



## The Impact of Road Infrastructure on Rural Development in South Africa

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### **Abstract**

In South Africa road infrastructure play a critical role in the rural areas towards improving their livelihoods. The rural community members use road networks for travelling from one area to another such as schools, clinics, shopping complex, work etc. For the past decades the government established programmes to improve access to road networks especially within the rural areas as a result of the injustices left by the apartheid government. However, there are still challenges within the rural areas of lack of transportation as a result of improper road networks for travelling. The purpose of this paper is to analyse the impact of road infrastructure on rural development. This paper adopted systematic data processing approach which is a qualitative data analysis method of reviewing literature from different scholars with regard to the research topic in question. The researcher grouped the information into themes prior reviewing them to derive results. The paper indicated that measures have been taken by the government in improving road infrastructure. However, the initiative did not yield ample outcome due to financial constraints on the government. It has also shown that rural communities members are still struggling to access transportation due to dilapidated road networks, as such that poses a serious threat towards their livelihoods. Therefore, the government need to come up with new measures on how they could develop road networks towards rural development. There is a need to seek stakeholder involvement such as business people, farmers and the private sector to assist in constructing proper road. Public private partnership is one of the key tool towards infrastructure investment.

**Keywords:** *Road Infrastructure; Rural Areas; Rural Development*

### **Introduction**

The apartheid legacy in South Africa gave a new damn to democracy which resulted in a number of challenges such as inequality, poverty and inadequate access to basic services. Some of these challenges are visible within the rural areas culminating in the need for measures towards poverty alleviation and the development and empowerment of the rural communities (Sewella, Desai, Mutsaers, Lottering, 2019). Road infrastructure is one of the key element towards improving the standard of living of community members. As such infrastructural development is plays a critical role in creating job opportunities and reducing the increasing level of poverty within the rural communities. However, most

of the developing countries are experiencing the infrastructural development problems as the economic growth is not advanced as the as the developed countries (Nyawo & Mashau, 2019).

According to Mofomme (2019) an efficient and effective transport system results in access to the markets, work and investment opportunities. Road transportation in South Africa is an important asset as it is used as a tool to drive the economy efficiency by moving goods and services around people and across different countries. Transport play a critical role in all sectors, the society, community and work, as the people require transport to travel to school, work and move raw materials after production to the market place. As a result, a developing country such a South Africa require efficient and effective road networks from one point to another. Nyawo & Mashau (2019) purport that rural road infrastructure is an indispensable asset for rural community members and in South Africa the state of rural road networks has been deteriorating and the government seem not to pay attention to them. The rural roads in South Africa are mostly gravel with poor maintenance and this affect the rural economy badly as the farmers cannot transport the fresh farm produce to the commercial markets.

Sewella, Desai, Mutsaers & Lotteringa (2019), highlight that inadequate access to social and economic opportunities is a well-known problem as a result of improper rural road infrastructure. The legacy of apartheid and colonisation in South Africa has left backlogs of service delivery in rural areas and as such left many of the black people in disgruntled rural areas as a result of policies such as Natives land act of 1913. Furthermore, Nyawo and Mashau (2019) contend that many rural areas in South Africa are still characterised by high levels of unemployment, poverty, inequalities, poor infrastructure and poor service delivery. That result in a slow pace of development especially when it comes to infrastructural development.

Chaminuka, Senyolo, Makhura & Belete (2008) purport that one of the biggest challenges of small-scale farmers in South Africa is the high transaction costs that came as a result of poor infrastructure. The same problem applies to the members of communities whom continues to struggle to get access to basic services such as water, electricity and sanitation. Lawami (2019) highlights that for the past decades the government have been unable to sustain the transportation system as the key driver of the economy in order for the future generations to be able to fulfil their needs. The important role of developing the transportation infrastructure is to ensure that everyone has access to mobility in order to support their daily households and business activities without any hindrance. Furthermore, sustainable transportation leads to improved standard of living, reduced poverty and economic growth.

