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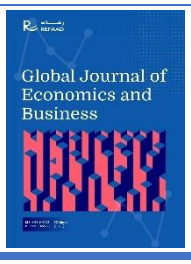

Analysing Economic Growth on Paid Work Growth in Mozambique

تحليل النمو الاقتصادي على نمو العمل المدفوع الأجر في موزمبيق

Harris Maduku[1], Mulatu Fekadu Zerihun[2]

[1] (Post-Doctoral Fellow), Faculty of Economics and Finance, Department of Economics, Tshwane University of Technology, Ga-Rankuwa Campus, Pretoria, South Africa

[2] Faculty of Economics and Finance, Department of Economics, Tshwane University of Technology, Ga-Rankuwa Campus, Pretoria, South Africa

[1] madhukuharris@gmail.com

Abstract:

The central objective of this paper was to understand the contribution of economic growth on job creation (paid work) in Mozambique. This comes at a background when the country experienced a decade of significant economic growth and economic development, but poverty and unemployment remain a problem. The growth of an economy without creating opportunities for the population and especially the poor is undesirable and such situations are described as exclusive economic growth and development. Despite commendable economic growth episodes, an estimated 70% of the Mozambican labour force still work in the agriculture sector and on the other side, the informal economy is projected at around 80% of the economy. To achieve the central objective of the study, the authors estimated the Autoregressive Distributive Lag model (ARDL). Our key findings were that economic growth in Mozambique does have a positive impact on growth of waged and salaried workers (WASW) and the relationship is statistically significant. We also found that growth in infrastructure investment contributes positively to paid work. Lastly, we found that gross value added in the economy negatively impacts paid work. Policy recommendations arising from our findings are that responsible authorities need to embark on massive infrastructure investment since it was found that its growth has positive traction of waged and salaried work growth and economic growth which also contribute to further job creation.

Keywords: *Economic growth; Unemployment; Inclusive; jobs; informal sector.*

الملخص:

كان الهدف الرئيسي لهذه الدراسة هو فهم مساهمة النمو الاقتصادي في خلق فرص العمل (العمل المدفوع الأجر) في موزمبيق. يأتي هذا في خلفية شهدت فيها البلاد عقدًا من النمو الاقتصادي الكبير والتنمية الاقتصادية، لكن الفقر والبطالة لا يزالان يمثلان مشكلة. إن نمو اقتصاد دون خلق فرص للسكان وخاصة الفقراء أمر غير مرغوب فيه وتوصف هذه الحالات بأنها نمو وتنمية اقتصاديين حصريين. على الرغم من نوبات النمو الاقتصادي الجديرة بالثناء ، لا يزال ما يقدر بنحو 70% من القوى العاملة في موزمبيق يعملون في قطاع الزراعة وعلى الجانب الآخر، من المتوقع أن يبلغ الاقتصاد غير الرسمي حوالي 80% من الاقتصاد. لتحقيق الهدف المركزي للدراسة، قدر المؤلفون نموذج تأخر التوزيع الانحدار الذاتي (ARDL). كانت النتائج الرئيسية التي توصلنا إليها هي أن النمو الاقتصادي في موزمبيق له تأثير إيجابي على نمو العمال بأجر وبأجر (WASW) وأن العلاقة ذات دلالة إحصائية. ووجدنا أيضًا أن النمو في الاستثمار في البنية التحتية يساهم بشكل إيجابي في العمل المدفوع الأجر. وأخيرًا، وجدنا أن إجمالي القيمة المضافة في الاقتصاد يؤثر سلبًا على العمل المدفوع الأجر. وتتمثل توصيات السياسات المنبثقة عن النتائج التي توصلنا إليها في أن السلطات المسؤولة بحاجة إلى الشروع في استثمارات ضخمة في البنية التحتية حيث تبين أن نموها له قوة جذب إيجابية لنمو العمل بأجر وبأجر والنمو الاقتصادي الذي يساهم أيضًا في زيادة خلق فرص العمل.

