



The Impacts of Undeveloped Roads on the Livelihoods of Rural Women: Case Study of Nyamana Community

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ARTICLE INFO

Received: 31-05-2016
Accepted: 04-07-2016
Available online: 29-08-2016

Keywords:

Access to healthcare;
Poor service delivery;
Transport burden;
Transport infrastructure;
Women's livelihoods.

JEL Classification:

O18 ;P2 ;I31 ;H75 ;J16

ABSTRACT

Globally poor service delivery is a challenge faced by many rural communities in Third World Countries. The overarching issue of poverty as well as poor services impacts on rural households in Third World Countries. The aim of this study is to assess the impacts of undeveloped roads in the Nyamana community and its direct linkage on the livelihoods of rural women. The Nyamana community is characterised by poor road conditions and is considered an undeveloped area. There is a lack of infrastructural development in the area that places further restrictions on the livelihoods of residents. The use of qualitative and quantitative methods are used in this study. Findings from this study reveal that a direct relationship exist between undeveloped roads and access to many other primary services such as education, employment, healthcare facilities and livelihood strategies. Residents in the Nyamana community have no access to electricity and clean water. In addition infrastructural access is a major difficulty for these residents due to insufficient roads. The study indicates that rural women bear the burden of household chores such as fetching water and collecting fuel wood, which is indicative of the transport burden women carry. Qualitative results of the study reveal that essential services such as healthcare, education and road infrastructure are absent in the community, however no effort is being made by the municipality in improving the provision of services. In addition rural dwellers state isolation and remoteness as a major contributor to their state of poverty, as they are unreachable and non-existent to the rest of society. Additional findings reveal that patriarchy is widespread in the community, which has led to inequalities with regards to access and mobility amongst women.

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DOI: <http://dx.doi.org/10.18533/rss.v1i8.40>

ISSN 2378-8569(Print), ISSN 2378-8550(Online)

1.0 Introduction

The state of service delivery in Sub-Saharan Africa is of great concern, especially in terms of poor service provision of transport infrastructure (Odaro, 2012). Rural roads in Sub-Saharan Africa whether paved or unpaved are defective, not only due to poor design but also a lack of maintenance. This increases the costs of transport services burdening the respective communities socially, economically and environmentally (Porter, 2002). As a result, the lack of access to adequate and reliable rural transport disempowers women, children and the elderly. In turn they are more prone to disease, poverty and gender inequality (Porter, 2013).

This article provides an analysis of the impacts associated with undeveloped roads on the livelihoods of rural women, with evidence drawn from fieldwork conducted in the rural community of Nyamana in Bulwer, KwaZulu Natal in South Africa. The main focus of this article is on women and their livelihoods. This includes aspects of

access to essential services such as healthcare and education as well as the restrictions placed on mobility due to undeveloped roads in rural areas.

Road infrastructure occurred quite late in Africa, caused mainly due to the history of colonialism and the introduction of the Structural adjustment programs (Porter, 2002). The conditions attached to these programs resulted in economic decline in African countries forcing them to cut back on funds for service delivery (Konadu-Agyemang, 2000). Therefore, Sub-Saharan Africa is characterised by high levels of poverty and underdevelopment. As a result there are major differences between rural areas in First World Countries and Third World Countries. These differences lie in the levels and extent of poverty, disease, services and remoteness. Although rural areas (usually referred to as the countryside) in First World Countries may experience poverty and disease, the levels of these phenomena are much higher and to a greater extent in Third World Countries (Knox & McCarthy, 2005). In addition, people from First World Countries usually move to rural areas as a choice to escape the pressures of the city, whereas people living in rural areas of Third World Countries have no choice but to live under harsh conditions as they have no additional options. When conducting research in rural areas, it is essential to understand what a rural area constitutes in the context of your study. This is very important because the term "rural" has no universal definition, largely due to the vast contextual diversity that exist within rural settings. For the purpose of this study, the definition provided by Ward and Brown (2009), which describes rural areas as "places of tradition rather than modernity, of agriculture rather than industry, of nature rather than culture and of changelessness rather than dynamism" best suits the study area. This is particularly the case because of the political history behind rural areas in South Africa. Policies and laws created by the apartheid government such as The 1913 Natives Land Act, allocated 20% of unproductive land to 80% of the black population (De Brauw et al., 2014). The Bantustans or Homelands was the name of these areas that the black population had to occupy under the ruling of the apartheid government. These areas did not have proper housing or basic services such as roads, healthcare facilities, schools, electricity and water and sanitation. Although South Africa is twenty-two years into democracy, a majority of the black population still live in underserved rural areas, suffering from changelessness (Zuma, 2013). Inadequate basic services and infrastructure are a major challenge in South Africa (Monitor, 2012). This is particularly evident in rural areas, where a majority of rural communities in developing countries do not have access to safe drinking water, electricity, reliable transportation or modern communication services. Road infrastructure specifically, is vital in rural areas as they connect rural areas to urban centres which lead to growth and mobility. Improved road infrastructure facilitates accessibility which enables the delivery of basic services such as healthcare and education (Barrios, 2008; Hettige, 2006). Rural roads have a pivotal role to play towards poverty reduction, gender equality and creating sustainable livelihoods. This is particularly relevant in rural areas of South Africa that are characterised by patriarchy, where women's needs and views are not valued (Coetzee, 2001; Essien & Ukpung, 2012). As a result rural issues regarding road infrastructure has gained momentum locally and globally and is a significant research field of study (Byceson et al., 2003; Hamilton, 2005; Peters, 2001; Porter, 2014).

Findings from Banjo et al. (2012); Blackden and Wodon (2006); Mitchell (2002) and Porter (2002) suggest that, women are known to carry a heavy transport burden when compared to men. This is due to their multiple roles they play in the household (Mitchell, 2002). Rural women play a critical role in the economy of rural areas in both developed and developing countries. They are responsible for providing their families with food, water and fuel. Rural women also take on the tasks of participating in crop production and livestock care, while engaging in off-farm activities. In addition, women are responsible for essential reproductive functions such as caring for children, the sick and the elderly (Blackden & Wodon, 2006; Buvinić & Gupta, 1997). "Women account for 65% of all time spent on household transport activities and 71-96% of all domestic travel" (Porter, 2013). Many of the activities women need to perform such as collecting wood or accessing healthcare are restricted due to insufficient transport networks, women are unable to follow-up on Anti-retroviral treatment and antenatal care due to the distance and cost needed to travel to treatment centres (Nyamathi et al., 2010). Even if basic services such as healthcare are not brought right into the community, if sufficient and reliable transport networks are developed it will be easier for rural dwellers to access these services in nearby towns (Barrios, 2008). According to Rasmussen (2009), formal healthcare in remote areas are sought after during emergencies such as child birth or extreme illness. In many countries such as Cameroon, Nigeria & Ghana patients are transported by wheelbarrows or on mattresses to the nearest clinics or hospitals (Malmberg Calvo, 1994). The improved access to roads will enhance mobility and accessibility while reducing transport costs (Odaro, 2012). In addition, this article has focused primarily on the livelihoods of rural women because they carry more of a transport burden in comparison to men not only due to their multiple roles in society, but also due to issues such as, rural-urban migration, cultural norms and patriarchy (Gumede et al., 2009). A study such as this is pertinent especially in a developing country such as South Africa where poor service delivery and gender inequality is a continuous challenge affecting those residing in rural or low income areas to a greater extent. The development of transport systems in rural areas is recognised as a core objective to ensure grass-root development in remote regions. The effects of poverty as a result of poor infrastructure are common in the former homeland provinces of South Africa such as Limpopo, the Eastern Cape and KwaZulu Natal (Bornman et al., 2012; Gopaul, 2009). As discussed earlier, the effects of

