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AN ASSESSMENT OF TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA: A CASE OF GAUTENG PROVINCE

By

KGaugelo Osmond Chiloane

A DISSERTATION

Submitted in fulfilment of the requirements for the degree

MASTERS TECHNOLOGIAE

In

CONSTRUCTION MANAGEMENT

In the

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

At the

UNIVERSITY OF JOHANNESBURG

SUPERVISOR: PROF. C.O. AIGBAVBOA
AN ASSESSMENT OF TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA: A CASE OF GAUTENG PROVINCE

KGAUGELO OSMOND CHILOANE

SUPERVISOR: PROF. C.O AIGBAVBOA

A DISSERTATION submitted in fulfillment of the requirements for the award of the degree Masters Technologiae in Quantity Surveying in the Faculty of engineering and the Built Environment, Department of Construction Management and Quantity Surveying, at the University of Johannesburg, Republic of South Africa.

JOHANNESBURG, DECEMBER 2016
DECLARATION

I, KGAUGELO OSMOND CHILOANE, do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the references and by comments included in the body of this report, and that it has never been presented anywhere else for a similar purpose. It was submitted to the University of Johannesburg (Department of Construction Management and Quantity Surveying), as a requirement to obtain a MASTERS TECHNOLOGIAE degree in Construction Management

Signature 30 October 2016

University of Johannesburg

Doornfontein Campus
ACKNOWLEDGEMENTS

I would like to express my gratitude to the Almighty God for giving me the strength and courage to accomplish this research study. Without Him I would have not been able to do anything.

I additionally wish to articulate my thanks to the following people for their recommendation and support:

- Prof Clinton. O. Aigbavboa, for providing useful resources for me and for his expert guidance throughout the course of this study;
- All the individuals who completed the questionnaires to make this possible; and
- Lastly, I wish to express my special thanks to the Department of Construction Management and Quantity Surveying, University of Johannesburg, South Africa for giving me the opportunity to study with them.
DEDICATION

This dissertation is dedicated to the Almighty God, who granted me the strength and bravery to complete this study.

Secondly, I dedicate this dissertation to my parents, Priscan Mashile and Cry Chiloane, for supporting me throughout this study.

Thirdly, I dedicate this dissertation to my close friend, Kgopotso Moriri, for his support and inspiration.
ABSTRACT

Infrastructure development is the most important focus area of any country in the world, since effective infrastructure development will boost the economy of both developing and developed country. Financing infrastructure is a most important role which the government and the private sector must play in order to achieve economic growth in Africa. This study assesses the current sources of infrastructure financing, sources of transportation infrastructure financing and the challenges facing infrastructure financing in the Gauteng Province of South Africa. Additionally, the roles of taxation and infrastructure development regarding economic growth are also assessed. Primary data was obtained through a questionnaire which was sent out to construction professionals. A total of 130 (one hundred thirty) questionnaires were sent out and 100 were received back, representing a 76.92 % response rate. The findings indicated that infrastructure finance companies, sales of public property and banking financing were the major sources of infrastructure financing in Gauteng Province. In addition, foreign institutional investment, banking financing and public-private partnerships were the major sources of transportation infrastructure financing in Gauteng Province. Furthermore, the findings showed that political interference, lack of funding and cost overruns were the major challenges facing infrastructure financing in Gauteng Province. Steady national revenue enabling a country to reach its economic development goals and raising income to fund public infrastructure were determined to be the major roles of taxation on economic development. Finally, the study showed that infrastructure development provides employment opportunities, ensures the effective functioning of the economy and provides physical and social infrastructure to the poor: these were the major roles of infrastructure development in terms of economic growth in the Gauteng Province of South Africa. It is suggested that, in order to achieve economic growth and steady national revenue, government should attract more investors to invest in infrastructure by providing reasonable returns on their investment.