Rasila (2019) indicates that worldwide the government have established the development plans in order to improve the standard of living of the citizens, especially those in the rural areas. Ezeuduji and Mgabhi (2023) emphasise that rural development in developing countries such as South Africa remains an important aspect particularly in the rural communities with poor economic activities. It is further seen as a strategic tool to improve the socio-economic growth of the people as its main focus is towards improving the quality of life of the citizens and enhance their social and economic wellbeing.

## ***Theoretical Framework***

This study has been framed through the Walt Whitman Rostow's Modernization Theory which emerged in the 1960s, informed by the need of the United States government to have an ideological basis to register its support to the Alliance for Progress which was the new US policy towards Latin America. This theory's premise is the establishment of an ideal of the modernized nation, setting universal standards of economic, social and cultural development to all countries (Freire & Lima, 2018). According to Chigudu (2019) the modernization theory study the social evolution and development of societies through directing the policies towards efficient production measures to transform the pre-modern towards the socio-economic status of an advanced society.

The modernization theory as it places its focus on the developmental state of the societies, this requires that the rural areas be transformed to a better economic and social state of welfare. This development within the rural areas can be achieved if the government focus on the most important factor which is road infrastructure as a mechanism that could be used to drive economic growth and improve the standard of living. Olasupo and Plaatjie (2016) contend that this growth and development was attached to the societies, political organizations and the economic sectors which were considered to be a growing sectors. As these sectors are overwhelmingly growing there is a need to ensure that development takes places especially in rural communities.

Ukwandu (2017) highlights that modernization theory was applauded by the policy makers as a mechanism of economic growth in African countries that will improve the standard of living of the poor in the continent. The theory placed emphasis on the construction of modern infrastructures as a way to modernise the tradition African societies. Hopkins (2019) purports that Indeed, one of the crucial advantages of the theory was its ability to produce rapid results for policymakers without engaging in intensive research into the past. Olasupo and Plaatjie (2016) argue that other scholars view modernization theory as not only the aspect of change but as well as the reaction to change. As such the modernization theory received critics that it does not take into cognisance the uniqueness of each society.

It must be born in mind that each society in a particular environment have different challenges. Therefore, as far as development is concerned there is a need for the government to understand the challenges of each area in order to address its issues. Many rural areas have no access to proper road networks and that requires more attention. Tagarirofa (2017) argue that the modernization theory in Africa has placed its focus on rural development initiatives based on traditional values of the rural communalistic societies. This focus resulted in institutionalization of participatory development in most development initiatives to drive core benefits and active participation towards the change of the state of welfare of the societies.

Modernization theory is one of the theories in social science that focused on the study of growth and development and that the state has an important role in stimulating the demand for goods and services to promote economic growth (Hyden, 2010). Modernization theory is based on the belief that the introduction of modern methods in technology and science, focusing on industrialisation that depends heavily on a mobile and cheap labour force; developing countries will experience rapid economic growth and development that will benefit rural areas (Ukwandu, 2017).

## ***Literature Review***

### **The state of Road Infrastructure within Rural Areas in South Africa**

In South Africa there are many rural areas with inadequate transport infrastructure which results in the inability to access social and economic activities. In rural areas the roads are in bad condition which makes mobility difficult and an extensive exercise through walking. This problem hinders income opportunities of the community members as they are geographically isolated and do not have access to agricultural markets. Access to employment opportunities, basic services and household mobility can only be enhanced through the development of the rural road infrastructure (Sewella, Desaib, Mutsaa, Lotteringa, 2019). Globally with the rural areas communities are isolated with limited access to basic services as a result of approximately one billion people living two kilometres far away from the paved road. If there is no access to proper road networks in rural areas, the communities will be faced with dire consequences such as low gross-domestic product (GDP) per capita and infant mortality (Kaiser & Barstow, 2022).

