

# SOLUTIONS TO PUBLIC TRANSPORT CHALLENGES\

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## ABSTRACT

South Africa has gone an extra mile as far as the provision of public transport is concerned when comparing it with other Southern African development countries. A large amount of capital expenditure has been channeled to developments in the public transport sector so that South Africans gets affordable, safe and efficient means of transport. Transparency and accountability in state owned organisations is also important because it reduces levels of corruption and unnecessary costs. Additional costs resulting from poor service delivery result in high logistics costs which burden the poor. Considering that the majority of South Africans travel long distances to work especially in towns and cities, it is important to provide passenger trains and buses which are more efficient than private cars so that cost of travelling to work becomes low and it will not constitute a larger proportion of their income. Adapting to current technological changes is important because it makes the department of transport more efficient. The use of technology enables the design of new engines which consume less fuel or use other alternatives. Therefore using technology encourages sustainability and a shift from non-renewable to renewable resources. People living in rural areas are still facing challenges travelling to schools, hospitals and shopping centers. However the provision of community transport in hospitals and schools enables easy mobility of people. Considering South Africa as a case study, this paper provides the state of public transport in South Africa and possible solutions to address the challenges.

## 1. INTRODUCTION

The apartheid system left a legacy of societal marginalization, fragmentation and the separation of people from their workplace which was mainly caused by poorly integrated transport within the Southern African Development Community (SADC) region (Adam et al, 1995). After the colonization era many cities and towns faced intensifying challenges of coordinating transport systems in order to solve the barricades of the apartheid spatial legacy, rewiring insulated protuberances and reconnecting communities long disengaged for opportunities (Findley & Ogbu, 2011). Since transport is a catalyst for socio economic growth through trade, health and safety, SADC countries have embarked on gigantic public transport development projects that redresses the dysfunctional structures

that promoted segregation, inequality and spatial inefficiency in the public sector (NDP, 2013). South Africa has come way addressing challenges its citizens has be Department of Transport focus more in creating a conducive environment which enables the practicing of sustainable and green methods that enhances easy mobility without negative impacts upon the environment. Considering South Africa as a case study, this paper provides the state of public transport in South Africa and possible solutions to address the challenges.

## **2. OVERVIEW OF PUBLIC TRANSPORT IN SOUTH AFRICA**

In 1994 the African National Congress (ANC) in section 2.9 of the Reconstruction Development Program (RDP) emphasized the need to provide an all-inclusive integrated transport network that promotes socio economic growth in South Africa (RDP, 1994). In order to rectify the spatial inefficiencies, fragmentation, segregation and extreme levels of inequality in public transport industry before 1994, the Department of Transport drafted a white paper on National Transport Policy in 1996 (South African Government Policy, 1996). The main vision was to provide, *“A safe, reliable, effective, efficient and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development while being environmentally socially and economically sustainable”*. In 2003 the first national Household Travel Survey was conducted with the aim of obtaining an enhanced understanding of the transport needs and conduct of households towards public transport (Department of Transport, 2003). The overview showed that two thirds of the population in South Africa still does not have access to decent transport facilities (National household Travel Survey, 2003).

The second NHTS was conducted in 2013. Statistics showed there was an increase in the number of travelers per seven days from 75.6% to 81.4%. According to the NHTS, the number of people who travelled using taxis increased from 59% to 69%, by buses increased from 5.8% to 9.9% and by train also increased from 16.6 to 20.2% from 2003 to 2013. The Rural Transport Development Strategy for South Africa stated that there are improvements in public transport developments in most towns and cities but people living in rural areas are still facing challenges in accessing hospitals, clinics, schools and business centers due to distance travelled (Department of Transport, 2007). About 35.2% of the population in South Africa lives in rural areas (World Bank, 2015).

The 2010 World Cup also played an important role in improving the state of public transport in many cities. Approximately R166.7 billion was spent on improving the state of airport and navigation system, taxi recapitalization programme, improving the Gauteng High-speed Rail Project and the improvement of passenger rail system in 2010 (Transnet, 2013). In 2013 the Department of Transport embarked on a gigantic multi billion project of constructing the Bus Rapid Transport system (BRT) facilities with the main aim of integrating the 13 cities in the Republic of South Africa. R292 billion was to be spent in the next three years for transport and logistics infrastructure, R30 billion for provincial road maintenance, R18 billion for bus rapid transit systems and the refurbishments of over 1700

Metrorail and Shosholoza Meryl coaches (Budget Speech, 2016). Since there is much activity in the transport sector the President of the Republic of South Africa has drawn less attention to public transport in the 2017 State of Nation Address (SONA). President Jacob Zuma only mentioned the R4.5 billion transport development project.

### **3. SOLUTIONS TO TRANSPORT CHALLENGES**

Since 1994, the Department of Transport has taken South Africa to greater heights, making it one of the best countries with improved and well maintained public transport systems in Africa. Since more has been done, it is high time the South African government embarks on a more sustainable transport system with lower logistics costs and promotes rural transport infrastructure.