Key words: Gauteng Province, South Africa, Infrastructure, Economy, Construction professionals, Department of Infrastructure Development.
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<table>
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<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tr>
<td>MIS</td>
<td>Mean item score</td>
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<tr>
<td>R</td>
<td>Rank</td>
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<tr>
<td>SD</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>IFCs</td>
<td>Infrastructure Finance companies</td>
</tr>
<tr>
<td>SA</td>
<td>South Africa</td>
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<tr>
<td>DID</td>
<td>Department of Infrastructure Development</td>
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CHAPTER ONE

INTRODUCTION

1.1. STUDY OVERVIEW
Infrastructure development plays an important role in aiding any country in the world to achieve economic growth and also leads to job and wealth creation in many countries. Infrastructure development is the system used by any government to sustain economic growth, and it is essential for any developing and developed country to invest in infrastructure. Infrastructure is categorized into different categories, namely physical infrastructure (which includes water system, electricity, roads and transport, and the like) and social infrastructure (which includes education and health facilities). These types of infrastructure are very important to any nation as they help to improve the lives of citizens and also aid to stimulate economic growth and create jobs for citizens. Governments must invest in infrastructure development in order for the country to enjoy the benefits their investments will stimulate, including maintaining service delivery to the public. But it is very important for any government to review their fiscal position before funding infrastructure, as this will provide information which will enable them to make accurate decisions about the required infrastructure: whether it must be financed by public private partnerships, private investors or by their revenue. Also the information about their fiscal position will enable them to either provide low tax rates or not on private investors or Public-private partnership. Funds are required to finance infrastructure and it is the responsibility of the government to provide those funds or obtain them elsewhere (loans, lender, and the like).

The purpose of this study was to assess the roles of taxation on economic development, the current sources of infrastructure financing, the sources of transportation infrastructure financing, and the challenges facing infrastructure financing. In addition, the study examined the roles of infrastructure development on economic growth. It is hoped that this study will improve the understanding of the importance and benefits of infrastructure development, the relationship between infrastructure development and economic development and also of how to finance infrastructure other than using the traditional models (state revenues).
This chapter focuses on the study overview, the background of the problem, the rationale or motivation for the study, and the significance of the study. In addition, the problem statement, research questions and research objectives are presented as well as the purpose of the study, its value of the study, delimitations, limitations, and ethical considerations.

1.2. BACKGROUND

Infrastructure development is the most significant focus area of any country in the world. Effective infrastructure development will boost the economy of any developing and developed country. In Africa, financing infrastructure is one of the most important roles which the government and the private sector must play in order to achieve economic growth. South Africa’s most source of infrastructure financing is taxation obtained from the citizens and private investors in the country. The South African government has been the main provider of public infrastructure, particularly in the water sector and other sectors as well (Ruiters, 2013: 313). Any developing country needs to provide water infrastructure and other infrastructure such as roads, sewages, schools, parks, buildings and power suppliers in order to improve the livelihoods of their citizens, thereby providing good quality of life. The problems for providing public infrastructure which are faced by many governments in the world are the financing of projects and the raising of projects’ funds. It is very important for any country to attract private investors by providing a high rate of return on their investments.

The execution and the financing of projects can be improved by the private sector’s involvement (Ehlers, 2014: 1). Most private investors can only commit large sums of finance to infrastructure development if they can trust the legal and political procedures. Ehlers (2014: 2) states that an increase in infrastructure financing must be obtained from private sectors. Luke and Walters (2010) indicate that suitable levels of infrastructure are usually recognized as having a positive effect on economic growth and development. Furthermore, they state that infrastructure plays two roles in any economy: firstly, it functions as an intermediate good which suggests that it facilitates the movement of labour, capital and other inputs to production, hence improving productivity and reducing costs. It also increases information flows, opening new opportunities and reducing irregularities and other market inadequacies. Secondly, it functions as a final good, suggesting that the intake of infrastructure services improves quality of life through ‘access to power, clean water,
telephones, and serviceable roads and mass transit, all providing people with greater movement and improved choice, thereby leading to an improvement in incomes and welfare.

1.3. PROBLEM STATEMENT
The problems which are faced by many governments in the world for providing public infrastructure are the financing of projects and raising of projects funds. Evidence has shown that South African infrastructure is struggling to contest its growing population and increasing economy (National Treasury, 2014; National Development Plan, 2030). Also evidence is provided that there are possible ways to improve the current approach to infrastructure funding and provision. African countries suffer from abandonment of infrastructure projects and the rejection by private sectors to provide finance for infrastructure development because of the low rates of return for their investments and the politics involved in many infrastructure projects. Most infrastructure projects are being abandoned in many countries simply because of the shortage of funds to finance infrastructure. This is due to the fact that most countries depend on taxation to finance infrastructure.