Marais (2022) reported that rural South Africans' lives are under threat as a result of crumbling road infrastructure that limit the society access to hospitals, shopping complex and schools. This is informed by the conducted survey amongst 311 farming operations and all members of Agriculture SA (Agri. SA) which was delivered by the Minister of Agriculture, Land Reform and Rural Development Thoko Didiza in April. One of the members from Agriculture SA (Agri. SA) indicated that it's a serious injustice to lock rural people in the state of poverty and inequality as a result of road. Marais (2022) reported that as much as policy makers are sympathising with the rural people, it seem as if their attention is not directed towards improving the current state and not court order can assist in that regard. Geldenhuys (2021) purports that over the past few years motor vehicle drivers have been faced with a serious challenge of poor road conditions and dreaded potholes that could cause accidents. According to the South African Automobile Association (AA), 60% of South Africa's 535 000 km road network have potholes or are in need of maintenance especially in the rural areas.

As outlined in the Sustainable Development Goals, poverty is a serious problem in developing countries such as South Africa. As much as the government has taken a couple of initiatives to alleviate poverty, the relationship between infrastructure development and poverty alleviation are intertwined. There is a need to draw a clear line between urban and rural infrastructure development and the coupled benefits for these differing contexts (Schachtebeck & Mbuya, 2016). Since the dawn of democracy the South African road transport infrastructure has taken a sharp curve. It must also be acknowledged that the government established the best well-developed infrastructure investment in the field of roads, health and education particularly in the rural communities. However, the roads, railways and ports still require a massive investment for the maintenance and upgrade (Hlotywa & Ndaguba, 2017).

## **The Impacts of Road Infrastructure in Rural Communities**

Kaiser and Barstow (2022) purport that the rural transport sector plays an important role in sustainable development that is intertwined with many sectors. Rural transportation is the critical tool towards the Sustainable Development Goals (SDGs) and a significant contributor to the socioeconomic wellbeing of the people in the communities. According to Fungo, Krygsman and Nel (2017) rural infrastructure is the cornerstone of both rural and urban transportation systems as it plays a critical role in transporting the agricultural goods to the market place. There is a need to improve rural road networks in order to stimulate the agricultural sector development that feeds the society. Road networks play a significant role in the production process of raw materials and also reduces poverty and enhance economic growth in number ways.

Dercon and Christiaensen (2011) contends that the impact of roads on poverty and economic growth is placed through the transportation reduction and improving the access of rural people to the markets and urban shopping complex. If the infrastructure is poor then the local business owners who do not have access to properly constructed roads may increase the prices as the cost of conducting businesses is higher. Proper road networks uplift local businesses by allowing them access to improved technologies, lowering input costs and improving output prices and employment opportunities. Improved infrastructure, such as a road network, assists rural areas in improved mobility, which results in productivity and economic growth. It must be borne in mind that road infrastructure reduces poverty and accelerates agricultural productivity which result in employment opportunities. Road infrastructure links urban and rural areas, and facilitates the mobility of goods and people, thus providing access to roads in a community and leading to access to services such as ambulances and police being able to serve these areas. The lack of roads hinders development that might help the community.

Barrio (2008) believes that poverty and infrastructure are intertwined with the community at some pint for not being able to provide basic services due to a lack of infrastructure. The lack of quality roads networks have a negative impact on agriculture and small, locally owned businesses. Roads in improper condition, which often become slippery when it rains, have a negative impact on transport,

production and the movement of people within an area. Nyawo and Mashau (2019) concur that unfavourable weather conditions, in instances of heavy rains lead to more travelling time on gravel roads. Therefore, improved road networks allow for easy access and movement among the community, and assist in decreasing transport costs and increasing economic activities. Sewella, Desaib, Mutsaaa and Lotteringa (2019), many rural communities do not have access to social and economic activities as a result of isolation, no or broken bridges, bas road networks and insufficient transport services. As a result the people cannot access schools, basic services, place of work and transport goods to the markets.