apartheid policies and laws have left a majority of the black population displaced in rural areas lacking basic services and economic opportunities. This has led to increased levels of poverty and disease which have been passed on through the generations. The following case study further demonstrates the effects of poverty and inadequate service provision in South Africa. Entabeni community in KwaZulu-Natal province, is a deep and remote rural area that consists of 50 000 people. It is also conservative, very traditional and deeply religious. There is a lack of education, transport infrastructure, water and sanitation and healthcare due to landscape and terrain. Researchers have established a huge issue of HIV/AIDS and they believe that 47% of pregnant women in the area are likely to be HIV positive (Campbell et al., 2008). This also increases the risk of mother-to-child transmission. This factor is influenced by the fact that men are allowed to have multiple wives and rural to urban migration allows husbands to have multiple girlfriends. This patriarchal system has meant that most women are denied HIV/AIDS support, pre-natal and post-natal healthcare as well as education on contraceptive options and abuse. The conservative and religious nature of the community has meant that people infected with the virus are in denial, will seek help from traditional healers instead of medical doctors and are shunned (due to stigma) by the church. This also means that sexual behaviour by students is not considered as a factor because educators and parents believe that children are afraid of sex and are well behaved. Most of the Induna's and health workers are un-educated, therefore unable to efficiently assist those in need (Campbell et al., 2008). This case study is relevant to many people residing in rural areas of South Africa. Appropriate policy development and implementation using a bottom-up approach is required to address these social injustices of the past. Establishing effective policy development and implementation requires appropriate methodologies that take indigenous knowledge systems into account. Indigenous knowledge systems should be made a priority at policy level. This can be achieved through the utilisation of appropriate research methodologies. The research methodology adopted for this study acknowledges the value of indigenous knowledge systems by adopting Participatory rural appraisal (PRA). This approach enables the researcher to learn and understand the challenges rural people face daily. Furthermore, it allows the researcher to create a bond with the community members creating an interactive environment.

The use of open and closed ended questionnaires were used to obtain demographic information from the respondents. As well as the respondents perceptions regarding the impacts of undeveloped roads on the livelihoods of women in the Nyamana community. The results from the study indicate the importance of transport infrastructure, particularly rural roads which are essential to sustaining and contributing positively to the livelihoods of rural women. This study revealed that women are more responsible for transport activities in comparison to their male counterparts. Also, the results are indicating that well maintained roads can provide better social and economic opportunities for rural women.

More focus has to be placed at municipal level, towards the improvement of road infrastructure in rural areas. Although the rural development framework is in place, there is still a need for implementation of the core principles of this framework. As well as to rethink the rural sector beyond the "farm" but shifting focus to the local needs and interest of the community by providing them with opportunities to diversify their livelihood strategies (Barrios, 2008). The South African national and provincial governments face many constraints which often lead to lack of service provision which affects both rural and urban areas (Agüero et al., 2007). Lack of integration within policies and departments is a big problem because we find that the education department will not integrate with healthcare department which means that implementation on the ground-level is done in isolation. This means that many rural areas will not receive services at the same time (Barichievsky et al., 2005). For example, an area might have schools but it will be a long period of time before they receive road networks to get to a school resulting in children traveling long distances or dropping-out. Another issue is, most South African policies are taken from Eurocentric ideas and are embedded in capitalism. This can often mean failure to bring benefits to the poor. Examples include development policies such as Growth Employment and Redistribution (GEAR) and Accelerated and Shared Growth Initiative for South Africa (ASGISA) that were criticized for being neo-liberal and market oriented thus benefitting business sector and increased disparities between rich and poor (Aliber, 2003). Most policies in South Africa focus on creating employment and service provision initiatives are ignored. Budgets allocated to providing services in rural municipalities are significantly reduced due to insufficient funds, debt and corruption. It is important to mention that obstacles experienced in providing rural services are powerful at the local level because they become specific to that community or municipality. Paradza et al. (2010), mentions that local municipalities in rural areas often lack capacity to provide services, do not have sufficient finances and incur a skills shortage from municipal managers to councillors. This is because these municipalities are small and become isolated within government structures (Agüero et al., 2007). Furthermore, services will be outsourced through private sector businesses to communities. This means rural people end up not being able to afford them or service contracts being cancelled (services are not sustained) because municipalities are unable to pay the costs (Paradza et al., 2010). Corruption and mismanagement of funds also play a role. As previously mentioned, services are interlinked therefore the lack of one service can impact or become an obstacle on other services (Hanjra et al., 2009). For example the lack of transport networks means that remote areas do not receive healthcare from mobile clinics. Politics also play a role as councillors or chiefs will allow the provision of services to areas that are politically affiliated to their parties and this creates a conflict of interests. Rural areas are often remote which means service delivery issues and protests are not publicly seen in

media and communities are without a voice and become abandoned. Another disadvantage is that support systems cannot be established in remote areas because NGOs are unable to access these areas and because of patriarchy and African culture, support systems for women (such as HIV/AIDS, women abuse programmes) are denied by the men in the community for various reasons such as fear of rebellion by wives, westernization and denial about HIV/AIDS (Campbell et al., 2008). This can often highlight how a patriarchal system can create a hierarchical system response. For example, in rural areas the chief is often the one whom is approached for approval before a project is approved. Thus meaning he will consult his Induna's and the men in the community and women are often left out. Therefore projects will tend to benefit, the chief, induna, representative and husband before it benefits the wives and children (Campbell et al., 2008). As a result, policies need to be gender inclusive and consider the needs and purpose of travel for females that reside in rural areas. This is the only solution to ensure that the benefits of developing transport infrastructure will reach those who require it most.

