COLLEGE OF LAW AND MANAGEMENT STUDIES

Advancing Rural Infrastructure for Quality Education: Perspectives of Umzumbe Local Municipality

BY

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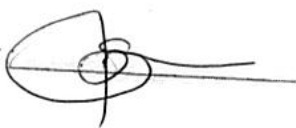
Supervisor: Dr BR Qwabe

Declaration

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Samukelisiwe Purity Zondi   **2020/08/24**

Dedication

This dissertation is dedicated to my Creator in thanks for all the undeserved favours He has always afforded me. What can I bring to the Lord that is worthy of all my praise? I shall give all of myself to thee!

I also dedicate this work to my late father Thabani Claude Zondi in thanks for always having been my guardian angel in the realisation of my academic goals. It has always been my wish to make him proud of me, and I know he is celebrating my academic achievements with the angels in heaven.

Acknowledgements

Firstly, I would like to express my heartfelt gratitude to my supervisor Dr BR Qwabe. Your profound academic support and perseverance enabled me to strive to do better every time in order not to disappoint him. Thank you, Phakathwayo, for equipping me with the skill of "paying attention to detail", a skill I've never possessed, for believing in me and for pushing me even when I did not have the strength to press on. I will forever be indebted to you.

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Abstract

Background: In South Africa, efficient, effective and responsive delivery of basic services has always been one of the yardsticks of good governance and development. As such, government is mandated by the Constitution of the Republic of South Africa (1996) to promote the achievement of equality and other measures intended to advance and protect the marginalised and disadvantaged. This mandate necessitates the commitment of local government, as the sphere that is at the centre of service delivery, to promote rural infrastructure development to ensure inclusive and quality service delivery, particularly in education.

Objective: This research focused primarily on the impetus of rural infrastructure on quality education for the rural populace, drawing on the case study of Umzumbe Local Municipality (ULM) in the KwaZulu-Natal Province. In this regard, the study aimed to determine how the development of rural infrastructure affects the quality of education in schools within ULM.

Methodology: The study used the qualitative research methodology to collect the primary data using focus group discussions and semi-structured in-depth interviews with the target population of 35 participants from ULM. The research adopted the non-probability approach by using purposive sampling to conduct the enquiry. The interview schedules were designed and used as a data collecting tool for the study.

Findings, analysis and discussion: The findings of the study pointed to the marginalisation of rural communities and rural infrastructure inadequacy as mitigating factors that limit accessibility of quality basic education in ULM. The study further showed poor institutional capacity and limited revenue as major bottlenecks in the provision of rural infrastructure to fulfil the constitutional mandate of inclusive and quality basic education. As a result, the study concluded that ULM is struggling to meet the increasing rural infrastructure demands to upscale the quality of education.

Recommendations and Conclusion: Based on the findings of the study, the following recommendations were made that could assist rural local municipalities to advance rural infrastructure for quality education: Firstly, Intergovernmental Relations need to be fostered to boost the capacity of ULM to fund the increasing rural infrastructure demands; secondly, the frequent use of community consultation platforms must be encouraged to help local government identify the realistic rural infrastructure prerequisites that may address the plight of rural learners in accessing quality basic education; and lastly, local government should

introduce policies that regulate monitoring and evaluation practices in order to uphold feedback mechanisms that are aligned to their performance targets and indicators. The study concluded that the rural infrastructure development policies and institutional arrangements in ULM are not context specific and do not address the unique characteristics and needs of rural communities and rural learners, in particular.

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Acronyms and Abbreviations

CRDP	Comprehensive Rural Development Programme
DCOGTA	Department of Cooperative Governance and Traditional Affairs
DoE	Department of Education
GCI	Global Competitiveness Index
HOD	Head of Department
ICT	Information and Communication Technology
IDP	Integrated Development Plan
KZN	KwaZulu-Natal
MIG	Municipal Infrastructure Grant
MTSF	Medium-Term Strategic Framework
NDP	National Development Plan
PGDS	Provincial Growth and Development Strategy
PPP	Public-Private Partnership
RSA	Republic of South Africa
SADC	South African Development Community
SDGs	Sustainable Development Goals
SGB	School Governing Body
ULM	Umzumbe Local Municipality

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CHAPTER 1

INTRODUCTION AND CONTEXT

1.1 Introduction

This chapter provides a general overview of the study. It particularly covers the background of the study, research problem, research questions, research objectives, significance of the study, preliminary literature review, research design, methods and limitations of the study, and the key terms and definitions used in the study. This chapter finally summarises all the chapters in the study.

1.2 Background to the Study

The efficient, effective and responsive delivery of basic services has always been one of the yardsticks of good governance and development. Mamabolo (2016:31) proposes that this is especially the case for developing countries that continue to struggle with good governance and responsive service delivery. On the one hand, the challenges faced by developing countries are the lack of resources and capacity. On the other hand, at the core of responsive service delivery is the measurement of performance of both public servants and public institutions by the citizens as the customers, clients and recipients of public services.

South Africa, like other African countries, continues to be haunted by development challenges such as lack of and poor infrastructure and an ailing education system, especially in rural areas. This is despite various policy developments, programmes, strategies and national development frameworks to address development issues such as the National Development Plan (NDP) and Vision 2030 (South African Presidency, 2016:54). The National Development Plan conceives the development challenges faced by rural areas as linked to the marginalisation of the poor.

In the South African context, the interventions to date have not been responsive to the apparent disparities in development. Spaull (2013:2) is of the view that these interventions are not in line with the reality shifts on a development perspective. Although South Africa has a globally admired constitution and other progressive legislation, development challenges remain unsolved. Therefore, it could be argued that the current strategies, priorities and budget planning have somehow failed to achieve an effective, efficient and responsive local government as espoused in the Constitution and development frameworks such the NDP and

Vision 2030 (Moyo, 2014:5995). For example, most South African rural areas are still besieged with rural infrastructure constraints that are interlinked with poor universal access to education. Umzumbe Local Municipality (ULM) is an excellent example of this. It is of great concern that the prevalence of poor infrastructure development in rural municipalities, including ULM, compromises education development for rural inhabitants. Subsequently, it is imperative to advance rural infrastructure in the quest to promote the quality of education in ULM.

The Constitution of the Republic of South Africa (RSA) of 1996, Chapter 2, Section 9(2), stipulates the need to promote the achievement of equality, legislative, and other measures intended to advance and protect the marginalised and the disadvantaged. In addition, Section 152(1) of the Constitution provides for the functionary role of local government in promoting social and economic development by ensuring the delivery of services to the community in a sustainable manner. The Constitution further provides and highlights core principles that serve as guidelines for public institutions, including being responsive and accountable to the public when delivering public goods and services (RSA, 1996).

Infrastructure and education are some of the basic pillars identified in the Sustainable Development Goals (SDGs) and Global Competitiveness Index (GCI), which are used to measure countries' competitiveness (World Economic Forum, 2016/2017:35). Accordingly, when viewed from a human development perspective, the delivery of quality infrastructure, such as roads, energy, sanitation, telecommunications, education, health and recreational facilities, remain fundamental. It is unfortunate that in some parts of South Africa poor and/or lack of rural infrastructure, including those mentioned above, hinders human development through quality education, especially for the marginalised in rural areas. Rural communities are sparsely populated, which can lead to limited accessibility to critical infrastructure. As such, Mwanyepedza (2016:722) notes that infrastructure development challenges pose a threat to the development of rural inhabitants; this impacts on the delivery and access to education, thus leading to underperforming rural learners.

Quality education is a system of education that focuses on the physical, emotional, mental, social as well as cognitive development of each child, regardless of race, socio-economic status, gender, ethnicity or geographic location (Slade, 2016:11). Slade purports that such education does not only prepare the child for testing but for life in general. The author further suggests three pillars that shape quality education, namely, ensuring accessibility to schools as centres of learning; establishing a supportive quality learning environment; and providing

quality learning equipment (Slade, 2016:11). However, the diminishing standards of education are strongly affected by access issues prevalent in rural communities (Makube, 2013:238). In addition, when research is conducted on the challenges facing education, emphasis is frequently on learning equipment as an internal environment to quality education within schools. Thus, the effect of infrastructure as an external environment to quality education is rarely highlighted in research studies, leaving a gap for a similar study, particularly in a rural context (Makube, 2013:239).

Moyo (2014:5995) proclaims that most rural areas in South Africa are faced with basic infrastructure constraints for the delivery of economic and social services, which hinders the capacity of local municipalities to invest in education, health and recreational services. The author alludes that this is largely owed to the fact that rural local municipalities lack the capacity to fund their infrastructure requirements since they rely on external interventions and other spheres of government. To promote development in rural areas, it is essential to provide adequate infrastructure and services for the rural municipalities' investments in education, health and infrastructure, such as roads, water, sanitation, telecommunications and energy.

Umzumbe Local Municipality is no exception to these assertions. The areas in ULM are sparsely populated, which impedes accessibility to internet and other essential services, including the delivery of infrastructure such as roads, telecommunications, poor sanitation, water and electricity; all of which affect the delivery of quality education. This is owed to the non-existence of an economic base and a lack of funding as the municipality depends on grants from other government spheres (ULM Spatial Development Framework, 2017:52). These constraints have a negative effect on overall learner performance and impact the standard and quality of education in the area.

The right to education is enshrined in Section 29 of the Constitution of South Africa (RSA, 1996). As such, everyone has a right to basic, adult and further education. Therefore, the state has a mandate to ensure that these are made accessible and available as far as possible; the state is obligated to provide and promote a sustainable system of education that is reactive to the population's needs (RSA, 1996). Section 29 of the Constitution further provides that all forms and levels of education must display adaptability, acceptability, accessibility and availability as essential features. These features include provision of non-discriminatory, affordable education within physical and safe reach and availability for learners through the provision of basic services and facilities (RSA, 1996).

As further explained in Section 2.4.1, access to basic infrastructure and services is a constitutional right for every citizen and also an important foundation for promoting growth and development. Musiwalo (2013:5) establishes that the need to attain social cohesion and development of rural areas through the improvement of access to basic services such as infrastructure is stipulated in the Comprehensive Rural Development Programme (CRDP), which was approved by Cabinet in 2009. The aim is to provide adequate infrastructure while bringing about transformation of rural areas. As such, this study seeks to review the current institutional arrangements in place for infrastructure delivery in order to determine their impact on enhancing the quality of education within ULM. Narrowly, the focus of this research will be on determining how the delivery of infrastructure affects the quality of education. It is expected that the study will provide recommendations for future policy formulation in pursuit of improving infrastructure and education quality.

The literature reviewed revealed the gaps of other studies in addressing the probable effect of infrastructure as an external environment to quality education, as have been reflected above. The study will examine the institutional arrangements and the national development policies in place for rural infrastructure delivery with emphasis on improving education quality in schools located within ULM.

1.3 Research Problem Statement

Rural infrastructure delivery is the mandate of local government in South Africa. As such, this responsibility has to be executed in a consistent and efficient manner to all communities. Nevertheless, there are service delivery gaps among communities, and some communities tend to benefit more than others. It is the rural infrastructure delivery gap between communities that needs to be investigated. Evidence from South Africa reveals that the public sector has capacity constraints, such as scarce skills in critical thinking and knowledge management that prevents it from effectively overseeing and ensuring infrastructure delivery in terms of quality, time and cost (Qwabe & Ruffin, 2013:283). There is an urgent need to enhance skills and capacity, particularly in development areas, including infrastructure. Compared to its counterparts, South Africa has the highest supply of quality electricity and overall infrastructure; however, these aspects are well below the world rankings (Qwabe & Ruffin, 2013:283).

According to Spaull (2013:34), South Africa participates in a number of cross-national assessments of educational achievements that makes it possible to compare the level of

learning and knowledge of learners in South Africa with those of other countries. Assessments conducted in 2013, show that over the past decade there has been some progress at Grade 9 level of basic education, yet the performance levels remain extraordinarily low from Grade 10 to 12.

Arguably, since 1994 after racial segregation was abolished, the schools that serve black learners in South Africa remain dysfunctional and unable to impart the necessary skills to the learners. This is mostly true of schools in rural areas. According to Paxton (2015:226), literature on rural education in South Africa suggests that rural schools are positioned on the periphery. The system they operate in has traditionally placed them on the margin of thought, meaning they were a low priority item on the national agenda and budgets. Accordingly, as point of departure, this study seeks to ascertain the probable effect of infrastructure as an external environment to quality education in rural schools.

In light of the above, the study is undertaken on the perspectives of ULM. In principle, there is a gap in the scale at which rural infrastructure is being delivered in rural local municipalities compared to urban municipalities. The researcher was interested in ascertaining the root cause of staggering service delivery in line with the delivery of rural infrastructure in uplifting the quality of education in such localities.

1.4 Research Questions

The primary question explored in this study was:

1. To what extent has ULM implemented the national development policies to promote rural infrastructure development to advance education?

Related to the primary question were the following sub-questions:

2. Which national development policies have been used by ULM to advance rural infrastructure to improve the standard of education in schools within ULM?
3. What institutional arrangements have been adopted by ULM to advance rural infrastructure to improve the quality of education in schools within ULM?
4. What are the challenges in providing rural infrastructure to advance education in schools within ULM?
5. How can rural infrastructure be advanced to improve the quality of education in ULM schools?

1.5 Research Objectives

The primary objective of the study was:

1. To determine how the delivery of rural infrastructure affects the quality of education in schools within ULM.

Related to the primary research objective were the following secondary objectives:

2. To evaluate the extent to which national development policies on rural infrastructure development have been implemented in ULM to improve quality education in schools;
3. To identify the institutional arrangements that ULM has put in place to advance the rural infrastructure required to improve the quality of education;
4. To assess the availability of rural infrastructure to advance education in schools within ULM; and
5. To make recommendations for the policy planning and implementation needed to advance rural infrastructure and quality education in ULM schools.

1.6 Significance of the Study

This study was prompted by the prevalence of infrastructure backlogs evident in ULM. This local municipality is characterised by a backlog of services as a result of lack of infrastructure. These infrastructure challenges are hindering service delivery. Hence, the researcher needed to investigate the challenges that ULM experiences in delivering adequate rural infrastructure, which affects the delivery of and access to quality education. This allowed the researcher to suggest policy interventions that may be useful in upscaling infrastructure delivery to improve the quality of education in the area.

The study focuses on rural infrastructure as a catalyst for improving the quality of service delivery, particularly in education. Furthermore, the study assesses the impact that the disparities in infrastructure have on the academic performance of learners in schools within ULM. The study differs from other research in that it contributes strategies and programmes to be adopted and implemented in an attempt to improve service delivery through the delivery of rural infrastructure, thereby advancing the quality of education for rural learners of ULM. It contributes by adding to the current body of knowledge of infrastructure development and data essential for the development of rural infrastructure for the purpose of uplifting the quality of education.

The aftermath of the study is to upscale the delivery of social and economic infrastructure required to promote the quality of education within ULM schools. It is envisaged that the study will draw attention to the importance of rural infrastructure and its eminent contribution to the delivery of quality education. As such, the data obtained from this study will further contribute towards the realisation of the ultimate goal enshrined in Chapter 4 of the NDP for competitive infrastructure delivery to improve living standards, while eliminating inequality and social exclusion in society (National Planning Commission, 2011:161). This will in turn support the attainment of infrastructure and innovation in line with Goal 9 of the SDGs as well as quality education as premised in Goal 4 of SDGs, including the action plan premised in Agenda 2063 that by 2063 Africa should have adequate infrastructure to support accelerated growth and development (United Nations, 2016:22). Correspondingly, these initiatives have been used by government at national, regional and global scales in an attempt to address infrastructure challenges.

The study adds value to the understanding of the implementation of the aforementioned national development policies, which are all aimed at improving the standards of education in the entire country. In addition, the study may provide the ground work necessary for formulating strategies to develop world-class infrastructure as a catalyst for expanding access to quality early childhood, primary and secondary education, as aspired in Agenda 2063. Agenda 2063 states that social and economic infrastructure must be integrated for human development by providing life's basic necessities (African Union Commission, 2015:03). Furthermore, this research also provides lessons for other public institutions on how to best upscale their standards of education through effective and efficient delivery of rural infrastructure.

1.7 Preliminary Literature Review

The notion of rural development in South Africa is derived from a developmental state based on building and developing resilient and sustainable infrastructure in support of economic development and human wellbeing (Ondiege, Moyo, & Verdier-Chouchane, 2013:2). Nonetheless, the past decade has been marked with instability and fragmentation in rural development policies and development thinking, regardless of the widespread focus on attaining SDGs. Consequently, there is an urgent need for South Africa as a developing country to implement policies that contribute to the empowerment of its people while promoting rural development, such as infrastructure.

The Inclusive Rural Development Theory suggests that the critical objective of rural development is to advance the quality of life of rural mankind (Fernando, 2008:16). The author establishes that the three dimensions of development that contribute immensely to the accessibility of basic services are economic, social and political (institutional) dimensions. In line with the Inclusive Rural Development Theory, these three dimensions of development should reinforce each other to achieve inclusive development.

1.7.1 The Economic Dimension of Inclusive Rural Development

Fernando (2008:9) remarks that the economic dimension of inclusive rural development represents the capacity and opportunity afforded to the marginalised to participate in and benefit from the growth processes. In this context, the economic dimension encompasses infrastructure such as transport, roads, energy, and Information and Communication Technology (ICT). In line with the Inclusive Rural Development Theory, these economic aspects of physical infrastructure are fundamental in affording rural inhabitants better and improved access to essential basic services that significantly impact their welfare. Consequently, the Inclusive Rural Development Theory suggests that with improved physical infrastructure, the benefits of economic growth are evenly distributed among rural inhabitants as they participate in it. Deficiencies in physical infrastructure, such as roads, need to be addressed to create economic opportunities for rural inhabitants and to make economic growth inclusive (Fernando, 2008:9).

In this context, Bila (2013:12) observes that the capacity of the rural sector is critical in sustaining and accelerating rural development. The author laments that educational opportunities in rural areas lag behind those of cities as a result of infrastructural and capacity constraints such as roads, transport and ICT. Therefore, development efforts should be steered towards investment in the education of rural communities. In support of Bila, Van Dyk (2015:246) affirms that poor economic infrastructure and capacity constraints in rural schools have a detrimental effect on education outcomes. For example, rural schools have an inadequate supply of basic services such as roads, public transport and ICT, and this negatively affects education standards. Van Dyk (2015:246) purports that the restricted abundance of resources in rural areas contributes to low standards of education and learner performance while inhibiting educators from developing their skills.

Relatedly, Whiteworth (2015:257) assumes that the geographic location of rural areas makes it difficult for educators to attend courses and workshops. This creates a barrier for the

development and growth of rural educators as skills development does not cater to rural educators, and thus, their opportunity for personal growth and development are limited.

Rahman and Akter (2014:21) thus conclude that rural infrastructure influences rural livelihood, while investment in education influences assets and resources, and therefore, boosts economic efficiency and productivity for rural inhabitants.

1.7.2 The Social Dimension of Inclusive Rural Development

The social dimension of inclusive development refers to investments in education, health and human resource development to eliminate inequalities in society. This aspect of development involves infrastructure in the form of schools, libraries, clinics and recreation facilities. Fernando (2008:17) remarks that this dimension of development is imperative for inclusive rural development since it embraces social development while eliminating inequalities in social indicators for rural inhabitants.

In light of this, Sapkota (2018:1) emphasises that infrastructure variables such as energy, transport and roads have significant impacts on human development processes such as education and health. Thus, the author suggests future research on a framework to effectively eliminate infrastructure inadequacy to reduce inequality and accelerate inclusive development. Therefore, this study seeks to examine the adequacy of infrastructure in advancing the quality of education in schools within ULM. It is envisaged that the study bridge the gap of inequality in inclusive rural development, as suggested by Sapkota (2018:1).

Hlalele (2014:462) confirms that one of the key features of the South African rural profile is the poor conditions of roads and bridges to schools. Other features include lack of infrastructure such as ICT, energy, education and health; low economic status; and limited access to lifelong learning opportunities. These impediments disadvantages rural learners since many schools in South Africa are situated in rural areas. For example, the nature and the extent of the South African rural communities' demands for infrastructure are so vast that the investment initiations have not yet matched the demands (Hlalele, 2014:462). Statistics South Africa (2015:16) affirms that KZN has the highest percentage of children aged 14–19 residing far away from school. In addition, most of this province's population have limited access to internet, with only 5.3% of households having access to internet at home.

1.7.3 The Political (Institutional) Dimension of Inclusive Rural Development

There is an urgent need to strengthen political institutions in order to promote inclusive rural development in the delivery of basic services such as education and health. The problems facing rural development should be addressed in a coherent and reinforcing manner (Fernando, 2008:14). In light of this assertion, Mikulcak, Haider, Abson, Newig, and Fischer (2015:248) argue that rural development models to date have failed to explain why development stagnates in certain regions and focuses on single policy areas. This study revealed that rural development barriers are multiple and impacted by deliberated institutional context. As such, development barriers cannot be addressed by one sided intervention but should be resolved through a coherent and multidimensional approach if human development is of importance (Mikulcak *et al.*, 2015:248).

Furthermore, Naldi, Wilson, Westland, and Wixe (2015:90) argue that rural development is not a one size fits all approach and its application should be combined with a place-based approach adjusted to fit the specifics of rural contexts. The authors recommend future research to embark on fundamentals of rural development across regions to be built on available measures that can be linked to the theory of rural growth and its determining factors. From these assertions, this study aligns itself with recommendations for future research by Mikulcak *et al.* (2015) and Naldi *et al.* (2015), which identify the need to specify accurate processes that holistic rural development approaches should entail. Henceforth, the study seeks to highlight the role of rural infrastructure in enhancing growth of rural humankind through education.

1.8 Research Design and Methods

Mouton (2011:56) identifies that research methodology focuses on the research process, the procedure that the research will entail, as well as the tools that the research will use. The emphasis is on numerous steps that need to be followed when conducting the research in order for the research to produce the desired results. As such, the methodological approach for this study are discussed below.

1.8.1 Research Design

A research design is a plan that explains how the enquiry will be conducted. It is linked to the kind of planned study and the results that are hoped to be achieved through the study,

including the evidence that validates the proper addressing of the research problem (Mouton, 2011:55). The research design should be informed by the worldview tradition that the investigator brings to the study; procedures of enquiry; data collection techniques; data presentation; and data analysis. The selection of the research design depends on the natural phenomenon of the problem under investigation, the audiences for the study, and the researcher's personal experiences.

There are three approaches that can be used to examine a hypothesis and to answer a research question: The qualitative, quantitative and mixed methods (Creswell, 2009:3). Creswell (2009:4) describes qualitative research as exploring and understanding the manner in which individuals ascribe to a social or human problem. Quantitative research design is described as a measurement of the properties of phenomena, such as the attitudes of individuals towards a certain topic, so that the collected data can be analysed through the use of statistical procedures (Creswell, 2009:3). Alternatively, the mixed methods design uses both qualitative and quantitative approaches to exploit the advantages of both approaches. The mixed methods design extends to collecting and analysing both types of data in the interest of enriching the overall strength of the study so that it can be greater than qualitative and quantitative research (Teddlie & Tashakkori, 2009:73).

The research design adopted in this study is the qualitative approach. The flexible nature of the qualitative approach allows for further questions to be asked about decisions as the research progresses and social reality unfolds (De Vos, Strydom, Fouche, & Delport, 2011:324). This research approach further provides the researcher with the opportunity to reflect on what certain questions have achieved at particular stages of the enquiry. Furthermore, the multi-paradigmatic focus of qualitative research enables the researcher to be sensitive to the value of multi-method approaches while being committed to the natural and interpretive understanding of human experience (Flick, 2006:6). The qualitative approach is regarded as the most appropriate for this research because the advancement of rural infrastructure and quality education will be explored in the broad spectrum of its complexity for inductive data building.

1.8.2 Research Strategy

Saunders, Lewis, and Thornhill (2003:90) define a research strategy as a general plan of how the researcher will go about answering a research question. The authors recognise eight research strategies: Surveys, case studies, experiments, ethnography, action research,

grounded theory, exploratory, and cross-sectional studies. Each of these research strategies is delineated in detail in Section 4.4.

The purpose of the study, the research method, and the necessity of the study informs the choice of the research strategy for the study. This study adopted a case study approach in order to obtain an insider perspective on social action and to understand the actual realities based on advancing rural infrastructure and quality education. A case study in qualitative research is a research strategy in which the researcher attempts to explore in depth an activity, process, programme, or event in one or more individuals. Mouton and Babbie (2007:149) confirm that case studies can present the examination of multiple variables while the elements of study interact within their perspectives, thus it forms a significant part of the investigation.

Similarly, Yin (2009:19) contends that case studies have a distinct place in evaluation research because they help to describe the presumed casual links in real-life solutions that are too wide for the survey or tentative strategies. Case study research is defined as a strategy of enquiry, a methodology, or a comprehensive research strategy. In addition, case studies are methods of research that offer a way of investigating an empirical topic by following a set of prescribed procedures (Yin, 2009:19). A case study was thus suitable for this study because it sought to investigate the nature and extent of rural infrastructure advancement as a contributing factor to quality education within the jurisdiction of ULM.

1.8.3 Study Site

Umzumbe Local Municipality is the second largest of four local municipalities within the Ugu District. This municipality is predominantly rural with an estimated population of 151 676 and covers a vast rural area of 1 221 km, with approximately 1% being semi-urban. The municipality incorporates 12 traditional council areas and comprises 20 municipal wards and 20 Ward Councillors. There are 140 schools within ULM, 11 that are combined, 96 primary schools and 7 high schools (ULM Spatial Development Framework, 2017:63). The schools are faced with infrastructure constraints, particularly road and transport infrastructure, which negatively affects education outcomes.

Map 1-1 below is the map of ULM.
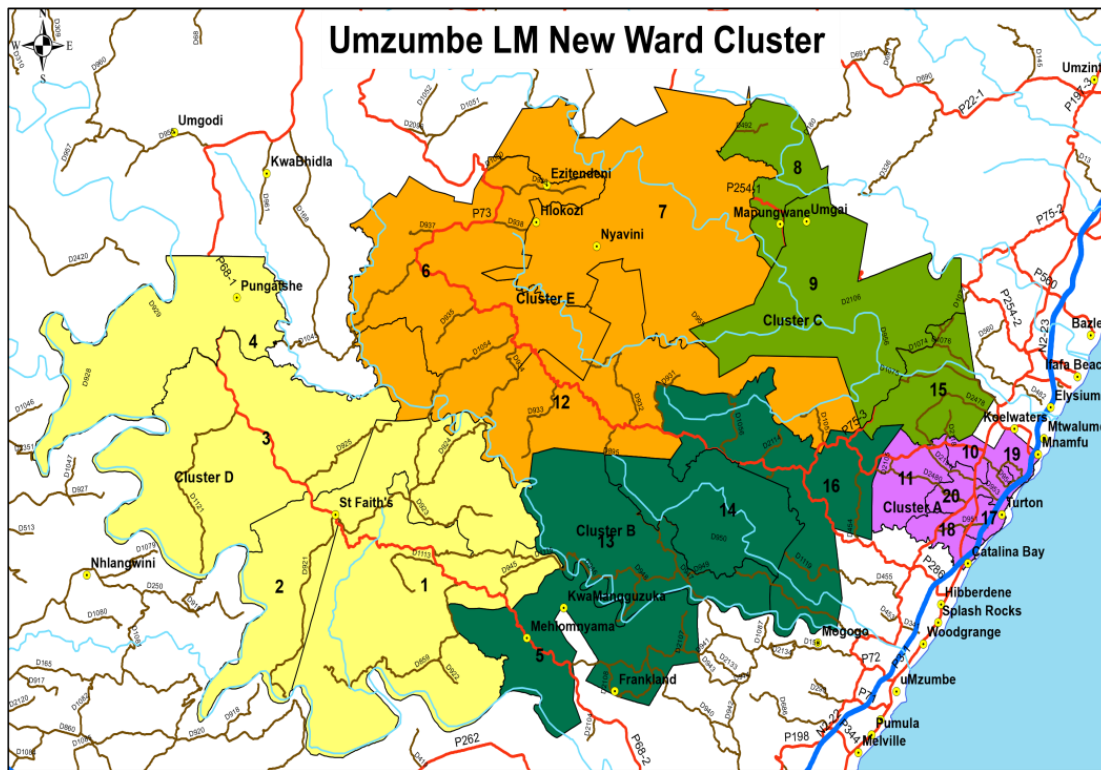
Map 1-1: Map of Umzumbe Local Municipality

Source: ULM IDP (2017/2018)

1.8.4 Study Population

Welman, Kruger and Mitchel (2005:52) describe the population as a study object comprising of individuals, groups, events and human products and the conditions they are exposed to. Correspondingly, Wiid and Diggines (2013:186) define population as a total group of people or entities from whom information is required. Accordingly, the population represents the full collection from which a sample is chosen.

1.8.5 Target Population, Sampling Population and Sample Size

A target population reflects the total collection of units of analysis that a researcher may wish to draw conclusions on. Van Rensburg (2010:56) asserts that a target population comprises of all elements that form a unit of analysis. The difference between the target population and the accessible population is that the target population represents everyone or everything that falls within the parameters of the population, while the accessible population refers to that section of the population that can be included in the study. In essence, it is impossible and costly to involve all population members in an enquiry; therefore, the conclusions can be drawn from

the data obtained from the sample of the target population (Van Rensburg, 2010:56). As such, a research population can be classified into target population, sampling population and sample size.

This study targeted participants who would contribute to concrete and realistic findings in line with the objectives set for this study.

1.8.5.1 Target Population

The target population for this study was drawn from Wards 11, 16, 18, and 19 in ULM. These wards were selected on the basis of their secluded and isolated location from social and economic amenities. Thus, the researcher presumed that this sample held concrete perceptions that would effectively meet the objectives of the study. Furthermore, the target population for this study comprised of Ward Councillors, Managers, Headteachers and Grade 12 learners within ULM.

1.8.5.2 Sampling Population

Population sampling refers to the general sample comprising of elements that possess attributes that the researcher believes serve the purpose of the study (Rubin & Babbie, 2005:247). Based on this assertion, the sampling population for this research comprised of three ULM officials, four Headteachers of the Department of Education (DoE) and four groups, comprising of six learners each, of Grade 12 school learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools, respectively.

1.8.5.3 Sample Size

The sample size indicates the number of elements in a sample. Patton (2002:244) establishes that sample size is determined by the usefulness and credibility of the inquiry and the available time and resources. In addition, there are no rules for sample size in a qualitative enquiry. The intended sample size for this study was 39 participants within ULM. This was informed by Patton's (2002:244) assertions that sample size depends on what will have credibility and what can be done with the available time and resources.

The sample size for this research comprised of three ULM officials and four Headteachers of the DoE, all from Wards 11, 16, 18 and 19 within ULM. It also included four focus groups of Grade 12 learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools,

with each focus group comprising of six learners. In total the sample size consisted of 35 participants. The participants for the study are described in Table 1-1.

