ORIGINAL ARTICLE

Official Development Assistance; A Succor To Manufacturing That Enhance Economic Growth In SADC

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ABSTRACT

The aim of this study was to establish ODA as an aid to manufacturing that leads to economic growth using data from Southern Africa Development Community (SADC) countries. The study adopted manufacturing as a percentage of GDP as a mediator between ODA and economic growth. The United Nations report (2020) observed that close to half of the population in the region are living below the poverty datum line. This is why the researcher saw it fitting to conduct a research on how ODA can better result into economic growth. The theory that was utilized in the research is the Absorptive capacity model which helped in developing a theoretical framework that links manufacturing as a mediating variable between ODA and economic growth. Absorptive capacity formed a very important aspect in this research and it is measured by manufacturing. The Random Effects Model was also used in data analysis which revealed that ODA has positive impact on economic growth.

Keywords : Economic Growth; Manufacturing Sector; ODA, Absorptive Capacity, SADC.

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INTRODUCTION

The concept of the relevance of Official Development Assistance has remained relevant over the years (Xayayong V, 2002). This aspect of ODA from developed countries to the African continent has over the years received and continue to receive immense attention since the 1960s (Murshed M et al 2014) . Conclusions reached by various researchers concerning this aid received in the SADC region are varying. The renewed interest in ODA by both researchers and policy makers was necessitated by the implementation of sustainable development goals which were proposed by the United Nations (Veiderpass A et al 2007). The goals being; sustainable economic growth, poverty reduction, industry and infrastructure are part of the sustainable development goals which are to be achieved by developing countries. Therefore, ODA plays a crucial part in the attainment of such goals. There was need for the accomplishment of sustainable development goals through channeling of resources to low income countries together with the improvement of the relevance of ODI through donor co-ordination.

Table 1 : Official Development Assistance as a percentage of GDP to selected southern African countries

COUNTRY	2000	2005	2010	2015	2019
ANGOLA	18.43	21.34	10.07	13.63	1.56
DRC	3.79	34.35	53.96	34.09	34.86
MALAWI	40.2	45.43	69.94	62.67	64.75
LESOTHO	18.29	34.29	128.31	42.01	68.69
NAMIBIA	84.93	58.49	123.33	61.51	59.49
ZIMBABWE	14.78	30.88	56.11	57.06	66.57

Source: Global Development indicators

As indicated in table 1 above the level of ODA as a percentage of GDP within the SADC region is very high. As evidenced from the sampled 6 countries above that receive more ODA in the region. However, the corresponding levels of development within the region are very low. This has led to the investigation by researchers on the nexus of policy implementation and developmental assistance.

The rise in Official Development Assistance since the beginning of the millennium has failed to spur manufacturing and economic growth in developing countries especially in the target region of SADC (ebid). Failure to spur manufacturing has an effect on industrialization which has by the years been advocated for by economists and development experts as an engine of economic growth. This research is of the opinion that, for SADC economies to strive, government policy makers should put more emphases on entrepreneurial development by using Official Development Investment for entrepreneurial financing.

Entrepreneurial development is the backbone of developing economies if they are primed and aided well. This abet nations in relation to job creation and citizen empowerment, transformation and innovation hence dealing with issues of poverty reduction. Talking of innovation, studies have shown over time, countries in Sub-Sahara Africa has been lagging behind in terms of innovative capabilities which has resulted in a rebuff of the manufacturing sector across the region including SADC (Abreu, et al, 2008). This study attributes the growth of aid in SADC to lack of innovation and member states dependence on imported finished

goods. In the modern world, the driving force behind improving productivity and efficiency in the manufacturing sector is innovation. It also goes further to involve improvement of the quality of products, cost reduction of production as well as the time frame taken in the production line.

By the observation made by this research, the concept of Absorptive Capacity theory which was developed originally to capture the performance and innovativeness of SMEs play a very significant role in determining the need for development aid in the SADC region. The kind of aid that the region needs should be the one that contributes to unlocking the capabilities of member states towards innovativeness and competiveness especially in the manufacturing sector. This will automatically give firms and SMEs a competitive advantage on the kind of goods or products they sell either locally or across the borders.