1.1 Literature Review

The presence of roads has many benefits for the poor as it reduces the prices of inputs, opens up opportunities in new markets and offers seasonal migration for employment (Hettige, 2006). The most common means of transport in rural areas is walking or head loading and this requires energy and time, as it limits their time to perform more productive tasks that can generate an income (Odaro, 2012). The development of transport infrastructure can save productive time and energy through the use of local transport services (Banjo et al., 2012). Transport infrastructure allows governments the opportunity to reach the rural poor and also promote social equality as rural dwellers will no longer feel marginalised from the rest of society (Hettige, 2006). Agriculture is a major source of income and food security in rural areas. The role of transport is very important in terms of access to markets as farmers with bicycles or carts can carry more produce to markets at a quicker pace. This ensures that produce remains fresh and farmers make a substantial profit (Banjo et al., 2012). Adequate roads promote the provision of public services such as ambulances and police patrols. In addition roads are an essential component for the development of markets, this allows the opportunity for farmers in rural areas to provide produce to high value urban markets increasing profits of the rural poor (Hettige, 2006). These benefits discussed, allow the poor an opportunity to sustain and diversify their livelihoods which ultimately leads to the reduction of poverty in rural communities. Poverty is a multi-dimensional problem that requires to be addressed by considering all aspects leading to it. Although transport services are of vital importance, the prices of transport services are essential as poor people cannot afford access to these services due to transport fares being too high (Porter, 2002). There is a need for the cheap and reliable provision of transport in rural areas as the poor face the challenge of having to travel long distances to reach service centres to receive education, healthcare and market opportunities (Odaro, 2012). Poor access to education and healthcare contributes to the inability to strengthen human capabilities and improve livelihoods (Starkey, 2002). A lack of access to market opportunities is also a challenge for many rural communities as it has a major impact on potential growth and income, directly increasing rates of poverty. Efficient means of transport are also important when looking at transport infrastructure. Poverty assessments have shown that bicycles, carts and wheel barrows are a means of travel for many poor people, however due to poor transport infrastructure in rural areas such as roads, bridges and paths it becomes a challenge to travel through these areas to reach service centres (Starkey, 2002). Efficient transport services and infrastructure enable people to build up their asset base which will aid in reducing poverty. Studies have shown that the development of roads is not enough and the main failure lies in the fact that roads are developed but there is still a need for affordable transport services and the maintenance of these roads (Hettige, 2006). Regular maintenance of roads is critical in sustaining the positive impacts that roads bring to rural communities (Banjo et al., 2012). The lack of maintenance is due to a lack of funds provided by the government as they have the habit of ignoring the small maintenance problems, and wait until they become severe before action is taken (Hettige, 2006).

As a result, rural areas become places characterised by poverty, isolation and social exclusion, which has a disproportionate effect on women. The lack of transport has enhanced gender inequalities and created an environment that isolates women and restricts their association with the broader society. Women living in rural areas are at an enormous disadvantage in terms of mobility and access to transport services. Rural women require transport more than rural men, considering their multiple roles and responsibilities (Porter, 2013). A major challenge rural women are facing is the cost of transport fare and distance they have to travel to reach essential services, which is a result of poor road conditions. Findings from, Porter (2002) suggest that Sub-Saharan Africa has the highest transport fares in the world, with fare being two and a half times more expensive than transport fare in Nigeria & Ghana (Porter, 2002). Besides the multiple household chores women have to perform, they are still expected to transport both their husband's and their own goods to the market to sell, receiving no help with transportation (Booth et al., 2000). A study was conducted on the comparison between women's incomes who live in rural areas and those women who live along a main road. The study found that women who lived along a main road earned double the income compared to women who lived in a rural area far from a main road (Porter, 2002). The reason for this was that women living nearer to main roads accessed potential buyers more effectively

in terms of what time they would arrive to sell their goods, and had more time to prepare or collect more produce to sell. In addition they did not have to pay high transport fares. Women residing in rural areas are less likely to own means of transport such as bicycles and animal-drawn carts, instead you see most women head-loading as a way to transport their goods (Starkey, 2002). Women in Uganda are responsible for producing 80% of food and 70% of agricultural labour (Booth et al., 2000). Gender inequality is a major challenge facing Africa and countries on a global scale, where we find ourselves in a male dominated society. Another aspect of gender inequality is portrayed in many African countries where young girls are taken out of school to perform household tasks. If this burden was reduced, women would be able to access an education and improve their livelihoods. Women bear the ultimate transport burden, yet are unable to access transport the way men do (Porter, 2013). Cultural constraints also play a role in this situation, as in some countries such as eastern Uganda, it is viewed as inappropriate for women to use bicycles as this is seen as wanting to portray a man. Some men refuse to allow their wives to use any form of transport as they view a women's work as not being economically beneficial (Starkey, 2002).

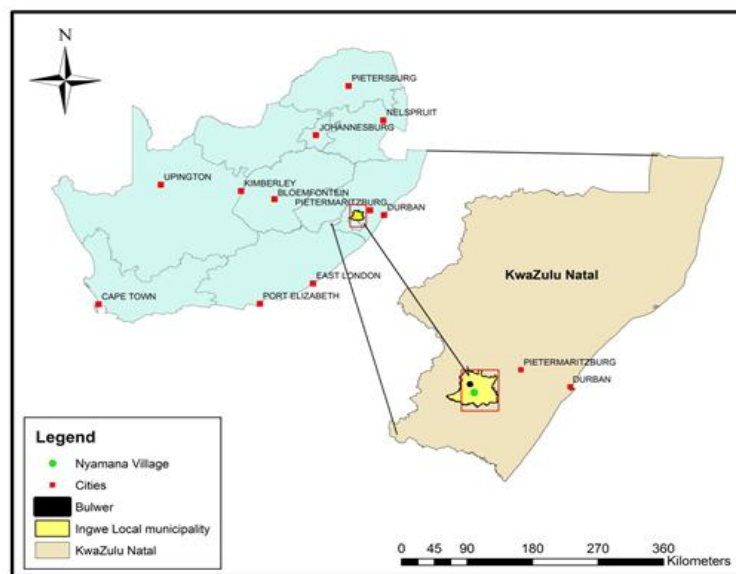
2.0 Methodology

The data for this research project is collected using a triangulation method incorporating quantitative and qualitative approaches, to gain an insight and a broader understanding of community dynamics. In addition the data for the research is collected using open-ended and close-ended questionnaires using a systematic sampling strategy. Participatory approaches are conducted to assist in creating an effective dialogue with the community, enabling greater understanding of the issues (Binns et al., 1997; Cornwall, 2008). During data collection the following methods are used, questionnaires, GPS (global positioning system), photographs and participatory exercises. Open and close ended questionnaires are used to obtain demographic information about the respondents and information about the impacts of undeveloped roads on the livelihoods of women in comparison to men. These questions are administered to women, men, scholars and the elderly. Due to literacy and language barriers, questionnaires are translated into isiZulu and administered with an interpreter present. The second step in data collection is through participatory processes. The participatory method used includes problem ranking matrix (Mitchell, 2002). This method allows the researcher to gain an in-depth understanding of the lives of the rural poor and collect data using a diverse range of methods to establish reoccurring themes. Problem ranking matrixes allow for the ranking and scoring of priority issues and assists the researcher in making assessments and identify issues that frequently arose as priority issues (Binns et al., 1997).

The nature of this research requires the use of a triangulation approach, using both quantitative and qualitative data. The reason for the use of triangulation is to expand the scope and analytical power of the study (Sandelowski, 2000). This approach is best suited in this research as it involves dealing with human phenomena, which requires complex research designs to capture the complexity of human behaviour (Creswell & Clark, 2007). Triangulation employs a diversity of sources and means of gathering data and analytical methods (Mitchell, 2002). The approach leads to each aspect of the problem being analysed by a variety of methods which allows for greater accuracy. When undertaking a mixed method approach in research, it is important to understand that there must be stable operations at the technique level of research and the researcher must decide if qualitative and quantitative methods will remain as distinct designs or whether they will be integrated (Sandelowski, 2000).

