

INFRASTRUCTURAL DEVELOPMENT AND POVERTY REDUCTION IN AFRICA

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Abstract

The topic is centred around Africa and ailing infrastructure. The advancement of infrastructure in an economy heighten the standard of living of citizens. The piece of writing have subheadings such as infrastructure and growth in Africa as well as infrastructure and poverty reduction in Africa. Each of these subsection is characterized by tabular analysis of the impacts of infrastructure in Africa. Remarkably, infrastructural development in Africa over the past decades has increased the yearly growth rate by over 13 percent in Africa. It has also been proven by research findings that telecommunication infrastructure produce the highest contribution to Africa's gross domestic product. Regrettably, the huge returns from infrastructure in the continent has not been equitably distributed among the citizens as a result African dwellers experience low standard of living, suffer untold hardship and wallow in poverty trap. The recommendations of this work are outlined as the role of the government, provision of alternative sources of finance, meeting the needs of the poor role of the private sector etc.

Keywords: Infrastructure, Economy, Poverty, Advancement, Telecommunication, Development

Introduction

The adequate supply of infrastructure services has been long viewed as essential for economic development and poverty reduction both in the policy, its implementation and academic realms (Ariyo, 2009). Over the years, considerable efforts have been devoted to theoretical and empirical evaluation of the contribution of infrastructure to growth and economic development. More recently, increasing attention has also been shifting to the impact of infrastructure in poverty and inequality (Ariyo, 2010). On the whole, an agreement has been reached that under the right conditions, infrastructure development can play a major role in promoting growth and development in any nation where it is largely in existence. Unfortunately in spite of this universally acknowledged attributes and importance, Africa's continent trails behind other regions in infrastructure service delivery and quality, with the gap widening over time (Ariyo, 2010 op-cit).

This is clearly demonstrated in the energy sector with about 800 million citizens, 48 countries in Africa produce collectively about as much power as Spain, which has only a fraction (1/18th) of the population (Jerome, 2010). Despite its great potential in clean energy resources such as hydropower solar wind, and geothermal, investment in new facilities in Africa has been woefully inadequate, creating a long supply imbalance (Jerome, 2010). In the context

of economic stagnation, poor governance and fragile public institutions, it is estimated that almost two thirds of African. Urban dwellers are living in slums, characterized by deficient infrastructure unless current approaches to urban development change radically (Pieterse, 2012). Across Africa rapid urban growth has been accompanied by a host of problems such as unemployment and underemployment, a burgeoning informal sector, deteriorating infrastructure and service delivery capacity, overcrowding, environmental degradation and an acute housing shortage (Pieterse, 2012). The lack of modern infrastructure is an impediment to Africa's economic development and a major constraint on poverty reduction, as well as the attainment of the Millennium Development Goals (MDGs). Available evidence shows that lives and livelihoods are suffering from the fragile state of Infrastructure in sub-Sahara Africa. The lack of adequate transport, power, communication networks, water, sanitation and other infrastructure puts severe problems on economic growth and development across, the African continent. Inadequate infrastructure erodes Africa's competitiveness and makes bringing African goods and services to the world market place a challenge (Jerome, 2010).

According to the World Bank's (2009), doing business in most sub-Saharan African countries with few exceptions, rank in the bottom 40 percent of all countries in the trading across borders indicator. The needs for infrastructure in Africa are large, hence the development of interest in the continent's infrastructure. From rural roads, railways and harbours, to irrigation systems, telecommunications, clean water sanitation energy and such basic social infrastructure as health, education, banking and commercial services, hundreds of millions of Africans lack even the most fundamental amenities, This is particularly true in rural areas, where the minority of the people live.

Conceptual Framework

Accordingly the piece of writing revolves around Africa and ailing infrastructure. The various concepts that will be explained are the concepts of infrastructure, ailing and Africa.