الكلمات المفتاحية: *النمو الاقتصادي؛ بطالة؛ شامله؛ وظائف؛ القطاع غير الرسمي.*

Introduction:

This paper is motivated to understand how economic growth in Mozambique has been able to absorb paid work personnel overtime. The country has achieved remarkable macroeconomic progress over recent decades, boasting one of the world's highest rates of GDP growth. Averaging between 5% to 7% per annum over the past decade (Nucifora et al., 2011; Macuane & Muianga, 2020). However, there are concerns that this achieved growth did not benefit the majority by creating much needed growth in waged and salaried work (Castel-Branco & Nuno 2014). In this paper, wage and salaried workers are those workers who hold the type of jobs defined as paid employment jobs, where the incumbents hold explicit employment contracts that give them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work (Polivka, 1996; Sule et al., 2015). As of 2021, an estimated 68% to 95% of the country's labour force is argued to be working in the informal sector (Aga et al., 2021). Those employed formally are argued to be either in low-productivity or low paying jobs, making economic growth unsustainable and less inclusive.

Given the above, this paper contributes to the body of knowledge by estimating an econometric model to understand the significance of economic growth in Mozambique towards the growth of waged and salaried jobs. This debate has not been fully exhausted in the context of Mozambique as there are still debates as to whether economic growth is the answer to joblessness and poverty reduction in Mozambique or not (Cunguara & Hanlon, 2012; Arndt et al., 2011). Some of the debates come from the point that Mozambique witnessed respectable economic growth levels for a decade and a half, surpassing the average growth rate of the Sub-Sahara countries. However, over 70% of its labour force still work in the agriculture sector and the country is still largely informal (Harrington & Coduras 2019). Also, the income per capita of the country underperformed compared with the Sub-Sahara Africa figures despite witnessing high economic growth patterns compared to the averages of the region (World Bank, 2021).

It is the mismatches between economic growth, job growth, informality and economic development that give this paper a firmer foundation to make a contribution in the debate of inclusive economic growth in Mozambique and Africa at large. The contribution of this paper would be on analysing the relationship between economic growth and growth in waged and salaried work in Mozambique. That makes this work to be the first in trying to unpack that relationship in the context of Mozambique at least to the best of our knowledge. As a result, this paper makes a huge contribution in unpacking the growth-jobs relationship for Mozambique.

The following sections of this paper will focus on the background of the study and that of the Mozambican economy. After the background previous studies on economic growth and paid work or employment creation are discussed. Next, the paper will discuss the methodological issues of the paper before dissecting the findings of the study. Lastly, the paper will conclude and present the policy proposals to relevant stakeholders in Mozambique.

Background and stylised facts about the Mozambican economy:

This section is dedicated to give a brief background and visuals about the Mozambican economy. The section shall highlight the economic growth path the country has walked on as well as other important highlights of the country in line with what this study intends to achieve.

To have a picture of Mozambique's economic growth path over the past two decades, please refer to figure 1 below. According to figure 1, Mozambique's economic growth rates have been above and better than the SSA's averages for a full decade from 2005 until 2015. The covid-19 however disrupted the positive economic growth path in 2020 as the economy dived into negatives (-1,2%) before rebounding to 2,4% in 2021.

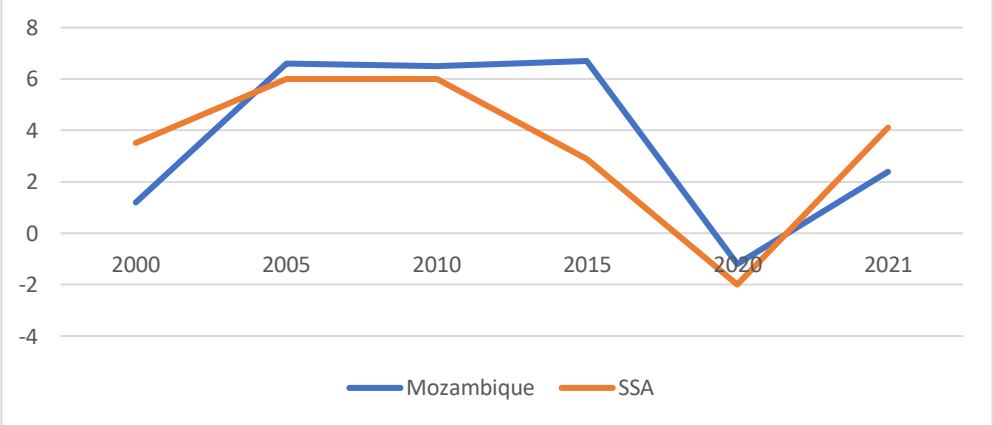

Figure (1): Economic growth trends for Mozambique and SSA (In percentages)
Source: World Development Indicators 2021 (World Bank)