This study has also observed that most previous researches have concentrated on analyzing the impact of ODA on economic growth excluding the effects of the nexus of the manufacturing sector and economic growth from the equation. However, the researcher noted that development assistance alone is not sufficient to bolster economic growth in the long-run. For there to be continual economic growth, industries in the manufacturing sector must be operating at a minimal cost and producing goods of high quality. This is where the concept of absorptive capacity features in. The Absorptive Capacity theory was generally developed based on the idea that innovation and assimilation of external knowledge would help improve the performance of firms operating in an economy. It is therefore the believe of the researcher that for the SADC region to improve its manufacturing there is need for the countries to take a leading role in the investment of innovative initiatives.

It is a key objective for economists and developmental experts in developing countries to register economic growth rates (Moolio and Kong, 2016) over the years. Through the adoption of numerous policies to overturn the growth rates of their countries, they implement strategies of engaging development partners. Researches have depicted that after many years of receiving ODA, poorest African countries are still living in abject poverty (Mallik G 2008). The real per capita income for most southern African economies since 1965 has either declined or remained stagnant despite receiving huge sums of Official Development Assistance. These observations have resulted to researchers and policy makers concluding that ODA has failed to meet its intended objectives.

Hypothesis Development

Several studies have been conducted to establish the relevance of Official Development Assistance on economic growth. The studies however produced conflicting results and that has led policy makers and researchers re-establish their interest on ODA and growth nexus. In addition, studies focusing on the dual effect of official development assistance, manufacturing and entrepreneurial financing are limited and this is the main focus of the researcher.

Official Development Assistance is a catalyst for long-run economic growth. The study's results reveal huge and vigorous various specifications and estimation techniques that support that development aid effect is substantial (Minoiu C et al 2009). When examining the increasing impact of Official Development Assistance to developing countries, the author used a different approach from previous studies. The effects of development and non-development aid were straightening out with specifications permitting for aid effects on economic growth to

befall in long periods. When it comes to the issue of manufacturing and whether this aspect impact economic growth, the study did not touch this part.

A sample of 95 countries was used to investigate the impact and role of foreign aid (ODA) on economic growth with foreign direct investment (FDI) and population (POP) as control variables (Yiew T. H et al 2018). Just like other researches above, the author's point of focus was not on the manufacturing part but rather on ODA and economic growth. The results revealed that the relationship showcases a U-shape between foreign aid and economic growth. The results are that FDI and POP are significant determinants of GDP with the implication that is less likely to depend on ODA.

A study to investigate the impact of manufacturing on economic growth using manufacturing firms in Senegal was done (Ndiaya C et al 2018). Covering the period from 1960 to 2017, the study used secondary data extracted from the World Bank (WDI 2015) and National Agency of Statistic and Demography in Senegal (ANSD). The result of the econometric analysis revealed that increase of Industrial output will increase economic growth in the country. The study concludes that there is significant relationship between industrial development and Senegalese economic growth. On the other part, the results suggested that manufacturing will go a long way in stimulating economic growth. If this is the case the study did not go further to explain why results revealed that manufacturing will go a long way in the country and how that can be corrected.

Feeny et al (2012) carried a study on measuring absorptive capacity constraints to foreign aid. The intensions of the research were to review the extensive aid effectiveness in SADC countries and address the concerns that additional aid is not used effectively because of absorptive capacity. The study also devises a composite index of absorptive capacity for SADC countries as a way of adding policymakers as they lead the allocating of aid from donors. The authors tackle the issue of donor practices noting that a challenge on the capacity of developing countries to absorb huge amounts of assistance comes from the way in which these funds are channelled by donor countries. The conclusion is that an administrative burden on SADC countries' public sector officials is usually the result of the how ODA funds are delivered.

It is outlined that most of the debate concerning development in developing economies revolves around the domestic process of manufacturing. Mukherjee S (2012) notes that foreign trade growth relevance gives this debate a background for trade policy orientation towards manufacturing and growth of these developing economies. The author assesses the significance of the policy mix in order to come up with the process of growth and development in developing countries. In the analysis, the research makes a distinction between two trade strategies that are related to manufacturing which are Import-substituting Manufacturing (ISI) and Export-oriented Manufacturing (EOI). It is noted that ISI and EOI can be viewed as a chronological stage in the development of LDCs (ibid). This study is also silent on the issue of using Official Development Assistance to promote manufacturing for economic growth.

In this chapter, the researcher intends to make a presentation on the nexus between the theoretical framework adopted in the study and the concepts of ODA, manufacturing and economic growth. The theory that is being utilized in this study is the Absorptive Capacity theory.