There is no iron clad definition of infrastructure. It is most commonly discussed in terms of its characteristics - longevity, scale, inflexibility and higher investment costs. But that is rarely seen as satisfactory. According to Pieterse (2012), other characteristics describe infrastructure as:

- i) Essentially public goods, providing in principle, nonexclusive goods accessible to all.
- ii) Fixed investments, bulky and lump-sum with long or no pay back periods.
- iii) Having considerable variation in earning power capacity
- iv) Output mostly in local currency

According to Ariyo (2010), economic infrastructure is also at a given point in time, part of an economy's capital stock used to facilitate economic production or serve as inputs to production (e.g. electricity, good roads and ports). This helps to produce items that are consumed by households (e.g water, sanitation and electricity). Economic infrastructure can further be subdivided into three categories: utilities (power piped gas, telecommunications, water and sanitation, sewage and solid waste disposal), public work (roads, and water catchments in dams, irrigation and drainage) and other transport subsectors (railways, water ways and sea ports, airports and urban transport systems (Ariyo, 2010). In national accounts statistics, these are found in two subheadings of the gross domestic product (GDP): electricity gas and water are located in the secondary sector; while transport, storage and communication

are found in the tertiary sector (Ariyo, 2010).

Social infrastructure on the other hand encompasses services such as health education, and recreation (Jerome, 2010). It has both a direct and indirect impact on the quality of life. According to Jerome (2010), directly it enhances the level of productivity in economic activities indirectly, it streamlines activities and outcomes such as recreation, education, health and safety. The indirect benefit of improved primary health care for example, is improved productivity, which in turn leads to higher economic growth and real incomes.

According to Ariyo (2010), social infrastructure also facilitates investment in human capital that ensures better utilization by some of the economy's physical capital stock and thereby raises the productivity of the workforce. The impact on growth is similar to an increase in the supply of capital which is a higher- capital to labour ratio that enables a given number of workers to produce more output per capita.

It also enhances the quality of life of the populace by empowering them economically, politically, and socially with the attendant positive effects on efficient use of national resources and poverty alleviation (Ariyo, 2010).

The many benefits of infrastructure have also been confirmed by the United Nations millennium project (2008), which advocates for a major increase in basic infrastructure investments to assist countries especially in Africa escape the poverty trap.

According to Hornby (2000), something is said to be ailing if it is being faced with difficulty and problems in such a way it does not function effectively. In the words of Wikipedia (2017), Africa is the world's second largest and second most populous continent (the first being Asia). At about 30.3 million km² including adjacent island. It covers 6 of earth's total surface area and 20.4 of its total land area. With 1.2 billion people as of 2016, Africa accounts for about 16 of the world's human population. The continent is surmounted by the Mediterranean Sea to the north, both to the Suez Canal and the red sea along the Sinah Peninsula to the north east, the Indian Ocean to the south east and the Atlantic Ocean to the west. It has 54 sovereign states.

Africa and Ailing Infrastructure

Having attained this height in this piece of writing, the body of the work will be elaborately written under the following indicators to fully: understand to what extent infrastructure in Africa's continent has dwindled. This indicator is outlined as infrastructure and growth in Africa.

Infrastructure and Growth in Africa

Infrastructure in Africa is very central to the various efforts to support growth, reduce poverty and improve the overall quality of life of Africans. A common argument for the push for a large increase in public spending on infrastructure in Africa is that infrastructure services may have a strong growth - promoting effect through their impact on the productivity of private inputs and the rate of return on capital - particularly considering the reality that stocks of infrastructure assets are relatively low. Based on research findings, there will be no growth and no significant poverty alleviation in Africa without a major improvement in the level and state of infrastructure supporting the widely held consensus that the Millennium Development Goals (MDGs) will not be achieved without at least a seven percent annual growth rate for the continent and that this target will not be achieved without a significant increase in

infrastructure Investment.

Estache et al (2008) demonstrated that over the last 30 years, infrastructure investments accelerated the annual growth convergence rate by over 13 percent in Africa. The strongest impact comes from telecommunications, followed by roads and electricity.