1.4. RESEARCH QUESTIONS
This study was guided by the following research questions:

1.2.1. What are the current sources of infrastructure financing in South Africa?

1.2.2. What are the sources of transportation infrastructure financing in South Africa?

1.2.3. What are the challenges facing infrastructure financing in South Africa?

1.2.4. What are the roles of taxation regarding economic development in South Africa?

1.2.5. What are the roles of infrastructure development regarding economic growth in South Africa?

1.5. RESEARCH OBJECTIVES
The following were the research objectives:

1.3.2. To determine the current sources of infrastructure financing in South Africa;
1.3.3. To determine the sources of transportation infrastructure financing in South Africa;

1.3.4. To examine the challenges facing infrastructure financing in South Africa;

1.3.1. To assess the roles of taxation regarding economic development in South Africa; and

1.3.5. To assess the roles of infrastructure development regarding economic growth in South Africa.

1.6. PURPOSE OF THE STUDY
Other than relying on taxation as a source of infrastructure financing, it is very important to implement other ways or mechanisms to be used to obtain sufficient funds in order to finance infrastructure. Therefore, the purpose of this study was to investigate the roles of taxation and infrastructure development regarding economic development and the challenges facing infrastructure financing. Furthermore, this study endeavored to investigate the current sources of infrastructure financing and the sources of transportation infrastructure financing.

1.7. RATIONALE / MOTIVATION FOR THE STUDY
The motivation for conducting this research was to improve the knowledge about other sources of infrastructure financing than taxation revenues. The results of this study will hopefully contribute to a better understanding of the roles of taxation and infrastructure development on economic development, the challenges facing infrastructure financing, and the current sources of infrastructure financing. Furthermore, the results will provide a better understanding of the sources of transportation infrastructure financing.

1.8. SIGNIFICANCE OF THE STUDY
The findings from this research study will contribute to increased knowledge on infrastructure financing and other available sources of infrastructure financing other than using taxation revenues to finance infrastructure. Further, the findings will provide more understanding of the roles of taxation and infrastructure development on economic development, the challenges facing infrastructure financing, and the current sources of infrastructure financing. Furthermore, findings will provide more understanding of the sources of transportation infrastructure financing.
1.9. VALUE OF THE STUDY
The value of this study lies in its contribution to the body of knowledge on infrastructure financing. The study presented a good understanding of the roles of taxation and infrastructure development on economic development, the challenges facing infrastructure financing, and the current sources of infrastructure financing. Furthermore, the study provided a better understanding of the sources of transportation infrastructure financing.

1.10. RESEARCH SCOPE / DELIMITATION
This study was conducted in Gauteng Province, City of Johannesburg Metropolitan Municipality in South Africa. The study focused on professionals working for the Department of Infrastructure Development and Construction professionals. These included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals who are involved in construction projects. The study covered the roles of taxation and infrastructure development on economic development, the challenges facing infrastructure financing, and the current sources of infrastructure financing. Furthermore, the study covered the sources of transportation infrastructure financing.

1.11. RESEARCH LIMITATIONS
This study focused on professionals working for the Department of Infrastructure Development and Construction professionals. These included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals that are involved in construction projects. The respondents included professionals working for the Department of Infrastructure Development and Construction professionals who included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals who are involved in construction projects. The study determined the roles of taxation and infrastructure development on economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the study determined the sources of transportation infrastructure financing.
1.12. RESEARCH METHODOLOGY
The research methodology adopted in this study is explained in details in this section. Also the chapter details the area where the research was conducted, research design, and the population for the study. The sampling method and the instruments used to collect data and the analysis methods are also explained in this section.

1.12.1. RESEARCH APPROACH AND DESIGN
This study adopted a quantitative exploratory descriptive design to identify, analyze and describe the role of taxation and infrastructure development on economic development, the challenges facing infrastructure financing, and the current sources of infrastructure financing. Furthermore, the sources of transportation infrastructure financing in Gauteng Province, South Africa. The current study collected data through a structured questionnaire which was distributed to the respondents by the researcher.

