680.4	19.5327	19.8832	21.0205
4	-162.9	43.919*	9	0	31883.1*	18.3545*	18.8102*	20.2887

Source: STATA, 2021

*Shows the lag order chosen by the criterion

Co-integration Analysis: Johansen test for the long-run relationship was achieved and the results are informed in the Table 5. The Table explain test statistics and their critical values of the null hypothesis of no co integration. Following the researcher's calculation of the Johansen test for co integration, the outline statistics is superior to the critical value at 5% significant level, thus the null hypothesis of 0 co integrating vectors can be rejected in support of > 0 . Therefore the null hypothesis of no co integration is powerfully rejected in acceptance of the alternative hypothesis of survival of co integration to entail that there exists long run relationship between the variables.

Separately from that, the Johansen co-integration method established the continuation co- integrating vectors (relationships) in the regression equation. Both the $\lambda trace$ and λmax Test statistics accepted the null hypothesis that there are at most one $r \leq 1$ co- integrating vectors (relationships). This outcome is powerfully substantiated by the test statistics which are smaller than their corresponding critical values at 5% significance levels.

Table 5: Show the Johansen’s Co integration Test Results

Null Hypothesis	Trace Statistic	Critical Value	Max Statistic	Critical Value
$r = 0$	30.0090	29.68	21.8424	20.97
$r \leq 1$	6.1667	15.41	5.1832	14.07
$r \leq 2$	4.5740	3.76	0.9835	3.76

Source: STATA, 2021

NOTE: r: represents co-integrating vectors or relationships; when $\lambda trace$ and λmax tests are in conflict decision is made based on $\lambda trace$ statistics; ** shows the rejection of the null hypotheses at 5% levels of significance.

From the results in Table 6 shows that, on the long run GDP and recurring expenditure financed by external grants has a positive relationship which is statistically significant. The coefficient of recurring expenditure indicates that, under ceteris paribus, other thing remain constant, one percent increase in recurring expenditure financed by external grants will cause sustainable economic development to increase by 64.8494 percent. On the short run, recurring expenditure has a negative relationship indicating that, under ceteris paribus, other factors remain constant, and one percent increase in recurring expenditure financed by external grants will cause a decrease in sustainable economic development by 0.0049 percent.

Table 6: Showing the Results of the Effects of Recurring Expenditure Financed by External Grants on Promoting Sustainable Economic Development

D.lngdp	Coef.	Std. Err.	T	P>t
ADJ				
Ln gdp				
L1.	-0.1334	0.0334	-3.994	0.002
LR				
lnrecurring	64.8494	29.3436	2.21	0.006

	0.4837	1.3114	0.37	0.719
Inflation_rate				
SR				
lnrecurring				
D1	-0.0049	0.0049	-2.10	0.005
Inflation_rate				
D1.	-0.0079	0.0048	-1.63	0.12
LD.	-0.0055	0.0045	-1.13	0.272
_cons	-0.6618	1.1630	-0.57	0.58

Source: STATA, 2021

NOTE: GDP: the natural logarithm of GDP; in recurring expenditure: natural logarithm of recurring expenditure financed by external grants; Inflation rate: and P > t show the “significance level “at 5% level of significance: LR: Show long-run and SR: shows the short-run: ADJ: Shows the coefficient of error correction, the adjustment speed toward equilibrium.

According to [16] found that there is a positive and statistically significant relationship between the share of government expenditure in GDP and the share of net payment of overseas external grants. The results revealed that government uses external grants to finance its recurring expenditures. According to [2] revealed that recurring expenditure financed by external grants promote sustainable economic development hence supported by Keynesian hypothesis. Recurring expenditure financed by external grants seems to have influence on sustainable economic development due to the fact that it is used to pay salaries and wages, that goes straight on the consumption direct and therefore affect the economy directly. Also it improves human capital such as technical-know how, education system and health sector. Achievement of sustainable economic development depends on the contribution of knowledge, skills and health of its people. Human Capital Wealth Data and World Bank’s Human Capital Index (HIC) recommends ways in which the nation could invest in its citizen for quickly poverty reduction. The emphasis was based on the human capital.