Table 1-1: Research participants

Research Participants	School/Municipality	Number of Participants
Grade 12 Learner Focus Group 1	Sbongimfundo High, Ward 16	06
Grade 12 Learner Focus Group 2	Kwafica High, Ward 18	06
Grade 12 Learner Focus Group 3	Luthuli High, Ward 19	06
Grade 12 Learner Focus Group 4	Bonguzwane High, Ward 11	06
DoE HOD 1	Ward 16	01
DoE HOD 2	Ward 18	01
DoE HOD 3	Ward 19	01
DoE HOD 4	Ward 11	01
Ward Councillor 1	Ward 16	01
Ward Councillor 2	Ward 11	01
Ward Councillor 3	Ward 18	01
Ward Councillor 4	Ward 19	01
Municipal Manager	ULM	01
IDP Manager	ULM	01
Technical Services/Infrastructure Manager	ULM	01
Total		35

1.8.6 Research Sampling Method

Mathenjwa (2010:56) identifies two main types of sampling techniques commonly used in research, namely probability and non-probability sampling. Non-probability sampling involves techniques such as snowball, quota, purposive and self-selection sampling. Probability sampling generates a representative sample by drawing a sample from numerous units (Neuman, 2011:244). Each of these sampling techniques are discussed in detail in Section 4.6.

The benefits of using a sample are that it is time and cost effective (Maree, 2014:70). Babbie (2007:264) affirms that it may not always be practical to study the entire population; therefore, a portion of a population known as a sample may be selected to participate in a study.

This study adopted the non-probability sampling approach by using purposive sampling. Palys (2008:87) states that eligible participants can be selected on the basis of the researcher's judgement, although it may be based on coincidence and not on random or systematic selection. Consequently, the researcher intended to direct the study to relevant people who hold relevant information regarding the delivery of rural infrastructure in

advancing the quality of education. It is for this reason that the purposive technique of non-probability sampling was used in this study.

1.8.7 Data Collection Methods

Data collection is solely dependent on whether primary or secondary data must be gathered. The different methods of collecting data are text analysis, testing, interviewing and observation (Mouton, 2011:104). Primary data is gathered by the researcher, while secondary data is collected using other sources that are readily available for use (Cassim, 2011:8). This study collected primary data using focus group discussions, semi-structured, in-depth interviews and document analysis to determine whether the delivery of rural infrastructure in ULM contributes to the quality of education.

1.8.7.1 Interviews

Interviews may be defined as a strategy of researchers to obtain information through direct interchanges with an individual or a group that is known to possess the knowledge they seek (DePoy & Gilson, 2008:108). The three types of interviews are structured, unstructured and semi-structured interviews.

(a) Structured interviews

In a structured interview, the interview questions are presented in a standardised and straightforward manner. This means that all the interviewees receive the same set of questions that are asked in the same sequence by the interviewer (Maree, Creswell, Ebersohn, Eloff, Ferreira, Ivankova, Jansen, Nieuwenhuis, Pietersen, & Clark, 2016:93).

(b) Unstructured interviews

Unstructured interviews are used by researchers to gain an understanding of the participants' points of view or situations (Collins, 1998:1). In this interview setting, the participants' perspective on the phenomenon of interest is allowed to unfold as the participant, and not the researcher, views it (Marshall & Rossman, 1995:80). Such interviews are focused and discursive, allowing the researcher and participants to further explore the phenomenon being studied.

(c) Semi-structured interviews

Semi-structured interviews are used to gain a broader picture of participants' beliefs about a particular topic (De Vos *et al*., 2011:352). This method of interviewing allows the researcher and participants flexibility since it allows for following up on interesting avenues that emerge from the interview. Even though the questions are predetermined, the interview is guided rather than dictated by the interview schedule. In this context, the interview schedule replicates a questionnaire that is used to guide the interviews (De Vos *et al.,* 2011:352).

For this study, primary data was collected using semi-structured interviews to determine the nature and the extent to which the delivery of rural infrastructure within ULM contributes to the delivery of quality education in the municipality. The semi-structured interviews allowed for in-depth interactions with municipal officials to obtain detailed information on the participants' attitudes, values and beliefs surrounding the reality of the delivery of infrastructure in the municipality. The interview schedule was issued to all participating municipal officials and Headteachers two days prior to the interviews to give participants enough time to scrutinise the questions so that they could provide profound responses on the day of the interview.

1.8.7.2 Focus Groups

Du Plooy-Cilliers, Davis, and Bezuidenhout (2014:145) define a focus group as a group of individuals that assemble to participate in a discussion based on a common interest. The authors further establish that the focus group comprises 6–12 individuals that assemble to express their ideas, opinions and viewpoints pertaining to predetermined open-ended questions of a specific phenomenon. Parallel to interviews, the researcher in turn becomes a facilitator for a focus group and needs to ensure that the discussion stays on topic (Du Plooy-Cilliers *et al*., 2014:145).

The researcher interviewed four focus groups, each comprising of six participants from the Grade 12 learners of Luthuli High School, Kwafica High School, Sbongimfundo High School, and Bonguzwane High School. Through focus group interviews the researcher was able to determine the learners' perceptions and experiences of delivery of infrastructure and basic education within ULM**.**

1.8.7.3 Document Analysis

Documentary evidence refers to sources containing information that can be used as empirical facts in order to substantiate data collected through interviews (Bowen, 2009:27). Such documents include journals, books, newspapers, institutional reports, reports, and other official publications. Noor (2008:1604) affirms that documentary evidence enables the qualitative researcher to validate information collected from interviews.

In this study, these documents provided the researcher with guidelines to follow when conducting the interviews. As such, the researcher used documentary evidence from annual reports, strategic plans and other documents relating to infrastructure and basic education to analyse data.

1.8.8 Data Quality Control

Data quality control refers to the standardised tools used by a researcher to ensure data assurance as a means to confer validity and reliability on collected qualitative data (Benjumea, 2015:887). This means that it is fundamental for qualitative researchers to reflect on what the study is about while formulating a research theme without mixing it up with a population group. Therefore, in line with Benjumea's (2015:887) recommendations, the researcher adopted semi-structured interviews to conduct the inquiry. The interview guides were essential to maintain the focus on the topic under study.

The interview guide provided a list of all elements and aspects that had to be covered by the study. During the interviews, the participants were asked the same questions based on the perceptions, opinions and experiences of the rural infrastructure delivery and basic education recipients. In addition, the researcher used technical equipment such as a recording device to capture and store the responses from the participants. This helped to ensure the reliability of the collected data.

1.8.9 Data Reduction and Analysis

Data analysis is a process through which data is translated into findings. This translation is done by the researcher by identifying and describing the evident and dormant patterns of meaning emerging from the data in order to reach conclusions. In addition, data analysis is a systematic process of converting raw information collected from written and verbal responses of participants into written or visual formats, known as transcribing (Du Plooy-Cilliers *et al*.,

2014:229). For this particular study, the researcher transcribed all audio recorded data word for word into a transcript in order to analyse it as text, thereby focusing on the content meaning of the phenomena emerging from the empirical data. Subsequently, data was divided into segments through the process of coding. Du Plooy-Cilliers *et al*. (2014:229) defines data coding as a means by which the researcher attempts to break the text down into concepts and codes in order to arrange them into meaningful units. Coding is applicable to all forms of text, such as interviews, observations, field notes, focus groups and written texts.

For the purpose of this enquiry, the researcher used thematic coding. Babbie and Mouton (2001:493) define thematic coding as a process of compressing data by identifying themes. As such, the researcher used thematic coding in analysing and interpreting the impact of infrastructure on advancing the quality of education in schools within ULM.

1.8.10 Ethical Considerations

According to Mouton (2011:239), ethical choices entail a concession between the interests and rights of different parties. This implies that the researcher follows precautionary measures in the process of the research but not at the expense of the rights of other people. The ethical considerations were maintained by obtaining informed consent from the participants and furnishing them with documents relevant to the study in order to ensure their wellbeing. In addition, consent was obtained from the parents and guardians of the Grade 12 learners who participated in this research. Teddlie and Tashakori (2009:199) comment that the participants must be assured of anonymity and confidentiality during a research study. In light of the above, the researcher ensured adherence to the following criteria while conducting the research:

- The gatekeeper letter granting permission to conduct the study was obtained from ULM.
- The permission to conduct the study in KZN high schools was acquired from the provincial office of the DoE.
- The Ethical Clearance Certificate was obtained from the University of KZN's Ethics Committee.
- The parents' consent for Grade 12 learners to participate in the focus groups were obtained since the learners were minors and under 18 years of age.
- Consent forms were issued to the participants before they started the interviews.

- Clear and accurate information about the research was given to the participants before commencing with the research.

- Participants were informed that the research is voluntary and that they were free to withdraw at any time.

- Care was taken to safeguard the privacy of participants to protect them from harm. The researcher also assured the participants that only the researcher will have access to the information that was shared during the interviews.

- The researcher ensured confidentiality and anonymity by not identifying the participants.

1.9 Limitations of the Study

Qualitative research can result in challenges of problematic evaluation of outcomes. Mouton (2011:152) maintains that no research design or strategy is without its limitations. The limitations of the case study method are that case studies are not designed for the generalisation of findings. In most cases, limitations arise from lack of standardised measurements as a result of time constraints in data collection and analysis. Therefore, even though the research was carefully prepared, the researcher encountered shortcomings and limitations during the research.

Firstly, the researcher was granted permission by the Department of Education Provincial office to conduct research in Kwafica, Sbongimfundo, Bonguzwane and Luthuli High Schools. However, the researcher faced another hurdle when seeking permission from the Ward Managers of the respective schools to access the schools and engage with Principles, educators and Grade 12 learners. Further delays in obtaining consent letters from learners and parents emanated from the fact that the schools were closed for holidays from 28/09/2018–08/10/2018. This meant that the researcher had to wait another two weeks before making appointments with the Headteachers of the respective schools in order to select participants for the research. This included obtaining consent letters from Grade 12 learners and their parents.

Secondly, the researcher faced challenges in obtaining consent letters from Grade 12 learners at Luthuli and Bonguzwane High Schools. The Headteachers of these schools were concerned that the learners were already focusing on final examinations and that it would shift their focus to bother them with consent letters. In addition, there were foreseen challenges in getting these learners to avail themselves for focus group interviews because

these learners would scatter soon after final examinations and it would be difficult to get hold of them to participate in the research. After much consideration of the above circumstances, the researcher decided to shift the sample from Grade 12 class of 2018 to the potential class of 2019. These learners were selected by the Headteachers and Grade 11 and 12 convenors based on the knowledge that they would make it to Grade 12 in 2019. Furthermore, the learners would already be in Grade 12 by the time the focus group interviews were conducted at the beginning of 2019.

Thirdly, the four members of the SGB that were chosen for this study could not be reached for interviews because the term of the current members had ended in March 2019 and the elections for new SGB members had not yet taken place and the date for the elections could not be confirmed by the HODs of participating schools. This meant that the sample size for this study shifted from 39 to 35 participants.

Lastly, the researcher faced another impediment in obtaining interview appointments with ULM officials since they argued that they were busy campaigning for the upcoming National and Provincial Elections for 8 May 2019. Thus, the researcher had to wait until the National and Provincial Elections passed before securing appointments with the targeted municipal officials.

Furthermore, the sample was chosen in an effort to secure a fair representation of the municipality employees, education officials and Grade 12 learners in this research. As a result, the researcher used a sample of one Municipal Manager, one IDP Manager, one Infrastructure Manager, four Headteachers, four Ward Councillors and four focus groups, each comprising of six Grade 12 learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools. Accordingly, the chosen sample is not the whole target population of ULM staff, school staff and Grade 12 learners from all high schools within ULM. However, time and financial constraints meant that it was impossible for the researcher to interview the whole staff of ULM and all the Headteachers and Grade 12 learners from ULM schools.

Lastly, the same interview questions were used for all participants to save time and to maintain standardisation of measurement.

1.10 Key Terms and Definitions

The key terms and definitions used in the study are shown in Table 1-2

Table 1-2: Key terms and definitions

Key Terms	Definition
Rural Development	Actions for development of areas outside the mainstream economic system intended to sustain the socio-economic development of rural communities (Pellisery, 2013:223).
Infrastructure	Social and economic facilities, such as roads, energy, transport, education and health, as basic necessities for promoting general welfare in society (Buhr, 2003:8).
Rural Infrastructure	Activities that are regarded as social overhead as they are crucial for the overall development of rural areas (Satish, 2014:32).
Local Government	The organ of state within the local sphere of government that is entrusted with specific powers within its area of jurisdiction (Ismail, 1997:2).
Service Delivery	The provision of public activities, benefits and satisfactions. Services relate to the actual provision of social and economic public goods (Fox & Meyer, 1995:119).
Quality Education	A form of education that is methodologically and developmentally sound while educating learners to become active and productive members of society (Slade, 2016:5).

1.11 Chapter Inventory

Chapter 1: Introduction and Context: The first chapter is an introduction to the study that incorporates the research background, research problem, research questions, research objectives, significance of the study, preliminary literature review, research design and methods, research strategy, study site, target population, sample size, sampling strategy, data collection methods, data quality control, data reduction and analysis, ethical considerations, limitations of the study, and key terms and definitions.

Chapter 2: Rural Infrastructure for Inclusive Development in South Africa: This chapter examines the regulatory and policy framework in South Africa regarding rural infrastructure and basic education. It also outlines and reviews in detail the scholarly arguments relevant to the study while observing the delivery of rural infrastructure and basic education from a South African perspective. It further examines the delivery of infrastructure and quality basic education in rural settings globally. The government initiatives on infrastructure and inclusive development are also interrogated in this chapter.

Chapter 3: Theoretical Framework Underpinning the Study: This chapter presents the theoretical framework underpinning the study. The Inclusive Rural Development Theory as a theory informing this study is expounded.

Chapter 4: Research Design and Methodology: Chapter 4 provides a description of the research methodology and the procedures adopted in conducting this research. The chapter also includes the population, sample of participants, sample size, sampling strategy, and the data collection methods.

Chapter 5: Data Presentation, Analysis and Discussion: Chapter 5 presents and analyses the research findings generated from local government officials, Headteachers and Grade 12 learners. The qualitative primary data is analysed in this chapter.

Chapter 6: Summary of Findings, General Conclusions and Recommendations: Chapter 6 provides recommendations and conclusions drawn from the results and the findings obtained through the qualitative research method in order to improve the delivery of rural infrastructure and thereby upsizing the standard of education.

CHAPTER 2

RURAL INFRASTRUCTURE FOR INCLUSIVE DEVELOPMENT IN SOUTH AFRICA

2.1 Introduction

This chapter provides an overview and the conceptualisation of rural infrastructure and quality education. Specifically, it provides an overview of the legislative mandate and frameworks that are in place for rural infrastructure and basic education in South Africa. In addition, in an attempt to examine the conventional wisdom that social and economic infrastructure positively affect the standard of service delivery, this chapter reviews scholarly input in relation to the provision of rural infrastructure and quality education. Lastly, the chapter explains and evaluates how governments have attempted to address rural infrastructure and education delivery constraints from global, regional, national, provincial, and local perspectives.

2.2 Definition of Key Concepts

The following section provides a description and brief definition of key terms for the study. These key terms, including rural development, rural infrastructure, and quality education, constitute the independent and dependent variables, respectively, for this research.

2.2.1 Rural Development

According to Pellisery (2013:223), rural development is a comprehensive term that focuses on actions for the development of areas outside the mainstream of the urban economic system. These actions are intended to sustain socio-economic development of rural communities. In essence, rural development denotes improved quality of life and the economic wellbeing of people living in rural areas, which are relatively isolated and sparsely populated. Kalu, Ibiam, Stephen, and Ijeoma (2014:15) recognise rural development as a strategy for transforming the economy with the aim of satisfying the aspirations of most rural inhabitants. This includes empowering individuals to participate in the development process and creating the infrastructure and structures that are necessary for mass participation.

2.2.2 Infrastructure

Infrastructure refers to social and economic facilities, such as roads, energy, transport, education, and health, as basic necessities for promoting general welfare in society (Buhr, 2003:8). In the literature, infrastructure also refers to public and social amenities that can be categorised as social, economic and institutional infrastructure. In this context, institutional infrastructure represents the policies and regulations needed for the operation of an institution. Social and economic infrastructure are complementary to each other and are a combination of facilities of education, health, recreation and transportation facilities supplemented by roads, water, sanitation, energy and ICT (Buhr, 2003:11).

2.2.3 Rural Infrastructure

Satish (2014:32) views rural infrastructure as an umbrella term for activities regarded as social overhead, as they are crucial for the overall development of rural areas. That said, Kalu *et al.* (2014:14) define rural infrastructure as the foundations of social development that are interrelated and mutually supportive. These foundations include human and organisational capabilities that strengthen and sustain the social dimensions of development. These authors further postulate that rural infrastructure refers mainly to the social and economic resources necessary for rural populations to access services and benefits they are constitutionally entitled to (Kalu *et al.*, 2014:14). Similarly, Musiwalo (2013:10) and Spaull (2013:96) assert that rural infrastructure signifies access to quality public services such as sanitation, water, energy, transportation, ICT and public facilities for education, health and recreation, which must be afforded to all rural inhabitants to promote their wellbeing.

2.2.4 Local Government

Local government is that substructure of government that operates on a local level and is closest to the people. For this reason, local government is instrumental in fostering a developmental role based on fiscal governance and legislative and executive authority over an area of its jurisdiction and a certain group of people (Ndreu, 2016:2).

2.2.5 Service Delivery

Essentially, service signifies the performance of work by an official making use of resources to provide the public with necessities (Crous, 2002:19). The author further defines delivery as

a process of handing over the goods to the intended recipients as expected. Thus the concept of service delivery extends to the provision of a service or a product by a government institution to the community that expects such.

2.2.6 Quality Education

Slade (2016:5) describes quality education as the form of education that is methodologically and developmentally sound while educating learners to become active and productive members of society. This includes preparing learners for further study, employment and participation in the corporate environment. Quality education encompasses inclusiveness regardless of geographic location or economic status. Moreover, quality education provides sufficient resources and is provided in an environment that is emotionally and physically safe for learners (Slade, 2016:7). Spaull (2013:99) confirms that quality education allows schools to access basic services such as the required infrastructure to advance quality education intended to develop learners. This extends to positive outcomes necessary for individuals and communities to progress in a competitive world.

2.3 Historical Background of Rural Development

The interest in rural development started in the1960s and 1970s as a result of growing concerns about the high levels of rural poverty (Musiwalo, 2013:1). As a result, government embarked on interventions to support specific components of rural development. These components included rural roads, basic education and health care, which were considered priorities for successful rural poverty reduction. These components were perceived to be critical in improving the living conditions of poor people, especially in developing countries. It thus appeared that development should not only address economic and material needs of the people, but should also address their social wellbeing (Musiwalo, 2013:1).

Mirela-Adriana (2016:388) establishes that through the experiences of rural poverty it was realised that economic growth alone would not foster better living standards for developing countries. Thus, it appeared that there was an urgent need to adopt a multidimensional approach that would incorporate distributive justice. Such an approach would assist in eliminating the social inequalities in the distribution of services, particularly for rural inhabitants. Consistently, Suttie (2014:07) holds that even though rural development was aimed at addressing the injustices of the apartheid era, it has not positively impacted the lives of the poor.

The concept of rural development dates back to the seventeenth century; however, even after democracy, it remains a major concern for development policy, planning, and implementation. Calatrava (2016:2) reveals that following the Second World War, signs of perceived effects of economic development started to emerge. These development challenges were identified as social inequalities in terms of wealth and land distribution. Based on these challenges, new goals and strategies became necessary in order to develop rural societies. As a result, rural development emerged as a development paradigm that sought to address the social ills and inequities facing rural society other than economic growth. Among other factors, the new development model was to focus on better infrastructure facilities, education, and health for rural communities (Calatrava, 2016:2).

After 1994 the multi-dimensionality approach of development shifted from poverty alleviation towards being people centred, integrated and comprehensive (Mkhutshulwa, 2017:32). As a result, it is worth noting that integrated rural development currently comprises of various activities and dimensions. Correspondingly, Sharma (2015:46) identifies that for most developing countries, like India and Nigeria, the core objective of rural development is to ensure justice and equalisation of opportunities in society. This objective extends to improving the economic and social life of rural communities. This objective can be realised by providing food, shelter, education, health, employment and other basic services to improve the quality of human life. Hence, in this context rural development should be centred on an integrated spatial perspective in cognisance of all policies that are pertinent for rural areas (Sharma, 2015:46).

2.4 Infrastructure Development in South Africa: A Legislative Context

The National Development Plan Vision 2030 calls for improved access to basic services, quality education and health care. The emphasis is on infrastructure development programmes that will contribute to spatially, socially and economically integrated rural areas (Medium-Term Strategic Framework [MTSF], 2014–2019:13). Hence, the development of infrastructure to support livelihoods is essential for improving the quality of human life in fulfilment of Outcome 7 of the NDP on comprehensive rural development. Outcome 7 further envisions South African rural communities that enjoy quality education transport, health care and other basic services (MTSF, 2014-2019:13).

Despite several attempts by the democratic government to accelerate infrastructure inadequacies since 1994, the impact of infrastructure inadequacies has been most visible in

the South African rural spaces (South African Presidency, 2016:16). As such, the inadequacies in social and economic infrastructure have had a significant impact on the quality of basic services, particularly in the health, education and recreation sectors. Therefore, in an attempt to bridge the social and economic infrastructure gaps, the key priority of the democratic government has been to eliminate the marginalisation of rural people in particular.

An overview of the legal frameworks that promote infrastructure development and quality basic education in South Africa is presented next.

2.4.1 The Constitution of the Republic of South Africa, 1996

Government at the local, provincial and national spheres is mandated by the Constitution of the RSA of 1996 (RSA, 1996) to ensure the provision of basic services, such as infrastructure, to communities in a sustainable manner. Specifically, Chapter 2 of the Constitution stipulates the need for government to promote equality and protect the marginalised through legislation and other relevant measures (RSA, 1996). Section 27(1)(a)(b)(c) succinctly promotes sustainable human settlements and access to education, health and recreational facilities among other infrastructure development imperatives.

Fundamentally and related to this study, the right to education is enshrined in Section 29 of the Constitution: Everyone has a right to basic, adult and further education (RSA, 1996). Therefore, the state has a mandate to ensure that these are made accessible and available, as far as possible. The state has an obligation to provide and promote a sustainable system of education that is reactive to the population needs. Section 29 of the Constitution further provides that all forms and levels of education must display adaptability, acceptability, accessibility and availability as the most essential features (RSA, 1996).

Correspondingly, Manggat, Zain and Jamaluddin (2018:650) established that a well-developed infrastructure underpins the notion for social inclusion and equitable access when customised with the unique circumstances of each community. In return, the benefits are reflective of the community priorities as they contribute to the welfare and quality of life of the community in education.

2.4.2 Infrastructure Development Act No. 23 of 2014

The National Development Plan led to the promulgation of the National Infrastructure Development Act No. 23 of 2014. This Act signified the mobilisation of socio-economic infrastructure contained in Chapter 6 of the NDP (Perreria & Andraz, 2013:30). Furthermore, the Act provides a policy framework for the development of infrastructure in South Africa, including rural areas. In this regard, the rural development approaches adopted by government, including infrastructure, must respond to the NDP requirements.

The Act led to the establishment of the Presidential Infrastructure Coordinating Commission. The Presidential Infrastructure Coordinating Commission is responsible for coordinating and managing government infrastructure projects. This includes improving capacity, maintaining the National Infrastructure Plan, and monitoring the impact of projects on economic and social development in the Republic. Overall, the main objective of the Act is to ensure the alignment of the country's resources and capabilities for proper coherence and effective building and maintenance of infrastructure development programmes (Government Gazette, 2014:8).

2.4.3 Comprehensive Rural Development Programme, 2009

Post-1994 South Africa benefitted from development and improved infrastructure programmes as a result of an attempt by the democratic government to embark on reconstruction and development in order to balance the imbalances of the infrastructure sector. Over and above the rapid economic growth and improved standards of living, the use of infrastructure by more people triggered an increasing demand for social and economic infrastructure such as energy, roads, transport and telecommunications. In this context, the increasing infrastructure demands created an urgent need for a sequence of programmes in line with the election manifesto of the ruling party (South African Presidency, 2016:104).

Development programmes, such as the Integrated Sustainable Rural Development Programme launched in 2000, were intended to modify the shortcomings of the previous interventions in an attempt to address the existing circumstances (Musiwalo, 2013:2). The purpose of the Integrated Sustainable Rural Development Programme was to ensure integrated development by bridging the rural-urban divide to reduce the need for migration to urban areas. The programme focused on improving education, transport, education and health services in rural communities (Kole, 2004:26). Following this transition, the Department of

Rural Development and Land Reform was established in 2009 to address rural socio-economic development challenges in South Africa. With the establishment of the Department of Rural Development and Land Reform, government envisioned rural inhabitants that fully enjoy the same human rights and dignity as their urban counterparts as promised in the Constitution.

To achieve the equity vision, the CRDP was promulgated as a framework within which rural development, including infrastructure, would be implemented. Henceforth, the need to attain vibrant, equitable and sustainable communities is based on Goal 9 of the SDGs of 2015 that were set to address the impediments identified in the Millennium Development Goals of 2000. Goal 9 of the SDGs was based on the need to unleash infrastructure impediments while fostering innovation (Department of Rural Development and Land Reform Annual Report, 2014/2015:29). Thus, the CRDP was an intervention intended to accomplish the quality education Outcome 7 of the NDP of 2012 as a strategy aimed at reducing inequality by the year 2030, which entails increasing access to socio-economic infrastructure and services. The aim was to eliminate the low literacy and skills levels with emphasis on remote rural areas and historically underserviced localities in the country. The main thrust of the CRDP was the empowerment of rural communities and the revitalisation of infrastructure, including education, healthcare, energy, ICT and public transport (Department of Rural Development and Land Reform Annual Report, 2014/2015:30).

2.4.4 South African Schools Act No. 84 of 1996

In 1997, the South Africa government enacted the South African Schools Act 84 of 1996. This Act was promulgated as a new school governance system to ensure that all learners have equitable access to quality education without discrimination. The aim of the Act was to provide school-funding norms that prioritise the restoration of the allocation of resources and infrastructure for the public-schooling system (Government Gazette, 2013:7). Section 7(1)(a) of the Act provides that the geographic location of the schools should ensure easy accessibility to basic infrastructure services namely roads, water, energy, telecommunications and recreational facilities. Furthermore, the Act recognises the need for appropriate topography and location related to access and demographic realities.

2.4.5 Rural Infrastructure and Inclusive Development: A South African Context

The role of government in effectively providing basic services is premised in the Constitution of 1996 (RSA, 1996). Sithole and Mathonsi (2015:13) opine that all spheres of government in South Africa must ensure the delivery of and access to services by all citizens including previously disadvantaged individuals. Similarly, Gnade, Blaauw and Greyling (2016:5) assert that all spheres of government have an obligation to encourage the socio-economic development of communities. This should be initiated by giving priority to basic needs in the form of infrastructure and services such as water, energy, ICT, roads and transport, as these contribute immensely to accessibility of education, health and recreation facilities. As such, local government, being the sphere of government that is closest to the people, has a sole mandate to deliver basic services.

Kalu *et al.* (2014:19) proclaim that the prevailing inequalities, including access to improved physical infrastructure in South Africa's rural communities, remain a daunting challenge. Likewise, Sithole and Mathonsi (2015:17) advocate that the lack of infrastructure in rural areas resulting from the institutional capacity of rural local municipalities is contributory to the huge backlogs of ICT, roads and transport that minimise accessibility to health and education services. Gnade *et al.* (2016:2) note that the socio-economic challenges and inequalities from the apartheid dispensation prevail in the country, particularly in rural areas. This is evident from the poor education outcomes, divided spatial patterns, and crumbling infrastructure that impede growth, development, and reduction of inequality.

Adams, Gallant, Jansen, and Yu (2015:18) affirm that the impact of the apartheid legacy is still experienced in the democratic system of government. Their study on the success of service delivery and public assets revealed that the problems faced by rural communities include lack of infrastructure, limited resource accessibility, and education and social service inadequacies. These infrastructure deficits are a result of the social disparities attached to rural areas. The existing infrastructure constraints hinder development, mobility and improved service provision for rural communities, leading to social exclusion that includes lack of access to education, health and recreational services and other opportunities that are essential for human and sustainable development (Adams *et al.*, 2015:18).

Consequently, rural areas are characterised by numerous dynamics that negatively affect the delivery of quality education. For example, these areas are remote and vastly underdeveloped, resulting in such areas being poor and lacking infrastructure for water,

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energy, sanitation, ICT, roads and transport. In this regard, these socio-economic realities facing most rural communities put the learners of rural schools at a disadvantage (Du Plessis, 2014:1109).

The provision of infrastructure and basic services to the public is premised in the *Batho Pele* principles (Musiwalo, 2013:23). The Batho Pele principles provide a framework for the effective implementation of service delivery. According to the Batho Pele principles, people should be given first preference with regards to delivery of public services such as infrastructure development. Hence, government, including local government institutions, should be governed by this ethos, including consultation, quality service standards, accessibility, courtesy, openness, transparency and value for money (Musiwalo, 2013:23).

Batho Pele is a Sotho phrase meaning "People First" and an initiative to ensure that public servants commit to service delivery excellence and improvement (White Paper on Transforming Public Service Delivery, 1997:8). The eight key Batho Pele principles are:

- *Consultation*: It is essential that the citizens are consulted about the quality of services they prefer. Consultation should be cascaded through the municipal IDP's as a platform for communities to state how they prefer infrastructure and basic services to be delivered in their municipal areas.
- *Setting service standards:* The citizens should be informed about the service standards that they should expect. It is through the IDP processes that the citizens should be informed about standards of infrastructure and basic services to expect.
- *Increasing access:* Citizens should be afforded equal access to services they are entitled to. It is through the involvement of the community in the IDP process that the principle of increased access to infrastructure and basic services could be achieved.
- *Ensuring courtesy:* It is expected that the citizens be treated with dignity, courtesy and consideration.
- *Providing information*: Citizens should be given accurate information about services to which they are entitled in order for them to participate fully in service delivery issues.
- *Openness and transparency:* Local government officials are required to be accountable and transparent in the delivery of infrastructure and basic services to the community.

- *Redress*: It is required that local government take responsibility and apologise to the community in cases where the promised standards of infrastructure delivery and basic services are not met.
- *Value for money:* The infrastructure and basic services should be delivered in an economic and cost effective manner in order to give citizens value for money.

In the context of this study, the Batho Pele principles can be used as a yardstick for local municipalities to provide and monitor feedback on the quality of infrastructure and basic services delivered to the community (Khawula, 2016:31). Thus, it is through compliance with Batho Pele principles that local government officials could commit to quality infrastructure delivery that could help upscale the quality of education.