Calderon (2008) recently estimated that across Africa, infrastructure contributed 99 basis points to per capita economic growth over the period 1990 - 2005, compared with on 68 basis points for other structural policies. That contribution is almost entirely attributable to advances in the penetration of telecommunication services. The deterioration in the quantity and quality of power infrastructure over the same period has had a significant retarding effect on economic growth. If these deficiencies could be eliminated, the effect would be remarkable. Calderon (2008) suggested that if an Africa were to catch up with Mauritius in infrastructure, per capita economic growth in the region could increase by 2.2 percentage points.

Table 1: How much Faster Africa would have Grown if it had Enjoyed South Korea's Infrastructure Stock and Quality

Country	Actual growth per capital 1996-2000	% point increase in potential growth rate per capital assuming country enjoys south Korea's infrastructure	Potential growth rate per capital (1996-2000)
Boswana	5.32%	0.6	5.92%
Burkina Faso	0.59%	1.59	2.18%
Cote d'ivoire	0.35%	0.64	0.99%
Ethiopia	0.47%	1.47	1.94%
Ghana	1.11%	0.65	1.76%
Guinea	0.07%	1.03	1.10%
Guinea-Prissau	1.19%	0.98	2.17%
Kenya	1.12%	0.91	2.03%
Madagascar	-0.99%	1.21	0.22%
Mali	-0.03%	1.79	1.76%
Mauritania	0.60%	1.57	2.17%
Mauritius	3.71%	0.34	4.05%
Niger	-1.55%	1.87	0.32%
Nigeria	-0.95%	1.01	0.06%
Rwanda	-0.12%	1.23	1.11%
Senegal	-0.28%	0.9	0.62%
Sierra Leone	0.08%	0.92	1.00%
Tanzania	0.58%	1.31	1.89%
Uganda	1.29%	1.16	2.45%
Zambia	-0.76%	0.51	-0.25%
Zimbabwe	1.76%	0.18	1.94%
Sample Average	0.076%	1.004	1.11%

Source: Estache and Woodon (2010).

The above table 1 is rested on analytical approach proposed by Calderon and Serven (2004), Estache and Wood on (2010) shows how they have calculated the increase in the average growth of Gross domestic Product (GDP) per capita that 21 African countries would have had if they had been able to rely on the infrastructure stocks and quality of south Korea during 1996-2000 period. Catching up with Korea's level would bring about economic growth

per capita up to 1.1 percent per year as shown in table 1.

Infrastructure and Poverty Reduction in Africa

There is a very little strong cross-country analytical evidence for Africa on the impact of infrastructure on poverty. A need total evidence on the importance of the sector for the poor is large and so is the evidence generated by donor agencies based on their project work. In a recent overview of the drivers of rural development in Africa.

Nwabu and Thorbeke (2004) cover a wide range of country specific studies which add up to very convincing evidence on the relevance of access to infrastructure for the African rural poor. In the range of impacts covered, they include linkages through gender or human development concern e.g. the significant positive impact of rural transport and water access on women's life and the evidence on the improved access to improve education or health. They also pointed to the impact of infrastructure on the poor through its increased access on self and wage-based employment opportunities.

The microeconomic evidence is much more robust. Wooden and Estache (2010) employ household survey data to assess the impact of policies promoting access to basic Infrastructure services for the poor on poverty in some African countries. The poverty reduction impact of basic infrastructure services is measured by estimating the gain in the implicit rental value of owner-occupied houses when access to a basic infrastructure provided. This gain is then added to the consumption of household in order to have a rough measure of the impact on poverty of access. The gain in rental value due to access to basic services is then estimated from a model in which the rent paid is explained by the characteristics of the house and its location using hedonic semi-log rental regression.