Further, as the country has been achieving respectable economic growth patterns compared to other resource rich countries and Sub-Sahara Africa, there is no evidence of structural change in the economy. The country has

largely remained agriculturally based (75% are employed in agriculture), and there is no growth in value addition in the economy as only 0.6% of the labour force is employed in the manufacturing sector (World Bank 2021). There is lack of a clear link between the agriculture sector and the manufacturing sector. In addition to the above, the income per capita of the country stunted pushing the country's ranking below its peers and under Sub-Sahara Africa's averages. See figure 2 below.

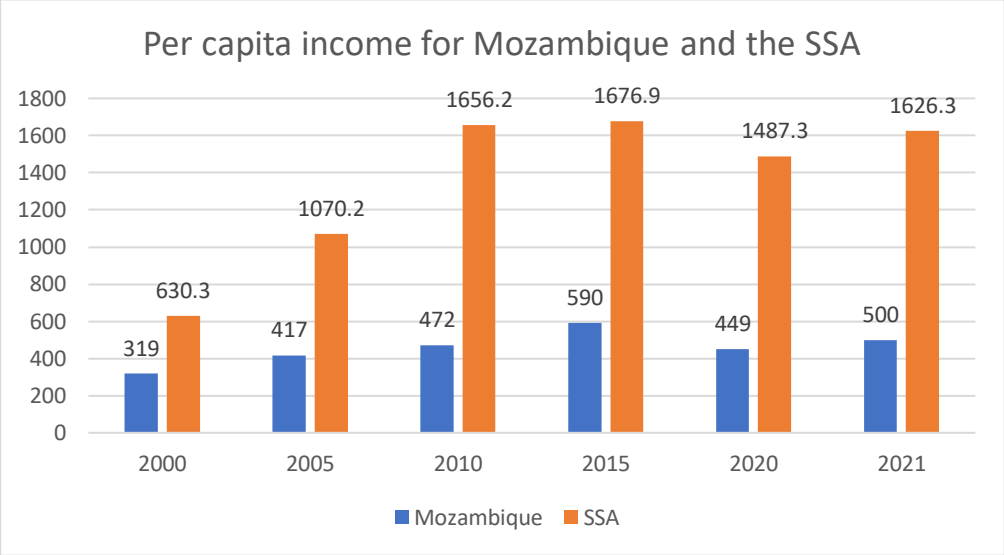

Figure (2): Mozambique's Per capita Income compared with SSA (figures are in US dollars)
Source: Word Development Indicators 2021 (World Bank)

Looking at figure 2, it can be observed that Mozambique has had a steady increase in its income per capita over the past two decades but the size of the progress has been very small. For example, GDP per capita was $319 in year 2000, and it has not doubled twenty years later although remarkable attempts were made by year 2015 (World Bank, 2021). Looking at the averages for Sub-Sahara Africa, the figures rose from $630,3 in 2000 to more than doubling in 2010 and maintained that for a decade from 2010 to 2020 (World Bank, 2021). Despite enormous progress by other countries in SSA as evidenced by the averages reported by the World Bank, Mozambique has been performing below average as displayed by figure 1 above.

Given the mismatches highlighted above between high economic growth, a large informal economy and a small percentage of manufacturing jobs (Harrington & Coduras 2019; Hanlon, 2010); this paper was motivated to empirically examine how economic growth in Mozambique has contributed to job growth.