However, in contrast with these principles, during the past two decades limited progress has been made with regards to accessibility and quality service standards, particularly in rural areas (Gnade *et al.*, 2016:2). Rural schools, for example, face infrastructure backlogs such as water, sanitation, electricity and roads. These widespread inequalities and social exclusion were inherited from the previous governmental spatial policies that are still prevalent in the country. Kalu *et al.* (2014:14) remark that infrastructure development is essential for the sustainability of communities while also acting as an instrument of social change. The authors maintain that the development of infrastructure such as roads, transport, energy and ICT may change the outlook of society while ending the scourge of inaccessibility and social exclusion.

As noted earlier, the Constitution provides for a common South African citizenship whereby all citizens have equal access to the rights, privileges and benefits. As a result, South Africa is one of the few countries with a constitution that protects and promotes human rights for the attainment of socio-economic rights for all (RSA, 1996). From a constitutional and human rights perspective, the South African democratic government has prioritised the need to address inequality and the development agenda, including the upscaling of infrastructure. Mokitimi and Vanderschuren (2016:4798) espouse that this is evident in the policy documents and strategies that have been developed by the democratic government. In this regard, the new government committed itself to developing development strategies that would seek the attainment of socio-economic growth and basic needs delivery.

Blaauw (2017:1) argues that government is committed to mobilising resources necessary to build a democratic future in compliance with the constitutional mandates. However, the government's efforts to improve rural infrastructure as a strategic priority are hampered by

the persistence of dense rural settlements. These disparities in settlement, limited mobility, and inability to access basic services are attributed to the legacy of apartheid. Relatedly, Kalu *et al.* (2014:19) affirm that imbalances in the provision of rural infrastructure when compared with that of cities have negatively impacted on rural sustainability. The provision of social facilities such as proper roads, schools, and recreation facilities can give hope for a better life to the rural communities (Kalu *et al.*, 2014:19).

2.5 Understanding the Significance of Infrastructure in Promoting Inclusive Development

Infrastructure has a positive and consistent impact on rural development, especially in the areas of sanitation, road density and level of education (Fuwa, Balisacan, & Faye-Piza, 2016:2). The development of rural infrastructure leads to changes in human life, health and education while minimising the inequalities of rural society. However, based on the idea that different types of infrastructure investment have different outcomes, government needs to be cautious when making investment choices if the prevailing inequalities are to be managed (Fuwa *et al.*, 2016:3). Adding credibility to this, Mwanyepedza (2016:722) affirms that poor infrastructure such as roads, bridges, energy and ICT results in rural communities facing challenges in accessing education of reasonable quality.

Gnade *et al.* (2016:1) confirm that infrastructure investment manifests social and economic development indicators in rural municipalities. In addition, infrastructure eliminates inequality and social divisions by promoting development and growth, especially for rural areas. Hlalele (2014:451) asserts that improved rural infrastructure allows people to share and participate in economic growth. Therefore, if infrastructure development is to be meaningful, the gap that exists between those benefitting from such reforms and rural inhabitants needs to be addressed together with the marginalisation that hinders such reform.

It is important to note that the development of rural infrastructure contributes significantly to the level and quality of rural development. In that context, it can be concluded that infrastructure plays a fundamental role in influencing the standard and nature of economic and social activities in a country (Manggat *et al.*, 2018:650). Thus, the general consensus is that improving accessibility to basic services such as safe water, roads, energy and recreational facilities contributes to progressive development and subsequently quality education.

2.6 The Role of Local Government in Infrastructure Development

Local government as the sphere of government that is closest to the people is regarded as grass-root governance, which is at the centre of service delivery (Sebola, 2015:4). The author recognises that local government remains the essential sphere that deals with the practical social, economic and political affairs of the country. As a result of municipal demarcation, all geographic areas in the country fall within the jurisdiction of a specific local government entity, and for this reason, local governments hold a legislative mandate for the equitable provision of infrastructure and basic services to the citizenry.

Ogungbemi, Bubou, and Okorhi (2014:24) maintain that from a development standpoint, adequate supply of infrastructure is seen to enhance quality of life while improving the accessibility and quality of basic services, which is education in this context. In this regard, the author establishes that good roads, transportation, water systems, energy and ICT are fundamental in leapfrogging standards of education. Furthermore, Kak and Gond (2015:13) assert that in rural areas, poor infrastructure contributes to poor school attendance and lack of qualified educators, which have a huge impact on education outcomes.

Section 152(1) of the Constitution mandates local government in South Africa to:

- Provide a democratic and accountable government for local communities;
- Ensure the provision of services to communities in a sustainable manner;
- Promote social and economic development;
- Promote a safe and healthy environment; and
- Encourage the involvement of communities and community organisations in matters of importance to local government (Oosthuizen & Thornhill, 2017:6).

According to the constitutional mandate, local government also has sole responsibility to propel the socio-economic development agenda by promoting grass-root development. Van der Waldt (2015:20) explains that the developmental services delivery role of local government depends on its integration with the provincial and national spheres of government. This integration can be achieved by aligning the IDP with the Provincial Growth and Development Strategy (PGDS) and the NDP: Local government as the sphere closest to the people has the sole mandate to promote the democratic development for the general wellbeing of the community, the provincial government is responsible for facilitating and monitoring the development process, while national government provides the framework as ground work for such development (Van der Waldt, 2015:20).

Section 155 of the Constitution classifies municipalities into the following categories:

- Category A represents metropolitan authorities;
- Category B represents local municipalities that fall within district boundaries of Category C; and
- Category C represents district authorities that include more than one local municipality (Subban & Wissink, 2015:38).

The main objective of restructuring local government was to redress the historical spatial inequalities and disparities inherited from the apartheid regime (Subban & Wissink, 2015:38).

2.6.1 Local Government and IDP

In line with the Municipal Systems Act No. 32 of 2000, all municipalities are required to develop IDPs as tools to plan their future development (eThekwini Municipality, 2014:9). An IDP is a development plan for a municipal area comprising of the short-term, medium-term, and long-term objectives and strategies. This plan serves as a guide that informs planning, budgeting, management and decision making based on service delivery and development within the municipal area. It is imperative that when municipalities develop their IDPs, they ensure coherence with the national and provincial plans such as the NDP, SDG and PGDS.

The infrastructure delivery requirements of communities are frequently embedded and prioritised in the IDP in an effort to eradicate the prevailing infrastructure backlogs that need to be addressed by local municipalities (EThekwini Municipality IDP, 2019/2020:11). However, constraints such as limited funding, high population density, unemployment and inability of poor households to pay municipal taxes make it difficult to address the huge infrastructure backlogs. These constraints include the poor alignment of the budget to the IDP. It should be noted that the IDP depends on budget availability for its successful implementation.

Khawula (2016:24) explains that the purpose of the IDP is to coordinate the work of local government with that of the national and provincial governments. The main thrust is to ensure coherence in the improvement of the quality of human life at all levels of government. The main strength of the IDP is that it is based on community priorities while it values the connection between democracy, delivery and improvement. Against this background, the community is afforded the opportunity to identify the needs that are important to them.

Mamabolo (2016:31) maintains that local government is at the centre of the development agenda and has a responsibility to establish a development plan for short, medium and long term. This planning and budgetary process is undertaken through the IDP and is the municipality's five-year strategic vision on development matters intended to improve the quality of human life.

2.6.2 Local Government and the Municipal Infrastructure Grant

In the past, local municipalities were unable to fund and control the infrastructure projects within their jurisdiction because of lack of resources. This was due to the low revenue base attached to some municipalities because of their small population sizes. This prompted the Cabinet to introduce the Municipal Infrastructure Grant (MIG) in 2003 in pursuit of addressing the capacity constraints facing municipalities in infrastructure delivery (Department of Provincial and Local Government, 2004–2007:8). The main objective was to integrate funding for all planning linked to local municipalities' IDPs. Hence, the vision of the MIG was to provide all South Africans with at least basic levels of service by 2013 by providing the finances required to fund infrastructure requirements to eligible municipalities.

The Department of Provincial and Local Government (2004–2007:16) suggests that the MIG is a conditional grant afforded to municipalities that comply with conditions laid down by the Municipal Infrastructure Task Team. These conditions are the Division of Revenue Act conditions that apply to the management of MIG funds, the cross-cutting conditions that apply to all sector projects within the MIG, and sector conditions that are established specifically for each sector. The funds are allocated strictly for improving and maintaining municipal infrastructure used by the poor and are administered and monitored by the Department of Provincial and Local Government (2004–2007:12).

Subban and Wissink (2015:42) highlight that the MIG is an integral part of all municipal services since the provision of basic services depend on infrastructure. Thus, MIG fits within the overall development framework of government in the provision of basic services for the improvement of quality of life.

The review of the MIG conducted by the Department of Cooperative Governance and Traditional Affairs (DCOGTA) (2015:2) reveals that even though the MIG has changed the context of service delivery, there is an urgent need for government to acknowledge municipal differences in terms of spatial and performance realities such as those in rural areas as discussed in Section 1.7.3. The MIG needs to be distributed in cognisance of the pertinent

infrastructure needs of rural areas. Furthermore, government needs to improvise on undertaking infrastructure delivery challenges relating to planning, implementation and maintenance, including widening the view of the unique expenditure needs of rural municipalities (DCOGTA, 2015:3).

2.6.3 Challenges Faced by Local Government in Infrastructure Development

Since democratisation in 1994, the South African local government has been besieged with inequality challenges associated with development, particularly in rural communities. Madumo (2015:154) observes that the disparities between the South Africa's rich and poor have increased rapidly since 1994. It cannot be argued that the success of any local sphere of government is determined by the apparent provision of quality services to the citizenry. Reddy (2016:1) echoes Madumo's observation that the distribution of infrastructure and basic services in South Africa has proved to be unreliable, consequently endangering rural local municipalities. The author laments that government initiatives to address infrastructure challenges post 1994 have not resolved the existing local governance predicaments.

Mamabolo (2016:28) bemoans that even though the Constitution of RSA (1996) discourages inequality in the provision of services to the community, the demarcation of urban and rural areas still display inequalities in terms of service provision such as poor road infrastructure provision in rural municipalities. These inequities in road provision have a detrimental effect on rural inhabitants, particularly rural learners who cannot access schools. Likewise, Madumo (2015:163) notes that lack of funding is the major cause of inadequacies facing rural municipalities.

2.6.4 Infrastructure Development in ULM

The general consensus is that improving access to basic services such as roads and transport promotes decent living conditions. Umzumbe Local Municipality also faces the accessibility challenges emanating from staggering poor infrastructure supply. According to the ULM Annual Report (2015/2016:18), ULM is predominantly rural and is dependent on the MIG to provide basic services to the citizenry. Currently, the municipality is facing vast infrastructure backlogs and is struggling to provide basic services to the community to reduce social exclusion. This includes the deteriorating state of infrastructure as well as the ability to maintain and sustain the existing infrastructure.

The Umzumbe Local Municipality Annual Report (2015/2016:60) further pronounces that it is a challenge to roll out developmental service delivery programmes since the municipality owns no land. The community is sparsely populated and this limits the provision of public facilities such as schools and libraries. The prevailing infrastructural constraints impact effective delivery of services such as education. Consequently, there is a decline in the population as people migrate to nearby cities to seek better service delivery (ULM IDP, 2016/2017–2020/2021:4).

2.7 The Role of the Private Sector in Advancing Rural Infrastructure

Rural infrastructure is not just a fundamental component of rural development but also an ingredient for promoting equality and inclusiveness in society. It serves as an indicator of where meaningful adjustments on basic and social infrastructure should be made to create an equal and more inclusive society on a spatial level. This could realise the vision of the South African Constitution of promoting equality and protecting the marginalised through the provision of infrastructure and basic services such as education. According to Gnade *et al.* (2016:14) the National Planning Commission identified basic and social infrastructure challenges that are preventing South Africa from becoming an inclusive and growing society.

Government is solely responsible for ensuring infrastructure access for the citizenry. Conversely, Kanyane (2015:78) acknowledges that governments in developing countries usually struggle to address the infrastructure challenges. As such, governments rely on partnerships with financial institutions and international partners, particularly in the private sector, to provide quality and affordable infrastructure to the citizenry. The partnership between government and the private sector is commonly known as Public-Private Partnerships (PPPs). In this context, government partners with the private sector to fulfil its critical constitutional mandate to deliver infrastructure and basic services to all communities in an equitable and fair manner.

Public Private Partnership is premised in Regulation 16 of the Public Financial Management Act of 1999. In line with this regulation, the accounting officer of a public institution may enter into a PPP agreement on behalf of that particular institution (Department of National Treasury, 2017:4). Once the institution has identified a project to be concluded as a PPP, a feasibility study must be conducted to determine whether the PPP is in the best interest of the institution. This should be done by illuminating the operational and strategic benefits of the proposed PPP for the institution in line with the strategic objectives and government policy.

Kanyane (2015:90) points out that the regulation of PPPs is informed by international best practices while its thrust is on value for money and benefits derived from the service delivery through the partnership. Patel (2013:9) affirms that PPPs are fundamental in strengthening and accelerating impactful and meaningful service delivery such as the delivery of infrastructure, because government alone cannot bridge the service delivery gaps emanating from lack of infrastructure. The collaboration of government with the private sector is eminent in addressing financial and capacity constraints. The aim is to leverage private resources and skills capacity to respond efficiently to the needs of the people on the ground, as per the constitutional mandate (Patel, 2013:10).

It should be noted that South Africa is rated among the leading countries in legislation governing PPPs. However, the World Bank (2013:5) reports that many infrastructure projects fail because of inadequate financial resources, especially at local government level. Southern African countries also lag behind their peers in the developing world in terms of infrastructure provision and coverage. This dilemma is owed to the financing constraints and inefficient resource allocation facing South Africa in infrastructure delivery. Accordingly, the Southern African Development Community (SADC) have taken steps to create policy frameworks that allow private sector participation in infrastructure.

The role of the private sector includes investing in and financing infrastructure within the ambits of the law. This can be achieved through contracting with the municipalities in the provision of infrastructure and enhancing municipal capacity through the skills transfer. This includes the joint funding of strategic infrastructure programmes as well as research to improve infrastructure delivery (Lokesha & Mahesha, 2016:6). The authors further remark that government capacity to deliver infrastructure projects is limited, particularly in rural areas, and therefore, infrastructure investments must be made based on the infrastructure types that are perceived to be inadequate and essential for the citizenry. In addition, there is an urgent need to identify the root causes of marginalisation to enable making informed infrastructure investment decisions.

Ogungbemi *et al.* (2014:25) observe that lack of capability remains a barrier to achieving affordable infrastructure investment and quality services for rural poor people. The rural inhabitants continue to face more social mobility and equal opportunity constraints than their urban counter parts. Ogungbemi *et al.* (2014:25) further maintain that, for example, transport infrastructure promotes economic and social development while reducing the isolation of rural areas from modern society. Consequently, the diminishing standard of living results

from lack of good transport infrastructure. Good roads and transport infrastructure facilitate accessibility to schools, clinics and libraries for rural communities. This development results in the improvement in the quality of services, such as education (Ogungbemi *et al.,* 2014:25).

Accordingly, ULM IDP (2016/2017–2020/2021:17) records that based on the vast backlogs and deteriorating infrastructure facing ULM, there is an urgent need for this municipality to lobby with the private sector to boost its infrastructural capacity to provide the community with socio-economic opportunities. This includes the building of clinics and sport and education facilities.

2.8 The Impetus of Rural Infrastructure on Basic Education in South Africa

The right to education is enshrined in Section 29 of the Constitution of South Africa of 1996. According to the Constitution everyone has a right to basic, adult and further education. Therefore, the state has a mandate to ensure that these are made accessible and available to all. The state has an obligation to provide and promote a sustainable system of education required by the people (RSA, 1996). However, despite these constitutional mandates, South African rural areas still face infrastructure constraints that prevent the delivery of quality services. This includes road, transport, energy, water and ICT infrastructure. These challenges pose a threat to the delivery and access to education among rural inhabitants, which further contribute to inequalities and underperformance for rural learners.

A number of research studies conducted reveal that infrastructure has a strong impact on the efficiency of education and health. Mdikane and Allen (2016:146) state that infrastructure affects every aspect of community life, including schools, clinics, recreational facilities and daily living. The authors establish that when a community lacks basic infrastructure such as roads, energy, water and transport, then schools also suffer. Mwanyepedza (2016:722) suggests that poor infrastructure such as roads and bridges results in rural communities facing challenges in accessing education, health and employment.

Gnade *et al*. (2016:4) affirm that electricity, water and sanitation connections can increase learners' ability to attain quality education by reducing the incapacity of such learners. The authors further assert that electricity enables students to study well into the night; the benefits of this for human accrual, economic growth and social development are self-explanatory. It can thus be argued that the availability of rural infrastructure is essential for effective service delivery, since it reduces inequality in society, as per constitutional mandates.

Notably, after more than 25 years of democracy, there have been remarkable improvements in the South African education system. Nonetheless, Du Plessis (2014:1109) argued that South African rural schools still face infrastructural impediments unique to their environment. The author recognised that these challenges include lack of basic infrastructure such as roads, transport and ICT. These infrastructural constraints are owed to the rural areas being remote, marginalised and underdeveloped. The social exclusion facing these areas is linked to their spatial characteristics that limit resource accessibility while promoting inequality and a divided society.

Similarly, Mdikane and Allen (2016:147) draw upon immense infrastructure challenges such as lack of ICT and library facilities as part of the reason for the poor quality of education in rural schools. The authors perceive such infrastructure impediments as being in contrast with Section 29 of the Constitution and the South African Schools Act Number 84 of 1996, which mandates equal access to education, educational facilities and opportunities.

Gardiner (2017:7) further refine this analysis by referring to socio-economic conditions facing rural communities that affect the standard of education for rural learners. The author ponders geographic disparities and marginalisation of rural communities as a contributing factor to infrastructural impediments facing rural schools. The author makes a point that policy makers are faced with a dilemma in bridging the gap that exists between urban and rural learners in basic education.

Adding credibility to the above arguments, Statistics South Africa (2015:4) reveal that 78% of public schools are situated in the Eastern Cape, Limpopo and KZN. These provinces are regarded as the least developed in the country. KwaZulu-Natal is home to 54% of rural learners in South Africa, and the rural schools in this province face vast challenges in infrastructure such as ICT, roads, transport and libraries. About 40% of rural high school learners live more than 10 kilometres away from school and have to walk long distances to acquire basic education. In addition, these schools have more than 45 learners per classroom, which makes it impossible to provide a sound education to these learners. Adding to that, in KZN only 5.3% of households have access to internet at home

2.8.1 Key Challenges Facing Basic Education in South Africa

Since the transition to democracy, the quality of education in South Africa is facing an ongoing crisis, and the current system of education is failing South African youth. South Africa currently uses local and international assessments of educational achievement,

including the Annual National Assessments as a nationally standardised test of achievement for Grades 1–6 and Grade 9 (Spaull, 2013:3). Spaull (2013:3) argue that as far as education outcomes are concerned, South Africa has the worst education system of all countries participating in cross-national educational assessments. The author further claims that there has been some improvement in pupil outcomes and policy developments.

Endorsing this argument, DoE (2015:78) findings reveal that there has been some progress in the past 20 years to uplift the levels of education is South Africa. Surveys conducted in 2014 suggest that the education system is failing most children, placing South Africa at the second last position on the international league table. These surveys further reveal that in 2013 about 37% achieved better than 50% in Mathematics, while only 3.4% of all learners achieved marks higher that 50%. In 2014 only 50% students achieved marks higher than 50% (DoE, 2015:78).

Du Plessis (2014:1109) stresses that rural schools are mostly located on the periphery and are difficult to reach because of infrastructural challenges such as roads and transport. Thus, the geographic disparities facing rural areas limit the interaction between the schools and the community. Additionally, the distance between the schools and the communities prevents the schools of taking advantage of unemployed graduates and retired professionals. These graduates and retired personnel could temporary assist when permanent educators are on sick leave.

Badat and Sayed (2014:134) confirm that the geographical disparities facing rural areas limit the opportunity for equality and quality outcomes in education. The authors further argue that the equity of opportunity is strongly influenced by social status and geography that result from national policies. Conversely, Spaull (2013:7) recognises that while South Africa's education system is in a dire state, there are number of recent policies that indicate that the Department of Basic Education has taken initiatives to redress the crisis. For example, the Curriculum Assessment Policy Statement, the Action Plan 2030, and the implementation of the Annual National Assessments are all intended to achieve the targeted standards of education. However, there are still a number of areas that must be addressed in order to improve teaching and learning in South Africa.

Correspondingly, Badat and Sayed (2014:134) ponder the close link between social exclusion of the disadvantaged groups, opportunity, equity of access and learning outcomes. The authors elaborate on an urgent need for government intervention to improve the

circumstances of rural South African learners in order to enhance educational opportunities and outcomes. In this context, the National Planning Commission diagnosed challenges facing the South African education system more specifically.

Badat and Sayed (2014:132) further emphasise that the National Planning Commission envisions all South Africans to have access to the highest quality education by 2030. Furthermore, the National Planning Commission proposes a rural development strategy that focuses on quality services, particularly in education, health and public transport. This Commission strives to ensure that all previously disadvantaged South Africans realise their full potential. This vision can be achieved through providing equal opportunities while building an inclusive society. It is envisaged that such a vision will eliminate the marginalisation of rural learners (Badat & Sayed, 2014:132).

The above insights divulge the broad spectrum of challenges surrounding the South African system of basic education in the area of quality, especially in rural areas. Umzumbe Local Municipality is directly implicated in this because of the infrastructure constraints facing this municipality. The Umzumbe Local Municipality IDP (2018/2019–2019/2020:47) indicates that education levels in ULM are very low because of the settlement patterns that compel long distance travel for scholars to access schools and libraries. The infrastructural constraints, ranging from poor roads and inadequate transport, propel poor education outcomes. Consequently, in 2016 half of the 35 schools performed below 60% in overall subjects, which requires imperative intervention. In addition, out of the 2 454 learners that wrote Matric exams in the 2016 academic year, only 55% passed (ULM IDP, 2018/2019-2019/2020:56).

2.9 International and Local Overview of Rural Infrastructure and Basic Education

If rural infrastructure and basic education are regarded as the drivers of sustainable development, it is essential to review international and local perspectives on infrastructure development and education. Atkinson (2013:2) suggests that the competitiveness of a country is determined through the GCI, which is an indicator for the main drivers of growth. The evolution of each indicator is analysed in order to identify areas of improvement and deficiencies. The author refers to competitiveness as institutional arrangements that determine the level of productivity of a country. The level of productivity further indicates the level of prosperity that can be reached by a country's economy.

In line with the Global Competitiveness Report (World Economic Forum, 2017/2018:269), infrastructure and basic education are among the 12 pillars used as indicators for a country's competitiveness. However, governments in many countries including South Africa are facing infrastructural constraints, and therefore, struggle to achieve sustainable growth and competitiveness. Thus, the large gaps that exist globally and regionally reflect the need to work on a renewed competitiveness agenda to mobilise sources of global inequality. The main aim of the report is to help policy makers and the private sector to identify areas for fruitful long-term public-private collaboration for competitive growth. This could help countries identify successes and failures while tracking progress and prioritising growth agendas in order to overcome the existing constraints.

Infrastructure is the second pillar and basic education is the fourth pillar in a country's performance rating. These two pillars represent the country's performance in the basic requirements sub-index of the GCI. The Global Competitiveness Index aims to measure the factors that determine the productivity of a country as a determinant of long-term growth. Palei (2015:173) cites that investment in the provision of health services is critical for sound economic growth based on the idea that a healthy workforce is vital to a country's competitiveness. In addition, the health pillar takes into account the quality of the basic education received by the population. Subsequently, basic education increases the efficiency of each individual worker and is thus imperative in today's economy.

2.9.1 A Global Perspective

Over the past 25 years there has been uncertainty over the link that exists between the level of access to infrastructure, such as roads, energy, ICT and education, and the benefits derived from such service delivery. This is based on the view that basic infrastructure is regarded as a bridge for integrating different social groups into society through the satisfaction of their needs (Vaznoniene & Palketiene, 2017:527). However, for example, development planning through rural infrastructure has been ineffective in ensuring a decent living for most of India's rural population. Despite numerous rural development schemes, inadequate infrastructure continues to be a major constraint to development in most villages. It is a challenge to give most rural Indians the right to access because of the unaffordability of basic infrastructure.

Chotia and Rao (2015:54) conducted a study comparing Indian states' infrastructure as an indicator in sectors of transport, energy, health and education. According to these authors, the

development and growth of a nation rely on accessibility of facilities provided by these sectors. The study looked at health and education as fundamental in accelerating human growth and development as well as a country's competitiveness. However, the study reveals that Indian states perform poorly in these sectors because of social exclusion and opportunity disadvantages. Consequently, these disparities result in paucity in the growth process while human development is held back (Chotia & Rao, 2015:54).

Lokesha and Mahesha (2016:5) also observe that in India, development of rural infrastructure has received significant attention from government. A number of programmes, such as the National Rural Employment Programme, were launched for infrastructure development to achieve rural connectivity. However, these programmes failed to achieve their goals because of planning and implementation deficits. Thus, the capacity of government to deliver infrastructure in rural areas is limited in many countries like India.

However, in spite of the numerous interventions for infrastructure development in rural India, the dismal state of infrastructure has not improved. The infrastructure facilities remain inadequate with unsatisfactory progress in accessibility across Indian states (Ghosh, 2017:19). The author advocates that significant inequalities between rural Indian states persist, and these states face inequalities in educational attainment and outcomes. Subsequently, the traditional factors of marginalisation in education are still influenced by rural or urban residence and underdevelopment of such countries (Ghosh, 2017:19).

2.9.2 A Regional Perspective

Africa has a considerable infrastructure deficit compared to other developing regions, mostly in the areas of transport, electricity and ICTs. According to the World Bank Enterprise Survey, Sub-Saharan countries such as Nigeria and Rwanda identified transportation as a major constraint in their communities (Ondiege *et al.*, 2013:8). In Africa, only 30% of the population is estimated to have electricity, compared to 70–90% in other developing countries. Road access in Africa is limited to about 34% of the population, compared to 50% in other parts of the developing world.

Ogungbemi, Bubou & Okorhi (2016:23) confirm that the ever-growing population of Nigeria means that Nigeria's infrastructure needs attention. The author points out a lack of road infrastructure, poor road maintenance, and inadequate funding as impediments for development in rural areas. These infrastructure inadequacies limit the overall advancement

of the economy while hindering productivity and human development through quality education (Ogungbemi *et al.,* 2016:23).

Conversely, following the ratings on the African Competitiveness Report, Africa's performance as a continent in transport infrastructure has decreased by 6%, while Asia's improved with 7%. This report reflects the factors, institutions, and policies that determine a country's level of productivity as an indicator for sustainable growth and prosperity (World Economic Forum, 2017/2018:19). These results indicate that the development of energy and transport infrastructure has stagnated, thus widening the gap with other advanced and developing countries such as Asia. However, Africa has improved its performance in primary and secondary education by 8% and 27%, respectively

In line with the Human Development Report, education and living standards of SADC countries fall within the low Human Development Index when rated (United Nations, 2016:2). The Human Development Index represents the measure of progress in the life expectancy and living standards and access to knowledge as three dimensions of development (United Nations, 2016:2). The conventional wisdom is that the low living standards are linked to the marginalisation of a society and institutional systems that are prevalent in these countries. Consequently, social mobility and equal opportunity remain marginalised for most people in the SADC region. Arguably, if marginalisation continues, it will take time for Africa to reduce this gap to meet the standards of other advanced economies.

2.9.3 A National Perspective

In South Africa, a number of policies and laws aimed at improving the quality of lives have been launched since 1994. Gnade (2013:24) draws attention to major programmes such as the Accelerated Shared Growth Initiative for South Africa, the Reconstruction and Development Programme and the CRDP as initiatives that have all achieved a minimum level of success. The author observes that despite these massive interventions, South African populations still live in an extremely unequal society. If rural infrastructure delivery is to be meaningful, there is an urgent need for emphasis on access to basic services such as proper roads and transport (Gnade, 2013:24).

Mokitimi and Vanderschuren (2016:4802) state that the provision of transport infrastructure services in remote areas is financially unviable because of the isolation of rural communities. As a result, mobility and access is limited, and 81.2% of learners take more than 60 minutes to walk to school. In agreement, Mamabolo (2016:32) posits that lack of funding for

managing and maintaining infrastructure projects hinders the development of socio-economic conditions of rural inhabitants. Furthermore, Du Plessis (2014:1111) thinks that rural schools find it difficult to attract and retain suitable educators because of infrastructure constraints facing rural areas. Educators are reluctant to consider employment in rural schools and prefer the better basic services available in urban areas.

Adding credibility to the above arguments, South Africa is rated number 61 in the GCI, with a score of 4.32 out of 7 in the overall infrastructure pillar, while standing at number 50 in road infrastructure with a score of 4.4 out of 7 (World Economic Forum, 2017/2018:269). Subsequently, quality and efficient infrastructure is critical for the effective functioning of an economy. In this regard, the quality of education is fundamental to increasing the efficiency of the labour force and meaningful economic competitiveness.

2.10 Governments' Initiatives on Infrastructure and Inclusive Development

Over the past 25 years, government has been faced with the challenge of addressing the socio-economic inequalities that impede rural communities from achieving progressive rural development (Mzimela, 2013:29). The aim has been to redress the marginalisation that deprives the rural population of a fair distribution of infrastructure and basic services such as education and health. In an attempt to address these inequities, governments have used a number of initiatives and precedents.

2.10.1 Global Context

A number of initiatives have been used by the international community to eradicate socio-economic inequalities in harmony with the post 2015 Development Agenda. Such initiatives became necessary because the state of social and economic inequalities across the globe raised international concern (Sparks, 2016:45). Amongst these inequalities, crumbling infrastructure, divided spatial patterns and poor education outcomes were some of the key challenges that were envisaged to be faced in order to eliminate inequality and social exclusion in the international society (Adams *et al*., 2015:3).

2.10.1.1 Sustainable Development Goals, 2015

The concept of SDGs came about as result of the Sustainable Development of the United Nations in Brazil in June 2012. These goals are the centrepiece of the 2030 Agenda for Sustainable Development that was adopted by United Nations Sustainable Development

Summit in September 2015 (Chopra & Virmani, 2017:834). These goals are regarded as an extension of the Millennium Development Goals that galvanised a global campaign from 2000, with a deadline of 2015, to end poverty in its various dimensions. Therefore, the objective of SDGs was restoring sustainability and inequality parameters ignored in the Millennium Development Goals. The aim was to provide solutions to the hindrances identified in the Millennium Development Goals.