The study is conducted in the province of KwaZulu-Natal in a town known as Bulwer in the Nyamana community. The study area falls under the Ingwe local municipality and Sisonke district municipality. According to the IDP (2014/2015) of the Ingwe municipality, Nyamana is an undeveloped community. Nyamana faces major challenges of poor infrastructure such as poor conditions of rural roads that are in a state of disrepair. The town faces major challenges of poor infrastructure such as poor conditions of rural roads that are in a state of disrepair. This is largely due to the various challenges the Ingwe municipality faces such as the lack of capacity and technical support deal with these challenges. Many people living in the local rural communities of Bulwer are forced to walk over 10 km daily to reach essential services (IDP, 2014) Some taxis are unable to reach certain areas of the community due to steep terrain and the presence of gullies (IDP, 2014). Nyamana is a rural community with approximately 180 households. The nearest towns to the community are Creighton and Donnybrook. The exact location of the community on the map is at Latitude and Longitude: S 29° 49' 09.78" E 29° 55' 19.01". Poor service delivery, unemployment, and population growth are major challenges facing this community resulting in increased levels of poverty (Lehohla, 2011). There are also high levels of rural urban migration predominately among the male population which accounts for the female population being much higher as compared to the male population (IDP, 2014).

Figure 4.1: Map of South Africa indicating area under study, representing the Nyamana community. Map was generated in Arcmap, ArcGIS 9.3.1.



The researcher recruits a total of 60 respondents from the Nyamana community. The target group for the study is women and the elderly; however males and scholars are recruited to gain an in depth understanding of the implications of undeveloped roads. The profile of the participants include, males which account for 33% of the sampled population while females account for 67%. Forty-three percent of the participants are married and 32% of participants having received no formal education.

3.0 Results

The ages of male and female respondents range between 15 -70 years with a small percentage of respondents being part of the active working age group. The demographic results within the Nyamana community reveal that there are more females than males amongst respondents. There are (67%) of females and (33 %) of males among the respondents in the Nyamana community. Women in the community perceive that the absence of males is largely due to remittances and the migration of men to towns and cities to seek employment. The former apartheid government of South Africa aimed to control the settlement patterns of the black population by enforcing laws such as the Group Areas Act and 1913 Natives Land Act. These laws forced the black population to live in ethnically homogenous homelands which were areas of unproductivity and lacked basic services such as water, proper housing and electricity (Zuma, 2013). A majority of the black population in South Africa remain trapped in the legacy of apartheid and live in extreme poverty due to these former apartheid policies. As a result, rural-urban migration has been a common trend and livelihood strategy for the rural poor, as they seek opportunities in the city to improve their standard of living. Studies conducted in rural areas in Sub Saharan Africa has revealed that migration is more common amongst males, largely due to cultural norms and systems of patriarchy. This has led to an increase in female headed households leading to the breakdown of the family unit and resulting in high incidences of poverty among rural women (Buvinić & Gupta, 1997; Jedwab & Moradi, 2011). Rural push factors, such as changes in rural economic conditions and unemployment result in rural workers (especially males) being pushed to the cities (Jedwab & Moradi, 2011). Barrios (2008), further states that poor infrastructure and poor provision of services in rural areas contributes to rural-urban migration. Urban pull factors implies that rural workers are attracted to the higher wages in cities and perceive that they can improve their standard of living (Jedwab & Moradi, 2011).

The majority of the respondents are between the ages of 41-50 and 51-60 years of age. A small number of respondents seen as the active working age group are present, the reason being that a majority of the economically active age group have migrated to the cities to seek employment. Therefore, the elderly face numerous challenges which are exacerbated by the undeveloped roads in the community. Many of the younger age groups migrate to cities not only because of job opportunities, but also due to the “bright lights” and assume that the city is a place of wealth and assurance for success. However this is not always the case, as urban poverty and the development of urban slums are rife in urban cities (Knox & McCarthy, 2005). This has led to the unproductive age group left

behind in rural communities, which has led too many rural development practitioners questioning whether investing in roads is worthwhile. Many rural dwellers in the community cannot afford to use public transport as it is too costly, however transport costs will be reduced if accessibility to roads were improved. Many sick people are transported in wheelbarrows as ambulances are unable to reach certain areas due to the bad conditions of roads. There is also a high dropout rate in schools due to the distances students have to walk to reach school on a daily basis.

3.1 Access to primary services

Basic service	Primary source	Family members responsible for the collection of the resource	The time spent fetching the resource on a daily basis	Comments
Water	Flowing river/stream	Women 18-60 (42%) of respondents	2-3 hours (40% of respondents)	Results show that a majority of respondents rely on natural water sources. The collection of water is undertaken mostly by women and is a time consuming task that limits rural dwellers from participating in productive tasks.
Electricity	Wood	Women 18-60 (42%) of respondents	3-4 hours	Results illustrate that wood is the primary source of fuel used for cooking, lighting and heating. It is an energy intensive task performed by women.

Most rural trips take place near the villages in which they reside. The purposes of these internal trips are to collect water, firewood and tend to crops (Booth et al., 2000). Access to resources such as water and fuelwood are essential for the day to day functioning of the lives of rural dwellers. Travel patterns in rural areas have been divided into three main categories: Domestic travel, agricultural travel and travel for access to services and social purposes (Millward & Spinney, 2011). Domestic travel involves daily reproduction needs of rural households, such as collecting firewood and water and process food at the grinding mill as most mills are situated outside areas (Calvo, 1994). These trips usually occur frequently and involve a great amount of load carrying. Agricultural travel involves productive activities that generate an income for rural households (Millward & Spinney, 2011). This travel incorporates travel for crop cultivation and the transportation of produce to local markets to sell produce (Booth et al., 2000). Travel for access to services and social events are largely for health purposes and to purchase items at shops or the market place (Calvo, 1994). Results illustrate, that (36%) of respondent's access water from a flowing river or stream. The results further emphasize that a majority of respondents interviewed obtain their water from more than one source which includes a flowing river, stagnant water and from a rain water tank. (Table 1) clearly illustrates that the majority of respondents rely on natural water sources. Momba et al. (2006), suggests that water borne diseases are increasing in rural areas due to contaminated water. This is due to the inaccessibility to water and sanitation. This is linked to undeveloped roads as governments are unable to develop areas and provide infrastructural development. The development of roads leads to the expansion of an area as governments are able to reach these communities and provide services more efficiently (Barrios, 2008).

Results from (Table 1) indicate that girls below the age of 18 and women 18-60 are primarily responsible for fetching water. Whilst males play an insignificant role in household chores. This could also be indicative of the higher transport burden that females have in comparison to men. According to Gumede et al. (2009) more than half of households in rural areas of South Africa are headed by females. Women have multiple roles in productive and reproductive tasks as compared to men. Therefore women are more affected by undeveloped roads due to their multiple roles and chores they need to perform (Gumede et al., 2009; Mitchell, 2002).