Literature Review:

Determinants of labour demand:

Labour is an input in a production system and its demand depends on various aspects. According to Ashton et al. (1990), a firm's position in its product market and the state of that product market are regarded as the most important factor in determining the level of labour demand. A firm continues to employ if the additional output from the added employee add to the firm's profit. That makes increased profits as a key determinant of labour demand. Ashton et al. (1990) emphasised that in the manufacturing sector, many of the firms will likely be forced to reduce the size of their labour force or to stop hiring more labour if the economy is affected by economic cycles such as a recession. During a recession aggregate demand falls and that eats into the profitability of firms forcing them either to stop demanding for additional labour or retrench. On the other side, economic booms are expected to increase profitability of firms through increasing aggregate demand in the economy. Barro and Grossman (1971) were firm to argue that employment should be increased by an increment in aggregate demand. The assumption is that during economic booms or periods of high economic growth, firms hire additional workers or more workers since their profitability is assumed to be rising during such periods.

On the other hand, the ability of a company to maintain its market share either as a result of foreign or local competition can be a very important determinant of labour demand (Kondo, 2013). If a firm can grow its market share, that also grows its profitability and later its labour force. Further, Oztuck et al., (2019) stated that the more productive the labour, the more the appetite of firms to employ more labour. They further go on to argue that when labour productivity increase, the wages earned increase also. These assertions take from the neoclassical labour demand assumptions. The neoclassical labour demand assumes that future profitability expectations increase the chances of employment growth in a firm (Barrow & Grossman 1971). There are many factors that can increase

future expectations for profitability. These range from cost of capital (interest rate), economic policies, structure of the labour market, the level of skills, the cost structure of the firm and many other factors (Kondo, 2013). If a firm that is productive expects future profitability to be high, that firm is likely to demand more workers so that it can expand its output. However, output constrained firms are assumed to be at their nearest desired level of employment, hence they will not demand more labour (Symons, 1985).

Economic growth and jobs nexus:

Economic growth alone does not necessarily translate into more and better jobs, especially for the poor, vulnerable and those at risk of being left behind. However, economic growth is a prerequisite for increasing productive employment; it is the combined result of increases in employment and increases in labour productivity. At the global level, Kapsos (2005) finds that for every 1-percentage point of additional GDP growth; total employment has grown by between 0.3 and 0.38 percentage points during the periods between 1991 and 2003. On the other hand, Khan (2007) finds employment elasticity of GDP growth in developing countries to be 0.7. The studies discussed above have revealed that there is a positive relationship between economic growth and job creation. This kind of economic growth is sustainable in the sense that it creates employment for those with little or no skills and that has a huge impact on reducing unemployment and poverty levels.

However, the pattern or nature of growth matters, too. The impact of economic growth on productive employment creation depends not only on the rate of growth, but also on the efficiency by which growth translates into productive jobs. Basnett and Sen (2013) argue that growth in manufacturing and services sectors have a particularly positive impact on employment. On the other hand, the impact of GDP growth on employment in agriculture is found to be limited overall while value-added growth in the agriculture sector has a relatively large impact on employment (Basnett & Sen 2013; Hanlon, 2010). For textiles, the evidence was small, but the study suggests that growth positively contributed to job creation. For agri-business/food processing, the authors find a positive impact of growth on employment.

Further, Melamed, Hartwig and Grant (2011) suggest that growth in services has become relatively more important in driving employment than manufacturing. The authors looked at 24 growth episodes from the 1980s, 1990s and 2000s in which there was evidence of the impact on employment in different sectors. In 18 of these, poverty had fallen. The other 15 cases witnessed a rise in employment in services whilst in the other 10, there was a rise in industrial employment and in 6 cases a rise in employment in agriculture. Looking at the 24 episodes that Hartwig and Grant looked at, it is evident that economic growth as a result of a boom in the service sector has capacity to create more jobs compared to the manufacturing sector which has been threatened by automation and labour substitution.