Chopra and Virmani (2017:836) posit that the main objective of the SDGs was to create universal goals that would stimulate action for the post-2015 development agenda for sustainable development. This would support the balancing of the social, economic and environmental facets of sustainable development. There are 17 SDGs and 69 targets; Goal 9 is linked to infrastructure and innovation, and quality education is premised in Goal 4.

The Sustainable Development Goals recognise the need to build resilient infrastructure to promote inclusive and sustainable industrialisation and foster innovation through Goal 9. Interestingly, the interconnectedness of this goal to Goal 4 on inclusive and equitable quality education and learning opportunities for all demonstrates the complementary characteristics of these two goals (Ainscow, 2016:147). The author suggests that equal access to services, resources and opportunities ensures the realisation of human capacity and aspirations. In this light, human potential is an essential and fundamental principle for sustainable development.

As noted above, the call for inclusive and equitable quality education is highlighted in Goal 4 of the SDGs. This target goal recognises that every child must be in school, and that the quality of those schools must improve so that students are prepared to be productive citizens and ready to lead the future. In the view of Barbier and Burgess (2017:1), the success of SDGs is attributed to the intersection between the interlinked dimensions of environmental, economic and social systems. This correlation is fundamental if the quality education goals and the industry, innovation and infrastructure goals are to be attained simultaneously. This means that the increase in the indicator of quality education goal can be achieved with the increase in the indicator for industry, innovation and infrastructure.

In contrast with the SDGs, Badat and Sayed (2014:135) argue that the social exclusion and marginalisation geographies facing rural areas restrict rural learners the right to human development through quality education. These impediments result in poor learning outcomes evidenced in the Annual National Assessments results of mathematics and literacy. The authors lament that rural learners remain marginalised as a result of inadequate infrastructure

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such as roads and ICT. In this context, the objectives of the SDGs have not fully advanced most learners from marginalised communities.

Notably, the indicator for industry, innovation and infrastructure has declined from 19% in 2000 to 15% in 2015. In addition, the quality education indicator reflects a positive effect on poverty and employment with an improvement of 9.1% in 2015. Nonetheless, it is envisaged that Agenda 2063, as an action plan to provide infrastructure and basic services for accelerated growth and development by 2063, which is discussed in Section 2.10.2.2, will redress the infrastructure constraints facing rural schools in an attempt to accelerate quality education delivery, since it is built on the achievements and challenges of the previous conditions (Chopra & Virmani, 2017:838).

Additionally, Ainscow (2016:153) states that the financing and institutional reforms are failing to provide the resources needed for the full realisation of the development goals. In this perspective, a number of issues persist in how much the SDGs address inequality.

2.10.2 Regional Context

Integrating infrastructure is an immense shift on the continuum towards successful regional integration (Wentworth, 2013:1). In an attempt to eradicate the bottlenecks in the provision of infrastructure for sustainable development for the benefit of all Africans, the SADC heads of state adopted Infrastructure Vision 2027 at the summit held in Zambia in 2012. The main objective of Vision 2027 was to establish a strategic framework that would guide the development of cost effective and seamless infrastructure networks in energy, transport, ICT, water and transport (Wentworth, 2013:2). Additionally, Agenda 2063 was drafted based on the SDGs with the aim of integrating social, economic and environment policies towards sustainable development in an integrated and balanced manner (Economic Commission for Africa, 2013:1). Thus, the alignment of SDGs with Agenda 2063 became necessary for African countries to integrate both agendas in their national development plans.

2.10.2.1 Vision 2027

Vision 2027 is a 15-year blueprint aimed at guiding the implementation of broader infrastructure projects from 2013 to 2027 (Tumbare, 2015:12). This vision is informed by the Regional Infrastructure Development Master Plan (RIDMP) as a strategic framework document that guides the implementation of infrastructure networks in an integrated manner. In addition, Vision 2027 is premised on the harmonisation of policies and regulations and

geared towards commitment for capacity development in order to achieve inclusive infrastructure development on the African continent. This vision is built on the following six pillars: Energy, transport, water resources, tourism, meteorology and ICT. These constitute the SADC Regional Infrastructure Development Programme (Tumbare, 2015:12).

The aim is to create a conducive environment by fulfilling infrastructure demands by 2027 to promote sustainable regional socio-economic development. According to Du Plessis (2014:1109), most rural communities and schools are disadvantaged and lack road, transport and ICT infrastructure to advance learning outcomes. The author maintains that these are the driving forces that accelerate human development of learners through education.

Transport improves mobility of learners so that they can access schools despite bad weather conditions. Similarly, ICT and road infrastructure promote accessibility to learners for advanced methods and tools of teaching and learning. Wentworth (2013:3) bemoans that despite the efforts by the SADC community to expand the infrastructure landscape, the funding gaps call for the involvement of the private sector. This becomes a challenge because the association with the private sector means that the marginalised rely on government for support and subsidy. As such, this research explored the efficiency and adequacy of rural infrastructure within ULM in attaining the capacity development objectives as premised in Vision 2027.

2.10.2.2 Agenda 2063

Agenda 2063 is a vision and action plan that is premised on the vision that by 2063, Africa should have the necessary infrastructure to support accelerated growth and development (Sparks, 2016:45). The author claims that this vision provides Africa with a unique consensus on common challenges, priorities and aspirations. It calls for implementing a continental mechanism to promote intra-African trade. The overall goal of this post-2015 agenda is to integrate social, economic and environmental policies towards sustainable human development. In addition, Agenda 2063 is a collective vision and a roadmap for the next 50 years. The Agenda seeks to achieve enhanced investment in the productive capacities for people by providing life's basic necessities and creating jobs (Sparks, 2016:45).

This is an important strategic shift as there is an urgent need for immense interventions to address the immense infrastructure constraints and impediments facing South African rural schools. Du Plessis (2014:1116) suggests that this is the problem that government needs to solve in order to improve quality and learning outcomes for rural learners. This would help

boost learners' achievement in the high standards of education in pursuit of growth and development. This shift could contribute towards bridging the gap that exists in the delivery of adequate infrastructure within ULM and consequently equal accessibility to quality education for ULM residents.

2.10.3 National Context

The South African government has recognised that the rollout of social and economic infrastructure is an important instrument to enhance the provision of basic services, particularly education and health services, in order to eliminate the prevailing inequalities between rural and urban municipalities (Blaauw, 2017:2). Thus, there is an urgent need for local municipalities to prioritise infrastructure development by integrating such endeavours into national development plans for effective implementation.

2.10.3.1 National Development Plan, 2012

The National Development Plan presents a socio-economic strategy to reduce poverty and inequality and to improve living standards by the year 2030. The plan recognises that South Africa is faced with multiple threats of underdevelopment, particularly in rural communities. These include low competitiveness, poor education outcomes and skills deficits. It realises the need for multiple interventions to harness the capability of communities to reduce inequality. Such interventions are based on building a developmental state while improving the quality of education, skills and innovation. The first phase of the plan (2012–2017) focuses on infrastructure investment and job creation through the improvement of education outcomes and skills development (Vukeya, 2015:47).

The National Development Plan acknowledges the need for competitive infrastructure delivery to attain efficiency in the delivery of public service. Daniels, Patridge, Kekana, and Musundwa (2013:19) espouse that the NDP presents the foundation for improving the quality of education, health and skills for improved quality service delivery. This is to be achieved through infrastructure delivery and spatial planning, which is envisaged to improve living standards while reducing inequality and social exclusion in society. This study focuses on Chapter 4 of the NDP because it asserts that infrastructure is the foundation and a precondition for social and economic development (Vukeya, 2015:48.)

The vision for all South Africans to have access to education and training of the highest quality to achieve improved learning outcomes by 2020 is featured in Chapter 9 of the NDP

(Vukeya, 2015:31). The chapter further reinforces the priorities of basic education such as infrastructure, human capacity and district support between schools and communities. The author highlights that investment in infrastructure enhances human capital attained through the delivery of health and education to the community. However, Fourie (2013:30) claims that the challenge lies in maintaining and expanding infrastructure to address the growing demands of the economy. The author bemoans that the NDP failed to address the plight of certain segments of society in the policy debate on inequality. It can thus be argued that to some extent the state does not possess the institutional or financial capacity to implement the investments required to finance infrastructure on the required scale.

2.10.3.2 Medium-Term Strategic Framework, 2014–2019

The South African government recognises the immense infrastructure challenges and poor education outcomes facing the country, and particularly, rural communities. The Medium Term Strategic Framework (2014–2019:4) states that the second phase of the democratic dispensation calls for embarking on reducing inequality and eliminating irregular quality service delivery. Some of its 14 key outcomes address infrastructure constraints and spatial imbalances through the work of the Presidential Infrastructure Coordinating Commission and improving the quality of education.

The Medium Term Strategic Framework was adopted by Cabinet in 2013 following the adoption of the NDP. This framework is a blueprint that informs the first five-year implementation phase of the NDP and is mandated to align the plans of local, provincial, national, and other public entities with the goals of the NDP. Based on the governing party's election manifesto, the MTSF strives for the capacity of the state, education, and decent work, among other things. Besides its key priorities, the framework further focuses on increasing the accessibility and affordability of ICT infrastructure and strengthening the capacity of education to meet international standards (MTSF, 2014–2019:9).

2.10.3.3 Back-to-Basics Strategy, 2014

Government is well aware of the need to ensure the sustainability and proper functioning of municipalities. It is for this reason that the DCOGTA adopted the Back-to-Basics Strategy. This strategy signifies a local government turnaround strategy aimed at strengthening the capacity of local government by getting the basics right (DCOGTA, 2014:12). This will be achieved by upgrading the quality of services provided to the South African citizenry. The

strategy rests on five key pillars: Putting people first, good governance, sound financial management, delivering quality services, and building sound institutional and administrative capabilities (DCOGTA, 2014:14).

It is the responsibility of the Inter-Ministerial Committee on Service Delivery to oversee the coordination and overall performance of all spheres of government in this regard. Oosthuizen and Thornhill (2017:16) highlight that the main thrust of the Back-to-Basics Strategy is good practice and quality standards in the provision of infrastructure to promote decent living conditions. The authors further elaborate that the strategy incorporates monitoring systems necessary to track overall municipal performance. However, the review of the first phase of the Back-to-Basics Strategy reveals that currently there are challenges with aligning national and provincial government activities with local government activities (DCOGTA, 2014:2).

2.10.4 Provincial Context

After 1994, the restructuring of all spheres of government laid a foundation for the cautious alignment of strategies and plans (Department of Provincial and Local Government, 2005:1). Furthermore, provinces are expected to be at the centre of infrastructure development, investment and economic planning in line with the principles of the National Spatial Development Perspective. Consequently, the PGDS is the main tool guiding the coordination of resources at local, provincial and national spheres of government for effective development outcomes.

2.10.4.1 The KwaZulu-Natal Provincial Growth and Development Strategy, 2011

The province of KZN has undergone a significant transformation over the last 20 years. The KwaZulu-Natal Provincial Growth and Development Strategy sets the scene for KZN as a province to build on its growth and development trajectory (KZN Provincial Planning Commission, 2014:3). The strategy seeks to guide the resource allocation activities at all spheres of government for the development of the province. Subsequently, the KZN Provincial Planning Commission emphasises the need for the provision of infrastructure and services to foster development, particularly in education. The objective of the KZN PGDS is a 20 year vision for growth and development for the province towards 2030. The strategy is built on seven key strategic goals:

- Developing and enhancing economic growth;
- Improving education, skills development and lifelong learning;

- Improving social welfare of the community;

- Developing affordable, reliable and sustainable infrastructure;

- Promoting environmental sustainability;

- Promoting accountable governance; and

- Ensuring equitable access to resources and social and economic opportunities.

The KwaZulu-Natal Provincial Growth and Development Strategy is aligned to the NDP, SDG, and the New Growth Plan as recognised frameworks that provide a milieu for such development. The KwaZulu-Natal Provincial Growth and Development Strategy (2014:24) indicates that remarkable progress has been made in basic service delivery such as energy, roads, sanitation and health. However, the remaining challenge is advancing the development agenda by eliminating the prevailing social and spatial disparities derived from the apartheid regime; therefore, there are numerous backlogs in the quality of basic services that still need to be addressed.

Government recognises the need to improve rural infrastructure in order to advance the quality of services, such as education. However, most rural areas are characterised by fragmented residential settlement patterns that hinder development plans because of high service delivery costs (MTSF, 2014–2019:8). Furthermore, all the development plans at all levels government must be aligned for meaningful development. For example, there has to be alignment between the IDP, the KZN PGDS and the NDP. In addition to this, government needs to conduct detailed impact assessments of the existing and new interventions in order to ensure alignment and to prevent unforeseen consequences.

2.10.5 Local Context

Local government is now mandated by the Constitution to play an extensive developmental role (Fuo, 2013:9). This role extends to the eradication of socio-economic inequalities through the provision of infrastructure and basic services. In order to fulfil this constitutional mandate, IDPs were introduced in 2000. Subsequently, local municipalities must direct the integration of infrastructure development by ensuring that IDPs are aligned with the priorities of the MTSF, the national strategic plan and the PGDS (Fuo, 2013:60).

2.10.5.1 Integrated Development Plan

The Integrated Development Plan is one of the mechanisms of developmental local government outlined in the White Paper (Khawula, 2016:24). In this context, the IDP serves as a basic statutory document that informs all aspects of development with the local government arena in South Africa. The author proposes that it is imperative that when municipalities develop their IDPs, they ensure coherence with the national and provincial plans such as the NDP, SDG and PGDS. The author believes that IDPs are instrumental in initiating the development process since they are democratically oriented and value community consultation on development issues.

Mzimela (2013:22) establishes that, as a development plan, the IDP is seen as a pathway to sustainable development and used to foster adequate infrastructure service delivery in communities. In this regard, IDP serves as the panacea to progressive infrastructure development in an attempt to integrate the social and economic needs of society.

2.11 Chapter Summary

The primary focus of this chapter was the analysis of local and international literature on the general factors influencing the provision of rural infrastructure and quality education. Notwithstanding the existing historical disparities between rural and urban local municipalities, it is appropriate to acknowledge the variation in the severity of backlogs in the provision of rural infrastructure and quality basic services, particularly education, as indicated by literature.

This chapter provided an overview of rural infrastructure in the context of basic education. It presented an evaluation of the legislative imperatives on infrastructure and basic education. The role of infrastructure in promoting inclusive development is deliberated upon in conjunction with the roles of local government, IDPs and the MIG in advancing infrastructure.

The challenges faced by local government in infrastructure development as well as the role of the private sector in advancing infrastructure delivery are discussed. The effect of rural infrastructure on basic education is also looked at. The chapter further presented an analysis of the international and local overview of rural infrastructure and basic education based on the studies that have been conducted that are relevant to this particular study. Lastly, it provided an analysis of the contemporary efforts launched by government to address rural infrastructure in the context of basic education.

CHAPTER 3

THEORETICAL FRAMEWORK UNDERPINNING THE STUDY

3.1 Introduction

This chapter provides an analysis of the theoretical basis on which the study is contextualised. Firstly, it highlights the significance of theory in research and presents the Inclusive Rural Development Theory as the theory adopted in the study. Thereafter, infrastructure is defined in its broad spectrum. Thereafter, the economic, social and political dimensions of infrastructure are contextualised with the aim of unearthing the correlation and relevance with the selected theory.

The following discussion presents a conceptual definition of theory coupled with its importance in research. Subsequently, the theory adopted for this study will be discussed within the context of rural development and quality education.

3.2 The Significance of Theory in Research: A Scholarly Perspective

Various scholars define theory in research from different perspectives. Casaneve and Li (2015:107) define theory as a presentation of models or networks that show relationships among concepts. It consists of sets of related concepts that clarify how the concepts are related. These authors further visualise theory as a structure that involves situating a study and interpreting data with ideas that are more abstract than the concrete particulars of the study itself.

For other scholars, theory is a source of new knowledge, insight and discovery that offers lucid explanations of a pragmatic world (Cohen, Manion, & Morrison, 2007:98). The authors draw attention to the descriptive, explanatory and explorative nature of theory that seeks to generate replicable productive outcomes, providing the grounds explicitly for its verification and falsification.

Creswell (2014:109) expands his definition of theory to a pattern or generalisation that emerges inductively from data collection and analysis, whereby inquirers use a broad explanation or perspective that raises questions related to race, gender, class or a combination of these. The author remarks that theory is a structure that provides an explanation or prediction about the relationship among variables in the study.

Grant and Osanloo (2014:13) define theory as a set of propositions that explain specific relationships between the phenomena being studied. These authors recognise theory as a guide on which to build and support a research study, while providing a structure to define how the researcher will epistemologically, philosophically, methodologically and analytically approach the study as a whole. It is a foundation from which all knowledge is constructed. Accordingly, theory constitutes a tool with which to gain a tighter grasp of reality. Similarly, Du Plooy-Cilliers *et al.* (2014:37) observe that theory serves as a mechanism to explain 'how' and 'why' something operates as it does. Thus, theorising is the process of systematically formulating and connecting ideas in order to explain and understand a particular phenomenon. As such, theory represents a set of interconnected ideas that emerge from this process. Furthermore, Du Plooy-Cilliers, *et al.* (2014:37) reason that researchers use a set of logically related propositions together, and the relationship among these propositions forms a theory.

It is important to note that various scholars highlight the value and significance of theory in research in the sense that every research design needs a theory of the phenomenon in reality to guide the decisions of the researcher. Therefore, this study attempted to establish the views and perceptions of the citizens of ULM on the ability of the municipality to deliver infrastructure services based on the legislative mandate.

The study further sought to establish the interventions used by the local municipality in its attempt to provide adequate infrastructure to the citizenry. Based on the notion that theory helps to render lucid explanations of a pragmatic world, this study sought to investigate whether the perceptions held by ULM citizens in relation to the delivery of infrastructure are a true reflection of the prevailing circumstances.

Ultimately, a theoretical framework is one of the most important aspects in the research process. Evidence from across disciplines confirms that the explicit identification and inclusion of the theoretical framework is necessary for sound research. Grant and Osanloo (2014:12) maintain that the theoretical framework provides a grounding base or cornerstone for the literature review and the research methods and analysis. Equally, the theoretical framework serves as the structure and support for the rationale of the study, the problem statement, the purpose, the significance, as well as the research questions.

Casanave and Li (2015:108) confirm that views on theory differ, and like Grant and Osanloo, state that every research design needs some theory of the phenomena in reality in order to

guide the researcher's other design decisions. The authors reveal that the entire process of carrying out a qualitative study replicates the process of theory building and that the process requires grounding ideas in theory and prior research to explain the details that may lead to a new or modified theory. In contrast, Bradbury-Jones, Taylor, and Herber (2014:135) assert that theory is central to and of critical importance in qualitative research as it is often parallel to the methodologies used. The authors contend that the integration of theory in research is essential and critical. They espouse that without theory, qualitative research is diminished. It has numerous functions and can provide justification for the research methodology used, offer comparative context for the interpretation of data and form a scheme for presenting findings.

These scholarly arguments reveal the undeniable significance and centrality of theory in research. As noted earlier, there are different scholarly views on the criticality of theory in qualitative research, and it appears that the relationship between theory and research is both complex and argumentative based on the idea that theory in qualitative research is variable and can be used in different ways. However, the balanced view is that the strongest allegiance between theory and qualitative research is based on theory being the driver of the entire study if applied visibly and consistently (Bradbury-Jones *et al.*, 2014:137). As such, it is important to accentuate that there is no one theory that fits best with an enquiry. Multiple theories can give varying perspectives on the same issue. Grant and Osanloo (2014:19) confirm that it is the researcher's responsibility to provide a clear rationale for their choice of theory or theories that are aligned and support the structure of the purpose of the study.

Tavallei and Talib (2001:573) suggest that qualitative researchers can consider a variety of theoretical frameworks that stem from the domain of their disciplines to conduct their studies. In this regard, the diversity and richness of various theoretical frameworks present the researcher with a valuable prospect to observe accustomed things from a new and distinct perspective. Correspondingly, Lowenthal (2009:117) observe that the richness of a theoretical framework determines its potential to provide a substantial new understanding of a phenomenon. Thus, the richness of theoretical frameworks signifies their capacity to generate valuable data for enormous understanding of the phenomenon. In putting up with these observations, the researcher adopted the Inclusive Rural Development Theory to generate a lucid understanding of the phenomenon under study.

Subsequently, the adopted theory must be tested and verified to provide an explanation to a research question. Bradbury-Jones *et al.* (2014:141) affirm that theory is at the heart of

research and needs to be examined both scientifically and practically. This argument is consistent with the view of Creswell (2014:15) that the researcher has to methodically collect data that may either affirm or reject the theory before finalising the analysis of the theory.

Thus, it is a requirement that data collection instruments be used to collect data from the units through interviews and direct observations of research participants. For this particular study, the researcher selected municipal officials, Grade 12 learners, Headteachers and community members of ULM as participants in the research in order to collect qualitative data to establish their perceptions on delivery of infrastructure in their community.

Interview schedules were given to 35 ULM residents who were chosen using the non-probability sampling technique. Therefore, the sample was selected on the basis of the researcher's judgement, and it was selected on coincidence and not on random or systematic selection (Mouton & Babbie, 2007:264). The sample constituted relevant people who held relevant information regarding the research question. The aim was to find perceptions on the role of infrastructure delivery in upscaling the quality of education from the relevant targeted population. Consequently, the researcher could progress from theory testing to drawing credible conclusions on the research question.

Essentially, any theory adopted in a research study should be coherent while representing demonstrated relationships between selected variables or constructs of the study (Cibangu, 2012:99). In addition, theory is not merely an assumption about the observed relationships but a definite contribution to the field and the world. Thus, the selected theory should capture and demonstrate the missing relationships in the observed patterns.

From the foregoing, this research study adopted the Inclusive Rural Development Theory, which will be discussed in the next section.

3.3 The Inclusive Rural Development Theory

The provision of services to the rural poor is both a constitutional requirement and a social necessity for post-apartheid society, and one of the fundamental roles of government is to deliver services that are responsive to the citizenry. The provision of infrastructure for rural development is regarded as the foundation for social and economic integrated activities that are recognised as being interrelated and mutually supportive (Srinivasu & Srinivasa-Rao, 2013:3). In light of this, the Inclusive Rural Development Theory draws its strength from the notion that the critical objective of rural development is to advance the quality of life of rural

citizens. The theory emphasises improving the quality of life of all members of rural society (Fernando, 2008:9).

According to Fernando (2008:9), the Inclusive Rural Development Theory embraces three different but correlated dimensions:

- The economic dimension that involves providing both capability and opportunities for low-income and poor rural inhabitants.
- The social dimension of supportive social development of low-income and poor households, disadvantaged groups, and low-income and poor inhabitants in order to eliminate social inequalities for susceptible groups.
- The political dimension of advancing opportunities for the low-income people and poor inhabitants of rural areas to essentially and evenly participate in political processes.

It is important to note that the current concept of rural development is completely different from the one used before. The present concept now includes the measurement of changes in the quality of life, environmentally safe living conditions, improvement in nutrition and health, communication and transport, education, and reduction of inequalities in gender and income (Fernando, 2008:8). However, the general consensus is that the ultimate objective of rural development is to improve the quality of life of rural people. Thus, it is necessary to go beyond the causes that influence the quality of life, hence, the inclusiveness of rural development (Fernando, 2008:9).

Furthermore, the Constitution recognises these socio-economic rights. In this regard, Section 152(1) of the Constitution provides for the functionary role of local government in promoting social and economic development by ensuring the delivery of services to the community in a sustainable manner. The Constitution further highlights core principles that serve as guidelines for public institutions, including being responsive and accountable to the public when delivering public goods and services (RSA, 1996).

Essentially, rural areas and communities require greater social, economic and political opportunities to overcome marginalisation and poverty. The NDP conceptualises the challenge for rural development as the marginalisation of the poor, which traps many rural households in a vicious cycle of poverty (Gnade, 2013:6). Therefore, in this regard, rural transformation can only be achieved if there is reasonable consensus among actors who influence rural development on the structural limitations of development planning around

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spatial design. Notably, the fragmented and segregated development that weakens socio-economic linkages between urban and rural areas is reinforced by the spatial design attached to rural areas.
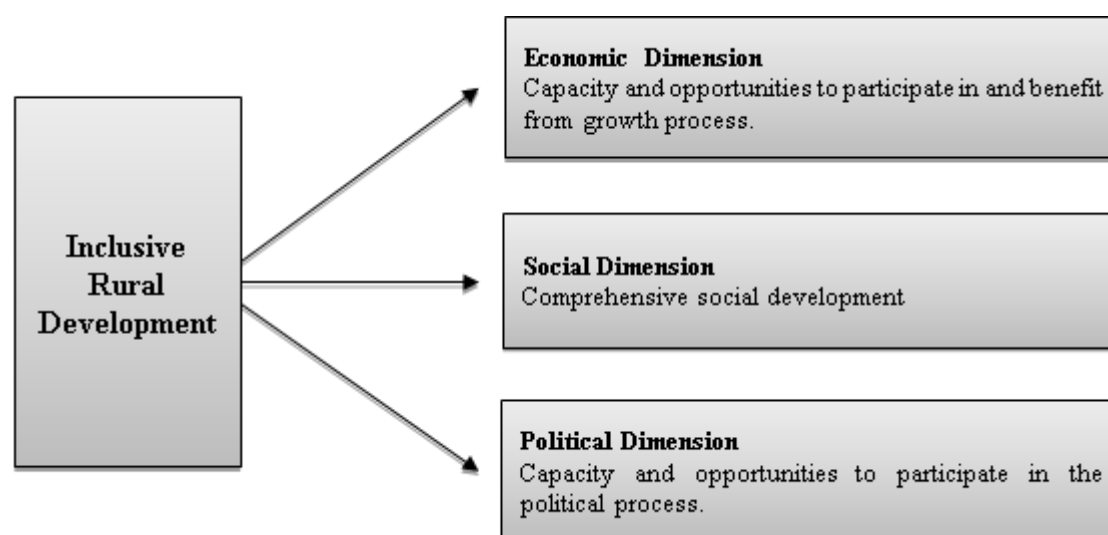
Figure 3-1: The Inclusive Rural Development Theory

Source: Adapted from Fernando (2008:9)

Figure 3-1 depicts the different dimensions of rural development. The theory advocates that rural development is a flexible concept, multidimensional process, deep in impact and wide in scope; hence, everyone interprets it in their own way, but the broad accord is that more importance should be given to development activities that are most concerned with the rural areas to enhance the quality of life of rural poor (Fernando, 2008:10). In consistence with this theory, Gnade (2013:56) espouses that the primary mission of government is to improve the standard of living of its rural poor. The most sustainable and effective means of improving the welfare of society is by providing basic services, which is the core concern of government. The author is of the opinion that to achieve these goals, the implementation of such programmes requires a social commitment, economic capacity and political determination. Thus, in this context, infrastructure plays a dominant role in making the development process more inclusive, and the lack of infrastructure creates bottle necks for sustainable growth and development while lowering the standards of living.

Based on the above background, the emphasis of this research is on the economic and social dimensions of the theory, because these constructs are directly linked to the provision of

economic and social services to the underprivileged segments of rural society, the building up of necessary infrastructure, and the development of human capital resources. These are critical elements that enhance the quality of human life and will be interrogated through this study.

3.4 Application of the Inclusive Rural Development Theory to Rural Infrastructure Development

Infrastructure in general refers to a set of facilities through which goods and services are delivered to the public. Its delivery does not only produce goods and services but provides inputs for other socio-economic activities (Srinivasu & Srinivasa-Rao, 2013:82). The authors recognise that infrastructure encompasses a variety of basic facilities together with capital equipment necessary for the functioning of an area or country. It is important to note that infrastructure has two components, namely economic and social. The economic component of infrastructure includes roads, bridges, transport, water, sanitation, energy and telecommunications, while social infrastructure extends to education, health and recreational facilities.

Srinivasu and Srinivasa-Rao (2013:82) further define infrastructure as a set of facilities through which goods and services are provided to the public. The authors conducted research on the relationship between infrastructure, growth and development, which reveals a direct link between the provision of infrastructure, growth and development. As such, people need access to basic economic infrastructure services like energy, sanitation, water and telecommunications, and to social infrastructure services such as schools, libraries and clinics. These authors add that people are acutely aware that the infrastructure could significantly improve the quality of their lives. Thus, the provision of basic infrastructure services for rural communities needs to be stepped up to ensure inclusive development and wellbeing of the rural population. In essence, most infrastructure services are regarded as intermediate inputs that allow poor rural inhabitants to access education and health and to build social capital. Thus, improving the availability of basic services such as water, electricity, sanitation and social infrastructural facilities is acknowledged as one of the principal ways to promote sound human settlements, good health, and decent living conditions.

Shucksmith and Brown (2016:431) highlight how the multifaceted nature of infrastructure contributes to equitable growth, development and social empowerment. As a result, the

general belief is that the economic and social components of infrastructure equally contribute to equitable growth and development as well as to social empowerment. This includes the improvement of living standards and influencing the quality of lives of the citizenry. It can thus be concluded that adequate infrastructure is essential for development. Therefore, socio-economic development can be accelerated by economic and social infrastructure.

3.4.1 Economic Dimension

In South Africa the provision of basic infrastructure services by municipalities is a constitutional right (Ghosh, 2017:1). The economic dimension involves providing capability and opportunities for the general welfare of rural inhabitants. Mamabolo (2016:26) describes this aspect of rural development by looking at the significance of rural infrastructure in stimulating economic development and improving the standard of living for the rural population. The author states that improving basic infrastructure such as electricity, roads, transport and ICT is critical for the development and wellbeing of the rural population. The author further stresses that in spite of the significance of infrastructure, persistent deficiencies prevail in most rural areas when compared to urban areas.

Laah, Adefila, and Yusuf (2013:51) refine this analysis with the processes of sustainable rural infrastructure development by outlining that basic infrastructure such as roads and transport creates capabilities for improved accessibility and enhanced opportunities for rural inhabitants. Subsequently, the returns for improved accessibility contribute immensely to quality health and education and sound human development.

Mamabolo (2016:28) makes the case that the South African government has acknowledged that there are serious infrastructure backlogs, which include roads, housing, health and telecommunications. New municipalities that were created with the aim of sharing resources between previously advantaged and disadvantaged municipalities have not yet yielded decent results. In turn, this has denied the citizens of South Africa the socio-economic rights promised to them by the Constitution. The author further ponders the poor implementation and lack of access to infrastructure services as contributing to poor quality of service delivery. It can therefore be argued that even a slight improvement in poor infrastructure could stimulate the quality of service delivery and human wellbeing.

Infrastructure is one of the basic pillars of the Global Competitiveness Report (World Economic Forum, 2017/2018:329). According to the report, the quality and extensiveness of infrastructure networks significantly impact economic growth while affecting various

inequalities and poverty in different ways. In terms of the GCI, South Africa is ranked number 61, with a score of 4.31, in the pillar of infrastructure and number 121, with a score of 4.47, in the pillar of basic education. This ranking indicates that South Africa remains one of the competitive countries in sub-Saharan Africa (World Economic Forum, 2017/2018:329).