#### **3.1 Sustainable public transport system**

The global economy is facing a fragile ecosystem that is consuming more nonrenewable resources which are depletable and scarce (Karu et al, 2007). Litman (2008) stated that due to the increase in the rate of urbanization, large amounts of energy are needed to sustain growth of which the transport industry consumes more of it. According to the Brundtland report of 1987, sustainability was defined as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs (Mackie and Preston, 2010). Therefore using non carbon based fuels reduces greenhouse emission effects upon the environment hence the future generation is not compromised from meeting their needs (Lombardi & Shantz, 2015). A sustainable transport system which is economically, socially and environmentally friendly can be achieved through inventing engines that consumes less fuel (Phys. Org, 2016). The design of new engines must enable engine downsizing which consumes less energy hence reducing the level of pollution and consumption of non-renewable resources (Environmental Agency, 2005).

#### **3.2 Introducing inexpensive, efficient and reliable rail public transport**

The introduction of high speed electrified train that links different cities that are more efficient than road transport enables users to shift from road to rail hence reducing the risk of environmental damage (Mackie and Preston, 1996). Approximately 2.2 million passengers travel using the passenger train each and every day in South Africa (Prasa, 2016). Improvements in the rail passenger train so that it will be more efficient, moving at a greater speed than before and less costly to board enables passengers to opt for rail other than using road transport which causes congestion and pollutes more. Despite being efficient, mode of transport must also accommodate low income earners in the society (Kittelsohn & Associates, 2003). South Africa is continuing to move forward in improving the rail system.

#### **3.3 Using modern technology for easy mobility in the public sector**

Technology makes public transport smarter, convenient, safe, affordable and efficient (Department of Transport, 2015). However adapting to technology in the Department of Transport needs awareness of consumer behavior in terms of when, where and how consumers travel and flexible to changes in environment. So as societies move towards the use of autonomous vehicles through google self-driving, safe and shorter route are used using cognitive computing the use of robots on wheels that act as electronic eyes, establishing network eyes will play a very important role in establishing an autonomous transport system (IBM Research, 2017) . Since most activities are done through the internet there is a need to make sure that data charges are low so that travelers can access the service (Akamatsu et al' 2013) This service is already being used by ride-hailing services such as Lyft and Uber (Kelly, 2016). Uber is operating in most towns and cities in South Africa and the longest distance travelled so far is 580km (Fin 24 Tech, 2016). The use of Uber and Lyft improves levels of reliability to passengers and therefore it is a vital solution to congestion and time wasted by passenger taking private cars although it is still expensive.

### 3.4 Improving rural transport systems

According to Rodrigue (2013), the transport sector is usually derived demand because it is not demanded for the sake of travelling but for other activities. Therefore what is lagging behind transport development in rural areas is that most economic activities are done in urban areas (Rodrigue, 2013). Approximately 70% to 80% of economic activities are done in town and cities resulting in more transport development in urban areas as compared to rural areas (Rodrigue, 2013).

**Table 1. Population distribution in South Africa.**

	Urban	Rural	Total
Number of people	34 662 753	18 828 580	53 491 333
Percentage	64.8%	35.2%	100%

**Source: World Bank, 2015**

Given the population size in rural areas as shown in Table 1, car sharing can be a noble idea (Chaitoo & Venkatesh, 2010). People in rural areas live in dispersed communities and they travel infrequently so organizing two or more people travelling the same journey and link passengers to drivers should be encouraged (Chaitoo & Venkatesh, 2010). In order to meet basic necessities like health, education and connecting to conventional bus or rail transport, the arrangements form the basis of community transport. Community transport is operated for nonprofit purposes and its main role is to link the society with their basic needs since conventional transport will be unavailable or physically inaccessible. Schools, hospitals and communities can provide community transport so that public transport services are accessible to everyone in remote areas (Chaitoo & Venkatesh, 2010). In rural areas demand responsive transport can be offered. DRT involves the provision of transport depending upon the demand by users and it includes the use of taxis and private hire vehicles (Chaitoo & Venkatesh, 2010).

### **3.5 Efficiency in state owned transport companies (SOUTH AFRICAN AIRWAYS, PRASA, SANRAL)**

There is still a great debate whether South African Airways, South African National Roads Agency Limited and the Passenger Rail Agency of South Africa should be privatized or keep them as a stated owned firms due to its levels of inefficiency (Ngwenya , 2016). These parastatals provide public transport but they are making huge losses each year. In order to improve the level of public transport provision in South Africa, the government must subsidize these firms because public transport is a necessity especially to the working class who have to travel to and from work (Ngwenya , 2016). Government subsidy will also keep fares as low as possible thus logistics costs become favorable for low income earners. To improve efficiency, these parastatals must also try to keep costs as low as possible through avoiding unnecessary labour cost through restructuring. Reduction in costs results in the avoidance of losses and lower fares are charged to passengers.

## **4. CONCLUSIONS**

Moving towards a sustainable transport system that integrates all members of the society is now of greater importance given the state of transport infrastructure in South Africa. Establishment of modes of transport that cater for people living in rural areas so that they can access education, health and other services is crucial because it improves social and economic activities in rural areas. Transparency and accountability in stated owned public transport organization is also important because it minimizes cost, lowers fares and improves quality of service provision in the department of transport.

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