To add, the International Labour Organisation (ILO) holds the view that, to achieve the goal of transforming growth into employment, there is need to promote global policy frameworks and partnerships that aim at generating more quality employment opportunities (Burnod et al., 2018). At the country level, there is need to develop, implement and monitor coordinated and context-specific policies and programmes that promote quality job creation through economic diversification and investment strategies, skills development for present and future needs in the labour markets, as well as labour market activation and intermediation that integrate the most vulnerable groups especially those in rural areas and those who work in the informal sector. In the context of Mozambique, for economic growth to be inclusive and contribute to quality and decent paying jobs, economic growth must create more jobs in the formal sector and out of the agriculture sector. Currently, employment opportunities in the agriculture sector commands approximately 70% of all employment opportunities in Mozambique (Mercandalli et al., 2016). Looking back in 2001 when total labour in the agriculture sector was 82%, it can be argued that there has been progress but when one looks at the GDP per capita, that progress looks to be very small.

According to Walker and Ricaldi (2021), economic growth must increase income of the poor as that increases investments in other sectors like education and health which will boost growth further in the long run. In addition to increased spending by poor people in the said sectors above, poor people spend most of their money on goods and services which further grows the economy whilst creating more economic opportunities. The argument by Walker and Ricaldi supports the narrative by Besley and Cord (2007) who argued that economic growth should not be about the quantity of jobs created but the quality of jobs created. The authors' position was that high quality jobs or high paying jobs have higher chances of reducing poverty and taking more people out of the informal economy which creates more opportunities mostly for the private sector.

Further in the debate of the impact of economic growth on the growth of paying jobs in Mozambique, Jones and Tarp (2016) argued that there is need for policies that raise the labour demand in Mozambique. This argument came as a result of the continued high informality and stubborn poverty levels in the Mozambican economy. The authors went on to explain that the public sector in Mozambique is constrained to create a significant number of

jobs to eliminate the informal sector whilst reducing poverty and the most possible solution was to give hope and support the private sector to do it. However, Besley and Cord (2007) had argued that the public sector is supposed to play a key role in creating paid jobs in Mozambique and through the multiplier effect more jobs would be created by the private sector. The authors asserted that investments into infrastructure like roads, water facilities, electricity and rail have capacity to create millions of jobs for the 500 000 young Mozambicans who enter the job market every year. The narrative by Besley and Cord hold true especially when we consider the fact that increased job opportunities mean increased incomes and taxes. The growth of the public purse can then further expand spending in other key sectors of the economy like health, education, research and development and more which further creates opportunities making investments by the government towards infrastructure an important key in the creation of salaried jobs which are desperately needed especially by young Mozambicans.

Methodology:

This section discusses the methodological issues of the paper, ranging from the data used, data properties and the estimation procedures to be followed to answer the central question and achieve the central objective of the study.

Data issues:

To understand the impact of economic growth on waged and salaried work in Mozambique, the paper used annual time series data accessed from the World Bank's World Development Indicators (WDI) platform for the period 1991 to 2021. The data was then subjected to unit root testing to observe the properties of the data and to decide which econometric model to estimate. After that, the variables included in the paper were also tested for cointegration after realising that some variables were stationery in their levels whilst some were stationary after first differencing (mixed order of integration).

Variable description:

WASW- This is the dependent variable in the model. It is the percentage in the labour force that has a paying job with a signed contract of employment.
LCAPITA- This is the logged income per capita in Mozambique. It is computed through dividing the national output or income by the total population in the country. The variable is in the model as an economic growth proxy of the country. We expect LCAPITA to positively impact WASW in the model.
LGFCF- The logged gross fixed capital formation is also another independent variable in the model representing the level of infrastructure investment in the country. We expect LGFCF to positively impact WASW in the model.
LGVA- The logged gross value added is also an independent variable in the model. It measured the summed value of all the value that was added in an economy at each stage of production in the economy. We expect the LGVA to have a positive influence on the number of waged and salaried workers in the model.

Estimation procedure:

This section discusses the estimation technique used in the paper as well as the procedure that was followed for data analysis. After the data was collected, variables were subjected to unit root testing to observe their order of integration. The order of integration helped us to decide whether to go on to test for cointegration and as a result the estimation technique to follow. Table one 1 below indicates that our variables were of mixed order of integration (some I(0) and some I(1)). That means we could not run a simple ordinary least squares regression since we had variables with different properties but an Auto-Regressive Distributed Lag (ARDL) model. As a result, we further subjected the variables for cointegration testing to see if a long-run relationship exists. The cointegration testing was done through the bounds testing procedure which indicated that a long-run relation existed among the variables. The study estimated the following equation:

$$LWASW = \beta_0 + \beta_1 LCAPITA + \beta_2 GFCF + \beta_3 GVA + \varepsilon_{t1} \quad (1)$$

Where LWASW is the logged values of the waged and salaried workers, β_0 is the constant term, β_1,……,β_3 are coefficients of the model and ε_{t1} represents the error term. The choice of variables was influenced by factors discussed in the literature review section above where the relationship between economic growth and paid work was discussed as well as other factors that contribute to job creation.