Infrastructure has a significant impact on economic development as it affects rural development positively. However, Fuwa *et al*. (2016:2) acknowledge that the importance of rural infrastructure is linked to spatial characteristics in enhancing economic growth linkages. The authors remark that theoretical literature has proven that the impact of infrastructure on economic growth varies immensely across different regions and sectors. Henceforth, historical records validate the fact that countries that have developed rapidly possess well-developed infrastructure. Du Plessis (2014:1115) maintains that a country with world-class infrastructure positions itself better in its efficiency in global competitiveness as a major thrust area. In this regard, the widening gap between rural and urban infrastructure is a fundamental area of development.

Thus, in context of the above conventional insights, it can be alluded that infrastructure is a necessary prerequisite to accelerate economic growth in rural areas. In addition, it can be argued that a well-developed infrastructure network is a prerequisite for the access of less-developed communities to major economic activities and services. The effects of this are a progressive economy that generates resources necessary for better health, education and income as prerequisites for human development (Adams *et al.*, 2015:2).

3.4.2 Social Dimension

Increasing the availability of basic infrastructure services for rural communities has a significant impact on the empowerment of the rural citizenry. In addition, the social dimension of rural development encompasses the support rendered in an attempt to eliminate social inequalities for rural inhabitants. Gnade *et al.* (2016:2) establish that infrastructure promotes linkages and communication among communities. The authors further remark that improved physical and social infrastructure improve life expectancy and literacy for rural inhabitants. Such advancements have increased returns on human development in terms of health and education. Subsequently, adequate rural infrastructure promotes accessibility as a paramount factor in bringing about socio-economic changes in rural areas. However, rural communities are often deprived of universal access to quality basic services because of their

dispersed and wide range of context. Mwanyepedza (2016:722) purports that rural communities are sparsely populated, which inculcates limited accessibility to basic infrastructures services. As such, the inaccessibility challenges pose a threat to development initiatives such as education and health. The author further claims that under the right conditions, basic economic and social infrastructure investment do contribute to increased growth, social development and reduction of poverty and inequality. In addition, Gnade (2013:5) recognises that rural municipalities need to be able to provide services while also effectively championing the needs of rural areas and providing coordination of rural issues.

In contrast, the South African Presidency (2016:6) say that a major challenge facing rural households is that where services are available, they are often of lower quality and poorly maintained throughout the country. In addition to this, rural municipalities have not developed the capacity to coordinate development initiatives effectively across communities. Rural municipalities still possess weak development plans and are unable to invest in and maintain rural infrastructure. It is within this context that it is debated that for ULM, as the municipality under study, a great deal of sufficient and adequate infrastructure could eliminate the scourge of service delivery challenges faced by the municipality, particularly in education.

Ogungbhemi *et al.* (2014:23) establish that basic infrastructure is necessary for human development since it lays the foundation for effective delivery of basic services. Kalu *et al.* (2014:14) advocate that such infrastructure is essential for the sustainability of human settlements while also being an instrument for social change. The authors further observe that social infrastructure contributes immensely to the development of backward regions and reduces regional imbalance.

The social aspect of infrastructure is further articulated by commentators such as Mdikane and Allen (2016:145). The authors state that South African rural communities continue to suffer from chronic infrastructure challenges that were shaped by apartheid. Lack of infrastructure have adverse consequences on development efforts for such areas. As such, the aftermath of infrastructure deficiencies is poor learning outcomes and low education standards, particularly for rural scholars.

In support of the above assertion, Hlalele (2014:452) asserts that inadequate infrastructure such as roads limits the ability of rural inhabitants to travel, communicate and access basic services that are essential for wellbeing. Equally, poor and inadequate infrastructure

contributes to human imbalances while limiting the development possibilities that might be achieved through education.

Fuwa *et al.* (2016:12) state that inadequate infrastructure is a major bottleneck hindering sustainable development in rural communities. Subsequently, lack of infrastructural services results in poor service delivery, while the pace of progress remains stunted, and consequently, rural inhabitants suffer in the process. The authors suggest that poor infrastructure propels geographical marginalisation and remote proximity to educational amenities for rural inhabitants. In turn, the outcome of such marginalisation has detrimental effects on rural learner development.

Gnade *et al.* (2016:2) corroborate that adequate and better-quality infrastructure is essential in the delivery of basic services to address social ills such as the poverty faced by rural communities. Equally, access to basic infrastructure services is essential for the attainment of social development goals while ensuring equal opportunity for the citizenry to participate in a country's economy. Nonetheless, the authors state that most rural areas still have not realised progressive development of infrastructure challenges despite post-1994 development policies. As a result, widespread inequality, spatial policies, and divided societies inherited from the apartheid government are prevalent in the country.

The Bill of Rights of the Constitution of the RSA, Chapter 2, Section 27.1(a, b, c) envisions sustainable human settlements, including education and recreational facilities (RSA, 1996). However, in the democratic dispensation socio-economic challenges and inequalities prevail. Central to these challenges are the infrastructure delivery constraints that impede growth, development and the reduction of inequality (Gnade *et al*., 2016:2). In contrast to the constitutional mandates, most rural learners continue to receive less than their statutory right in the democratic South Africa. As such, the prevailing disparities in the distribution of infrastructure contribute immensely to underdevelopment of rural areas.

The prevailing gap in infrastructure delivery in rural areas as compared to urban areas is perceived by Mwanyepedza (2016:720) as a contributing factor in rural municipalities struggling to maintain their infrastructure in a sustainable manner. While discussing the infrastructure differences between urban and rural areas, the author states that South African rural municipalities currently struggle to meet their infrastructure demands. In view of the above arguments, it is imperative to improve the supply, affordability and quality of infrastructure services if growth is to be stimulated and poverty be reduced. From this

perspective then, consensus has been reached that under the right conditions basic and social infrastructure investments contribute to increased social development.

3.4.3 Political Dimension

At the helm of progressive inclusive rural development is the availability of well-crafted interventions for rural infrastructure to improve rural development. This political or institutional dimension of rural development involves decision making through policy making and implementation. Ghosh (2017:20) emphasises that since rural infrastructure is regarded as a public good, it is imperative for government to take initiative to augment and improve rural infrastructure. The author maintains that government should establish accountable and transparent decision-making practices where rural communities are fairly represented to participate in the processes. This will ensure that appropriate policies and programmes are effectively implemented for universal coverage and access to infrastructure for rural households.

In an attempt to address socio-economic challenges and inequalities in the country, much progress has been made by putting in place new policy and legislative ambiance aimed at accelerating access to basic services for rural areas. The South African Presidency (2016:6) states that government in its willingness to develop sustainable communities has introduced the CRDP, Recapitalisation and Development Programme, National Rural Youth Service Corps and the NDP. The CRDP has successfully introduced community-based approaches to rural development while the National Rural Youth Service Corps has contributed to the development of skills and lives of rural youth.

In light of the above assertion, Mikulcak *et al*. (2015:248) are persuaded that rural development models to date have failed to explain why development stagnates in certain regions and focuses on single policy areas. The authors emphasise that rural development barriers are multiple and are impacted by deliberated institutional context. Therefore, if human development is important, a coherent multidimensional approach is needed to address these barriers. Naldi *et al.* (2015:90) recommend that since rural development is not a one size fits all approach, its application should be combined with a place-based approach adjusted to fit the specifics of rural contexts.

According to the South African Presidency (2016:17), the NDP, being the most recent programme, recognises poor education outcomes, a divided community, divided spatial patterns, uneven public service performance, and crumbling infrastructure as some of the

constraints to be addressed in order to eliminate inequality and poverty in the country. However, despite these policy shifts, backlogs in water, sanitation, energy and telecommunications remain a challenge, with rural areas lagging behind national norms. In addition, the infrastructure backlogs remain concentrated in rural areas.

The general consensus in the literature is that inadequate rural infrastructure contributes to poor education standards, particularly for rural inhabitants. The findings of literature highlight the impact of rural infrastructure on the quality of education delivered in South African rural schools. In line with this statement, infrastructure, both social and economic, remain a precondition that can impact the economic and social growth and development of ULM differently in terms of service delivery, particularly in education, if delivered adequately and efficiently.

There is an urgent need for an integrated approach to institutional arrangements to ensure effective and efficient infrastructure investment. Rustomjee (2013:58) disputes that since the transition to democracy, such an approach has not been fully in place to promote infrastructure development. This approach is necessary to, for example, avoid the building of housing projects in areas with limited accessibility to roads, energy, ICT and transport.

Correspondingly, Vukeya (2015:48) espouse that the problems facing rural development need to be addressed in a coherent and reinforcing manner in order for development to be holistic and accurate. The author makes the point that even though the NDP has given direction to all infrastructure sectors towards the achievement of a common 2030 vision, the NDP has expressed concern that government does not have sufficient institutional capacity to implement infrastructure investment plans.

3.5 Chapter Summary

This chapter provided an analysis of the theoretical basis of the study. The significance of theory in research was also discussed. The Inclusive Rural Development Theory as an adopted theory for this research was presented. Furthermore, the literature reviewed in this chapter confirms to some extent, the applicability and the relevance of the economic, social and political dimensions of the Inclusive Rural Development Theory on the provision of rural infrastructure and quality basic services, particulary education.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This chapter provides an overview of the inquiry design and the methodological analysis of the study. First, it describes the research design, and then the research paradigms, validity and reliability, and the measuring instruments are discussed. This chapter further provides a full description of the sampling method and sample size, data analysis, and study population, including target and sampled population. It further presents the study site and the data collection instruments. The study was conducted in ULM in order to examine the capacity of infrastructure to advance the quality of education as a service delivery initiative. The qualitative method of research was adopted to study the targeted population, as explained in the chapter. Lastly, the ethical considerations are discussed.

4.2 What is Research?

Research is a systematic way of investigation to discover new knowledge or acquire additional information. Saunders *et al.* (2003:82) define research as a process undertaken with the aim of discovering new things in a systematic way to develop knowledge and understanding. This process entails identifying a problem, translating the problem to a research problem, and collecting and analysing data in order to interpret the findings based on the process. The aim is to establish new information and facts linked to a phenomenon.

4.2.1 Research Paradigms or Worldviews

One of the requirements of research is that it has to be based on a reference frame that guides each stage of a particular research. Therefore, a researcher requires an understanding of parallel philosophies underpinning different dimensions of research. As such, every researcher has their own view of what manifests knowledge and truth. These views are referred to as paradigms and reflect the world view based on philosophical assumptions.

These paradigmatic aspects frame a researcher's view of a research problem and how to solve it. Collis and Hussey (2009:55) describe paradigms as a philosophical framework that provides guiding principles for our assumptions, beliefs and thoughts about society and how we view the world around it. Similarly, Neuman (2011:94) describes paradigms as a whole

system of thinking and tradition that guides action. Consequently, such views lead researchers to the most appropriate approaches of conducting a systematic enquiry. The author recognises the two areas of philosophy for social research as ontology and epistemology.

4.2.1.1 Ontology

Ritchie and Lewis (2003:11) describe ontology as a philosophical belief that there exists one confirmable or multiple realities linked to a phenomenon, while De Vos *et al.* (2011:309) define ontology as an approach where the researcher believes a research problem can be resolved truthfully based on their assumption of reality. Ontology from an interpretivists' viewpoint recognises that reality is limited to context, individuals, space and time and cannot be generalised into one common reality. This means that people's experience of reality depends on their environment and other circumstances.

This enquiry focuses on assessing the delivery of infrastructure in the predominantly rural ULM and evaluating its aftermath in the advancement of the quality of education in ULM. As such, this enquiry took an ontological stance of interpretivisim since it is limited to the context of ULM and cannot be generalised to other rural local municipalities. To this end, behind the ontological beliefs lie the theories of knowledge and perception known as positivism and interpretivisim.

(a) Positivism

Schwandt (2007:256) considers positivism as linked to the belief that reality can be studied objectively. This approach is based on the ability to know things as they actually are. Positivism is commonly used in quantitative research as it enables the researcher to understand the meaning of human experiences in an objective manner. Babbie (2011:35) defines positivism as an approach that focuses on natural science in investigating phenomena.

This approach is based on the interpretation of measurable data using instruments. Henning, Van Rensburg, and Smith (2004:7) opine that positivism is based on revealing the truth and presenting it by empirical means. Qualitative researchers, however, believe that knowledge comes from observation and interpretation.

(b) Interpretivism/constructivism

Interpretivism is based on the notion that reality should be interpreted through meaning reflected by participants in their everyday life. This approach enables the researcher to appreciate the subjective meaning of social action through language (De Vos *et al.,* 2011:308). Chilisa and Kawulich (2014:9) describe interpretivism and constructivism as related approaches that focus on understanding the world the way others experience it. The authors suggest that the aim of interpretative research is to understand human experiences in their natural settings.

Additionally, Maree *et al.* (2016:60) assert that interpretivism advocates the importance of subjective interpretations of human beings and their opinions of the world in understanding social phenomena. The authors maintain that in interpretivism research reality is not objectively accomplished but is socially constructed. For this reason, it is assumed that if people are studied in their social context or environment, it is possible to understand their perceptions of their own activities.

Based on the reviewed literature, this enquiry takes an interpretivist stance as an ontological approach to the research. The interpretivist approach seemed appropriate for this inquiry to understand the experiences of the ULM officials, Ward Councillors, Headteachers, and Grade 12 learners in respect of the returns of education quality based on infrastructure delivery. The researcher was able to gain an in-depth understanding of the experiences of these participants by seeing see the world through their eyes.

4.2.1.2 Epistemology

Ritchie and Lewis (2003:11) claim that epistemology encompasses the objectivity of knowledge and whether knowledge can be objectively or subjectively knowable. It is important to note that epistemological perspectives serve as guiding principles when generating knowledge about the social world. De Vos *et al*. (2011:310) affirm that epistemology represents the rules by which a researcher believes the truth should be known.

Epistemology can be linked to social constructivism as a philosophy that allows the researcher to gain an understanding of the research problem that relies so much on the views of participants being studied (Creswell, 2009:11). Subsequently, the adoption of the social constructivism worldview was instrumental in achieving the main research objective, which is how the delivery of infrastructure affects the quality of education in schools within ULM.

This study was informed by the social constructivist worldview because it is suitable for qualitative research. The adopted worldview allowed the researcher to make sense of the participants' views and experiences while taking an interpretive stance to gain an in-depth understanding of the impact of infrastructure delivery on the quality of education in ULM. The emphasis was on evaluating the extent of the implementation of national development policies in advancing infrastructure to improve education quality using the selected methodologies.

4.3 Research Methodology

Schwandt (2007:195) defines research methodology as the concept of how an inquiry should be conducted. This concept involves the use of a particular approach in the analysis of principles, procedures, and assumptions in undertaking an inquiry. The author states that methodologies expound the types of problems worth investigating, whether the problem is researchable, and which designs and procedures are suitable for researching the problem. This includes developing suitable means of collecting data when conducting an enquiry.

Similarly, Mouton (2011:56) identifies that research methodology focuses largely on the procedure that the research will entail as well as tools that the research will use. Its emphasis is on numerous steps that need to be followed when conducting the research to produce the desired results. As such, the research design and methods used in this study are discussed next.

4.3.1 Research Design

A research design is a plan used to explain how the enquiry will be conducted. It is linked to the kind of planned study and the results that are hoped to be achieved through the study, including evidence that validates the proper addressing of the research problem (Mouton, 2011:55). Creswell & Plano Clark, (2011:148) define research design as outlining the nature and plan that the inquest intends to trail. The research design should be informed by the worldview tradition that the investigator brings to the study; the procedures of enquiry; the data collection techniques; the data analysis; and the data interpretation.

The selection of the research design depends on the natural phenomenon of the problem under investigation, the audiences for the study, and the researcher's personal experiences. There are three approaches that can be used to examine a hypothesis and to answer a research

question. These include qualitative, quantitative and mixed methods (Welman *et al.*, 2005:52).

Creswell (2009:4) describes a qualitative research design as exploring and understanding the meaning of the manner in which individuals or a group ascribe to a social or human problem. It could be reasonably assumed that the design focuses on individual meaning together with the significance of rendering the density of a situation. The author describes quantitative research design as a measurement of the properties of phenomena, such as the attitudes of individuals towards a certain topic, so that data can be analysed through the use of statistical procedures. Neuman (2011:15), however, defines qualitative research as a process that involves simultaneous collection, analysis, and interpretation of data while building a new theory by drawing from existing theories. The author maintains that qualitative research is an inquiry that does not focus on a specific question but deliberates on a theoretical paradigm in an adopted perspective.

Quantitative research is the process of recording and verifying information in the form of numbers by converting data into a computer readable format. Neuman (2011:14) maintains that unlike the construction of new concepts and theoretical interpretations of qualitative researchers, quantitative researchers test previously developed hypotheses. Correspondingly, Creswell (2009:4) defines quantitative research as a measurement of properties of phenomena such as the attitude of individuals towards a certain topic so that data can be analysed using statistical procedures. Quantitative research quantifies the problem through the collection of numerical data that are converted into statistical data that can be regarded as evidence in an inquiry. This research approach generates quantitative data that are used to obtain generalised results for population samples (Wyse, 2011:22).

The mixed methods design entails the use of both qualitative and quantitative approaches with the aim of exploiting the advantages of both approaches. According to Teddlie and Tashakkori (2009:73), the mixed methods design can be defined as a "type of research design in which qualitative and quantitative approaches are used in types of questions, research methods, data collection, and data analysis". The mixed methods design extends to collecting and analysing both types of data in the interest of enriching the overall strength of the study so that it can be greater than either qualitative or quantitative research. Equally, Creswell and Plano Clark (2007:5) emphasise that mixed methods research allows the researcher to use all tools available for data collection to generate more comprehensive evidence to answer a

research problem. In this perspective, the research can adopt multiple paradigms that are associated with both qualitative and quantitative research in studying a problem.

It should be noted that each research design should be informed by the worldview tradition that the investigator brings to the study. This includes procedures of enquiry, data collection techniques, data analysis and data interpretation (Mouton, 2011:55). Thus, the researcher adopted qualitative research in order to gain insight into the phenomenon in the context of the natural setting of ULM. Unlike quantitative research design, the adopted methodology allows the voices of participants to be heard directly, thus affording the researcher an insider perspective of the phenomenon. The qualitative approach helped the researcher explore advancement of rural infrastructure and quality education in the broad spectrum of its complexity for inductive data building.

Together with the qualitative approach, a case study strategy was used to obtain an insider perspective on social action while describing and understanding the actual realities of advancing rural infrastructure and quality education. The case study was the most suitable approach to obtain relevant data in order to prove or negate the theory that the availability of rural infrastructure plays a crucial role in uplifting the standard of education within ULM schools.

The context of issues that were explored in this inquiry was another reason that the study adopted a qualitative approach. Qualitative research is appropriate for research questions that require textural data (Williams, 2007:65). In addition, this research approach is an effective model since it occurs in a natural setting and allows the researcher to see the details by being involved in the actual experiences (Creswell, 2003:16). The nature of the research problem required that the advancement of infrastructure in the context of quality education be explored in the broad spectrum of its complexity for inductive data building.

The inquiry intended to ascertain the impact of rural infrastructure on advancing the standard of education within ULM schools. Bearing this in mind, the researcher explored the views of ULM citizens in relation to infrastructure delivery. In comprehending the experiences and gaining more insight about the phenomenon being studied, the researcher evaluated the opinions of the officials of the ULM Infrastructure Unit, Headteachers, and Grade 12 learners from ULM schools on the current conditions experienced by inhabitants within this municipal area.

4.4 Research Strategy

Saunders *et al.* (2003:90) define a research strategy as a general plan of how the researcher will go about answering a research question. The authors recognise eight research strategies: Surveys, case studies, experiments, ethnography, action research, grounded theory, exploratory and cross-sectional studies. The research study is selected based on the purpose of the study, the research method, and the necessity of the study. The most commonly used methods for conducting qualitative research are ethnographic, grounded theory and case study approaches.

Babbie and Mouton (2015:280) interpret ethnographic studies as mainly using interviewing techniques and participant observation to gather qualitative data. Conversely, in the grounded theory approach, theory is grounded in the qualitative data that the researcher is collecting to create opinions and arguments surrounding the phenomenon (Du Plooy-Cilliers *et al.*, 2014:178). Alternatively, Babbie and Mouton (2011:149) suggest that case studies form a significant part of an inquiry because they can present the examination of multiple variables like the interaction of various elements of the study within their perspective.

As noted above, this research adopted the case study approach to conduct the probe. In the view of Creswell (2009:14), a case study allows the researcher to explore in depth an activity, process, programme or event in one or more individuals. Mouton (2011:149) confirms that case studies can present the examination of multiple variables while the elements of study interact within their perspective, thus it forms a significant part of the investigation. Similarly, Yin (2009:13) defines case study as an empirical inquiry that investigates an existing phenomenon within its natural setting when the boundary between context and phenomenon are not apparent. A case study was therefore suitable for this inquiry because it presented an insight into the existing conditions surrounding the delivery of infrastructure as a contributing factor to quality education within the jurisdictions of ULM.

Babbie and Mouton (2015:289) opine that a qualitative interview is a conversation through which the interviewer institutes a universal direction for the discussion and follows specific questions posed to the participant; the participant generally does most of the talking. Based on this assertion, the researcher used interviews and case study processes, activities and events to get more insight into the variables being studied (Creswell, 2009:177). Focus group interviews are useful because they tend to create a platform where people can get together and create meaning among themselves as a group, rather than as individuals. For the benefit

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of this study, this inquest used a case study of ULM as a sample from which to derive the data.

4.5 Data Collection Methods and Instruments

Data collection is solely dependent on the form of data that is to be gathered, whether primary or secondary. There are different methods of collecting data, namely text analysis, testing, interviewing and observation (Mouton, 2011:104). Primary data is the data that is gathered by the researcher, while secondary data is collected using other sources that are readily available for use (Cassim, 2011:8). This study collected primary data using semi-structured in-depth interviews to determine whether the delivery of rural infrastructure in ULM contributes to the quality of education.

Data was collected using focus group discussions, semi-structured in-depth interviews with the target population of ULM as well as analysis of documents such as IDP, Spatial Development Framework Report, and Annual Reports of ULM.

4.5.1 In-Depth Interviews

According to Babbie and Mouton (2015:289), a qualitative interview is a conversation through which the interviewer institutes a universal direction for the discussion and follows specific questions posed to the participant; the participant generally does most of the talking. The researcher used interviews and case study processes, activities and events to get more insight on the variables being studied (Creswell, 2009:177). As mentioned in Chapter 1, the interview schedules were issued to all research participants two days prior to the interviews, thus affording the participants enough time to scrutinise questions so that they could offer insightful responses on the day of the interview.

An interview is when a participant is asked questions from an interview schedule while the interviewer captures the participant's responses (Creswell, 2007:76). For the purpose of this enquiry, the researcher made use of primary data provided through interviews with ULM officials, Ward Councillors and Headteachers from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools in order to measure the perceptions and experiences of the selected sample. The semi-structured interviews used for data collection comprised of open-ended questions. These interviews thus allowed for in-depth interaction and were conducted face-to-face in order to obtain detailed information about the participants' attitudes, behaviour, values and beliefs. This helped the interviewer to ask follow-up questions based

on the responses, thereby maintaining the social constructivism philosophy (Maree, 2014:162).

According to Creswell (2007:175), semi-structured in-depth interviews are a combination of both structured and unstructured interviews. Semi-structured interviews can be based on loose structure consisting of open-ended questions to define the area that is being studied. In-depth interviews are less structured and allow the researcher to ask direct questions to participants with the aim of learning more about their perceptions, opinions and beliefs about the research problem. In addition, the interview questions were issued to the research participants before the scheduled interview date. This allowed the participants enough time to familiarise themselves with the research questions and prepare to give informed and reliable responses.

4.5.2 Focus Groups

A focus group is a group interview that is used to determine the preferences, behaviours, attitudes and dislikes of participants who are interviewed concurrently by a facilitator (Plooy-Cilliers *et al.*, 2014:183). These groups may consist of 6–12 group members plus the researcher as a facilitator. Focus groups are mostly used to determine participants' views about services and other issues. The focus group is a useful method of data collection because the arguments generated during discussions can afford the researcher a deeper understanding of the different viewpoints and opinions of the participants. In addition, the participants can learn from each other and may assist in resolving other issues experienced in the group.

For the purpose of this study, four focus groups comprising of six learners each from Luthuli, Kwafica, Sbongimfundo, and Bonguzwane High Schools were interviewed by the researcher. The aim was to determine their perceptions, opinions and experiences of rural infrastructure delivery's influence on the quality of education.

4.5.3 Documentary Evidence

Documentary evidence refers to sources containing information that can be used as empirical facts used to substantiate data collected through interviews (Bowen, 2009:27; Noor, 2008:1604). Such documents include journals, books, newspapers, institutional reports, policies and other official publications. Additionally, these documents provide the researcher with guidelines to follow when conducting the interview inquiry. Accordingly, the study interrogated and reviewed relevant literature in order to analyse and interpret collected data.

The researcher further used documentary evidence from annual reports, strategic plans, and other documents relating to infrastructure and basic education to analyse data. The use of these sources helped ensure the validity and reliability of the findings while also ensuring convergence of data (Noor, 2008:1604).

4.6 Sampling Process

Mathenjwa (2010:56) identifies two main types of sampling techniques commonly used in research, namely probability and non-probability sampling. Non-probability sampling involves techniques such as snowball, quota, purposive, and self-selection sampling. Probability sampling generates a representative sample by drawing a sample from numerous units (Neuman, 2011:244). Samples are used because they are time and cost effective (Maree, 2014:70). It may not always be practical to study the entire population; therefore, a portion of a population known as a sample may be selected to participate in a study (Babbie, 2007:264). Studies using qualitative methods always uses purposeful sampling (Babbie & Mouton, 2015:288).

This particular enquiry adopted a purposive sampling technique. The population size was 35 and was comprised of one Municipal Manager, one IDP Manager, and one Infrastructure Manager from ULM, four Ward Councillors, four Headteachers of the DoE, and four groups (comprising of six learners each) of Grade 12 learners from Luthuli, Kwafica, Sbongimfundo, and Bonguzwane High Schools, respectively.

The research adopted the non-probability approach by using purposive sampling to conduct the research. Palys (2008:87) confirms that the researcher can use their judgement to select the participants eligible for inclusion in the study and the selection may be based on coincidence and not on random or systematic selection. Consequently, the researcher intended to direct the study to relevant people who had relevant information about the delivery of infrastructure in advancing the quality of education. Thus, the purposive technique of non-probability sampling was used in the study with the aim of obtaining sought after perceptions from the relevant targeted population.

4.6.1 Study Site/ Population

Welman *et al.* (2005:52) describe the population as a study object comprising of individuals, groups, events and human products and the conditions they are exposed to. Correspondingly, Wiid and Diggines (2013:186) define population as a total group of people or entities from

whom information is required. Accordingly, the population represents a full collection from which a sample is chosen. The population for this study was the municipal manager, infrastructure manager, IDP manager, Ward Councillors, Headteachers, and Grade 12 learners within ULM.

ULM is the second largest of four local municipalities within the Ugu District. This municipality is predominantly rural with an estimated population of 151 676 and covers a vast rural area of 1 221 km, with approximately 1% being semi-urban. The municipality incorporates 12 traditional council areas and comprises 20 municipal wards and 20 Ward Councillors. There are 140 schools within ULM, 11 that are combined, 96 primary schools and 7 high schools (ULM Spatial Development Framework, 2017:63).

The schools in this municipal area face infrastructure constraints, particularly road and transport infrastructure, which negatively affects education outcomes. The Grade 12 learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools from Wards 11, 16, 18 and 19 formed part of the population for this study. The rationale behind this choice was that these learners have already chosen the career paths they want to pursue after high school, and despite the socio-economic factors surrounding these learners, they are still expected to produce good results as the future of the nation depends upon them.

4.6.2 Target Population

A target population reflects the total collection of units of analysis that a researcher may wish to draw conclusions on. Van Rensburg (2010:56) emphasises that a target population comprises of all elements that form the unit of analysis. The difference between the target population and the accessible population is that the target population represents everyone or everything that falls within the parameters of the population; while the accessible population refers to that section of the population that can be included in the study. In essence, it is impossible and costly to involve all population members in an enquiry; therefore, the conclusions can be drawn from the data obtained from the sample of the target population.

The population for this research comprised of the following:

- Four groups of Grade 12 learners, comprised of six learners each, chosen from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools;
- Four Headteachers chosen from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools;

- Four Ward Councillors from Wards 11, 16, 18 and 19; and
- Three officials from ULM.

These elements were chosen because they are directly affected by infrastructure and basic education, the variables under study.

4.6.3 Sample Population

Du Plooy-Cilliers *et al*. (2014:135) define a sample population as a subset of the population that is perceived to be representative of the people. In this regard, the researcher can generalise the research findings to the rest of the populace. The sample for this inquiry comprised of the following:

- One ULM Municipal Manager;
- One ULM IDP Manager;
- One ULM Infrastructure Manager;
- Four Ward Councillors from Wards 11, 16, 18 and 19;
- Four Headteachers of Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools; and
- Grade 12 learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools.

Consequently, this sample was representative of all those segments of society that are in one way or another involved in infrastructure development and quality education at ward and local government level.

4.6.4 Sample Size

The sample size indicates the number of elements in a sample. Patton (2002:244) establishes that the sample size is determined by the usefulness and credibility of the inquiry and the available time and resources. There are no rules for sample size in a qualitative enquiry. The sample size for this research comprised of three ULM officials, four Ward Councillors, four Headteachers from Luthuli, Kwafica, Sbongimfundo, and Bonguzwane High Schools, and four groups of learners from these schools. In total the sample size were 35 participants.

4.7 Data Quality Control

As mentioned earlier, the aim of qualitative research is to promote an understanding of particular phenomenon within a specific context without generalising such results to a broader population. In contrast, in quantitative research a researcher can conduct a study repeatedly using different samples from the population and get similar results (Du Plooy-Cilliers *et al.*, 2014:258). However, this is not possible in qualitative research because participants' answers are not objectively measured since they are unique to each individual's experience. As a result, qualitative researchers must strive to establish whether the research results can be trustworthy. The authors further maintained that trustworthiness in qualitative research symbolises the reliability and validity of the results.

4.71 Validity, Reliability and Trustworthiness

Teddlie and Tashakori (2009:209) suggested that in qualitative research, validity is concerned with whether what is being captured or measured is what is intended and whether data collection and analysis procedures indeed produce trustworthy findings. According to Sproull (1995:75), reliability refers to the consistency of measurement. For the purpose of this study, validity and trustworthiness was ensured by using a recording device to capture and store the responses from the participants in order to ensure the reliability of data. The researcher used semi-structured interviews; thus interview guides were essential. The interview guide provided a list of all the essential elements and aspects to be covered by the enquiry. During the interview proceedings, all participants were asked the same questions that were based on the perceptions, opinions, and experiences of the rural infrastructure delivery recipients.