The Absorptive capacity theory examines the firm's ability to recognize the value of new external information then assimilate it and apply it to achieving organizational goals (Cohen &Levinthal1989, 1990). This model proves to be relevant to this study because its measured through acquiring external knowledge and assimilating such knowledge within the firm. External information should not only be recognised but there should be assimilation and replication of the new knowledge obtained. This research advocates for ODA that promotes manufacturing that leads to economic growth in SADC. For the manufacturing sector to contribute to economic growth, it has to be competitive and this can only happen through adaptation, production and application of knowledge (Lin et al 2002). Accordingly, in the manufacturing sector that has high levels of absorptive capacity recognize the value of new external knowledge. Acquire it, transform or assimilate it and exploit it for the advancement of their production.

Absorptive capacity plays a pivotal role in the innovative context of firms operating in the SADC region and this include the ability to assimilate and manage acquired new knowledge which intends to improve outputs as well as improve the competitive advantage of SADC firms. As the world is open for competition, firms are seeking to take advantage of their innovative capacities and become more cost competitive against their competing counterparts. Studies have indicated that innovation is closely and intricately connected to the idea of knowledge which is a dynamic process at the level of knowledge research as well as its exploitation (Dosi, 1988). Studies have implored that innovation is directly connected to knowledge based research as well as its exploitation. This therefore implies that SADC countries need to invest more in innovative initiatives which would help improve the productive capacity of the manufacturing sector within the entire region of SADC.

A review of the current studies has indicated that for any developing country to initiate the industrialization or manufacturing industry process, there is need for transformation from the early stages of economic development natural resources or raw labour-intensive light industries to producing largely diversified consumer products. However, many countries within the SADC region are still lagging behind and most of their economies are dependent on the light industries and natural resources. In addition, their own internal savings are usually below the level of domestic investment and there is need for developing countries in SADC region to close the gap between savings and domestic investment which will help to achieve desired economic growth rates.

In addition to this, once the manufacturing sector is properly developed, it paves way to entrepreneurship development which is also another key factor in promoting economic growth. Using the dual economy models of structural economies transformation and growth to attest to this phenomenon on economic growth, NaudeWim (2008) carried a research show casing how entrepreneurs contribute to the economy of nations. The conclusion is based upon policy implications suggesting that quality, quantity and allocation of entrepreneurial ability should be the drivers of government support.

METHOD

The structural framework for the panel regression model was based on Coleman (2008) and is presented as follows:

$$Y_{it} = \alpha + \beta X'_{it} + \mu_{it} \quad\text{..(1)}$$

In equation above, Y_{it} represent the dependent variable, α is the constant of the equation, i=1,……., zarN and t = 1, ……….., T and X'_{it} presents a K-dimensional vector of explanatory variables exempt from the error term μ_{it}. The error them can further be broken down into two components namely the un-observed specific effects of development assistance (μ_i) and the other disturbances are entrenched in (v_{it}). These components can be illustrated as follows:

$$\mu_{it} = \mu_i + v_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

In equation (2) above, v_{it} is volatile in line with the cross-sectional variables as well as the time which allows it to capture the white noise in the estimation. Since the model employed in this study is balanced, the model is not adjusted for any unbalanced frameworks.

3.1 Mediation Effects of the manufacturing sector in the model

The mediation effects of one variable (X) to another variable (Y) goes through a third variable (M). In this case the mechanism of official development assistance is mediated by the manufacturing sector in order to improve economic growth. In order to estimate the mediation model, the following regression equation are estimated

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \mu \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$
$$\beta_1 = \beta_{m1} + \beta_{m2} m \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

Substituting equation (3) into (4) would result in the following equation

$$Y = \beta_0 + (\beta_{m1} + \beta_{m2} m)X + \beta_2 m + \mu \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

Simplifying equation (10) would result into the following

$$Y = \beta_0 + \beta_{m1} X + \beta_{m2} mX + \beta_2 m + \mu \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (6)$$

The selection of the independent variables was guided by the intensive literature review conducted by the researcher.

The Expected Signs of the Variable's and Their Justification

Studies have indicated that there are several variables that do have a significant impact on economic growth in at least a single regression equation (Salai-i-Martin, 1997). In this study the variables were limited in numbers so that the researcher could clearly trace the significant impact of the variables that are of interest to the researcher. The researcher observed that there are 8 variables presented with their interaction with the mediating variable which is the manufacturing as a percentage of gross domestic product. The variables are grouped into categories of three presented in the table below.