Discussion of Results:

This section discusses the findings of the study that were derived mainly from the time series data that we analysed through the ARDL approach. After estimating the ARDL, we also ran many other diagnostic tests (see the appendix section) to validate our findings.

Table (1): Stationarity tests

Variable name	Stationary in levels (I (0)	Stationary after first difference (I (1)
WASW		Yes
PeCapita		Yes
GFCF		Yes
GVA	Yes	

Source: Author using Unit root tests output in E-Views

After the unit root tests were done and analysed, we discovered that the variables were of mixed stationarity or were of different orders of integration. The next procedure was to ascertain if the variables had a long run association or not. The knowledge of the cointegration status of the study's variables was important in the selection of the appropriate econometric model for the regression analysis. As indicated by table 2 below which presents our cointegration test, we can conclude that the variables involved in the study have a long run association. The long run association is explained by the four (4) cointegrating equations as presented below. The knowledge of variables of mixed order of integration and cointegration made it impossible for the study to pursue the ordinary least squares route as that requires variables to be of the same order of integration and the variables must not be cointegrated. The alternative model of choice was the Auto-Regressive Distributed Lag (ARDL) model. The ARDL allows a study to be carried out even when variables are of different orders of integration and also when the variables are cointegrated which is the case of our study. Further down, table 3 presents the ARDL results which will be interpreted in line with the key objectives of this study.

Table (2): Cointegration test

Hypothesized No. of CE(s)	EigenValue	Trace Statistic	0,05 Critical Value	Prob**
None*	0.80208	76.06028	47.85613	0.0000
At Most 1*	0.45508	32.32380	29.79707	0.0251
At Most 2*	0.34644	15.93176	15.49471	0.0430
At Most 3*	0.15189	4.448078	3.84146	0.0349

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
** MacKinnon-Haug-Michelis (1999) P-values

Diagnostic tests:

After estimating the ARDL model, we tested for autocorrelation in the errors in our regression model. We used the Breusch-Godfrey serial correlation test which utilises the residuals from the model that we estimated, and we derived a test statistic from there as displayed in table 3 below. In our interpretation, if the p-value that corresponds to this Chi-Square test statistic is less than 5% or 0.05, then we reject the null hypothesis and conclude that heteroscedasticity is present (Aslam, 2016). Otherwise, we fail to reject the null hypothesis. The probability value we got from the Breusch-Godfrey serial correlation test is above 5% or 0.05 meaning that our model does not suffer from serial correlation which gives us confidence in the robustness of our model.

Table (3): Breusch-Godfrey Serial Correlation LM Test

F-Statistic	0.445655	Prob. F(2.21)	0.6463
Obs* R-Squared	1.140024	Prob. Chi-Square (2)	0.5655

Source: Author using output from Eviews

After testing for correlation, we also tested for omitted variable bias in the model. To achieve that, we used the Ramsey Regression Equation Specification Error Test (RESET). The test also checks whether non-linear combinations of the fitted values help explain the response variable or the dependent variable (Ramsey 1968; Volkova & Pankina 2013). According to table 4 below, the probability values for both the t-statistic and F-statistic are above 0.05 which means that the estimated values are free from specification errors. Our results for the Ramsey RESET test gives us confidence as they indicate that the model that we estimated was correctly specified and the results are credible.