Furthermore, the responses of interviewees were recapped in order to avoid ambiguity in the data captured during interviews. In addition, the interview questions were the same for the different segments of participants to ensure consistency with the data collection tool. Deriving data directly from the participants also assisted in the elimination of misconceptions, thereby increasing the level of validity and trustworthiness. Correspondingly, the validity, reliability, and trustworthiness of secondary data was maintained by gathering data from official documents of different sectors of government as reliable sources endorsed by relevant authorities.

4.8 Data Analysis

Data analysis is a process through which data are translated into findings. Du Plooy-Cilliers *et al.* (2014:229) observe that the researcher does this translation by identifying and describing the evident and dormant patterns of meaning emerging from the data in order to conclude the findings. Similarly, De Vos *et al.* (2011:397) state that data analysis involves "reducing the size of raw information, identifying important patterns and establishing a framework for interpreting what the data reveals". The authors remark that the joint denominators of qualitative data analysis methods are reduction, organisation, interpretation and substantiation of data. The approaches used in this study to analyse the data are discussed next.

4.8.1 Thematic and Content Analysis

According to Braun and Clarke (2006:79), thematic analysis is a method used to identify, analyse, and record patterns within the data. This rigorous thematic approach can produce an insightful analysis that answers particular research questions. For the purpose of this enquiry, the data collected through semi-structured interviews were analysed by observing significant themes recurring in the data, while further exploring the themes upon emergence from the data. The description of data according to themes enabled the researcher to enhance the findings while also integrating the findings into the Inclusive Rural Development Theory.

Correspondingly, Zang and Wildemuth, (2005:2) define qualitative content analysis as a process aimed at condensing raw data into themes on the basis of valid interpretation. This method of data analysis focuses on unique themes that demonstrate a variety of meanings of the phenomenon. In this context, the perspectives of the research participants can be better articulated by the investigator and the readers of the research results. In addition, Neuman (2011:49) asserts that content analysis occurs when "the content of the communication medium is methodically recorded and analysed". Thus, content analysis was used to draw conclusions on the variables based on the content of the responses obtained from the semi-structured interviews.

4.8.2 Stages of Interview Data Analysis

Maree *et al.* (2016:114) propose that the first step in data analysis is to describe the participants and the context in which the study was done. This is critical because the patterns

and findings emerging from the collected data help the researcher to understand the constructed reality of participants and their perceptions on the social phenomenon. The discussion on stages of data analysis is presented next.

4.8.2.1 Data Transcribing

Transcribing is defined as a system of converting raw information collected from written and verbal responses of participants into a written or visual format (Du Plooy-Cilliers *et al*., 2014:233). The authors claim that transcribing data is essential for qualitative data to be analysed using a systematic method. As such, the researcher transcribed all audio recorded data into a transcript that was typed word for word in order to analyse it in text form, thereby focusing on the content meaning of the phenomenon emerging from the data. The researcher used the textual qualitative data collected through interviews with Grade 12 learners, school personnel, and municipality officials of ULM.

4.8.2.2 Understanding Data

It is useful for a researcher to get to know the data inside and out by reading through it time and again. Maree *et al.* (2016:115) emphasise that even the transcribed interviews need to be listened to repeatedly, as this helps the researcher to record impressions as they go through the data. Therefore, the researcher familiarised herself with the data by reading and re-reading the text to understand and learn from it. This is because data may provide an additional data source that may need to be analysed further in order to critically consider the insights gained through the study against those patterns emerging from the data.

4.8.2.3 Data Organising

According to De Vos *et al.* (2011:397), the important approaches in data analysis are the reduction, organisation, interpretation and substantiation of data. The authors establish that these approaches help the researcher to sift through and compress raw information by identifying significant patterns emerging from the data. Thus, the researcher reduced and organised the data into significant patterns and characteristics in line with the adopted theory to determine how meanings are constructed in a dimensional way.

4.8.3 Stages of Coding Data

The process of dividing data into segments is referred to as coding. Du Plooy-Cilliers *et al.* (2014:235) define data coding as a researcher's means to break the text down into concepts and codes in order to rearrange them into meaningful units. The authors state that data coding enables the researcher to identify or retrieve common text or data that may be linked to a thematic idea for simultaneous examination and comparison with different cases. Welman *et al.* (2005:213) establish that data coding is a method of reducing huge amounts of data into manageable and understandable texts. The purpose is to make sense of the collected data by assigning tags and labels that attach meaning to the data. The authors maintain that coding is applicable to all forms of text, such as interviews, observations, field notes, focus group notes and written texts. In addition, data coding is essential for research findings to contribute to the body of knowledge. There are several forms of coding used in qualitative research, namely line-by-line coding, substantive coding, axial coding, selective coding and thematic coding.

For the purpose of this study, the researcher used thematic coding in the thematic analysis. Babbie and Mouton (2001:493) define thematic coding as a process involving the compressing of data by identifying themes. As such, the researcher used thematic coding to analyse and interpret the impact of infrastructure in advancing the quality of education in ULM. In this context, the researcher identified common themes and patterns from the data while establishing categories according to phrases and sentences. This was done to identify the most significant themes to use in the analysis (Blair, 2015:24). The author asserts that codes help to highlight common responses with similar colour for clear identification. Thereafter, the themes were contextualised in the context of their meaning and analysed by drawing from previously conducted studies and the constructs of the Inclusive Rural Development Theory adopted for this study.

4.9 Matrix Analysis

De Vos *et al.* (2011:419) define a matrix as a 'comparison' table used by a researcher to present a comparison of themes or categories emerging from a study. Data can be analysed and presented using a matrix analysis to ensure that the research findings are definitely qualitative and in line with the research design. The use of a matrix enables the researcher to create a visual display of data while understanding the flow of events and the connections thereof. For the purpose of this study, the analysis of data was done by constructing a visual

display of data using a matrix to illustrate the comparison of data while portraying a comparison of data responses provided during interviews. The researcher further used the matrix analysis to analyse secondary data obtained from books, journal articles and other documents relevant to ULM.

4.10 Constant Comparison Analysis

Constant comparison analysis is commonly used in focus groups and involves comparing the answers given by different group members within the focus groups (Welman *et al.*, 2005:212). The authors propose that researchers can use this method to compare different categories of text while identifying reasons for the differences in pieces of text. For the purpose of this study, the researcher used the constant comparison method to draw comparisons between the answers of participants based on their age, gender and experience.

4.11 Ethical Considerations

According to Mouton (2011:239), ethical choices entail a concession between the interests and rights of different parties. This implies that the researcher should use precautionary measures in the course of the research but not at the expense of the rights of other people. The ethical considerations were maintained by obtaining ethical clearance from the Ethics Committee of the University of KZN and informed consent from the participants, learners and their parents and guardians to participate in the study. This included furnishing them with documents relevant to the study to ensure their wellbeing. Teddlie and Tashakori (2009:199) state that participants must be assured of anonymity and confidentiality during a research study; therefore, the researcher adhered to the following criteria while conducting the research:

- Participants were given clear and accurate information about research before commencing with the research.
- Participants were informed that the research is voluntary and that they are free to withdraw at any time.
- Care was taken to safeguard the privacy of participants to protect them from harm. The researcher assured the participants that only the researcher will have access to the information that will be shared during the enquiry.
- The researcher ensured confidentiality and anonymity by not identifying the participants.

- Consent forms were issued to the participants and their parents or guardians before commencing with the interviews.
- Permission for audio recording was obtained from participants before commencing with the interviews.

4.12 Limitations and Delimitations of the Study

Qualitative research can result in challenges of problematic evaluation of outcomes. Mouton (2011:152) maintains that no research design or strategy is without its limitations. The limitations of the case study method are that case studies are not designed for the generalisation of findings. In most cases, limitations arise from lack of standardised measurements as a result of time constraints in data collection and analysis. Therefore, even though the research was carefully prepared, the researcher encountered shortcomings and limitations during the research.

Firstly, the researcher was granted permission by the Department of Education Provincial office to conduct research in Kwafica, Sbongimfundo, Bonguzwane and Luthuli High Schools. However, the researcher faced another hurdle when seeking permission from the Ward Managers of the respective schools to access the schools and engage with Headteachers and Grade 12 learners. Further delays in obtaining consent letters from learners and parents emanated from the fact that the schools were closed for holidays from 28/09/2018–08/10/2018. This meant that the researcher had to wait another two weeks before making appointments with the Headteachers of the respective schools in order to select participants for the research. This included obtaining consent letters from Grade 12 learners and their parents.

Secondly, the researcher faced challenges in obtaining consent letters from Grade 12 learners at Luthuli and Bonguzwane High Schools. The Headteachers of these schools were concerned that the learners were already focusing on final examinations and that it would shift their focus to bother them with consent letters. In addition, there were foreseen challenges in getting these learners to avail themselves for focus group interviews because these learners would scatter soon after final examinations and it would be difficult to get hold of them to participate in the research. After much consideration of the above circumstances, the researcher decided to shift the sample from Grade 12 class of 2018 to the potential class of 2019. These learners were selected by the Headteachers and Grade 11 and 12 convenors based on the knowledge that they would make it to Grade 12 in 2019. Furthermore, the

learners would already be in Grade 12 by the time the focus group interviews were conducted at the beginning of 2019.

Thirdly, the four members of the SGB that were chosen for this study could not be reached for interviews because the term of the current members had ended in March 2019 and the elections for new SGB members had not yet taken place and the date for the elections could not be confirmed by the HODs of participating schools. This meant that the sample size for this study shifted from 39 to 35 participants.

Lastly, the researcher faced another impediment in obtaining interview appointments with ULM officials since they argued that they were busy campaigning for the upcoming National and Provincial Elections for 8 May 2019. Thus, the researcher had to wait until the National and Provincial Elections passed before securing appointments with the targeted municipal officials.

Furthermore, the sample was chosen in an effort to secure a fair representation of the municipality employees, education officials and Grade 12 learners in this research. As a result, the researcher used a sample of one Municipal Manager, one IDP Manager, one Infrastructure Manager, four Headteachers, four Ward Councillors and four focus groups, each comprising of six Grade 12 learners from Luthuli, Kwafica, Sbongimfundo and Bonguzwane High Schools. Accordingly, the chosen sample is not the whole target population of ULM staff, school staff and Grade 12 learners from all high schools within ULM. However, time and financial constraints meant that it was impossible for the researcher to interview the whole staff of ULM and all the Headteachers and Grade 12 learners from ULM schools.

Lastly, the same interview questions were used for all participants to save time and to maintain standardisation of measurement.

4.13 Chapter Summary

This chapter presented the basis of the research in terms of the worldview that informed the research. The research methodology, design and strategy used in collecting data were covered in detail in conjunction with the data collection instruments. The discussion focused on the reasons and justification for the use of qualitative research method to assess the impetus of rural infrastructure on the quality of education. The qualitative research method was found to have been relevant for this inquiry and thus, assisted the study to achieve its main aim and

objectives. The study focused on rural infrastructure as a catalyst for improving the quality of service delivery, particularly in education. The chapter advanced further to reflect on the sampling, study site, target population, sample population and sample size. The discussion further expanded on the data analysis and presentation using the matrix and constant comparison analysis. The chapter also revealed various stages essential in data analysis. The ethical considerations that were observed while conducting the research were addressed in detail. The chapter further revealed the limitations and delimitations of the study.

CHAPTER 5

DATA PRESENTATION, ANALYSIS AND DISCUSSION

5.1 Introduction

The preceding chapter on research design and methodology presented different types of research methodologies and procedures that researchers exploit when collecting data. The chapter explained the research designs and methods that the researcher used to collect data for this study. This chapter in turn seeks to present an analyses and discussion of the findings based on qualitative data collected through focus groups and individual interviews in ULM as a case study.

5.2 Case Study of Umzumbe Local Municipality

The case context of ULM is presented in this section. Umzumbe Local Municipality is a local municipality that falls within the Ugu District Municipality and is located in the southern region of the KZN province. Ugu District Municipality comprises of four local municipalities. Umzumbe Local Municipality is the third largest municipality within the district following the amalgamation of Hibiscus Coast with Ezinqoleni Municipality and Umdoni Municipality with a portion of Vulamehlo Municipality. Umzumbe Local Municipality covers a large rural area of about 1 221 km^2, and approximately 1% of this area is semi-urban. The community survey of 2016 indicates that the total population of ULM is estimated at 151 676 and divided into 20 wards (ULM IDP, 2018/2019–2019/2020).

Many household and individuals residing in the rural areas of this municipality are entirely dependent on government social grants, subsistence farming and informal trading for survival. There are no established towns in this municipality that is characterised by a vast backlog of basic services, high levels of poverty, an indigent community and a minimal economic base (ULM Spatial Development Framework, 2017:52). Umzumbe Local Municipality is sparsely populated, impeding accessibility to essential services, including the delivery of infrastructure such as roads, telecommunications, sanitation, water and energy; all of which affect the delivery of quality education. These resource constraints have a negative outcome on the overall learner performance and impacts the standard and quality of education in the area.

5.3 Primary Qualitative Data

The qualitative research data were collected using focus group discussions and semi-structured in-depth interviews to determine whether the delivery of rural infrastructure in ULM contributes to the quality of education. Table 5-1 outlines the demographic data of the interview participants.

Table 5-1: ULM interview participants' demographic data

Research Participants	School/Municipality	Number of Participants
Grade 12 Learner Focus Group 1	Sbongimfundo High Ward 16	06
Grade 12 Learner Focus Group 2	Kwafica High Ward 18	06
Grade 12 Learner Focus Group 3	Luthuli High Ward 19	06
Grade 12 Learner Focus Group 4	Bonguzwane High Ward 11	06
DoE HOD 1	Ward 16	01
DoE HOD 2	Ward 18	01
DoE HOD 3	Ward 19	01
DoE HOD 4	Ward 11	01
Ward Councillor 1	Ward 16	01
Ward Councillor 2	Ward 11	01
Ward Councillor 3	Ward 18	01
Ward Councillor 4	Ward 19	01
Municipal Manager	ULM	01
IDP Manager	ULM	01
Technical Services/Infrastructure Manager	ULM	01
Total		**35**

In total, 35 participants, comprising of Grade 12 learners, Headteachers and municipal officials, participated in the study.

Table 5-2 depicts the interaction between the emerging themes of the study with the research objectives and questions.

Table 5-2: Interaction between the emerging themes and sub-themes of the study with research objectives and research questions

Research Objective 1	Research Objective 2	Research Objective 3	Research Objective 4	Research Objective 5
To determine how the delivery of rural infrastructure affects the quality of education in schools within ULM.	To evaluate the extent to which national development policies on rural infrastructure development have been implemented in ULM to improve quality education in schools.	To identify the institutional arrangements that ULM has put in place to advance the rural infrastructure required to improve the quality of education.	To assess the availability of rural infrastructure to advance education in schools within ULM.	To make recommendations for the policy planning and implementation needed to advance rural infrastructure and quality education in ULM schools.
Research Question 1	**Research Question 2**	**Research Question 3**	**Research Question 4**	**Research Question 5**
To what extent has ULM implemented the national development policies to promote rural infrastructure development to advance education?	Which national development policies have been used by ULM to advance rural infrastructure to improve the standard of education in schools within ULM?	What institutional arrangements have been adopted by ULM to advance rural infrastructure to improve the quality of education in schools within ULM?	What are the challenges in providing rural infrastructure to advance education in schools within ULM?	How can rural infrastructure be advanced to improve the quality of education in ULM schools?
Emerging Theme 1	**Emerging Theme 2**	**Emerging Theme 3**	**Emerging Theme 4**	**Emerging Theme 5**
Infrastructure supply	Rural infrastructure development initiatives	Institutional arrangements	Service delivery challenges	Recommendations for future improvements and future research

Emerging Sub-Themes	Emerging Sub-Themes	Emerging Sub-Themes	Emerging Sub-Themes	Emerging Sub-Themes
• Poor energy supply • Poor water supply • Poor road supply • Poor library supply • Poor transport supply • Poor bridge supply • Poor telecommunications	• Maintenance of existing infrastructure • Community participation • Intergovernmental relations • Short-term vs long-term interventions	• Operation Sukuma Sakhe • The Infrastructure Master Plan • Service delivery war-rooms • Public participation • The Local Area Plan • Sanitation & Waste Services • Learner transport (proposal but never implemented)	• Poor infrastructure delivery • Lack of public participation • Existing policy gaps • Budgetary constraints • Project management capacity • Dispersed households • High poverty rate	• Intergovernmental relations • Clarity of roles, responsibilities and enhanced accountability • Poverty tackling & fundraising strategies • Quality standards • Community consultation • Subsidised learner transport • Monitoring and evaluation

Source: Data interpretation and analysis of the study, 2019

The researcher adopted the Inclusive Rural Development Theory to conduct the study, as discussed in Chapter 3. The interaction between the Inclusive Rural Development Theory as the adopted theory for the study and the collected data for the study is presented in Table 5-3.

Table 5-3: Interaction between the Inclusive Rural Development Theory and the qualitative data

Constructs of the Theoretical Framework	Qualitative Data
Economic Dimension	• *The IDP depends on the availability of the budget for its implementation, but the budget allocation is too limited to cater for the needs of the growing population.* (**ULMWC2**) • *The existing infrastructure for water standpipes has been vandalised and stolen to sell the copper as a result of the high poverty rate in the area.* (**ULMHOD1**) • *Due to budgetary constraints, ULM is compelled to use cheap material such as quarry instead of concrete when building roads. Such roads do not last long as they erode easily during heavy rains.* (**ULMLFG1**) • *ULM is characterised by dispersed settlements that make water and electricity connections costly.* (**ULMWC4**)
Social Dimension	• *Since ULM is predominantly rural and characterised by mostly inland, sparsely dispersed settlements, lack of access to roads limits accessibility to schools.* (**ULMWC1**) • *The crumbling infrastructure, such as collapsed bridges and highly fragmented transport systems, results in social exclusion and the ULM community being marginalised.* (**ULMMGR3**)
Political Dimension	• *ULM has adopted the Local Area Plan as a platform to identify development nodes in order to develop frameworks to determine the type of infrastructure requirements required to develop these areas.* (**ULMNGR3**) • *Ward Councillors and Ward Committees interact with the community on the ground to gather information on infrastructure needs that are essential to the community.* (**ULMLFG3**) • *Service delivery war-rooms also provide a platform for ULM to identify the core infrastructure needs to be prioritised to address the plight faced by the community in accessing quality basic services.* (**ULMWC3**)

Source: Data interpretation and analysis of results, 2019

As discussed in Section 3.4, the provision of basic infrastructure services is regarded as a prerequisite for rural development and the well-being of the populace (Ghosh, 2017:1). As such, people need access to basic economic infrastructure services such as energy, sanitation,

water and telecommunications, and to social infrastructure services such as schools, libraries and clinics. However, in relation to the Inclusive Rural Development theory presented in Table 5-3, rural development is regarded as inclusive if it is constructed on economic, social and political dimensions and approaches (Fernando, 2008:09).

- *Economic dimension*

The economic dimension of the Inclusive Rural Development Theory involves providing capability and opportunities for the general welfare of the rural populace (Ghosh, 2017:1). The empirical data reveals that budgetary constraints facing ULM contribute to infrastructure inadequacies such as the bad condition of roads. Such inadequacies limit the accessibility of schools for learners residing within ULM. In addition, the high rate of poverty in ULM results in existing infrastructure such as water standpipes being vandalised, causing water shortages.

- *Social dimension*

The social dimension of the Inclusive Rural development Theory entails the support rendered by government in an attempt to eliminate social inequalities for all rural inhabitants (Gnade *et al.,* 2016:2). This support extends to promoting infrastructure accessibility to bring about socio-economic changes in rural communities. However, evidence from the empirical data unveils deprivation of universal access to basic services such as water, energy and roads as a result of dispersed settlements. In turn, the inaccessibility challenges pose a threat to development initiatives such as education.

- *Political dimension*

The political dimension of the Inclusive Rural Development Theory entails the urgent need for well-crafted policy interventions and legislation if progressive inclusive rural development is to be embraced (Ghosh, 2017:20). Therefore, appropriate policies that are pertinent to the needs of rural communities must be adopted, with the community being fairly represented to participate in such decision making, if rural development is to be inclusive. In this context, the empirical data reveals that ULM provides a platform for the community to participate in decision making through Ward Councillors, Ward Committees and service delivery war rooms.

As a point of departure, it appears from the above discussion that in line with the Inclusive Rural Development Theory, the delivery of both economic and social infrastructure could be

the solution to eliminate inequality in society. However, the adequacy of economic and social infrastructure alone is insufficient to eradicate inequality (Gnade, 2013:1). Thus, legislation and policies have to be implemented in order to achieve the desired economic and social goals.

The overall data presentation, analysis and discussion is presented in the next section.

5.3.1 Interview Data Presentation, Analysis and Discussion

This section presents the qualitative data collected and arranged into matrices. The presented data are further analysed using the thematic analysis technique. Braun and Clarke (2006:86) define thematic analysis as a process that can be used to analyse data collected through a qualitative survey using semi-structured interviews to investigate individual experiences of objective things.

5.3.2 Emerging Themes from the Qualitative Data in Relation to Research Objectives and Questions

The next section presents the themes that emerged from the data. These themes are in line with the objectives presented in Section 1.5. As indicated above, the data categories are arranged into matrices. The researcher interrogated the literature presented in Chapter 2 in order to discuss and analyse data.

5.3.2.1 Infrastructure Supply

The aim of Objective 1 of the study was to determine how the delivery of rural infrastructure in ULM affects the quality of education. The study found that 25 years after 1994 there is still much that needs to be done to address policy gaps that exist to advance rural infrastructure to promote the quality of education. The national development policies such as the Infrastructure Master Plan are outdated, creating a bottleneck in responding to the increasing infrastructure requirements.

This results in the inadequacies in social and economic infrastructure being most visible in rural spaces. The study also found that the inadequacies in social and economic infrastructure have a significant impact on the quality of basic services, particularly health, education and recreation.

(a) Poor energy supply

In general terms, infrastructure signifies access to social and economic resources such as energy, together with other public facilities for education, health and recreation in order to promote the general wellbeing of the populace. In relation to this, increased access to infrastructure directly benefits individuals and households by increasing the quality of education, health and other services. Subsequently, as people's education, health and income levels improve, it creates an additional demand for infrastructure services. In this regard, the study found that because of the nature of the difficult geography and dispersed settlement of rural communities, energy connections are costly, resulting in illegal energy connections (ULM IDP, 2018/2019–2019/2020:67). Furthermore, there are other challenges with constrained infrastructure, such as electricity substations.

One participant had this to say about the poor energy supply:

> *There is an urgent need for energy infills as a result of the vast population increase in the area. (**ULMWC3**)*

(b) Poor water supply

While there has been significant progress in the supply of energy and water, there is a prevalence of vandalism of existing infrastructure and municipal assets by the community (ULM IDP, 2018/2019–2019/2020:67). This results in water shortages because of the leaking, vandalised water standpipes.

Another participant bemoaned that:

> *The existing infrastructure for water standpipes is vandalised and stolen as a result of poverty that is rife in the area. (**ULMHOD1**)*

(c) Poor road supply

Poor access roads limit accessibility to schools for learners within ULM, while hindering sanitation services. This restriction results in the rural populace being marginalised and socially excluded in terms of social mobility, which in turn limits the opportunities for socio-economic development for the ULM populace.

One participant indicated that:

> *The bad condition of access roads in this area limits accessibility to schools. (**ULMMGR3**)*

Another participant pointed out that:

> *Lack of proper access roads limits access such that wheelbarrows and cows are used to transport ill people while hearses cannot access some of the households in cases of death. (**ULMWC1**)*

Picture 5-1: Road leading to Sbongimfundo High School in Ward 16

Picture 5-2: Road leading to Kwafica High School in Ward 18

(d) Poor library supply

The municipality is characterised by the lack of proper infrastructure for potential community facilities such as libraries, community halls and community health care centres.

One participant revealed that:

> *There is no library available in ULM for us as learners to conduct research for our school work. We have to travel to Hibberdene or Port Shepstone to access library and by the time we arrive, the library is already closed at 16h00. (ULMLFG4)*

(e) Poor transport supply

The study further found that ULM has a fragmented transport system that makes it difficult for the learners to commute from one area to another as a result of dispersed households. Thus, the provisions for transport are not centred on an integrated spatial perspective that is pertinent for the unique needs of rural communities.

One of the participants presented this point lamenting:

> *The wheelbarrows and cows are used to transport ill people to the hospital while hearses cannot access some households due to lack of proper access roads. (ULMWC1)*

Another participant stated that:

> *Most learners in this area drop out of school as a result of long distances they have to walk to school. (ULMLFG1)*

(f) Poor bridge supply

Amongst other infrastructure constraints facing ULM is the condition and the shortage of bridges. This infrastructure deficit in turn limits the mobility of ULM inhabitants to access schools and other community facilities. As a result, accessibility to schools is limited after heavy rains as rivers overflow and the low lying bridges prevent access.

One participant exclaimed that:

> *Bridges collapse and overflow during heavy rains making us unable to access schools. (ULMLFG2)*

Picture 5-3: Bridge leading to Sbongimfundo High School in Ward 16

Picture 5-4: Bridge leading to Kwafica High School in Ward 18

(g) Poor telecommunications supply

Umzumbe Local Municipality is characterised with low lying, inland areas with scattered settlement patterns (ULM IDP, 2018/2019-2019/2020:65). Thus, adequate provision of telecommunication infrastructure in this municipality remains a challenge. Even though cell phone companies provide coverage in some areas of ULM, internet access is not available in most areas of ULM.

One of the participants said that:

> *Lack of internet connectivity and network reception makes it difficult for us as learners to conduct research for our school projects.* **(ULMLFG3)**

The qualitative findings relating infrastructure supply are presented in the matrix below.

Matrix 5-1: Infrastructure Supply

Inductive Categories	Participant Responses	Source
Poor energy supply	*There is a need for infills as a result of the population increase.*	ULMWC3
Poor water supply	*The existing infrastructure for water standpipes is vandalised and stolen.*	ULMHOD1
Poor road supply	*The bad condition of roads limits accessibility to schools.*	ULMMGR3
	Wheelbarrows and cows are used to transport ill people while hearses cannot access some households because of lack of proper access roads.	ULMWC1
Poor library supply	*No library available in Umzumbe for learners to conduct research for school work and projects.*	ULMLFG4
Poor transport supply	*Most learners drop out of school because of the long distances they have to walk to school.*	ULMLFG1
Poor bridge supply	*Bridges collapse and overflow during heavy rains making us unable to access schools.*	ULMLFG2
Poor telecommunications supply	*Lack of internet connectivity and network reception make it difficult for us to conduct research for our school projects.*	ULMLFG3

The findings of the study concur with the literature that there is a significant and positive relationship between infrastructure and human social and economic development. In this regard, the literature suggests that poor access to infrastructure limits opportunities for socio-economic development and has detrimental effects on the quality of basic services rendered to the rural communities, particularly education (Sapkota, 2018:183).

The empirical findings of the study further confirmed what has been established by Gnade *et al*. (2016:2), namely that the crumbling infrastructure in rural areas is a consequence of the inequalities of the apartheid dispensation and the divided spatial patterns that contribute to poor education outcomes and stagnant growth and development for the rural populace. In agreement, (Manggat *et al*., 2018:651) pronounces that lack of infrastructure in rural areas hinders access to education for rural inhabitants whilst hindering the ability to live a decent life.

The findings on infrastructure supply revealed mixed perceptions among Headteachers, learners and ULM officials. For example, while most Headteachers, learners and ULM officials believed that the infrastructure supply in ULM is inadequate and thus impacts negatively on education outcomes in ULM; only ULMHOD3 indicated that there are almost no infrastructure constraints that impact negatively on learning for learners from his school. This participant alleged the supply of infrastructure in Ward 11 is in a satisfactory condition

and does not impact negatively on learning because they do not have learners who have to cross rivers to reach school, and therefore, learning always continues as planned without any challenges.

5.3.2.2 Rural Infrastructure Development Initiatives

Rural infrastructure development initiatives are programmes undertaken by government to improve the energy, water, road, transport, bridges, libraries and telecommunications for quality service delivery. These programmes help give the government direction to achieve spatial balance in the social and economic development of rural areas through adequate delivery of infrastructure. It is through these initiatives that basic infrastructure can be improved to promote the wellbeing of the rural populace while upscaling the standard of services such as education, health and recreation.

This study found that several initiatives have been used by ULM to improve and augment rural infrastructure for the benefit of the community. This sentiment was expressed by a participant who made the following statement:

> *Our municipality has developed its own plant with machinery such as graders and trailblazers in order to respond quickly to fix the frequently damaged roads and bridges.* (**ULMMGR2**)

(a) Maintenance of existing infrastructure

Because of the geography and dispersed settlements in ULM, the population primarily depend on infrastructure to access basic services. Infrastructure access helps to promote social inclusion, provides livelihood choices while increasing the quality of health, education and other services. Proper maintenance of infrastructure increases a community's returns of quality basic services such as education and health, while it reduces the inequality and social exclusion of rural communities. This study found that the infrastructure challenges facing ULM include poor maintenance, destruction and the dilapidating state of infrastructure.

One participant indicated:

> *The existing infrastructure for water standpipes is vandalised and stolen with the aim of stealing copper material. This is as a result of poverty that is rife in the area.* (**ULMHOD1**)

In addition to this, the quality of infrastructure in ULM is generally poor because of high service costs and financial constraints facing this municipality. This local municipality has insufficient revenue to implement IDP projects as a result of huge backlogs. A large portion of the ULM community is impoverished and indigent because of lack of unemployment opportunities and education, which results in the ULM municipality not being financially able to provide infrastructure sustainably, economically and equitably to all communities under its jurisdiction (ULM IDP, 2018/2019–2019/2020:67).

Another participant said:

> *Budget allocation is not sufficient while the IDP depends on the availability of budget for implementation. Again, our budget allocation is too limited to cater for all the needs of the growing population. (**ULMWC1**)*

The literature reveals that the inadequacy of infrastructure facilities in South African rural communities can be attributed to poor funding models while the developmental outcomes of various infrastructures depend on their management, quality and maintenance in order to keep up with service delivery standards (Ghosh, 2017:286).

(b) Community participation

Community participation can be loosely defined as the involvement of the people in deciding on community projects that will address the needs of the public (Longa, 2018:38). There is evidence that if applied correctly, community participation in decision making processes could boost local governance and the provision of basic services. In the context of rural infrastructure development, community participation refers to a development approach that is 'people-centred' and based on the principle of participation to determine priorities for realistic intervention and the need to influence the processes.

The study found that the community members are involved in some of the projects undertaken by government and this creates a conducive environment for the community to take ownership of the projects.