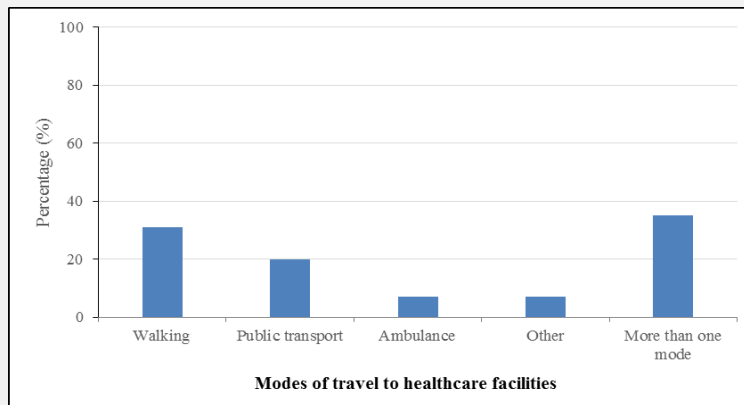
Table 1.1 indicates that 40% of the respondents spend 2-3 hours daily fetching water, while 33 % of respondents spend 3-4 hours daily fetching water. Results indicate that only 10% of respondents spend less than an hour fetching water every day. This indicates the restrictions that are placed on these respondents lives as this particular daily chore is so time consuming, that it restricts them from performing other productive tasks.

Forty- two percent of women aged between 18-60 years are primarily responsible for the collection of fuel wood. Boys under 18 (6%) and men 18-60 (8%) play a small role in the collection of fuel wood. Further establishing the contribution of women to household chores and having a higher transport burden than men. According

to Ndamase (2012), women and children are primarily involved in fuel wood collection for domestic use while men collect fuel wood to retail. Female respondents within the Nyamana community perceived that they were primarily responsible for these tasks without the assistance of males. This statement can be corroborated by a case study in Port St. Johns in the Eastern Cape, where results indicated that women were primarily responsible for fuel wood collection. This study further elaborated that the division of labour or household energy provision was centred on women (Ndamase, 2012). The distance to collect fuel wood has increased the risks of women being raped, bitten by snakes or attacked by wild pigs. Studies reveal that a high proportion of women who collect fuel wood suffer from wood fuel usage related diseases such as chest diseases and spinal problems (Ndamase, 2012; Porter, 2013).

3.2 Access to healthcare

Figure 1: Modes of transport to healthcare facilities in the Nyamana community (n=60 respondents)

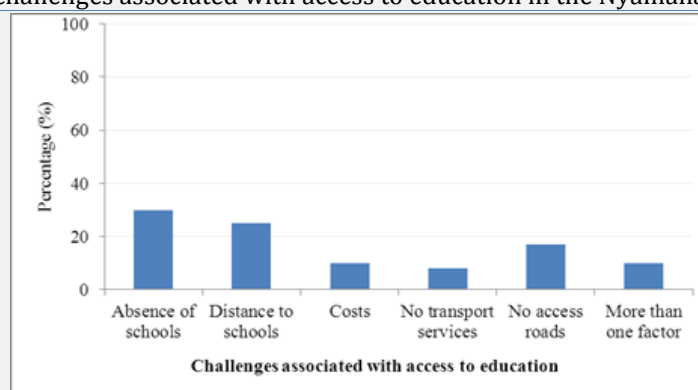


The results in (Figure 1) illustrates that the most common mode of transport in the community to access healthcare facilities is walking (31%) and more than one mode (35%). The respondents state that walking, public transport and head loading are the most common modes of transport to fulfil their daily needs such as collecting fuelwood, water and accessing essential services such as healthcare and markets. Other modes of transport are used by 7% of the community and include the use of wheelbarrows or private transport. The use of an ambulance to reach a healthcare facility are one of the lowest percentages (7%). According to Hall and McCoy (2000) and Rasmussen (2009), formal healthcare in remote areas are sought after during emergencies such as child birth or extreme illness. In many countries such as Cameroon, patients are transported by wheelbarrows or on mattresses to the nearest clinics or hospitals (Davis, 2001). Respondents in the Nyamana community state that due to a lack of roads and the terrain of the area, walking is the most common mode of transport and ambulances the least because they are unable to reach patients during emergencies due to the state of roads.

Transport plays a vital role in the efficient delivery of healthcare services. The transport sector affects the availability of preventative and emergency care which affects service delivery in terms of distributing drugs and transporting patients during transfers (Mashiri et al., 2008). Findings from proved that between 40-60% of people living in developing countries live more than 8 km from a healthcare facility. Access to transport is linked to access to healthcare as it is essential for healthcare delivery (Archer et al., 2005; Davis, 2001).

3.3 Access to education

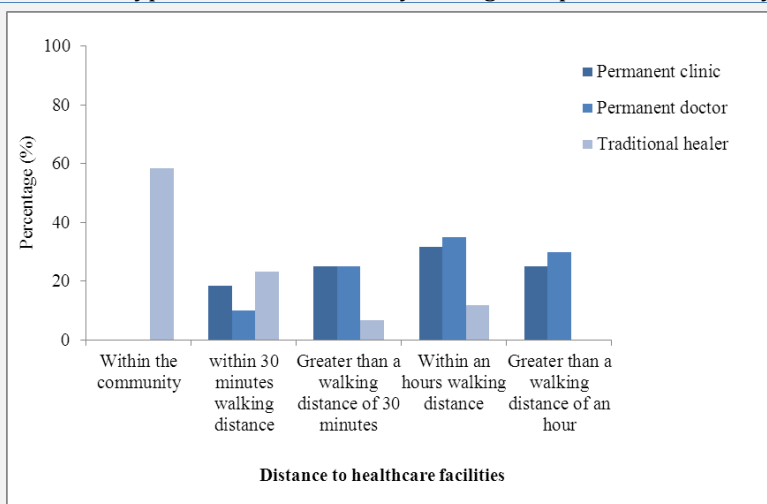
Figure 2: The major challenges associated with access to education in the Nyamana community (n= 60).



Results in (Figure 2) indicate that the absence of school infrastructure (30%) is the major challenge in accessing education in the Nyamana community. Followed by this is the distance to schools which is (25%) and no access roads which accounts for (17%) of respondents. These results correlate with the level of education amongst the respondents in the Nyamana community. According to respondents in the Nyamana community, many scholars drop out of school due to the long distances travelled daily to reach a school. Rural areas in South Africa have very low literacy rates which can be a result of distances needed to walk in order to reach a school (Hall & McCoy, 2000).

3.4 Distance to primary services

Figure 3: Distance to each type of healthcare facility amongst respondents in the Nyamana community (n=60).



Within the rural community of Nyamana, the distance in accessing primary services such as education and healthcare is a challenge. This is largely due to the absence of an all-weathered road which places major constraints on accessibility of community members. In addition ambulances and vehicles are unable to travel into these areas when needed. Another limiting factor is the terrain of the area which makes certain households inaccessible to via a vehicle.

Results from the community (Figure 3) indicate that healthcare facilities are a great distance from the Nyamana community. Distance to a permanent clinic can range from an hour’s walking distance to greater than an hour’s walking distance, (32% and 25% respectively) depending on where respondents were situated in the community (nearer or further from the main road). The only shorter distance was to a traditional healer which is situated in the community.