Table 2: Expected signs and categories of variables.

Types of Variables	Variable Symbols	Expected Sign
Dependent Variables	GDP	
	Lgdp	+
Independent Variables	Dev	-/+
	Dev*Manufacturing	+
	Manufacturing	+
	Labour	-/+
Control Variables	Labour*Manufacturing	-/+
	Trade*Manufacturing	-/+
	Trade	-/+

The SADC Model Specification

As has been observed by the methodologies employed by other scholars, who employed a quadratic panel regression model in which economic growth rate is treated as dependent variable and ODA, trade openness are independent variables (Ekanayake E.M et al 2009). Controlling for official development assistance and employing manufacturing as a mediating variable the following estimation equation is developed:

$$GDP_{it} = \beta_0 + \sum \beta_j X_{it} M_{it} + \sum \beta_k Y_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Equation (7) is estimated using the previous equation (6) and it includes the effect of the mediating effect of manufacturing. As indicated in this section, GDP is the gross domestic product of country i at time t, X is a matrix of independent variables as defined previously and M is the mediating effect which is manufacturing as a percentage of GDP. β_j is the coefficient of the interaction variable between the mediating variable (Manufacturing as a percentage of GDP) and the dependent variables.

The model in equation (7) can also be developed into a final equation which is to be estimated.

Thus the model can be presented as follows:

$$GDP_{it} =$$
$$\alpha_{it} + \beta_1 Lgdp_{it} + \beta_2 Dev_{it} * Manufacturing_{it} + \beta_3 Labour_{it} * Manufacturing_{it} + \beta_4 Trade_{it} * Manufacturing_{it} + \beta_5 Trade_{it} + \beta_6 Manufacturing_{it} + \beta_7 Dev_{it} + \beta_8 Labour_{it} + \mu_{it}$$

$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

The models were built based on previously related studies (Sahoo K 2016). Based on these studies, the aid-growth model in this case had a mediating variable which assumes that manufacturing sector amplifies the effect of development assistance on economic growth (Zarzoso et al 2010). The estimation of the model was based on panel regression frameworks which are credited for their ability of capturing the complicated relationship between economic variables. In addition, the panel framework model is credited for providing more degrees of freedom and variability which improves the inference of model parameters as compared to the traditional time series and cross sectional data analysis. This contributes towards improving the accuracy of econometric assessments. Researchers have indicated that most relationships are dynamic in nature and hence panel frameworks can easily track such dynamic relationships amongst variables.

RESULTS AND DISCUSSION

In this section, the researcher intends to provide the empirical outcome or research results of the study. A detailed overview and analysis of the projected results as well as other outcomes from the study in this part will also provide a framework of recommendations for both SADC and donor countries.The data employed in this study was obtained from the World Bank's world development indicators, SADC statistics data base as well as the International Monetary Fund (IMF) data base.

Descriptive Statistics of the Data

In this section of the study, the nature or the statistical behaviour of the data is tested using key statistical indicators known as measures of central tendency such as mode, median and the mean as well as measures of dispersion and skewness. The measures of central tendency indicate the centre or location of the distribution. The mean is the average of the data set, median is the value that appears as the middle value when the values are arranged in a particular order and lastly the mode is the value that appears the most.

Table 3. Descriptive Statistics for SADC Countries

Variable	Number Of Observations	Mean	Median	Standard Deviation	Skewness
GDP	210	2.043083	2.725469	4.238330	-0.845732
Lagged-GDP	210	2.103488	2.762967	4.314973	-0.853208
Official Development Assistance	210	29.02013	8.786113	64.35227	6.014289
Labour	210	9449627.	6960923.	8959040.	0.576109
Labour*Manufacturing	210	33746024	6726802.	89391745	0.743876
Manufacturing as a % of GDP.	210	3.322713	2.701809	9.152176	2.204065
ODA*Manufacturing	210	41.69156	8.180614	505.3357	-3.795873
Trade	210	78.31682	78.70516	35.60364	-0.064840
Trade*Manufacturing	210	231.8880	174.1475	710.1751	2.790278

The summary descriptive statistics for SADC countries is indicated in table 3. Raw data was used to compute the statistics before any transformations were made for the final estimation of the regression equation specified in the methodology. The mean depicts the average value of the variable and the median is the value which is appearing on the middle. The standard deviation is a measure of dispersion which explains how the data in question is spread. As indicated before variables with a lower standard deviation indicates that the data sets are much closer to the mean, while those with a high standard deviation indicates that most of the observations are spread out over a wider range.