1.12.2. TARGETED AREA AND RESPONDENTS
The industry of construction is an industry that involves different professionals working together to achieve common goal. These professionals are involved from the inception stage to the completion stage of projects. The study was conducted in the City of Johannesburg Metropolitan Municipality in Gauteng Province in South Africa, simply because the research targeted construction professionals who included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals that are involved in construction projects and professionals working in the Department of Infrastructure Development in Gauteng Province as the respondents of the study.

1.12.3. RESEARCH POPULATION
The research population for this study comprised all the construction professionals who included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals who are involved in construction projects and all the professionals working in the Department of Infrastructure Development in Gauteng Province in the City of Johannesburg Metropolitan Municipality in South Africa.
1.12.4. SAMPLE AND DATA COLLECTION
Polit and Beck (2004: 292) state that a convenient sample consists of subjects included in the study because they happen to be in the right place at the right time. A convenient sample was adopted in this study and a questionnaire was used as a tool to collect data from the respondents.

1.12.5. DATA ANALYSIS
Quantitative data analysis requires the use of relatively sophisticated forms of statistical analysis, and therefore a sophisticated statistical software package was required for the researcher to be able to manipulate the data and run the required tests (Pallant, 2011). Excel Microsoft and Statistical Package for Social Sciences (SPSS) computer software were used to analyze the collected data from the respondents and conclusions were drawn from the analyzed data.

1.13. ETHICAL CONSIDERATIONS
Creswell (2009) states that researchers must anticipate any ethical issues that may arise during any research study. All research involves collecting data about people from people (Punch, 2005). It is very important for researchers to guard their research participants by developing trust with them, promoting the integrity of the research, guarding against bad behavior and any rudeness that might reflect on their organizations, as well as coping with new challenging problems (Creswell, 2009). Participants were informed in writing of the nature, the importance and the purpose of the study in order to obtain their permission to conduct the study. Participants were guaranteed that their contributions were significant, and that their identities would be protected by the researcher. Further, participants were in writing of the voluntary nature of their participation and that they could withdraw from the study at any time without penalty. They were also advised that at any time during the process they could refuse to answer any question.
1.14. OVERVIEW OF CHAPTERS

Chapter 1: Introduction

This chapter focused on the background of the problem, rationale or motivation for the study, and its significance. The chapter also included the problem statement, research questions, research objectives, the purpose of the study, as well as its value. Limitations and ethical considerations were also mentioned.

Chapter 2: Literature Review: Overview of the State of Infrastructure Financing

This chapter focused on the connected research and theoretical rationale, including research questions, concepts, and perspectives in the context of previous academic research and current discussions. The chapter presented a discussion of the related literature on the roles of taxation and infrastructure development on economic development, the current sources of infrastructure financing, the sources of transportation infrastructure financing and the challenges facing infrastructure financing.

Chapter 3: Transportation Infrastructure Financing: International Perspective

This chapter covered an overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing and the roles of taxation and infrastructure development regarding economic growth in India and China. Unrelated views of scholars and researchers on the same topic were reviewed in this chapter.

Chapter 4: Transportation Infrastructure Financing: African perspective

This chapter covered an overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing and the roles of taxation and infrastructure development regarding economic growth in Namibia and Ghana. Unrelated views of scholars and researchers on the same topic were reviewed in this chapter.

Chapter 5: Transportation Infrastructure Financing in South Africa

This chapter presented an overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing and the
roles of taxation and infrastructure development regarding economic growth in South Africa. Unrelated views of scholars and researchers on the same topic were reviewed in this chapter.

**Chapter 6: Research Methodology**

This chapter focused on the research approach and design that the study adopted in order to obtain accurate data. Furthermore, the chapter explained the choice of research area and target respondents for the study and sampling design and data collection, as well as the data analysis for the study.

**Chapter 7: Findings and Analysis**

This chapter focused on the research findings and analysis method to analyze the findings, including interpreting the data collected and data presentation method.