Separately from that, inflation rate has a positive relationship in the long run and a negative relationship in the short run which is insignificant. Inflation rate has no effect on sustainable economic development. On the other hand, the inflation rate is being influenced negatively by the previous inflation rate. This means that, other things remains constant, for every increase in one unit of the previous inflation rate leads to decrease in current inflation rate by 0.0055 %. The coefficient of error correction is -0.13 implying that 13 % the adjustment speed towards the equilibrium following a shock is about 33 % after a single period. The negative sign and the significant probability signify the existence of co integration among the variables in the long run.

Diagnostic test of the model

Table 7: Show the Breusch-Godfrey LM Test for Autocorrelation

Chi- Square	Prob> chi2
0.436	0.5092

Source: STATA, 2021

Table 7 show that the model does not suffer from the serial autocorrelation since the p-value is greater than 0.05 and further from the Durbin-Watson d-statistic (6, 26) = 2.2299 which is approximate to two this also recommend the same that model do not suffer with serial autocorrelation.

Table 8 : Cameron& Trivedi's Decomposition of IM-Test

Source	Chi- Square	Df	P
Heteroskedasticity	17.34	18	0.5001
Skewness	5.15	5	0.3984
Kurtosis	1.35	1	0.245
Total	23.83	24	0.4712

Source: STATA, 2021

Table 8 show that the residual are normally distributed since the p-value for skewness and Kurtosis is greater than 0.05 and not only that Table 7 above show that the model do not suffer with heteroscedasticity since the P-value for heteroscedasticity is greater than 0.05 this result is same as from the white's test for homoskedasticity always the null hypothesis there is homoskedasticity is rejected when P-value is less than 0.05. So from the white's test for homoskedasticity the p-value (Prob> chi2 = 0.5001) was greater than 0.05 hence the null hypothesis was accepted. Jarque - Bera (JB) test results in Table 9 indicate that residuals are normally distributed; as supported by p-values which are greater than 5% level of significance. This implies that the data used for analysis followed normal evolution over the sample period.

Test for Normality

Table 9: Show the Test for Normality

Variable	Ch- Square (2)	Prob>chi2
Residual	3.863	0.1450

Source: STATA, 2021

The normality test shows the chi- square is positive figure (3.863) these means that the data was fitted and statistical significance and probability is greater than chi-square so it support this data. This scenario supported by different scholars who said that when the chi-square is positive is suitable in time series [1, 10, 18, 19].

Figure 1 shows the time series plot for GDP and recurring expenditure financed by external grants. Before estimating the time series data is suggested to draw the time series plot of the time series data in purpose to arrest different characteristics of time series data such as , trend , seasonality, stationary and so on [4]. From Figure 1 portray that both variables were non stationary since the as the time goes the variation increase in GDP and Recurring expenditure financed by external grants.