The importance of rural roads infrastructure for the rural communities cannot be underestimated, as they serve to enhance their socio-economic lives in various ways. Economic opportunities and the sustainable livelihoods of rural communities can be enhanced by improving the rural roads networks (Faiz; 2012; Porter, 2014). In the same way, an investment in the rural roads could often result in an improved local growth since good roads infrastructure allows for commercial opportunities and better performance for the businesses. Furthermore, in developed countries, the improved rural road networks allowed for urban-rural migration, as a result of people seeing the potential for socio-economic development on the basis of the sound road infrastructure. The improvement in the rural roads infrastructure also positively contributes to the country's agricultural productivity. It is, therefore, a fact that an improvement in the rural roads is an attraction for development opportunities, thereby improving the sustainable livelihoods of the rural folks. Lack of proper roads in the rural areas has an effect on service delivery, investments, local businesses profitability and growth, and tourism. It is therefore vital for a country to properly distribute enough budgets for construction, upgrading and maintenance of roads system. The physical features of the road play a crucial part in defining the levels of movability and safety, particularly for rural roads. The developments in the infrastructure have the potential to produce a safer travel environment, particularly a more 'crashworthy' environment (Nyawo & Mashau, 2019).

Brits (2010) argue that one of the common characteristics of transportation is to transport goods to their destination as they cannot be kept in one place for a longer time. Transport infrastructure it's an important element for the effective and efficient functioning and development of socio-economic activities in the society. Transport is central to development, without it people cannot not access jobs, health, education and other activities. If there is no sufficient physical access to resources and markets, growth deteriorate and poverty reduction cannot be achieved. Hlotywa and Ndaguba (2017) contend that the availability of road transport infrastructure investment (ROTI) is very important as it used to enhance the economic grow and development in the country. Sufficient access to road infrastructure investment accelerate the economic activities that improves the livelihoods of the people in the communities and stimulates economic development and improves the well-being of the society.

## **Financing road Infrastructure in South Africa**

According to McGaffin, Viruly & Boyle (2021) infrastructure is one of the important factor to drive the economic growth, reduce poverty and inequality. There is a strong relationship between infrastructure investment and economic growth, as such there is a need to restructure the inequitable, inefficient, unsustainable and fiscally unviable areas. The public private partnership and infrastructure investment has assisted the state to provide infrastructure in remote areas that struggle to access better infrastructure. Luiz (2010) contends that the evidence shows that infrastructure play a critical role in promoting growth and development. The challenges of transport infrastructure in South Africa has affected its international competitiveness, cost of trading, foreign direct investment (FDI) and economic performance. The poor have been negatively affected by the poor infrastructure to access jobs, schools and healthcare services.

Van Rensburg and Krygsman (2019) argue that South Africa has had many debate on how the road infrastructure should be funded in order to allow access to transportation operations. Most importantly the focus was on roads and to make an increase of funding demands made by the stakeholders

such as the public and state-owned entities (SOE). The main areas of arguments was against the fuel levy, toll roads and drivers being taxed unfairly and the road transportation sector subsidising other economic sectors. The government policy papers want to establish their preference for adopting the user-pay principle to fund roads. Ngowi, Pienaar, Akindele and Iwisi (2006) argue that there is a need to emphasize a reliable and well-developed infrastructure for the country's development. One of the important factors of attracting foreign direct investment (FDI) is having access to efficient transportation and modern telecommunication systems for the purpose of expanding the international trade, achieving long-term investment and growth, and ensuring social development of the society. Although, globalisation as a mechanism to fund all viable infrastructure projects, especially in developing countries has not been successful.

According to Hlotywa and Ndaguba (2017) since 2009 there has been a visible decline in road transport infrastructure investments leading to lower economic investment and gross domestic product (GDP). Therefore, it is important to note that road transport infrastructural investment have a direct impact on economic growth as it creates job opportunities and improves the standard of living of the people. It serves as an important input in the production of raw materials and services that improves the quality of life and greater value for money. Schachtebeck and Mbuya (2016) purport that infrastructure investment is one of the important tool towards the development of road infrastructure in the country. The construction of new road infrastructure is a product of public finance as it is considered a public good that must be accessed by everyone. Therefore, the development of road infrastructure is beneficial for variety of things such as business and transportation.

Programmes such as Community Based Public Works Programme, the Poverty Relief and Infrastructure Investment Fund, the Comprehensive Agricultural Support Programme and the Consolidated Municipal Infrastructure Programme as government initiatives to improve the quality and quantity of infrastructure in the rural areas have registered limited impact on the lives of many rural people (Chaminuka, Senyolo, Makhura & Belete, 2008). The African Development Bank has taken into cognisance that investment in infrastructure such as transport, power supply and telecommunication is important for improving economic growth, reducing poverty and improving the standard of living. At a macro level, infrastructure investment allows for better private sector activities through lowering production cost, opening up new markets for goods and services and supporting trade. Road infrastructure improvements can be expected to raise the output price of the producers and lower production cost through the reduced transportation cost of goods and services (Fungo, Krygsman & Nel, 2017).