**Chapter 8: Discussion of Findings, Conclusions and Recommendations**

This chapter focused on the data collected and the methods which the findings were analyzed. In addition, the chapter focused on discussions of the findings and the methods which these findings were presented. This chapter further focused on conclusions which were made from the data collected, and the literature review and also provide a small summary of recommendations. All the findings were used to make conclusions for this study.

**1.15. CONCLUSION**

This chapter focused on the overview, the background of the problem, rationale or motivation for the study, significance of the study, problem statement, research questions, and research objectives, purpose of the study, value of the study, limitation for the study and ethical consideration were also mentioned. Chapter two covers the literature review: an overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing, the roles of taxation and infrastructure development regarding economic growth.
CHAPTER TWO

LITERATURE REVIEW: OVERVIEW ON THE STATE OF INFRASTRUCTURE FINANCING

2.1. INTRODUCTION
This chapter provides the related research and theoretical rationale, including research questions, concepts, and perspectives in the background of previous academic research. The chapter examines related literature on the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth.

2.2. INFRASTRUCTURE DEVELOPMENT
The term infrastructure has different meanings to different scholars and the following are some the definitions of infrastructure.

2.2.1. DEFINITION, IMPORTANCE AND BENEFITS OF INFRASTRUCTURE
Goel (2003: 2) defined infrastructure as the physical structure of services through which goods and services are provided to the community. Its linkages to the economy are many and complex, because it affects production and consumption directly, creates positive and negative spillover effects and involves large inflow of spending. In addition, Goel (2003: 2) states that infrastructure that makes more sense from an economics perspective consists of large capital intensive natural monopolies such as communications systems, water and sewer lines, highways and transportation facilities. Moteff and Parfomak (2004: 1) define the term infrastructure according to the American Heritage Dictionary, which defines infrastructure as the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons. Infrastructure is divided into the following: (Goel, 2003: 2):

1) Economic or physical infrastructure – this consists of transport, roads, water systems, electricity, communications, irrigation, intermediate goods and output, science and technology and information systems;
2) Social infrastructure – this consists of education and health facilities; and
3) Institutional infrastructure – this consists of banking and civil administration.

Further, Prud’homme (2004: 153-157) states that infrastructure is a space-shrinker: it grows, advertises, and works like the bringing down of exchange boundaries. In urban zones, infrastructure adds to extend the viable size of the work market and of the merchandise or thoughts markets, expanding profitability and output along these lines. In addition, Prud’homme (2004: 153-157) states that infrastructure components are numerous and different, namely roads, tunnels, bridges, railways, airports, harbors, canals, subways and tramways, dams, irrigation networks, water pipes, water purification plants, sewers, water treatment plants, dumps and incinerators, power plants, power lines and distribution networks, oil and gas pipelines, telephone exchanges and networks, district heating equipment, and buildings. Different infrastructure has a different function to the nation and each service which each infrastructure provides to the nation is essential because it contributes to the economic growth in many ways and makes the lives of citizens easier by giving them access to many services.

However, this paper aimed at focusing on the transportation infrastructure only. Transport infrastructure is a basic fixing in financial improvement at all levels of income. It underpins individual prosperity and financial development. Organization for Economic Cooperation and Development (OECD) (2008:6) states that transport infrastructure plays a role as a capital input into production and wealth generation. The economic impact can be transformative, particularly at lower levels of revenue. Examples incorporate cross-country railroads or waterways connecting seas. At higher levels of wage the heading of causality between infrastructure development and economic growth turns out to be progressively entangled. In any case, the two stay related.

Transport infrastructure can be categorized as follows (OECD, 2008:17):

- Rail infrastructure
- Road infrastructure
- Inland waterway infrastructure
- Airport infrastructure
- Sea port infrastructure
2.3. CURRENT SOURCES OF INFRASTRUCTURE FINANCING

The study of Calitz and Fourie (2010: 7-8) shows various sources of infrastructure financing and the following are the major sources. These were in agreement with the studies of Owusu-Manu, Edwards, Badu, Donkor-Hyiaman & Love (2015: 38), Uddin, Hudson and Haas (2013), Sinha (2014:5-15), Bothra (2011:2-5) and Ray (2015:7):