One of the participants emphasised that:

> *Our local municipality has adopted a programme of training local community members in accredited training institutions so that they can acquire skills to enable them to work temporarily in infrastructure development projects. (**ULMMGR1**)*

Yet another participant said:

> *Our municipality has a tendency to decide on their own on which infrastructure requirements to prioritise, without involving us as the community. Things would be different if our municipality involved and consulted with the community first, before undertaking infrastructure development projects. There are platforms available for us as the community to register our priority infrastructure requirements because there are Ward Committees and Service Delivery War-Rooms in our community.* (**ULMLFG1**)

Many officials in the municipality are illiterate, and this poses a serious challenge to public participation (ULM IDP, 2018/2019–2019/2020:106).

Evidence from literature suggests the importance of government involving the community to address infrastructure requirements if service delivery is to serve the purpose of improving the lives of the population and meet quality standards. According to Sapkota (2018:185), the perceptions and participation of rural residents are useful in determining the priorities for rural infrastructure requirements because this is the only approach that allows policy makers and development workers to propose development plans and programmes more effectively.

(c) Intergovernmental Relations

In 2005, the Intergovernmental Relations Framework Act was passed in South Africa to ensure that the principles of Chapter 3 of the South African Constitution on cooperative governance are implemented. The aim was to devise mechanisms to coordinate the work of all spheres of government to provide effective services and promote development. In line with the Constitution, cooperative governance means that the local, provincial and national spheres of government should collaborate and support each other by coordinating their efforts in providing services to the citizens. At least half of municipal infrastructure is funded by grants from the national fiscal authority, while the rural, local and district municipalities solely depend on these grants to finance their infrastructure needs.

The study found that with regards to rural infrastructure development, local government works in partnership with other spheres of government to address the infrastructure backlogs facing the municipality. This entails obtaining funding from various sectors of government to fund infrastructure requirements.

One of the participants observed:

Our municipality is working in partnership with the Department of Economic Development to advance the development of small businesses in order to eradicate poverty, which has been found to be rife in this community. (ULMWC1)

In agreement, another participant confirmed:

Our municipality is working jointly with Eskom to increase the number of households with electricity. I can confirm that in addition to the 50% of households who have received electricity installations, the percentage will soon increase as a result of the pledge that has been signed by our municipality and Eskom. (ULMWC3)

Another participant revealed:

Our municipality has finalised an agreement with the Department of Housing to build houses for 400 households in this community. (ULMWC2)

It is well documented in the ULM IDP (2018/2019–2019/2020:106) that this municipality collaborates well with structures such as Intergovernmental Relations and Operation Sukuma Sakhe with the aim of providing better solutions to fast track the delivery of basic services to the populace. Furthermore, literature provides evidence of the significance of coordination among levels of government in the provision of infrastructure. In this regard, the service delivery standards tend to be shared among the local, provincial and national spheres of government, respectively (Nzimakwe & Ntshakala, 2015:833). In developing countries such as South Africa, Intergovernmental Relations requires the three levels of government to adopt service standards and central regulations that require coordinated planning and co-financing since they are subject to standards of access, quality and quantity as established by higher levels of government.

(d) Short-term versus long-term interventions

It should be noted that all infrastructure delivery projects should be sustainable if the anticipated impact is to benefit the target community. The sustainability of infrastructure projects is determined by the integration of projected short-, medium- and long-term capacity and maintenance requirements at the planning and designing stages. This means that the nature of the material, material availability, technical capacity and the intended life span of the material should be predetermined before infrastructure projects are implemented.

It is evident from the empirical findings of the study that some of the infrastructure delivery initiatives undertaken by ULM are not made to last in the long term. From these findings, it can be deduced that the life span and sustainability of products is not predetermined by the municipality during the planning and designing of infrastructure projects. In light of this, some of the initiatives used by the municipality in the delivery of rural infrastructure are interim solutions that do not permanently address the problems.

One participant said:

> *Umzumbe Local Municipality only responds after a crisis and the interventions are short term, e.g. using quarry material instead of concrete material to fix damaged roads. (**ULMLFG4**)*

Another participant shared the same sentiments:

> *Umzumbe Local Municipality sends a grader to restore the condition of corroded or damaged roads so that vehicles can access the roads. These interventions are short term since the situation persists when heavy rains strike. (**ULMLFG2**)*

Another participant stated:

> *Umzumbe Local Municipality tries to send the water truck to the community to supply water; however, this truck only arrives after a month or two. (**ULMLFG1**)*

The qualitative findings relating to rural infrastructure development initiatives are presented in the matrix below:

Matrix 5-2: Rural infrastructure development initiatives

Inductive Categories	Participants Response	Source
Maintenance of existing infrastructure	*ULM developed its own plant with graders and trailblazers to respond quickly to damaged roads and bridges.*	ULMMGR2
Community participation	*ULM has a programme to train community members in accredited institutions for them to work temporarily in infrastructure development projects.*	ULMMGR1
Intergovernmental relations	*ULM has a partnership with the Department of Economic Development to advance the development of small businesses in order to eliminate poverty.*	ULMWC1
Short-term interventions	*ULM tries to send the water truck to the community to supply water; however, this truck only arrives after a month or two.*	ULMLFG1
	ULM only responds after a crisis and the interventions are short term, e.g. using quarry material instead of concrete material to fix damaged roads.	ULMLFG4
	ULM sends a grader to restore the condition of corroded or damaged roads so that vehicles can access the roads. These interventions are short term since the situation persists when heavy rains strike.	ULMLFG2

Linked to Objective 2 of the study, which intended to evaluate the extent to which national development policies on rural infrastructure development have been implemented to improve quality education in schools within ULM, the empirical findings of the study concur with literature that there is an urgent need for local government to collaborate with the provincial and national spheres of government. Despite the interventions undertaken by ULM to address rural infrastructure constraints, collaboration with the provincial and national spheres of government could help to coordinate planning and financing for rural infrastructure delivery. This would help a great deal to augment the backlogs in rural infrastructure and its maintenance, while upscaling the quality standards of service delivery, particularly in education.

5.3.2.3 Institutional Arrangements

Institutional arrangements are the policies, systems and processes that organisations use to legislate, plan and manage their activities efficiently and to effectively coordinate with others in order to fulfil their mandate. Such arrangements may include the involved responsible organisations, their human resources, funding, equipment and supplies, leadership, effectiveness, and the communication links among organisations (United Nations, 2016:1). In pursuit of enabling government institutions to collaborate in delivering the objectives of the

2030 Agenda for Sustainable Development, most countries, including South Africa, have initiated efforts to configure their institutional arrangements to complement the SDGs.

Umzumbe Local Municipality has adopted a number of policies and programmes to address infrastructure challenges. The municipality has embarked on policies, processes and systems to address the prevailing infrastructure constraints and backlogs facing this rural municipality. Among the policies and systems in place are Operation Sukuma Sakhe, The Infrastructure Master Plan, service delivery war-rooms, public participation, The Local Area Plan, Sanitation and Waste Services and learner transport.

(a) Operation Sukuma Sakhe

Operation Sukuma Sakhe is an initiative by government to overcome issues that affect the most vulnerable and deprived communities in an attempt to make rural development sustainable and to fast track service delivery.

One participant said:

> *Umzumbe Local Municipality adopted Operation Sukuma Sakhe in an effort to improve its functioning in addressing infrastructure challenges. (**ULMGR1**)*

(b) The Infrastructure Master Plan

The Infrastructure Master Plan provides strategic and integrated planning for government on infrastructure requirements. According to the ULM IDP (2018/2019–2020/2021:68), one of the institutional constraints facing the municipality is that the current Infrastructure Master Plan is outdated.

One of the participants suggested that:

> *Even though ULM has adopted the Infrastructure Master Plan, this plan is outdated to address the contemporary infrastructure requirements. (**ULMMGR3**)*

(c) Service delivery war-rooms

Service delivery war-rooms are a component of Operation Sukuma Sakhe that serve as a vehicle to facilitate rapid response to service delivery needs whilst targeting the most deprived segments of society.

One of the participants provided that:

Our municipality makes use of service delivery war-rooms as a platform to identify priority infrastructure needs of the community for accessibility of quality services. (ULMWC3)

(d) Public participation

According to Longa (2018:380), public participation entails engaging the public in decision making so that they may give inputs that may influence decisions.

One participant established that:

Ward Councillors interact with the community with the aim of gathering infrastructure needs that are essential to the community. (ULMMGR2)

(e) The local area plans

Local area plans are the level of planning that is closest to local communities because they are based on public consultation.

Another participant highlighted that:

ULM uses this platform to identify development nodes in order to develop frameworks to determine the type of infrastructure required to develop such areas. (ULMMGR3)

(f) Sanitation and waste services

Refuse removal in ULM is a challenge because of the rugged terrain and the rural nature of the municipality. In response to the provision of sanitation and waste service in ULM, one of the participants remarked that:

ULM provides the community with tools for the collection and dumping of waste at central points. (ULMWC4)

(g) Learner transport

In response to the availability of transport in ULM, one participant pronounced that:

The initiative of providing learners with bicycles was proposed in 2010 but was futile as it was never implemented, even though as educators we had submitted all the necessary documentation in motivation for our learner needs for such resources. We

*were disappointed because we had hoped that this initiative would resolve the plight of learners walking long distances to reach schools. (**ULMHOD1**)*

The qualitative findings relating to institutional arrangements adopted by ULM are presented in the matrix below:

Matrix 5-3: Institutional arrangements

Inductive Categories	Participants Response	Source
Operation Sukuma Sakhe (0SS)	*ULM adopted this strategy in an effort to improve its functioning in addressing infrastructure challenges.*	ULMMGR1
The Infrastructure Master Plan	*Is in place as a comprehensive plan to improve accessibility to schools and inland areas.*	ULMMGR3
Service delivery war-rooms	*Platform for ULM to identify the rural priority infrastructure needs to address the plight of the community in accessing quality basic services.*	ULMWC3
Public participation	*Ward Councillors interact with the community in order to gather infrastructure needs that are essential to the community.*	ULMMGR2
The local area plan	*ULM uses this platform to identify development nodes in order to develop frameworks to determine the type of infrastructure required to develop such areas.*	ULMMGR3
Sanitation & waste Services	*ULM provides the community with tools for the collection and dumping of waste at central points.*	ULMWC4
Learner transport	*The initiative of providing learners with bicycles was proposed in 2010 but was futile as it was never implemented.*	ULMHOD1

Local government, being the sphere of government that is closest to the community, is best placed to fulfil government's responsibility to provide infrastructure and other basic services to the citizenry (Sithole & Mathonsi, 2015:14). Thus, the issue of the delivery of basic services such as infrastructure remains the constitutional mandate of local government, while it has to keep up with the challenges and demands for services by the communities. Sithole and Mathonsi (2015:14) remark that there is still confusion in institutional arrangements in government in relation to the powers and functions of local government.

Furthermore, the contemporary literature suggests that it is not always institutional authority that matters, but rather the capacity of local government itself to respond to the demands for basic infrastructure (Beer, 2014:34). However, it is significant that the institutional framework be formulated in a manner that complements the fiscal authority to the service delivery functions of local government in order for the delivery of infrastructure services to be effective. In this regard, institutional arrangements could improve rural infrastructure

delivery if certain conditions, such as transparency, capacity and community social capital, exist at local government level.

The empirical findings of the study revealed that the lack of integration among the three spheres of government has contributed to unprecedented challenges for local municipalities in meeting the increasing infrastructure demands. In relation to Objective 3 of the study, the empirical findings broadly reveal that some of the institutional arrangements in place in ULM have failed to address the infrastructure backlogs facing this municipality.

Attesting to this, DCOGTA (2014:47) documents that the challenges of institutional capacity facing rural local municipalities undermines the sustainability of infrastructure projects while contributing to inadequate responses to service delivery requirements. In keeping up with the Back-to-Basics approach by DCOGTA, local municipalities should foster strong collaborative relationships to improve the standard of service delivery to rural communities.

The empirical findings of this study concur with the literature that the institutional arrangements in place do not serve its purpose if the municipality lacks the financial capacity to respond to infrastructure requirements in line with the institutional authority. Adding credibility to this, Sithole and Mathonsi (2015:17) maintain that the lack of infrastructure in rural areas result from the institutional capacity of rural local municipalities and contributes to the huge backlogs of ICT, roads and transport that minimise accessibility to health and education services.

5.3.2.4 Service Delivery Challenges

According to Du Plessis (2014:1109), rural areas are characterised by remoteness and underdevelopment; therefore, schools in these areas remain disadvantaged and marginalised. The Constitution of RSA (1996) provides that all South African learners should have access to the same quality of learning and teaching as well as similar educational opportunities. However, the socio-economic realities facing rural areas place the learners in these communities at a disadvantage and has a direct influence on the quality of education acquired by rural learners.

(a) Poor infrastructure delivery

The service delivery challenges facing ULM result mainly from poor access to infrastructure. The municipality cannot financially meet its infrastructure demands as a result of insufficient

revenue to implement IDP projects (ULM IDP, 2018/2019–2020/2021:68). In addition, there is no Operations and Maintenance Plan for access roads, and public transport infrastructure is fragmented and inadequate. There are no libraries in the area, and there is poor ICT infrastructure. Subsequently, the prevailing poor infrastructure supply contributes to limited access to schools, low pass rates and the closing down of schools.

One participant expressed:

> *Public transport is highly fragmented and scarce as taxi ranks are not linked to one another. (**ULMMGR3**)*

Another participant shared the same sentiments:

> *Learners walk long distances to school because of scarcity of transport and bad road conditions. (**ULMLFG1**)*

Another participant indicated:

> *Learners cannot conduct research for school projects because of the unavailability of libraries. (**ULMLFG3**)*

Another participant remarked:

> *Poor internet connectivity limits learners from accessing Wi-Fi to conduct research. (**ULMLFG1**)*

> *(b) Lack of public consultation*

In line with the Municipal System Act No. 32 of 2000, all municipalities are required to adopt IDPs as tools to plan their future development (eThekwini Municipality, 2014:9). When developing IDPs, it is imperative that municipalities ensure coherence with the national and provincial plans such as the NDP, SDG, and PGDS. Khawula (2016:24) maintains that the IDP is instrumental in addressing service delivery needs since it is based on consultation, delivery and improvement and informed by prevailing and realistic community priorities. However, some of the participants felt that the municipality lacks consultation with the community in prioritising infrastructure requirements.

One of the participants established that:

There is no consultation with the community when identifying rural infrastructure that needs to be prioritised. (ULMLFG1)

(c) Existing policy gaps

Gnade (2013:6) established that when designing and prioritizing basic infrastructure to address inequality, policy makers should consider the unique needs of rural as opposed to urban areas. In this context, such awareness could inform policy decisions on how and where to direct potential infrastructure investment. The author suggests that such awareness could warrant the direction of basic infrastructure delivery to the most deprived segments of the community.

One participant proclaimed that:

There is a gap in policy development to address existing rural infrastructure challenges. The policy gaps hinder the implementation as per planning in line with the IDP. (ULMMGR1)

(d) Budgetary constraints

Following the adoption of the NDP in 2012, Cabinet decided in 2013 that the 2014–2019 MTSF should form the groundwork of the NDP to align the plans of local, provincial and national spheres of government (MTSF 2014–2019:5). The aim was to prioritise government programmes and development initiatives in line with the governing party's election manifesto. Listed among the priorities of the 2014–2019 electoral mandate are rural development, ensuring access to adequate human settlements and quality basic services, and improving the quality of and expanding access to basic education. However, despite the alignment of the arrangements and systems of the municipality with those of provincial and national government, the financial capacity and viability of ULM hinders its effective implementation.

One participant lamented:

Budget allocation is not sufficient, and the IDP depends on budget availability for implementation. (ULMWC1)

Another participant added:

> *Budget allocation is too limited to cater for the needs of the growing population. (ULMWC2)*

Another participant pointed out:

> *Umzumbe Local Municipality is characterised by inland areas with sparsely populated households that makes infrastructure connections costly. (ULMWC4)*

> *(e) Project management capacity*

One of the challenges facing local municipalities in South Africa, especially rural local municipalities, is inadequate skills and capacity (Longa, 2018: 47). The authors establish that most local municipalities are overstaffed with poorly trained officials to manage infrastructure and other significant projects.

One participant expressed that:

> *Our municipality uses cheap material such as quarry instead of concrete/tar when building roads and bridges. (ULMLFG1)*

Sharing the same sentiments, another participant reflected:

> *Erecting of low lying bridges instead of strong high volume bridges.(ULMLFG4)*

Another participant added that:

> *Our municipality has a tendency of starting a new project before the existing one is completed. (ULMLFG3)*

Another participant expressed that:

> *There is no post completion inspection conducted to monitor the success of completed projects. (ULMLFG2)*

Another participant concluded that:

> *Our municipality has a problem of recruiting staff without the necessary skills for specific jobs. (ULMLFG3)*

(f) Dispersed households

Umzumbe Local Municipality is predominantly rural and characterised by scattered settlement patterns that result in the costly connections of water, energy and ICT infrastructure (ULM IDP, 20182019-20192020: 47). Adding credibility to this, one of the participants pronounced that:

> *Umzumbe Local Municipality is characterised by inland areas with sparsely populated households, which makes infrastructure connections costly***. (ULMWC4).**

(g) High poverty rate

In most developing countries, such as South Africa, living in rural areas increases a person's likelihood of suffering from deprivation and poverty (Suttie, 2014:1). Therefore, there is an urgent need to reinforce rural-urban inequalities by tackling the factors influencing the under-investment in rural infrastructure. In support of this literature finding, one participant said:

> *The existing infrastructure such as water stand pipes has been vandalised as a result of the high rate of poverty in the area***. (ULMHOD4)**

The qualitative findings relating to service delivery challenges facing ULM are presented in the matrix below.

Matrix 5-4: Service delivery challenges

Inductive Categories	Participant Responses	Source
Poor infrastructure delivery	*Public transport is highly fragmented and scarce as taxi ranks are not linked to one another.*	ULMMGR3
	Learners walk long distances to school.	ULMLFG1
	Learners cannot conduct research for school projects because of unavailability of libraries.	ULMLFG3
	Bridges overflow and collapse, affecting accessibility to schools.	ULMLFG2
	Poor internet connectivity limits learners from accessing Wi-Fi to conduct research.	ULMLFG1
	No streetlights, thus not safe to walk in the dark to meet for group discussions.	ULMLGF4
Lack of public consultation	*No consultation with the community when identifying rural infrastructure needs to be prioritised.*	ULMLFG1
Existing policy gaps	*There is a gap in policy development to address existing rural infrastructure challenges.* *The policy gaps hinder the implementation as per planning in line with the IDP.*	ULMMGR1
Budgetary constraints	*Budget allocation not sufficient and the IDP depends on budget availability for implementation.*	ULMWC1
	Budget allocation is too limited to cater for the needs of the growing population.	ULMWC2
	There is no revenue base as the community is indigent.	ULMWC4
	The dispersed households make energy, water and road connections costly.	ULMWC3
Project management incapacity	*Use of cheap material such as quarry instead of concrete/tar when building roads and bridges.*	ULMLFG1
	Erecting of low lying bridges instead of strong high volume bridges.	ULMLFG4
	Starting a new project before the existing one is completed.	ULMLFG3
	No post completion inspection to monitor the success of completed projects.	ULMLFG2
	Employment of staff without the necessary skills for specific jobs.	ULMLFG3
Dispersed households	*ULM is characterised by inland areas with sparsely populated households, which makes infrastructure connections costly.*	ULMWC4
High poverty rate	*The existing infrastructure such as water stand pipes has been vandalised as a result of the high rate of poverty in the area.*	ULMHOD4

The findings of the study indicated that the capacity constraints and dispersed settlements contribute to the poor delivery of infrastructure, which results in the poor standards of education and recreation services. Furthermore, there is an urgent need for equitable allocation of resources for the overall policy objectives to be attained in a sustainable manner. In addition, minimal revenue and insufficient revenue make the implementation of some projects listed in the IDP unachievable because of the backlogs of infrastructure requirements, such as learner transport.

In relation to Objective 4 of the study that sought to ascertain what challenges exist in ULM that hinder the provision of rural infrastructure in advancing education for schools within ULM, empirical data revealed that lack of public consultation, budgetary constraints, project management incapacity, dispersed households and high poverty rates are the main causal factors that impede rural infrastructure development and quality education in ULM. From these findings, it may be presumed that the municipality does not consult with the community in its infrastructure development initiatives. It is also evident from the empirical findings of the study that rural infrastructure development cannot be viable in isolation from project management and the financial capacity of the municipality.

Furthermore, in the case of ULM, the municipality is characterised by a high poverty rate contributing to a low revenue base as a result of non-payment of taxes because of an indigent population. All of these incapacities facing ULM, therefore, deem the municipality unable to meet the increasing infrastructure backlogs, namely energy, water and ICT connections, that are evidently costly, based on the dispersed settlements predominant in this municipality.

5.3.2.5 Future Policy Planning

Rural infrastructure development is a complex and multifunctional obligation for local municipalities that encompasses a set of organisations and institutions working towards the common goal of satisfying the basic needs of the community. Manggat *et al.* (2018:650) highlight that the quality of education, health, housing, roads, transportation and recreation facilities are the key strategic elements through which the capacity of local municipalities to meet the expected level of rural infrastructure development can be determined. Thus, infrastructure development can be instrumental in reducing geographical gaps existing in society, while enhancing political integration (Manggat *et al.,* 2018:650).

(a) Intergovernmental Relations

The principles of cooperative governance and intergovernmental relations acknowledges the need for the local, provincial and national spheres of government to operate in a collaborative manner, while respecting each other's powers and functions (Nzimakwe & Ntshakala, 2015:824). Such collaboration is necessary to reinforce the capacity of local municipalities to deliver rural infrastructure to upscale the quality of education. In support of this, one of the participants suggested that:

> *Partnership between spheres of government is necessary in order to boost capability of local municipalities. (ULMWC1)*

In agreement, another participant added that:

> *Partnership with other spheres of government in order to support each other in addressing infrastructure backlogs. (ULMWC2).*

Another participant expressed that:

> *There is an urgent need for partnership with other organs of state such as leadership of schools. (ULMMGR3)*

> *(b) Clarity of roles, responsibilities and enhanced accountability*

Mees and Driessen (2017:671) define accountability as an interactive governance arrangement that is based on transparency, clear responsibilities and mandates.

One participant proposed that:

> *There is a need to categorise the roles of different organs of state to avoid funds being wasted on duplicated infrastructure delivery projects. (ULMMGR2)*

The same participant further proposed that:

> *Funding needs to be directed to those organs of state that are responsible for the rural infrastructure needs of the community to promote accountability. (ULMMGR2)*

> *(c) Poverty tackling and fundraising strategies*

The high rate of poverty in ULM contributes to the financial unviability of the municipality because the indigent population is unable to pay municipal taxes. Therefore, there is an urgent need for ULM to embark on poverty tackling strategies to augment infrastructure delivery for quality service delivery, including education. One participant recommended that:

> *There is a need for strategies to tackle poverty as it is a contributing factor to the community being indigent and there being no revenue base for the municipality. (ULMMGR3)*

In agreement, another participant suggested that:

*There is a need to promote fundraising by seeking donations from private businesses to boost the limited budget allocation so as to fund the growing infrastructure requirements of ULM as a rural municipality. (**ULMMGR1**)*

(d) Quality standards

Among the principles of governance is the responsibility by local government to provide services that are of acceptable standards to the citizenry. Thus, as the sphere of government that is at the coalface of service delivery, local municipalities have the mandate to deliver infrastructure services that will underpin the availability of quality services, including education.

One of the participants posited:

*There is a need to promote quality assurance of rural infrastructure delivery when choosing material to build roads and bridges, e.g. concrete/tar instead of quarry material for building roads. (**ULMLFG4**)*

(e) Community consultation

Engaging the community in infrastructure delivery is of particular relevance since the community is the sole recipient of basic services (Mees & Driessen, 2017:80). Therefore, the community should be actively involved in the decision making on infrastructure requirements that directly affect them. Consulting the community can be achieved through public hearings and citizen summits as a platform for the community to give advice on the governance arrangements.

One of the participants bemoaned that:

*ULM must not decide on their own but must involve and consult with the community in decision making regarding infrastructure requirements. (**ULMLFG1**)*

(f) Subsidised learner transport

As discussed in Section 5.3.2.1, among the infrastructure constraints facing ULM is the poor supply of roads, bridges and transport. In this regard, the mobility and accessibility of schools for ULM learners is to a certain extent inhibited.

One of the participants proposed that:

*There is a need to consider the provision of subsidised learner transport so that no learners will be marginalised from accessing schools and will arrive at school on time without walking long distances. **(ULMLFG1)***

(g) Monitoring and evaluation

According to Niyivuga, Otara and Tuyishime (2019:1), monitoring and evaluation is a systematic and continuous process of collecting data as a means of assuring and enhancing quality service and standards. From this standpoint, the government as the provider of infrastructure services can determine whether the acceptable standards of service, namely in education, are achieved.

One of the participants pointed out that:

*There is an urgent need for inspection upon the completion of projects to determine whether the desired outcome has been achieved, e.g. by inspecting whether every household has benefitted from the programme**. (ULMLFG2).***

The matrix below indicates the emanating future policy imperatives for ULM.

Matrix 5-5: Future policy planning

Inductive Categories	Participants' Responses	Sources
Intergovernmental relations	*Partnership between spheres of government in order to boost capability of local municipalities.*	ULMWC1
	Partnership with other spheres of government in order to support each other in addressing infrastructure backlogs.	ULMWC2
	Partnership with other organs of state such as leadership of schools.	ULMNGR3
Clarity of roles & responsibilities for enhanced accountability	*There is a need to categorise the roles of different organs of state to avoid funds being wasted on duplicated infrastructure delivery projects.*	ULMMGR2
	Funding needs to be directed to those organs of state that are responsible for the rural infrastructure needs of the community to promote accountability.	ULMMGR2
Poverty tackling & fundraising strategies	*There is a need for strategies to tackle poverty as it is a contributing factor to the community being indigent and there being no revenue base for the municipality.*	ULMMGR3
	There is a need to promote fundraising by seeking donations from private businesses to boost the limited budget allocation so as to fund the growing infrastructure requirements of ULM as a rural municipality.	ULMMGR1
Quality standards	*There is a need to promote quality assurance of rural infrastructure delivery when choosing material to build roads and bridges, e.g. concrete/tar instead of quarry material for building roads.*	ULMLFG4
Community consultation	*ULM must not decide on their own but must involve and consult with the community in decision making regarding infrastructure requirements.*	ULMLFG1
Learner transport	*There is a need to consider the provision of subsidised learner transport so that no learners will be marginalised from accessing schools and will arrive at school on time without walking long distances.*	ULMLFG1
Monitoring and evaluation	*There is an urgent need for inspection upon the completion of projects to determine whether the desired outcome has been achieved, e.g. by inspecting whether every household has benefitted from the programme.*	ULMLFG2

The rural infrastructure development role of ULM is informed by the IDP, which is guided by national, provincial and district policy frameworks as well as planning principles and legislation. The policies include the SDGs, NDP, MTSF, State of the Nation Address, Back-to-Basics Programme, PGDS, and the NDP. However, the empirical findings of this study reveal that insufficient budget and lack of community consultation impedes the rollout of pertinent rural infrastructure development projects and programmes in line with the IDP.

Subsequently, the resource deficiencies result in the quality standards in infrastructure delivery being compromised. Furthermore, the empirical findings show the urgent need for improved collaboration between the local, provincial and national spheres of government. In addition, the need for clarity of roles to improve accountability and enhanced monitoring and evaluation of infrastructure development projects is recommended in this study. The recommendations from empirical findings further extend to the need for poverty tackling strategies, fundraising as well as subsidised learner transport to eliminate the marginalisation of rural learners in accessing quality education.

To this end, ULM is faced with massive backlogs of infrastructure and insufficient revenue to implement IDP projects. In addition, the Infrastructure Master Plan that was adopted by ULM is outdated while the Spatial Development Framework that has been adopted and developed by the Council needs to be reviewed and aligned with the IDP and other plans of the municipality. Adding credibility to this, Van Der Waldt (2015:20) maintains that the developmental service delivery role of local government depends on its integration with the provincial and national spheres of government. This integration can be achieved by aligning the IDP with the PGDS and other development plans. In this context, the review of the Infrastructure Master Plan and the Spatial Development Framework together with alignment of the IDP with other development initiatives undertaken by ULM could be instrumental in eliminating the marginalisation and accessibility constraints facing ULM learners in accessing quality education as a result of rural infrastructure inadequacies.

5.4 Chapter Summary

This chapter presented the findings of the study. The research results were arranged thematically using matrices. The findings were presented in line with the objectives that were set for the study. In this context, the main thrust of the findings reflects how the delivery of rural infrastructure affects the quality of education in schools within ULM. It is important to note from the findings of the study that there is an urgent need for the integration of fiscal and

other policies and plans across the three spheres of government to complement the rural infrastructure delivery mandates to upscale the quality of education. The chapter further presented the constraints hindering the delivering of rural infrastructure to promote accessibility to quality services, mainly basic education. Lastly, the chapter presented the recommendations for future planning on rural infrastructure and quality education that emerged from the qualitative data.

CHAPTER 6

SUMMARY OF FINDINGS, GENERAL CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The aim of the study was to determine how the delivery of rural infrastructure affects the quality of education in schools within ULM. This chapter provides an overview of research questions and objectives and a summary of all chapters. Furthermore, this chapter presents the summary of findings and draw conclusions from the findings in relation to the objectives of the study. Recommendations and suggestions for future research are also presented.

6.2 Summary of Research Objectives and Research Questions

In light of the prevailing poor education outcomes, social inequalities and the marginalisation facing numerous communities, the study investigated the scale on which rural infrastructure is delivered in order to uplift the quality of education in ULM. Subsequently, the research objectives were designed as presented in Chapter 1 of this dissertation. Table 6-1 gives an overview of research questions and objectives.

Table 6-1: Research objectives and research questions

Research Objectives	Research Questions
1. To determine how the delivery of rural infrastructure affects the quality of education in schools within ULM.	1. To what extent has ULM implemented the national development policies to promote rural infrastructure development to advance education?
2. To evaluate the extent to which national development policies on rural infrastructure development have been implemented in ULM to improve quality education in schools.	2. Which national development policies have been used by ULM to advance rural infrastructure to improve the standard of education in schools within ULM?
3. To identify the institutional arrangements that ULM has put in place to advance the rural infrastructure required to improve the quality of education.	3. What institutional arrangements have been adopted by ULM to advance rural infrastructure to improve the quality of education in schools within ULM?
4. To assess the availability of rural infrastructure to advance education in schools within ULM.	4. What are the challenges in providing rural infrastructure to advance education in schools within ULM?
5. To make recommendations for the policy planning and implementation needed to advance rural infrastructure and quality education in ULM schools.	5. How can rural infrastructure be advanced to improve the quality of education in ULM schools?