Access to quality road networks has variety of benefits for the country but this depend on stable and sufficient modes of funding. In South Africa financing roads is one of the complex and controversial issue as it is difficult at some point to implement new forms of road user charges as well as the user-pay principle to promote a sustainable road infrastructure policy framework. The South African framework is under pressure for finance the road infrastructure given its nature and dependence on public good. The government is also overwhelmed to ensure that sufficient funds are spent on road infrastructure and in an economically efficient manner as it has other urgent developmental requirements that needs attention (Van Rensburg & Krygsman, 2019).

## ***Methodology***

The study adopted qualitative method called systematic data processing approach to critically address the research question in a manner that is clear and understandable. The systematic data processing approach is a system that comprises of three steps namely: literature search and screening, data extraction and analysis and writing the literature review. This approach assisted the researcher to respond to the research question in a manner that is not biased and ambiguous. The aim of this paper is to critically assess the impact of road infrastructure on rural development with specific reference to South African

communities. The road infrastructure is one key element that helps the country to shape its economy. It is through the proper construction and maintenance of road infrastructure that the rural communities are able to engage in both social and economic activities such as, travelling to work and school, transporting goods to the markets, accessing shopping complex, clinic etc. The articles that were used in this paper were extracted from the google scholar, the University of Limpopo library database such as the Ebscohost, Emerald and Sabinet as one of the well-known scholarly online database that comprises of articles the tackles the issues of management, administration and economy.

## ***Findings and Recommendations***

On the state of road infrastructure in rural areas it has been deduced that many rural areas in South Africa are still struggling to access transportation as a result of poor road networks. Some of the road are in bad condition with potholes that could cause motor vehicle accidents. This challenge poses a serious threat towards their livelihoods as they cannot perform their social and economic activities. The study recommend that the government need to shift its focus towards the construction and maintenance of proper road networks in the rural areas.

Based on the impact of road infrastructure on rural development, the paper has revealed that road infrastructure play a critical role through transportation. The rural community members use transportation for their social and economic activities such as traveling to work, school and clinics, farming, transporting goods to the markets and accessing the shopping complex. Therefore, the inadequate access to transportation through road networks poses serious health, social and economic constrains. This also leads to poverty as the community members are unable to perform their agricultural activities as a means of food supply. It is recommended that the government inject more finances towards the development of rural areas as they are also the role players in economic growth of the country.

The part of the financing of road infrastructure especially in rural areas it has been revealed that there has been a serious decline towards funding and investment in road infrastructure which directly impacts the economy of the country. As much as the government have come up with many interventions to raise revenue, it has not been enough to deal with road infrastructural problems. It is recommended that the government engage all stakeholders and public private partnerships in order to accelerate their investments towards road infrastructure because is not only the responsibility of the government but also of the citizens at large.

## ***Conclusion***

This paper adopted the modernization theory as tool of argument on the impact of road infrastructure on rural development in South Africa. The paper assessed different scholarly articles to support the argument through the use of systematic data processing approach. It has been revealed that South Africa as a developing country with the history of the apartheid still experiences many challenges one of it being the construction and maintenance of proper road networks especially within the rural areas. The rural community members are still struggling to access transportation due to no proper road networks. This challenge causes serious social and economic constrains as the community members are unable to travel to work and school, transports goods to the markets and access clinics and hospitals. After the analysis the paper concluded that the development of rural communities relies heavily on the access to transportation and that requires the government to shift their focus towards investing on road infrastructure as a catalyst towards economic growth. As much as the onus does not only rely on the government only, but there is a need to ensure that all stakeholders are involved to reach a common goal. One of the aspect of developing rural areas especially through road infrastructure is to engage on public private partnership in order to attract investments that will ensure access to road networks in the rural areas.

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