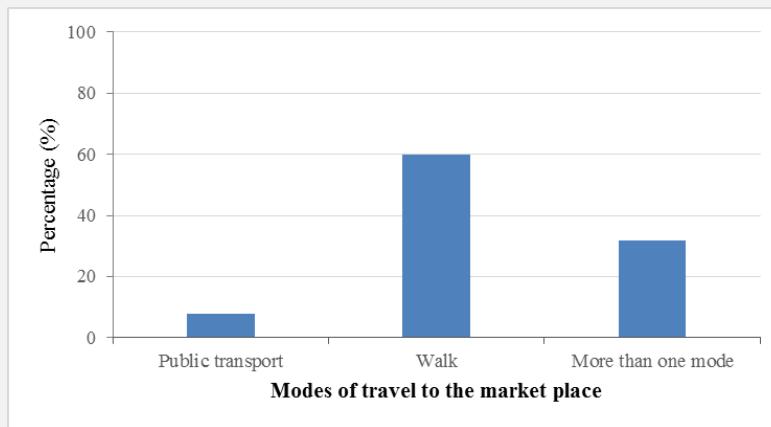
Table 2: Respondents perceptions of distance travelled to each type of school in the Nyamana community in % (n=60)

Perceptions of respondents in relation to distance to each category of school	Primary school	Junior school	Senior school
Within 30 minutes walking distance	-	-	-
Greater than a walking distance of 30 minutes	35	37	23
Within an hour’s walking distance	38	41	45
Greater than a walking distance of an hour	27	22	32

Results from (Table 2) illustrate that each type of school is within an hour’s walking distance with 38% of respondents stating that primary schools are within an hour’s walking distance and 32% of respondents stating that senior schools are greater than a walking distance of an hour. This is indicative of the level of infrastructural development in the community and could be the reason for low levels of education amongst community members.

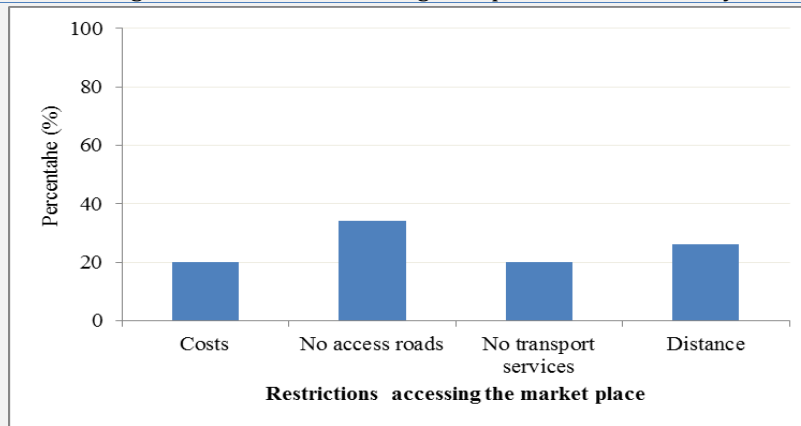
3.5 Access to markets

Figure 4: Modes of travel to the market place amongst respondents in the Nyamana community (n=60)



Access to the market place is a very important activity for many people living in rural areas, as it is a source of income. However due to undeveloped roads it is very difficult for rural dwellers to access markets. (Figure 4) illustrates that a majority of respondents walk to the market place, while 32% have more than one mode of transport which is walking or head loading.

Figure 5: Factors restricting access to markets amongst respondents from the Nyamana community (n= 60)



Results in (Figure 5) illustrates that no access roads (34%) and distance (26%) are the most significant restrictions to market access. This is directly linked to the cost factor and the absence of transport services due to undeveloped roads.

Access to primary services is a major challenge in the Nyamana community. This is largely due to poor service provision and the inaccessibility due to a lack of roads and transport services. Table 3 shows the services that are of priority to the community that they do not have access to. A majority of the community members have no access to electricity or healthcare. Table 4 presents the problem ranking matrix exercise conducted with women aged between 25-40 years of age.

Table 3: Nyamana community problem ranking matrix

	R	W	C	SO	S	E
R	•					
W		•				
C			•			
SO				•		

S	•	•	•	•	•	S
E	•	•	•	•	•	•

Problem	Scoring	Ranking
1. Roads (R)	3	2
2. Water (W)	1	3
3. Clinic (C)	5	1
4. Sassa offices (SO)	0	4
5. Schools (S)	5	1
6. Electricity (E)	1	3

Clinics (1), Schools (1) and Roads (3) are ranked by respondents as the primary services required in the community. These are followed by water (3), Electricity (3) & Sassa offices. This is an indication of the lack of primary services in the community which is largely due to the legacy of apartheid which restricted the development of rural areas. Respondent’s perceptions regarding services are important in sustaining their livelihoods. Many women reported that there is no effort being made by the municipality in improving the provision of services in the community. One of the respondents stated that: “we live in another world, nobody knows who we are and where we are, we are isolated from the rest of the world.” Many rural dwellers state isolation and remoteness as a major contributor to their state of poverty, as they are unreachable and non-existent to the rest of society (Buvinić & Gupta, 1997; Porter, 2002). Barrios (2008), suggest that the development of roads can solve this challenge by opening up rural areas to development and allowing access for rural dwellers and governments. The development of roads has been considered as a precondition for growth, development and poverty alleviation in rural areas as accessibility and mobility creates opportunity (Banjo et al., 2012). Discussions during this exercise also revealed that women are more affected by the lack of services as they are responsible for multiple tasks, these including reproductive, productive and community engagement (Mitchell, 2002) Discussions during this exercise revealed a patriarchal society as females are expected to leave school to perform household chores, while males are allowed to continue schooling. Although this is the case, the female respondents did not mention this patriarchal society directly as they respect males and feel inferior to them. Patriarchy is the main obstacle to the development and advancement of women in society (Sultana, 2012). Furthermore the system of patriarchy is rooted in the traditionalist way of thinking that men were born to dominate and women to be subordinate (Tarar & Pulla, 2014). Sultana (2012), suggest that this hierarchy has always existed and like the other rules of nature will continue and not be changed. Tradition is extremely important to women in rural areas and they would never question the authority of men and believe they are responsible for multiple tasks which seem to give them a sense of purpose.

Table 4: Nyamana community problem ranking matrix

	E	W	C	R	SG
E	•	E	E	E	E
W	•	•	C	C	C
C	•	•	•	C	C
R	•	•	•	•	R
SG	•	•	•	•	•

Problem	Scoring	Ranking
1. Electricity (E)	4	2
2. Water (W)	0	4
3. Clinic (C)	5	1
4. Roads (R)	1	3
5. Soccer grounds (SG)	0	4

(Table 4) represents a problem ranking matrix exercise conducted with males aged between 14-20 years of age. In this focus group Clinics (C) & Electricity (E) are ranked by respondents as the primary services they required.

These were followed by roads (R), water (W) and soccer grounds (SG). Amongst these respondents, electricity is one of the most important services required, which is different compared to what the female respondents in Table 4 required. It is ironic that males would rank electricity as one of the most important services as it is women who are primarily responsible for collecting fuel wood for lighting and cooking purposes. Gumede et al. (2009), recognised that women often have productive work which does not generate an income but is solely for household use. However women do not get the recognition for performing these tasks as it does not generate an income. Males on the other hand perform tasks such as collecting fuel wood for the purpose of generating an income and this is acknowledged and deemed as most important. This implies that there is a hierarchy as both activities should be recognised because both are for the benefit of the household.