6.3 Summary of Chapters

This section illustrates the outcome of each chapter in relation to the research objectives and research questions summarised in Table 6-1.

Chapter 1: This chapter provided an overview of the study. The chapter argued that the supply of rural infrastructure, namely roads, energy, water, telecommunications, sanitation, libraries and recreation facilities have a causal effect on the quality of education offered in schools. The problem statement in this chapter accentuated constraints linked to rural infrastructure delivery gaps existing between communities that contribute to poor quality of service delivery, particularly in education. In an attempt to investigate the existing gap, the research objectives and questions were designed. The research design, research sampling, data collection methods and ethical considerations for the study were also discussed.

Chapter 2: This chapter presented the literature review for the study. In this chapter, a regional and global perspective of rural infrastructure and basic education was presented with the intention of assessing the bench marking options that could be adopted by South African municipalities to advance rural infrastructure to upscale the quality of basic education. Furthermore, the chapter provided a situational analysis of rural infrastructure delivery in the context of basic education in ULM. This highlighted the historical and unique characteristics of ULM in relation to meeting its rural infrastructure delivery requirements and its maintenance to improve education quality. Overall, the literature was presented in line with the research problem, which revealed social exclusion, marginalisation, financial viability and vast infrastructure backlogs as prevalent in ULM. The discussion in this chapter explains why the Inclusive Rural Development Theory was adopted as groundwork for this study.

Chapter 3: This chapter presented the theoretical framework that formed the foundation of the study. The theoretical framework illustrated a logical explanation of the relationship that exists between models, concepts and other variables.

Chapter 4: This chapter presented the research design and methods adopted to collect data for the study.

Chapter 5: This chapter presented the findings of the study and analysis and discussion of the results. The collected data were presented and analysed according to themes that emerged from the empirical investigation and were aligned with the objectives of the study.

Chapter 6: This chapter presents a summary of the research objectives and questions designed for the study as discussed in Chapter 1. The outline of each chapter of the study is presented. The recommendations and suggestions for future research in the interest of rural infrastructure development and quality basic education are presented in this final chapter of the dissertation.

6.4 Main Research Findings and Conclusions

The literature and empirical findings of this study both divulge that rural infrastructure is a prerequisite for the improvement of the quality of services, particularly education, in developing counties to promote inclusive development in society. Considering the role of rural infrastructure in promoting inclusive development, it is recommended that local government authorities focus on adopting funding mechanisms that are pertinent for rural communities in order for such planning and implementation to be context specific to meet the unique needs of rural communities.

From a South African perspective, the local municipalities are solely responsible for the development of infrastructure. However, this sphere of government is dependent on the provincial and national spheres of government for funding mechanisms. Subsequently, the findings of this study revealed the incapacity of ULM to provide and maintain the rural infrastructure to improve the quality of service delivery as linked to budgetary constraints facing this municipality.

The comprehensive findings of the study are presented in the sections below. The empirical findings are organised according to themes that emerged from the conducted enquiry. These are further aligned with the research objectives and questions as set out in Chapter 1.

6.4.1 Research Objective 1 and Research Question 1

- **Research Objective 1:** To determine how the delivery of rural infrastructure affects the quality of education in schools within ULM.
- **Research Question 1:** To what extent has ULM implemented the national development policies to promote rural infrastructure development to advance education?

6.4.1.1 Finding: Infrastructure Supply

Local government at the local, provincial, and national spheres is mandated by the Constitution of the RSA (1996) to ensure the provision of basic services, such as infrastructure, to communities in a sustainable and inclusive manner. The service delivery responsibilities of local municipalities include the provision of infrastructure such water, energy, sanitation, telecommunications, roads, housing and recreation facilities. Furthermore, infrastructure is to a large extent one of the dominant elements that ensures the satisfaction of basic human needs, particularly in education, health and recreation. However, the adequate provision of infrastructure in rural areas is mitigated by the prevalence of dispersed settlements, mainly due to high costs resulting in non-sustainability of infrastructure projects.

The empirical findings of this study revealed that the bad condition of roads in ULM limits access to schools. Against this background, most learners drop out of school as a result of the long distances they have to walk to school. In addition, the lack of libraries in ULM makes it difficult for educators to impart essential knowledge to learners through research projects. Therefore, an adequate supply of rural infrastructure in ULM would contribute to unlocking the rural infrastructure constraints faced by rural learners in accessing quality basic education.

6.4.1.2 Conclusion

It can be concluded from the findings of this study that rural local municipalities are not capacitated to meet the increasing infrastructure backlogs to advance the quality of education. Thus, the poor supply of rural infrastructure in local municipalities, particularly in ULM, affirms that the provincial and national spheres of government should devise alternative techniques to enhance rural infrastructure development in local municipalities in order to upscale the quality of education for rural learners.

6.4.2 Research Objective 2 and Research Question 2

- **Research Objective 2:** To evaluate the extent to which national development policies on rural infrastructure development have been implemented in ULM to improve quality education in schools.

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- **Research Question 2:** Which national development policies have been used by ULM to advance rural infrastructure to improve the standard of education in schools within ULM?

6.4.2.1 Finding: Rural Infrastructure Development Initiatives

The National Development Plan calls for improved access to basic services, quality education, recreation facilities and health care. In this context, the emphasis is on infrastructure development programmes that contribute to spatially, socially and economically integrated rural areas (MTSF 2014–2019:13). Thus, the development of infrastructure to support livelihoods is imperative for improving the quality of human life in fulfilment of Outcome 7. This outcome envisions South African rural communities that enjoy good quality education, transport, health care and other basic services.

6.4.2.2 Conclusion

Nonetheless, despite several attempts by local municipalities to boost infrastructure inadequacies since 1994, the inadequacies in social and economic infrastructure still have a significant impact on the quality of basic services, particularly health, education and recreation (South African Presidency, 2016:16). Furthermore, these infrastructure inadequacies have been most visible in rural spaces. The empirical findings of this study reveal that none of the initiatives used by ULM have succeeded in augmenting rural infrastructure development to improve the quality of education in this municipality.

6.4.3 Research Objective 3 and Research Question 3

- **Research Objective 3:** To identify the institutional arrangements that ULM has put in place to advance the rural infrastructure required to improve the quality of education.
- **Research Question 3:** What institutional arrangements have been adopted by ULM to advance rural infrastructure to improve the quality of education in schools within ULM?

6.4.3.1 Finding: Institutional Arrangements

Sithole and Mathonsi (2015:17) maintain that the lack rural infrastructure in rural areas results from the institutional incapacity of rural local municipalities and is contributory to the backlogs in ICT, roads and transport that minimise accessibility to education and health

services. This argument concurs with the empirical findings of the study, which found that the Infrastructure Master Plan that is in place as a comprehensive plan to improve access to schools and other inland areas of ULM, is currently outdated. However, the empirical findings highlight the Local Area Plan as a platform adopted by ULM to identify development nodes in order to develop frameworks to determine the type of infrastructure required to develop the areas within ULM. This includes the Operation Sukuma Sakhe, service delivery war-rooms, public participation and sanitation and waste services as initiatives adopted by ULM in response to rural infrastructure requirements. Regrettably, the subsidised learner transport programme that was proposed initially proposed was never implemented.

6.4.3.2 Conclusion

The capability of local municipalities to promote effective rural infrastructure development for enhanced quality of education is not only dependent on the institutional arrangements but also on the capacity of local government to respond to the increasing demands for rural infrastructure facing ULM as a result of the increasing population. Henceforth, there is an urgent need for the financial feasibility of the municipality to finance the adopted mandate in response to rural infrastructure delivery to improve the access to quality education.

6.4.4 Research Objective 4 and Research Question 4

- **Research Objective 4:** To assess the availability of rural infrastructure to advance education in schools within ULM.
- **Research Question 4:** What are the challenges in providing rural infrastructure to advance education in schools within ULM?

6.4.4.1 Finding: Service Delivery Challenges

Even though the Constitution of the RSA (1996) discourages inequality in the provision of services to the community, the demarcation of urban and rural areas still display inequalities in terms of service provision (Mamabolo, 2016:28). These inequalities have a detrimental effect on accessibility for rural inhabitants, particularly rural learners. The main challenge is that rural local municipalities lack funding for the provision and maintenance of rural infrastructure. Furthermore, there is a perceived degree of confusion with regards to legislation and the system of cooperative governance for local municipalities.

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The empirical findings divulge that ULM is predominantly rural and is dependent on the MIG to provide basic services to the populace. In addition, the municipality is facing huge infrastructure backlogs while struggling to keep up with deteriorating infrastructure, its affordability and its maintenance.

6.4.4.2 Conclusion

The infrastructural constraints prevailing in ULM impact negatively on the quality of service delivery in education, health, energy, recreation and telecommunications. From the empirical findings of the study, it can be concluded that the vast service delivery constraints facing ULM are exacerbated mainly by budgetary constraints, dispersed households, policy gaps, poor project management capacity, lack of public consultation, as well the high rate of poverty facing the community of ULM.

6.4.5 Research Objective 5 and Research Question 5

- **Research Objective 5:** To make recommendations for the policy planning and implementation needed to advance rural infrastructure and quality education in ULM schools.
- **Research Question 5:** How can rural infrastructure be advanced to improve the quality of education in ULM schools?

6.4.5.1 Finding: Future Policy Planning

Rural infrastructure, both economic and social, remains a critical pillar for local government to reduce marginalisation and inequality in society. It is evident that the development of rural infrastructure contribute significantly to the quality of rural development. In the process, the evolution of rural infrastructure initiatives undertaken by local government in many ways contributes to the quality of basic services and quality of life, while having a significant impact on inclusive rural development.

Despite enormous interventions adopted by ULM in its quest to improve standards of basic services, particularly in education, this municipality still suffers rural infrastructure inadequacies as a result of limited revenue to meet the increasing infrastructure demands. Furthermore, the rural infrastructure inadequacies facing ULM are exacerbated by the dispersed households and poor accessibility, making rural infrastructure connections costly.

6.4.5.2 Conclusion

Overall, the scale at which rural infrastructure is delivered to improve the quality of education in South African rural municipalities is still a hurdle in inclusive rural development and rural transformation becoming a reality.

The detailed recommendations of the study are presented in the next section.

6.5 Overarching Recommendations of the Study

The recommendations in this chapter are anticipated to benefit all South African local municipalities in their future policy planning for rural infrastructure in pursuit of transforming the quality of education. As such, constructed from the research findings relating to rural infrastructure and quality education drawn from ULM, the study offers the following recommendations.

6.5.1 Recommendation 1: Intergovernmental Relations

Despite local municipalities being funded by the MIG, the rural local municipalities remain unable to meet all rural infrastructure demands because of high maintenance costs and a growing population. In this regard, the review of MIG conducted by DCOGTA (2015:3) revealed that even though the MIG has changed the context of service delivery, there is an urgent need for government to consider increasing acknowledgement of municipal differences in terms of spatial and performance realities. The findings of the study showed an urgent need for enhanced partnership between the local, provincial and national spheres of government in the rural infrastructure development initiatives to improve education quality. Henceforth, the study recommends improved intergovernmental relations to assist in boosting the potential and capacity of local municipalities to fund and address the increasing rural infrastructure demands.

6.5.2 Recommendation 2: Clarity of Roles and Responsibilities for Enhanced Accountability

Local government as the sphere of government that is closest to the people is responsible for service delivery. In terms of Section 152(1) of the Constitution (RSA, 1996) local municipalities have a legislative mandate for the equitable and sustainable provision of basic services to the citizenry. Amongst these constitutional obligations of local municipalities is

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providing a democratic and accountable government for local communities. The findings of the study revealed the lack of clarity of roles resulting in poor accountability for local municipalities. Therefore, the study recommends that government reviews the allocation of roles to different organs of state to prevent funds being wasted on duplicated infrastructure projects. This initiative would in turn improve accountability on government expenditure since funding will be directed solely to those organs of state responsible for rural infrastructure projects.

6.5.3 Recommendation 3: Poverty Tackling and Fundraising Strategies

The high rate of poverty and unemployment in ULM means that a large proportion of the community is indigent. Thus, this municipality is unable to collect revenue to fund the provision of rural infrastructure and other basic services to the populace. The findings of the study pointed to poverty as a contributing factor to the financial incapacity of rural local municipalities to meet rural infrastructure requirements. Therefore, the study recommends that municipalities embrace poverty tackling strategies to address the high rate of unemployment. Such strategies should be reinforced with fundraising initiatives from the business sector in a quest to raise funding to supplement the limited revenue to fund infrastructure requirements.

6.5.4 Recommendation 4: Quality Standards in Local Government

The findings of the study revealed that the material used to build roads and bridges is not of good quality and therefore does not last long. Thus, the study recommends that the material used to build roads and bridges should meet reasonable quality standards in order to last. In essence, there is an urgent need to promote quality assurance in rural infrastructure delivery when choosing material for sustainable infrastructure projects.

6.5.5 Recommendation 5: Community Consultation in Local Government

In pursuit of responding to the needs of the community, Municipal Councils should always use the platform of Councillors and Ward Committees to identify needs in order to ensure that service delivery is improved (Khawula, 2016:138). The municipality will only know the needs and problems of the community when their needs are identified through these structures from the community on behalf of the municipality. The findings of the study revealed that even though the community consultation platforms are in place, the community

is not involved and consulted in decision making regarding rural infrastructure requirements. The study therefore recommends that local municipalities promote the use of the existing community consultation platforms to identify and gather the realistic rural infrastructure prerequisites that will address the plight of rural learners to access quality education.

6.5.6 Recommendation 6: Subsidised Learner Transport Policy

Du Plessis (2014:1109) establishes that rural schools are mostly located on the periphery and are difficult to reach because of infrastructure challenges such as roads and transport. Thus, it is the social disparities facing rural areas that limit the interaction between schools and the community. Furthermore, the social disparities facing rural municipalities in turn limit the opportunity for equality and quality outcomes in education.

The empirical findings of the study revealed that learners have to walk long distances to reach schools, which results in learning time being lost since they arrive late for classes. Hereafter, this study recommends that local municipalities reconsider the introduction of a subsidised learner transport policy to ensure that none of the rural learners are prevented from accessing schools. This would assist in ensuring that learning time is not wasted while walking to school and improve the quality outcomes of education.

6.5.7 Recommendation 7: Monitoring and Evaluation in Local Government

The findings of the study discovered a lack of monitoring and evaluation as a critical cause for the waste of limited revenue on unsuccessful rural infrastructure projects. It became evident from the findings that upon completion of infrastructure projects, post-project inspections are not conducted to certify the feasibility of projects. This study, therefore, recommends that local government should introduce policies that regulate monitoring and evaluation practices in local municipalities to promote feedback mechanisms that are aligned with their performance indicators and targets.

6.6 Significance of the Findings

The findings presented in this study indicate that the provision of rural infrastructure in remote rural areas is financially unviable. This results in the marginalisation of rural communities with limited accessibility and mobility constraints that prevents them from accessing quality basic services, particularly education. The findings of the study point to institutional capacity and limited revenue as challenging initiatives in a dynamic and

dispersed rural context. The study further revealed that future policy development should be aligned to the geographic localities and unique needs of rural communities in order for rural infrastructure development to respond positively to the complexities of unique rural circumstances.

In line with the Inclusive Rural Development theory, for rural development to be inclusive it must embrace the economic, social and political dimensions in its approach. In view of this, the economic dimension of the Inclusive Rural Development theory highlights the capacity and opportunities to participate in the growth process. Equally, the political dimension of this theory highlights the capacity and opportunities to participate in the political process whilst the social dimension of the theory emphasizes inclusive social development.

In this context, it is evident from the empirical findings that based on the disparities in the economic, social and political perspective of rural infrastructure development, the marginalisation and inequality of the ULM learners is inevitable. Therefore, it is impossible for rural development to be attainable if it does not embrace the economic, social and political dimensions as premised in the Inclusive Rural Development theory. In essence, there is an urgent need for the integration of appropriate legislation, supported with adequate fiscal arrangements and opportunity for the community to participate in the political and growth process, if rural development is to surface as inclusive.

6.7 Suggestions for Future Research

Drawing from the landscape of this study, this enquiry comprehensively examined the delivery of rural infrastructure in upscaling the quality of education, specifically in ULM. However, how the results of this study apply to other municipalities remains to be tested. Thus, it is recommended that the dynamics of this research be explored in future research on a broader scale in order to thoroughly explore the range of policies that could systematically progress rural infrastructure to promote quality education. Such research should focus on monitoring and evaluation as a tool to demonstrate feedback on rural infrastructure development projects. In addition, future research should examine possible fundraising strategies that could help boost the capacity of rural local municipalities to finance the increasing infrastructure demands.

6.8 Chapter Summary

The enquiry was intended to explore the causal effect of rural infrastructure on the quality of education, with particular reference to ULM. Overall, this chapter presented a summary of the research objectives and research questions designed to direct this study. Furthermore, the chapter established how the methodological approach and data presentation enhanced the conclusions and recommendations on developing rural infrastructure in local government to elevate education quality. The final analysis of the study concluded that the recommendations made could contribute to stimulating rural infrastructure development for local municipalities in order to improve service delivery, particularly education.

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Annexure 1: KZN DoE Permission to conduct the study in ULM schools

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education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Phindile Duma   Tel: 033 392 1063   Ref.:2/4/8/1549

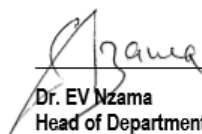Miss S Zondi
PO Box 3650
Westville
3630

Dear Miss Zondi

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"ADVANCING RURAL INFRASTRUCTURE FOR QUALITY EDUCATION: PERSPECTIVES OF UMZUMBE LOCAL MUNICIPALITY, KWAZULU-NATAL"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 01 June 2018 to 01 October 2020.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

UGu District

Dr. EV Nzama
Head of Department: Education
Date: 19 June 2018

Annexure 2: District Managers' Permission to conduct the study

education

Department:
Education
PROVINCE OF KWAZULU-NATAL

| Enquiries: Ngcobo B.M | 0822982434 | Date: 01/10/2018 |

To:

THE PRINCIPAL: KWAFICA HIGH SCHOOL
BONGUZWANE HIGH SCHOOL
SIBONGIMFUNDO HIGH SCHOOL

SUBJECT: PERMISSION TO GRANT RESEARCH

Samkelisiwe Zondi is a research student from UKZN and is hereby granted permission to conduct research in your school. I have therefore informed her to formalize an appointment with the principals of the above mentioned schools so that she will give details of her intended research.

This is also our last quarter and we are now focused on matric exams, hence my request to you is that her activities must not in any way interfere with teaching and learning.

Yours Sincerely
Ngcobo B.M.

PROVINCE OF KWAZULU - NATAL
UMNYANGO WEMFUNDO
DEPARTMENT OF EDUCATION
DEPARTEMENT VAN ONDERWYS

2018 -10- 0 1

ISIKHWAMA SEPOSI
P.O. BOX / POSBUS   133
HIGHFLATS, 3306

EMZUMBE CMC

...Championing Quality Education - Creating and Securing a Brighter Future

KWAZULU-NATAL DEPARTMENT OF EDUCATION : U G U   D I S T R I C T
Postal Address: Private Bag X860 • Port Shepstone • 4240 • Republic of South Africa
Physical Address: 46 Aiken Street • Port Shepstone • 4240
Tel.: +27 39 688 8680 • Fax.: 0866980653• Email: ronald.mark@kzndoe.gov.za •Web:www.kzneducation.gov.za
Facebook: KZNDOE....Twitter: @DBE_KZN....Instagram: kzn_education....Youtube:kzndoe

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Enquiries:	K P Reddy	Reference:	SCOTTBURGH CMC	Date:	10/10/2018
Imbuzo:	0824603957	Inkomba:	UMDONI CIRCUIT	Usuku:	
Navrae:	kpr@telkomsa.net	Verwysing:		Datum:	
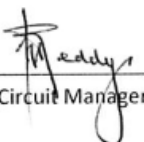
For Att: Ms S P Zondi

REQUEST TO CONDUCT RESEARCH – ADVANCING RURAL INFRASTRUCTURE FOR QUALITY EDUCATION

Permission is hereby granted to conduct research [as a student of University of KZN] in Luthuli High School which is situated in the Umzumbe Local Municipality. This permission is subject to the conditions enunciated by the Head of Department – Education as per his comminique to you.

I wish you luck in your studies.

Regards,

K P Reddy [Circuit Manager]

Have A Wonderful Day

PROVINCE OF KWAZULU - NATAL
UMNYANGO WEMFUNDO
DEPARTMENT OF EDUCATION
DEPARTEMENT VAN ONDERWYS

2018 -10- 1 0

ISIKHWAMA SEPOSI
PRIVATE BAG / PRIVAAT SAK   X0515
UMZINTO

SCOTTBURGH CMC

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UMZUMBE MUNICIPALITY
UMASIPALA WASEMZUMBE

C/o P.O. Box 561
HIBBERDENE
4220
umzumbe@umzumbe.gov.za

Tel: c/o 039 972 0005
Fax: c/o 039 972 0099
E-mail:

OFFICE OF THE MUNICIPAL MANAGER

Umzumbe
MUNICIPALITY

For attention: Samukelisiwe Purity Zondi
Student Number: 215031265

Dear Ms Zondi

RE: GRANTING OF PERMISSION TO CONDUCT RESEARCH AT UMZUMBE LOCAL MUNICIPALITY

This has reference to your letter dated 11 October 2017 in which you were seeking permission to do research at Umzumbe Local Municipality.

This serves to inform you that Umzumbe Local Municipality Management in partnership with the Infrastructure Department have considered your request and have agreed to grant you authority to conduct research on the subject "Advancing Rural Infrastructure and Quality Education : Perspectives of Umzumbe Local Municipality". You are allowed to use Umzumbe Local Municipality as your case study and we assure you of our cooperation as Umzumbe Municipality in making you achieve your academic goals.

In return, we hope that you will share the results and recommendations of your research with the Municipality for consideration. You are further reminded to take serious account of ethics when engaging in this research.

It has been agreed that you are to liaise directly with the Head of Infrastructure Department, should you require any assistance from our line departments in Umzumbe Municipality.

Ms NC Gijima
Municipal Manager
Umzumbe Local Municipality

Annexure 4: Ethical Clearance Letter

UNIVERSITY OF ™
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

09 January 2018

Ms Samukelisiwe Zondi (215031265)
School of Management, IT & Governance
Westville Campus

Dear Ms Zondi,

Protocol reference number: HSS/1267/018M
Project title: Advancing rural infrastructure for quality education: Perspectives of Umzumbe Local Municipality, KwaZulu-Natal Province

Approval Notification – Expedited Approval

In response to your application dated 22 August 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

....
Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Dr Bongani R Qwabe
cc Academic Leader Research: Professor Isabel Martins
cc School Administrator: Ms Angela Pearce

Humanities & Social Sciences Research Ethics Committee
Professor Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 Facsimile: +27 (0) 31 260 4609 Email: ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE
Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

Annexure 5: Interview schedule for school personnel

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Researcher: Miss Samukelisiwe Purity Zondi: 0723827448
Supervisor: Dr BR Qwabe: (031) 260 7490
Research Office: Ms M Snyman: (031) 260 8350

SECTION A: BIOGRAPHICAL DETAILS

POSITION/DESIGNATION: --
DEPARTMENT: --
WARD: --
PROVINCE: --

SECTION B: ROLE AND RESPONSIBILITY
1. What is your role in your current position in your school?
2. How long have you been in this position?

SECTION C: INFRASTRUCTURE DELIVERY AND QUALITY EDUCATION
3. What is the state of rural infrastructure in your municipal area?
4. How does the delivery of rural infrastructure in your municipal area affect the access and quality of education?

SECTION D: AVAILABILITY AND IMPACT OF RURAL INFRASTRUCTURE
5. What infrastructure challenges do you know of that your municipal area is facing in   improving access to quality education?
6. What types of infrastructure requirements do you think are essential for improving education accessibility and quality in your municipal area?

SECTION E: INSTITUTIONAL ARRANGEMENTS FOR INFRASTRUCTURE
7. What are the infrastructure initiatives that have been adopted by your local municipality in promoting access to quality education?
8. To what extent have any of these initiatives contributed in advancing access and the quality of education?

SECTION G: POLICY PLANNING
9. What proposals can you suggest to the municipality as its future initiatives to advance rural infrastructure in order to improve access and the quality of education?

THANK YOU FOR YOU COOPERATION AND PARTICIPATION!

COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Researcher: Miss Samukelisiwe Purity Zondi: 0723827448
Supervisor: Dr BR Qwabe: (031) 260 7490
Research Office: Ms M Snyman: (031) 260 8350

SECTION A: BIOGRAPHIC DETAILS

POSITION/DESIGNATION: --
DEPARTMENT: --
WARD: --
PROVINCE: --

SECTION B: ROLE AND RESPONSIBILITY
1. What is your current position in Umzumbe Local Municipality?
2. How long have you been in this position?

SECTION C: INFRASTRUCTURE DELIVERY AND QUALITY EDUCATION
3. What is the state of rural infrastructure in this municipal area?
4. How does the delivery of rural infrastructure affect the quality and access to education in this municipal area?

SECTION D: INSTITUTIONAL ARRANGEMENTS FOR INFRASTRUCTURE
5. What are the municipal infrastructure programs and projects that have been adopted by the municipality in promoting rural infrastructure development?
6. To what extent have any of these programs contributed in improving the quality education?

SECTION E: NATIONAL DEVELOPMENT POLICIES IN INFRASTRUCTURE
7. What policies have been adopted by Umzumbe Municipality in developing infrastructure to improve access and quality of education?
8. Explain how these policies have contributed to the access and quality of education in schools within this municipal area.

SECTION F: AVAILABILITY AND IMPACT OF INFRASTRUCTURE
9. What challenges do you know of, that face your institution in delivering infrastructure to improve education access and quality?
10. How do you think these challenges impact the access and quality of education for schools in this municipal area?
SECTION G: POLICY PLANNING
11. What do you think can be done by the municipality to improve the quality and access to education through the delivery of rural infrastructure?

THANK YOU FOR YOUR COOPERATION AND PARTICIPATION!

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UNIVERSITY OF KWAZULU-NATAL ™

INYUVESI YAKWAZULU-NATALI

COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Researcher: Miss Samukelisiwe Purity Zondi: 0723827448
Supervisor: Dr BR Qwabe: (031) 260 7490
Research Office: Ms M Snyman: (031) 260 8350

SECTION A: BIOGRAPHICAL DETAILS:

GENDER:	Male/Female
AGE:	-------------------------
RACE:	-------------------------
SCHOOL:	-------------------------
WARD:	-------------------------
PROVINCE:	-------------------------

SECTION B: PERIOD OF ATTENDANCE
1. How long have you been in this school?

SECTION C: RURAL INFRASTRUCTURE DELIVERY AND QUALITY EDUCATION
1. How do you view the state of rural infrastructure within Umzumbe Local Municipality?
2. What do you understand about rural infrastructure and quality education?
3. What types of infrastructure requirements are essential to improve access and quality of education in this municipal area?
4. How does the delivery of rural infrastructure affect the quality of education within Umzumbe Local Municipality?

SECTION D: INSTITUTIONAL ARRANGEMENTS FOR INFRASTRUCTURE AND EDUCATION
5. What initiatives have been adopted by Umzumbe Local Municipality in promoting rural infrastructure delivery?
6. Have any of these initiatives contributed in advancing the quality of education in schools within Umzumbe Local Municipality?

SECTION E: THE FUTURE OF INFRASTRUCTURE PLANNING AND DEVELOPMENT FOR QUALITY EDUCATION
7. What recommendations can you propose to Umzumbe Local Municipality to improve the delivery of infrastructure in order to improve access and the quality of education in this municipal area?

THANK YOU FOR YOUR COOPERATION!

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Annexure 8: Informed consent for participants in the research

COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Dear Respondent

Master's Research Project
Research Project: Advancing rural infrastructure for quality education: Perspectives of Umzumbe Local Municipality, KwaZulu Natal
Researcher: Samukelisiwe Purity Zondi (031-2048717)
Supervisor: Doctor Bongani Qwabe (031-260 7490)
Research Office: Ms M Snyman (031-260 8350)

I **Samukelisiwe Purity Zondi**, am a Master of Administration (MA) candidate, at the **School of Management, Information Technology and Governance**, of the University of KwaZulu Natal. You are invited to participate in a research project titled: **Advancing rural infrastructure for quality education: Perspectives of Umzumbe Local Municipality**. The aim is to explore the perceptions of the community on the delivery of rural infrastructure to the inhabitants of Umzumbe Local Municipality.

Through your participation I hope to gain more insight into perceptions held by the community of Umzumbe Local Municipality. It will further help in the understanding of how Umzumbe Local Municipality responds to the needs of the people in terms of rural infrastructure delivery in general. The results of the survey are intended to contribute to the improvement of rural infrastructure delivery standards by Umzumbe Local Municipality to the inhabitants living within Umzumbe Local Municipality.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequences. There will be no monetary gain from participating in the survey. The School of Management, Information Technology and Governance, UKZN will maintain confidentiality and anonymity of records when identifying you as a participant.

Should you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor on the numbers listed above. The survey should take approximately thirty (30) minutes to complete. I hope you will take the time to complete this survey.

Sincerely

Investigator's signature _____ **Date** _____

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COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Master's Research Project
Research Project: Advancing rural infrastructure for quality education: Perspectives of Umzumbe Local Municipality, KwaZulu Natal
Researcher: Samukelisiwe Purity Zondi (031-2048717)
Supervisor: Doctor Bongani Qwabe (031-260 7490)
Research Office: Ms M Snyman (031-260 8350)

CONSENT

I--- (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature of   **Date**
Participant

--   --------------------------------

COLLEGE OF LAW AND MANAGEMENT STUDIES SCHOOL OF MANAGEMENT, INFORMATION TECHNOLOGY AND GOVERNANCE

Master's Research Project
Research Project: Advancing rural infrastructure for quality education: Perspectives of Umzumbe Local Municipality, KwaZulu Natal
Researcher: Samukelisiwe Purity Zondi (031-2048717)
Supervisor: Doctor Bongani Qwabe (031-260 7490)
Research Office: Ms M Snyman (031-260 8350)

CONSENT

I-- (Full
names of Parent/Guardian) hereby confirm that I understand the contents of this
document and the nature of the research project, and I give consent for my child

----
(Name of Learner) to participate in the research project.

I understand that I am at liberty to withdraw my child from participating in the research project at
any time, should I so desire.

Signature of
Parent/ Guardian   **Date**

--   --

WORDPLAY EDITING
Copy Editor and Proofreader
Email: karien.hurter@gmail.com
Tel: 071 104 9484
Website: http://wordplayediting.net/

To Whom It May Concern:

This letter is to confirm that the MPA dissertation *Advancing Rural Infrastructure for Quality Education: Perspectives of Umzumbe Local Municipality* by Samukelisiwe Purity Zondi was edited by a professional language practitioner.

Regards,

Karien Hurter