Short-run Empirical Panel Regression Results (Random Effects Model)

Table 4. The empirical results for the model are indicated in table below

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Independent Variables				
Constant	0.077358	0.853488	0.090637	0.9279
Lagged GDP	0.298490	0.059060	5.054041	0.0000
ODA	0.001058	0.003934	0.268802	0.7884
Labour	-1.04E-08	3.32E-08	-0.313802	0.7540
Manufacturing	0.078132	0.063599	1.228505	0.2207
Trade	0.011646	0.008166	1.426173	0.1554

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Mediating Variables				
ODA*Manufacturing	0.002230	0.000614	3.632931	0.0004
Labour*Manufacturing	1.76E-09	4.14E-09	0.426265	0.6704
Trade*Manufacturing	0.000351	0.000730	0.481681	0.6306
Weighted Statistics				
R-squared	0.390173			
F-statistic	16.07523			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.122577			

The results of the study revealed that funds for SADC countries received as official development assistance had a positive impact on economic growth. A 100% increase in official development assistance would result in approximately 0.1058% increase in economic growth for the region. The mediating effect of the manufacturing sector on the effects of official development assistance on economic growth amplified the effects. A 100% increase in the mediating variable between official development assistance and manufacturing (ODA*MANUFACTURING) would result in approximately 0.2230% increase in economic growth for SADC countries. This revealed that the manufacturing sector has the potential of improving the growth rates of the region.

Also, the manufacturing sector in SADC countries has a positive impact on economic growth. A 100% increase in manufacturing sector would subsequently result in an approximately 7.8% increase in Gross domestic product holding other factors constant. This really reveals how manufacturing is significant in the economic growth of SADC countries. Therefore, for there to be an abrupt economic growth, it is paramount that the ODI should be channelled towards the manufacturing sector. In this way, the industrial sector in this region will develop and hence contribute to economic growth which this research is advocating for.

Labour which is also a key variable according to the new classical Solow growth model had an insignificant impact on economic growth for SADC countries. The poor quality of labour in the southern African region could have contributed towards the negative effect of labour on economic growth. The region is largely dominated by an excessive number of unskilled labour which results in lower labour productivity per worker.

CONCLUSION

ODA is a necessity in promoting manufacturing that leads to economic growth of SADC countries. It is depicted in the study that countries that channelled the ODA grants and loans in investing well in projects that support manufacturing managed to experience economic growth over the years. This is to attest that ODA is a succour that promotes manufacturing leads to economic growth in SADC. It is revealed that the net official flows do have a positive impact on economic growth of SADC countries but however, the impact of official development assistance on economic growth for SADC countries can be amplified by the introduction of the manufacturing sector as a mediating variable.

Member states of SADC place industrial development at the centre of development which happen to be SADC's integration agenda. The manufacturing sector for SADC

countries had a positive effect on economic growth. This implied that the manufacturing sector is a key driver of economic growth. For recipient countries a 100% increase in the manufacturing sector resulted in an approximately 30% in economic growth and as for SADC countries a 100% increase in manufacturing would result in 7.8% increase in economic growth. Hence to improve the effect of ODA in the long run funds received as ODA should be directly channeled to the manufacturing sector. The manufacturing sector plays a crucial role in the economic growth of Southern African countries and resources should be channeled to the manufacturing sector.

The study also reveal that absorptive capacity is a significant factor in ensuring that ODA leads to economic growth. Manufacturing was chosen in the study as a per of absorptive capacity because the developing world is trying to catch up with the developed world. To capture this, the manufacturing sector of SADC countries should capture modern technology so that they are able to improve their production measures. A well modernised operation system will provide a competitive advantage in the goods and products manufactured in the region when they are competing with those created in other countries. In this way, the region will be able to reduce high levels of imports and thus increase their levels of exports.

The study has failed to encompass a much wider sample of African countries which would be more informative and brings variability to the study. However, some researchers have suggested that regional studies are much more informative as compared to studies that involve or include all the countries. Different regions in Africa have different characteristics and hence separate studies need to be adopted for each region in the continent. Concentrating on the Southern Africa region would also result in a small sample size

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