The aim of the research is to assess the impacts of undeveloped roads on the livelihoods of rural women. The objectives developed for the achievements of this aim are to (1) assess the transport burden of rural women. (2) Determine the relationship between undeveloped roads and women's accessibility to essential services. (3) Investigate the manner in which undeveloped roads hamper activities of rural women. (4) Forward possible strategies and recommendations. The results of this study indicate that there is a strong relationship between undeveloped roads and the livelihoods of women in the Nyamana community. This study reveals that areas with undeveloped roads have high levels of unemployment, low education levels and challenges in accessing essential services such as healthcare. The results illustrate that this has affected women particularly and their everyday lives.

The Nyamana community is undeveloped and rely on natural resources for domestic use. Accessing clinics, schools, markets and employment is a challenge for rural women as there are no accessible roads. Time and distance spent travelling and performing chores such as collecting fuel wood is a major challenge associated with the lack of developed roads. Furthermore accessing schools, clinics and employment is a limiting factor to the growth and development of the area as well as the reduction of poverty.

4.0 Conclusion

The aim of the research is to assess the impacts of undeveloped roads on the livelihoods of rural women in the Nyamana community. The objectives developed for the achievements of this aim are to (1) assess the transport burden of rural women. (2) Determine the relationship between undeveloped roads and women's accessibility to essential services. (3) Investigate the manner in which undeveloped roads hamper activities of rural women. (4) Forward possible strategies and recommendations. The results of the study suggest that there is a strong relationship between undeveloped roads and the livelihoods of women in rural areas. The areas with undeveloped roads have high levels of unemployment, low education levels and challenges in accessing essential services such as healthcare. The results illustrated this has affected women particularly and their everyday lives.

The Nyamana community is undeveloped and rely on natural resources for domestic use. Time and distance spent travelling and performing chores such as collecting fuelwood is a major challenge related to the lack of developed roads. Furthermore accessing schools, clinics and employment is a limiting factor to the growth and development of the area as well as the reduction of poverty. Access and mobility are important factors in alleviating poverty in rural areas and fostering rural development (Hettige, 2006). In addition a lack of access, hinders opportunities to improve and sustain their social and economic wellbeing, infrastructure is important for economic transformation and contributes positively to the level and quality of rural development. The local government of a country plays an important role in the delivery of infrastructural services and ensuring that efficient rural development takes place. Many policies in developing countries have a bias towards development in urban areas, at the expense of rural areas. There is a need for the development of policies that are context- specific and provide bottom-up solutions to problems that are relevant for rural areas.

In addition the participation of the private sector is essential as they can provide additional funding. The role of all key stakeholders is essential, especially the local community as this ensures that their perceptions are considered. However in the context of South Africa challenges such as weak management capacities at local levels, corruption and skills shortages pose major limitations to the effective functioning of local governments and municipalities. Therefore transparency and cohesion between different tiers of government is essential for efficient service delivery.

Respondents in the Nyamana community perceive that government does not understand their transport needs. An additional role of government is to understand the personal and family mobility needs of communities, as this will assist in the development of appropriate policies (Porter, 2002). There is also a great requirement to look at ways in which the government can support the growth of social and human capital in off-road areas. This can be achieved through the effective collaboration of local governments and Non-governmental organizations (NGOs). The development of rural areas in South Africa will alleviate poverty which is rife due to the legacy of apartheid.

Programmes designed by NGOs should target both women and men which can provide them with an opportunity to have a voice and to obtain knowledge and skills (Cornwall, 2008). The removal of the top down approach is necessary so the bottom up approach can come into effect (Cornwall, 2008) & (López-Guzmán et al., 2011). Community Based Programmes (CBP) provide good ways of reaching, remote rural areas because they provide accessible social programmes, skills training and development which caters to the community needs (Cornwall, 2008). The findings of this study have established that female respondents have a higher transport burden than male respondents. Therefore male and female respondents have different transport needs. Transport policies and strategies need to be more gender inclusive, this is especially important in terms of achieving the Sustainable Development Goals.

Within the South African context, policies need to be “tailor made” to suit the needs of rural women as the major burden for transport is on them (Porter, 2013). A gender sensitive approach needs to be established to address the unique needs of women residing in rural areas. Policies and research relating to transport and gender have tended to overlook the multiple roles women have in society. Research and policies have often neglected to address the impacts that head loading has on rural women and children in terms of health and education. These factors are important when developing and implementing policies. The role of local government is extremely important as they have the power to effectively implement the necessary policies to make the changes. Maintenance of the infrastructure is extremely important to ensure continuous accessibility and mobility to rural dwellers. The role of the private sector and NGOs also comes into focus as they can provide funding for the maintenance and employ locals from within the community to carry out this undertaking. The assumption by policy developers that improved services will automatically alleviate poverty needs to be revised (Bryceson et al., 2008). Policies need to be based on the mobility challenges of the poor and take their specific needs into consideration.

References

- Agüero, J., Carter, M. R., & May, J. (2007). Poverty and inequality in the first decade of South Africa's democracy: What can be learnt from panel data from KwaZulu-Natal? *Journal of African Economies*, 16(5), 782-812.
- Aliber, M. (2003). Chronic poverty in South Africa: Incidence, causes and policies. *World Development*, 31(3), 473-490.
- Archer, E., Chanda, R., Darkoh, M., & Mpotokwane, M. (2005). *Road improvement and safety: a case study from the western region of Botswana*. Paper presented at the Proceedings of the 24th Southern African Transport Conference (SATC 2005).
- Banjo, G., Gordon, H., & Riverson, J. (2012). Rural Transport: Improving its contribution to growth and poverty reduction in Sub-Saharan Africa.
- Barichiev, K., Piper, L., & Parker, B. (2005). Assessing ‘participatory governance’ in local government: A case-study of two South African cities. *Politeia*, 24(3), 370-393.
- Barrios, E. B. (2008). Infrastructure and rural development: Household perceptions on rural development. *Progress in Planning*, 70(1), 1-44.
- Binns, T., Hill, T., & Nel, E. (1997). Learning from the people: participatory rural appraisal, geography and rural development in the ‘new’ South Africa. *Applied Geography*, 17(1), 1-9.
- Blackden, C. M., & Wodon, Q. (2006). *Gender, time use, and poverty in sub-Saharan Africa* (Vol. 73): World Bank Publications.
- Booth, D., Hanmer, L., & Lovell, E. (2000). Poverty and transport: a report prepared for the World Bank in collaboration with DFID. *Final report and Poverty and Transport toolkit*.
- Bornman, S., Budlender, D., Clarke, Y., Manoek, S., van der Westhuizen, C., Watson, J., . . . Iqba, N. (2012). The state of the nation, government priorities and women in South Africa. *Cape Town: Women’s Legal Centre*, 31.
- Bryceson, D. F., Bradbury, A., & Bradbury, T. (2008). Roads to poverty reduction? Exploring rural roads' impact on mobility in Africa and Asia. *Development Policy Review*, 26(4), 459-482.
- Bryceson, D. F., Mbara, T. C., & Maunder, D. (2003). Livelihoods, daily mobility and poverty in sub-Saharan Africa. *Transport reviews*, 23(2), 177-196.
- Buvinić, M., & Gupta, G. R. (1997). Female-headed households and female-maintained families: are they worth targeting to reduce poverty in developing countries? *Economic development and cultural change*, 45(2), 259-280.
- Calvo, C. M. (1994). *Case study on the role of women in rural transport: Access of women to domestic facilities*: Citeseer.
- Campbell, C., Nair, Y., Maimane, S., & Sibiya, Z. (2008). Supporting people with AIDS and their carers in rural South Africa: possibilities and challenges. *Health & place*, 14(3), 507-518.
- Coetzee, D. (2001). South African education and the ideology of patriarchy. *South African journal of education*, 21(4), 300-304.