Table 2: Impact of Access to water and Electricity on Poverty, Selected African Countries

	Electricity		Water	
	Mauritania	Rwanda	Mauritania	Rwanda
Percentage increase in rent, percentage increase in consumption per capita	39.8%	56.6%	67.9%	21.40%
Quintile 1	3.8%	5.2%	6.09%	1.17%
“ 2	2.2%	3.3%	3.97%	,72%
“ 3	1.8%	2.8%	3.40%	0.74%
“ 4	1.5%	2.51%	3.09%	0.72%
“ 5	1.2%	1.83%	2.99%	0.52%

Change in extreme poverty (percentage points)

All sample	-1.56	-0.29	NA	-2.01
	-1.65	-0.62	-0.5	-0.27

Change in poverty (percentage points)

All sample	NA	-1.40	NA	-0.56
Household with access	-1.3	: -1.48	-1.05	-0.78

Source: Woodon (2006) and Estache and Wooden (2010)

Table 2 presents the coefficient estimates in the rental regressions for the access to electricity and water for a sample of African countries. The percentage increase in rent obtained with access to basic services varies between 20 and 70 percent of the rent paid by the tenant. Analyses of the interface between poverty and infrastructure services in African countries indicate that the poor access to basic infrastructure is extremely limited.

Evidently, infrastructure coverage is very poor in most countries. This has further worsened the poverty level of those countries especially as their political leaders have failed woefully on their part to make heavy investment in infrastructure. Experience to date has demonstrated that private service companies have not shown eagerness to extend infrastructure to poor informal neighbourhoods. While there may be concrete illustrations, the majority of privatized water and sanitation companies tend to avoid the poor neighbourhood.

There are a host of factors explaining why existing infrastructure interventions fail to serve the poor in Africa. The two most obvious are non-availability of service and affordability problems. Possibly, the one that gets the most attention is the non-availability of infrastructure. Poor households may not have access to the infrastructure services simply because they are too far from the services. This is especially the case for network utility services such as water and electricity. For many among the poor, even if the services were affordable, they would not be able to benefit because the services are not provided in the areas where the households are located. But there are also problems on the demand side, as the cost of being connected to the network. When the network is available is frequently too high for the poor. The affordability problem is particularly acute for the process.

Conclusion

This piece of writing is rested on Africa and ailing infrastructure. In the last few years, Africa has witnessed some modest improvements in infrastructure development especially in telecommunications. But in reality, Africa ranks at the bottom of all developing regions in most dimensions infrastructure performance indicators. Not only does the continent's existing infrastructure all short of its needs, it lags well behind infrastructure development in other poor regions. Poor maintenance has left much of the existing infrastructure in an unhealthy state; further hindering economic growth and discouraging new investment.

Recommendations

Having discussed that infrastructure development in Africa is ailing and backward: the following measures can be adopted to improve on the situation.

1. **The role of the government:** Government remains at the heart of infrastructure service delivery with or without private participation, government can embark on infrastructure reform for setting and enforcing the basic rules of the game and for regulations. This means that such capital projects would require sacrifice of time, money and sophisticated skills as well as approval of active private participations. Also the government should ensure effective monitoring supervision and accountability in the award of contracts.
2. **Alternative sources of finance:** Improving the capacity of the local financing markets to mobilize resources would be an important part of a sustainable financing strategy. As in other continents, project sponsors in Africa have in recent years sought to increase local financial markets contributions to the debt funding of infrastructure projects that

generate mostly local currency revenues.

3. **Meeting the needs of the urban poor:** In the face of the rapid urbanization in Africa, the issue of an exploding number of urban poor with no or vary limited access to essential infrastructure services are problems to policy makers. The various well tarred roads bridge construction and flyovers, dams, telecommunication etc. could be afforded to urban centers.
4. **Role of the private sector:** Active private participation in infrastructure is not only about financing, it is more importantly about capacity building, transferring better technologies, innovations and removing capacity constraints to implementation.

The other recommendations that are given to improve infrastructure in Africa are outlined as follows:

- i) Appropriate regulations
- ii) Meeting the rural challenge
- iii) Regional integration

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