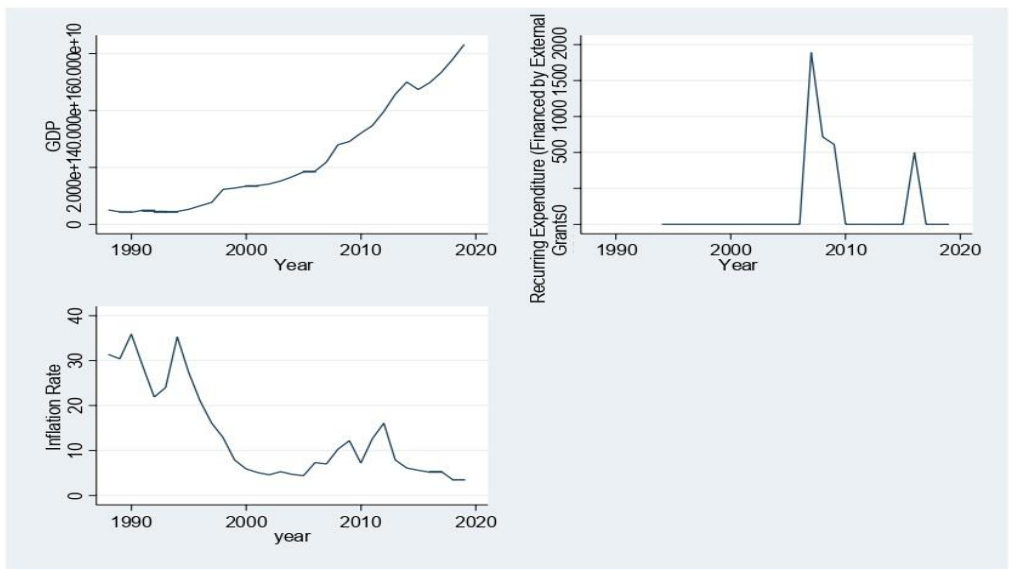


Figure 1: Represent the Time Series Plot of Recurring Expenditure Financed by

External Grants, Inflation Rate and Sustainable Economic Development

V. CONCLUSION

The results found the recurring expenditure financed by external grants has positive relationship in the long-run and negative relationship in the short-run. But the results are statistically significant in both, long run and short run, hence recurring expenditure financed by external grants influence sustainable economic development. This conclusion supported by different scholar who said that the recurring expenditure financed by external grants has association with sustainable economic development [5, 7, 13, 19]. The study recommend on the establishment of policies that will enhance good cooperation with donor countries, and direct its expenditure on the development sector like social service and human capital skills. It should also increase more recurrent expenditures so as to speed up consumption and hence promote economic growth.

The researcher recommend that the study like this supposed to be conducted in different countries in Africa since recurring expenditure financed by external grants are differ from one countries to another.

References

- [1] Adofu, I and Abula, M (2010). Domestic Debt and the Nigerian Economy". Current Research Journal of Economic Theory, Vol. 2(1), pp 22-26.
- [2] Attorney, B., "Overview of the Tanzanian's budget for the financial year 2019/2020", Tanzania: Ministry of Finance, vol. 1, no. pp. 3-10, 2019.
- [4] Bank of Africa (BOA). (2018). Management Efficiency of Public Debts in Africa. Challenges and Prospects. Journal of Business and Management
- [5] Bank of Tanzania (2013). Financial Stability Report. Bank of Tanzania, Monthly Economic Review (MER) - July 2012.
- [6] Bank of Tanzania., "Poverty Overview", Ministry of Finance and Planning, vol.2, no.1, pp.33-49, 2019
- [7] Barro, R.J., 1979."On the Determination of the Public Debt". The Journal of Political Economy, vol.87, no.5, pp.940-971.
- [8] Baum, A., Checherita-Westphal, C., & Rother, P. (2013). Debt and Growth: New Evidence for the euro area. Journal of international money and finance, 32, 809-821.
- [9] Boboye Y. & Ojo H. (2017). When Capital Inflows come to a sudden stop: consequences and policy options. SEACEN Center, Kuala Lumpur, Malaysia, 24-25, 2-3 .Journal of Business.

- [10] Brown, C., "Public Sector Economics" (4th ed.). Oxford: Blackwell Publishing, UK Business and Management.
- [11] Gujarati, D., "Basic Econometrics" (3rd ed). New York: McGraw-hill Publishing, US.

- [12] Gurdal, T., Aydin, M. & Inal, V., "The Relationship between Tax Revenue, Government Expenditure and Economic Growth in G7 Countries: New Evidence from Time and Frequency Domain Approaches. Econ Change Restruc," International Journal of Economics, vol. 2, no. 1, pp,229-300, 2020.
- [13] Hansen, H., and Trap, F.," Aid Effectiveness disputed" Journal of InternationalDevelopment, vol. 12, no. 1, pp. 375-398, 2000.
- [14] Johansen, S., "Statistical analysis of co integrating vectors," Journal of Economic Dynamics and Control, vol. 1, no.12, pp. 231-254, 1988.
- [15] Macek, R., "The Impact of Taxation on Economic Growth: Case Study of OECD Countries," Review of Economic Perspective, vol. 14, no. 1, pp. 5-10, 2014
- [16] Paul, F., & Furahisha, G., "Government Expenditure and Economic Growth Nexus: Wegner's law or Keynesian Hypothesis for Tanzania?," African Journal of Economic Review, vol.5, no.1, pp.2-9, 2017
- [17] Tavakol, M., & Dennick, R., "Making Sense of Cronbach's Alpha, " International Journal of Medical Education, vol 2, no. 1, pp. 53-55, 2011.
- [18] Tosun S. & Abizadeh S., Economic Growth and Tax Components: An Analysis of Tax Changes in OECD," Journal of Applied Economics, vol. 35, no. 19, pp. 2251-2263, 2020
- [19] World Bank (2019): World Development Indicators (WDI) & Global Development Finance (GDF) database