- Cornwall, A. (2008). Unpacking 'Participation': models, meanings and practices. *Community Development Journal*, 43(3), 269-283.
- Creswell, J. W., & Clark, V. L. P. (2007). Designing and conducting mixed methods research.
- Davis, A. (2001). Transport versus service provision: a sustainable livelihoods profile of Cameroon. *TRL Limited*, 1-16.
- De Brauw, A., Mueller, V., & Lee, H. L. (2014). The role of rural-urban migration in the structural transformation of Sub-Saharan Africa. *World Development*, 63, 33-42.
- Essien, A. M., & Ukpong, D. P. (2012). Patriarchy and gender inequality: The persistence of religious and cultural prejudice in contemporary Akwa Ibom State, Nigeria. *International Journal of Social Science and Humanity*, 2(4), 286.
- Gopaul, M. (2009). The significance of rural areas in South Africa for tourism development through community participation with special reference to Umgababa, a rural area located in the province of KwaZulu-Natal.
- Gumede, N. P., Bob, U., & Okech, R. N. (2009). Women and Technology in South Africa A Case of Four Communities in Kwazulu-Natal. *Gender, Technology and Development*, 13(1), 103-125.
- Hall, W., & McCoy, D. (2000). No Transport, No Primary Health Care. *Durban: Health Systems Trust*.
- Hamilton, K. (2005). Women and transport. *PROCEEDINGS OF ETC 2005, STRASBOURG, FRANCE 18-20 SEPTEMBER 2005-TRANSPORT POLICY AND OPERATIONS-EUROPEAN POLICY AND RESEARCH-ACCESS TO TRANSPORT AND FUTURE ISSUES*.
- Hanjra, M. A., Ferede, T., & Gutta, D. G. (2009). Reducing poverty in sub-Saharan Africa through investments in water and other priorities. *Agricultural Water Management*, 96(7), 1062-1070.
- Hettige, H. (2006). When do rural roads benefit the poor and how?: an in-depth analysis based on case studies.
- IDP. (2014). Ingwe Municipality integrated development plan. 186.
- Jedwab, R., & Moradi, A. (2011). Transportation infrastructure and development in Ghana.
- Knox, P., & McCarthy, L. (2005). *Urbanization*. United States of America.: Pearson Prentice Hall.
- Konadu-Agyemang, K. (2000). The best of times and the worst of times: structural adjustment programs and uneven development in Africa: the case of Ghana. *The Professional Geographer*, 52(3), 469-483.
- Lehohla, P. (2011). GHS Series Volume III.
- López-Guzmán, T., Sánchez-Cañizares, S., & Pavón, V. (2011). Community-based tourism in developing countries: A case study. *Tourismos: an international multidisciplinary journal of tourism*, 6(1), 69-84.
- Malmberg Calvo, C. (1994). Case study on the role of women in rural transport: access of women to domestic facilities.
- Mashiri, M., Nkuna, Z., Chakwizira, J., & Maponya, G. (2008). *STRENGTHENING INFORMAL HEALTHCARE DELIVERY: GENDER PERSPECTIVES*. Paper presented at the Proceedings of the 27th Southern African Transport Conference (SATC 2008).
- Millward, H., & Spinney, J. (2011). Time use, travel behavior, and the rural-urban continuum: results from the Halifax STAR project. *Journal of Transport Geography*, 19(1), 51-58.
- Mitchell, B. (2002). *Resource and environmental management* (Vol. 2nd edition). United States of America, New York: Routledge.
- Momba, M., Tyafa, Z., Makala, N., Brouckaert, B., & Obi, C. (2006). Safe drinking water still a dream in rural areas of South Africa. Case Study: The Eastern Cape Province. *Water SA*, 32(5).
- Monitor, A. (2012) Rural infrastructure in Africa. *Unlocking the African moment* (pp. 32). Cape Town, South Africa: Development support monitor.
- Ndamase, Z. (2012). *The implication of fuel-wood use and governance to the local environment: a case study of ward seven of Port St Johns Municipality in the Eastern Cape*. University of Fort Hare.
- Nyamathi, A. M., William, R. R., Ganguly, K. K., Sinha, S., Heravian, A., Albarrán, C. R., . . . Ramakrishna, P. (2010). Perceptions of women living with AIDS in rural India related to the engagement of HIV-trained accredited social health activists for care and support. *Journal of HIV/AIDS & social services*, 9(4), 385-404.
- Odaro, E. D. (2012). Causes of poor service delivery in Africa and their impact on development. *Consilience: The Journal of Sustainable Development*(7), 34-45.
- Paradza, G., Mokwena, L., & Richards, R. (2010). Assessing the role of councillors in service delivery at local government level in South Africa. *CPS (Centre for Policy Studies) Research Report*(125).
- Peters, D. (2001). *Gender and transport in less developed countries: A background paper in preparation for CSD-9*. Paper presented at the London, Paper Commissioned by UNED Forum.
- Porter, G. (2002). Living in a walking world: rural mobility and social equity issues in sub-Saharan Africa. *World Development*, 30(2), 285-300.
- Porter, G. (2013). Transport services and their impact on poverty and growth in rural Sub-Saharan Africa.
- Porter, G. (2014). Transport services and their impact on poverty and growth in rural Sub-Saharan Africa: a review of recent research and future research needs. *Transport reviews*, 34(1), 25-45.
- Rasmussen, S. (2009). *Pro-poor health care in Northern Ghana*. Master Thesis, Roskilde University.
- Sandelowski, M. (2000). Focus on research methods combining qualitative and quantitative sampling, data collection, and analysis techniques. *Research in nursing & health*, 23, 246-255.

- Starkey, P. (2002). *Improving rural mobility: options for developing motorized and nonmotorized transport in rural areas* (Vol. 23): World Bank Publications.
- Sultana, A. (2012). Patriarchy and women's subordination: A theoretical analysis. *Arts Faculty Journal*, 4, 1-18.
- Tarar, M. G., & Pulla, V. (2014). Patriarchy, Gender Violence and Poverty amongst Pakistani Women: A Social Work Inquiry. *International Journal of Social Work and Human Services Practice*, 2(2), 56-63.
- Ward, N., & Brown, D. L. (2009). Placing the rural in regional development. *Regional studies*, 43(10), 1237-1244.
- Zuma, N. (2013). Rural migration in South Africa. Paper presented at the 2013 Economic policy forum, Growth, transformation, reform: emerging economies in the next decade, Haikou, China. Input paper retrieved from http://www.economic-policy-forum.org/wp-content/.../2013/...zuma_forum_paper.