Table (4): Ramsey RESET test

	Value	Df	Probability
t-statistic	2.163538	22	0.0624
F-statistic	4.680898	(1, 22)	0.0624

Source: Author using output from Eviews

Main results of the study:

Using the ARDL estimation results, this paper found that economic growth positively impacts the growth of waged and salaried workers in Mozambique and the relationship is statistically significant. The relationship

between economic growth and waged and salaried workers has a t-statistic of 1.9921 and a probability value (p-value) of 0.0515. To measure growth, the paper used income per capita or GDP per capita (PECAPITA) as a proxy for economic growth whilst using waged and salaried workers' (WASW) growth as a proxy for paid work growth. Given our results, we can confidently claim that economic growth in Mozambique is sustainable although. However, more still need to be done so that more unskilled and less skilled people can be included in the mainstream economy. The inclusion of the poor in the economy will help create more jobs in the formal sectors and shrink the informal sector that characterises the Mozambican economy today.

Table (5): ARDL (1, 0, 1, 0) estimation results

WASW	Coefficient	Std. Error	t-Stat	Prob
WASW (-1)	0.9330	0.0399	23.3898	0.0000
LCAPITA	0.6671	0.1625	1.9921	0.0515
LGFCF (-1)	0.3587	0.1820	1.9712	0.0609
LGVA	-0.1989	0.0934	-2.1297	0.0441

Source: Authors using ARDL estimation results

The paper also looked at infrastructure investment (GFCF) growth in Mozambique and its impact on sustainable livelihoods (WASW). Our results indicate that infrastructure investment is positively associated with growth of waged and salaried workers in Mozambique and the variable is significant at 10% level of significance with a p-value of 0.0609 and a t-statistic of 1.97. These findings concur with the findings from Kumo (2012) and Zandi and Yaros (2021) who concluded that investments in infrastructure are important in creating and sustaining jobs in an economy. When an economy dedicates a significant portion of its national budget on infrastructure investment, it creates jobs for all levels of skills including those with no or limited skills. The assertions by Kumo; Zandi & Yaros are true for Mozambique mostly because it is a country that is struggling with skilled labour force, hence investing in infrastructure will help in creating jobs for those with limited or with no skills at all. The implications of these results are that Mozambique can create more waged and salaried work for its people if there is increased investment in both public and private infrastructure.

Lastly, when it comes to Gross Value Added (GVA), our findings indicate that increases in GVA negatively impact growth of waged and salaried workers. The findings of our study might indicate that as the economy creates and adds more value, corporates reduce the number of employees that they require for production. This might also mean that the manufacturing sector in Mozambique substitutes labour with automation as it processes primary products into secondary products. According to the African Economic Outlook (2017), despite massive economic growth created by huge economic projects mainly in infrastructure development, the impact of growth on poverty and unemployment reduction has been minimal. On the other hand, Jones and Tarp (2016) also echoed the same sentiments arguing that growth in Mozambique, especially in the manufacturing sector had not been export-oriented and labour-intensive.

Conclusion and Policy Recommendations:

Mozambique has experienced tremendous economic growth over the past decade with much of the economic activities dominating the extraction sector. However, that economic growth upward trajectory has not meaningfully impacted job creation and poverty reduction. The country still has approximately 80 percent of its labour force employed in low paying agricultural jobs, poverty is still hovering over 50 percent whilst unemployment is around 27 percent. Given the above, the objective of this study was then to empirically examine how economic growth in Mozambique impact the growth of waged and salaried workers. The economic intuition is that, when economic growth increases, the number of waged and salaried workers also increases. That situation puts a country in a better position to reduce poverty and unemployment. We went further to estimate an ARDL using waged and salaried workers (WASW) as a dependent variable explained by economic growth, infrastructure investment and gross value added. Our key findings were that economic growth in Mozambique does have a positive impact on growth of waged and salaried workers (WASW) and the relationship is statistically significant. That means economic growth has been contributing significantly to paid work in Mozambique. However, the remaining high levels of poverty regardless of positive economic growth patterns over the past decade is of concern for policy makers in Mozambique. We also found that growth in infrastructure investment contributes positively to paid work. Lastly, we found that gross value added in the economy negatively impact paid work. Policy recommendations arising from our findings are that responsible authorities need to embark on massive infrastructure investment since it was found that its growth has positive traction of waged and salaried work growth and economic growth which also contribute to further job creation.

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