- Tax revenues
- Lenders to government or enterprises (loans or guarantees)
- Private investors (equity)
- Development agencies (loans)
- Donors (grants)

The study of Uddin et al. (2013) revealed that the following are the major sources of infrastructure financing and these are in agreement with the studies of Calitz and Fourie (2010:6-8) and Ray (2015:7):

- User charges for the service involved – a monthly charge on the use of water, toll charges on an expressway, and the like
- Property taxes - a major source of revenues for local agencies
- General taxation – tax on income, consumer goods, fuel, and the like. It refers to the compulsory, unrequited payments to the general governments. It is an obligatory levy made by public authorities for which nothing is received directly in return. Therefore they are transfers of money to the public sector, but they exclude loan transaction and direct payments for publicly produced goods and services
- Transfers from senior governments – transfer from a state or province to a local agency
- Other, such as sales of public property, fines for traffic violations, and the like
- Transfer of the asset to a PPP, which can range from finance to design and build to operations
- Public-private-partnerships - Khanom (2010: 150-151) states that public-private partnerships are normally acknowledged as long-term cooperative institutional arrangements between public and private actors to achieve various purposes
- Tax-investment financing - attracting private finance through future tax revenues)
• Development changes from developers
• Loans - the money obtained by government or individuals from a financial institutions or lenders. Calitz and Fourie (2010:7-8) state that most governments obtain funds in the form of a loan from lenders or financial institutions to finance infrastructure. Most governments adopted this system of making loans to finance infrastructure, as this appears to be a fair system to them when a lower rate of interest is being charged on the loan and the fact that taxer payers are normally going to repay the loan. The system works this way: government obtains a loan to finance infrastructure: when the required infrastructure is completed, as in the case of a highway, or roads, the government will charge the users (e.g. tolls) for using the roads and the collected money from tolls will be used to repay the loan. Normally the user charges will take care of the debt servicing and the operational cost.

• Bonds
• Carbon finance/charges
• Tariffs - the customs duties or taxes imposed by governments when goods are imported or exported (Global Health Council, 2007:1). A rate is charged for all goods entering a country or vice versa.

Owusu-Manu et al. (2015: 38) conducted a study on real estate’s development in Ghana and the study revealed that the following are the major sources of infrastructure financing on real estate’s development:

• Loans (Debts)
• Mortgage loans
• Long-term leasing
• Trade crediting
• Sub-contracting
• Cash flow from operations
• Co-operating shares
• Disposal of assets
• Venture capital (VC)
• Sale and Lease Back
• Industrial/Commercial finance
• Bonds
- Sale of common stock
- Government grants
- Debentures
- Equity
- Retained profits

These results were in agreement with the studies of Calitz and Fourie (2010:6-8) and Uddin, Hudson and Haas (2013). Further, the study of Ray (2015:11, 14-21) revealed that the following are the major sources of infrastructure financing. These results are in agreement with the study of Uddin et al. (2013) and Rodrigue (2013:1) who also showed that infrastructure is financed through private participation:

- Equity
- Debt
- Public sector
- Private sector
- Bond market
- Public-private partnership
- Cross-border public-private partnership
- International infrastructure funds

Further, the study conducted by Nataraj (2014: 5-11) was in agreement with the studies of Love et al. (2015: 38), Calitz and Fourie (2010: 6-8), Haas et al. (2013), Sinha (2014:5-15), Bothra (2011:2-5) and Ray (2015: 7) who also revealed that infrastructure is financed by the following major sources:

- Domestic savings
- Debt - from commercial banks, non-banking finance companies, insurance companies and the external commercial borrowings (ECB)
- Public-private partnerships

The current study adopted the categories employed by Owusu-Manu et al. (2015: 38), Calitz and Fourie (2010: 6-8), Uddin et al. (2013), Sinha (2014:5-15), Bothra (2011:2-5) and Ray (2015:11,
who identified the following sources of finance as the major sources of infrastructure financing:

- User charges for the service involved – a monthly charge on the use of water, toll charges on an expressway, and the like
- Property taxes - a major source of revenues for local agencies
- General taxation – tax on income, consumer goods, fuel, and the like
- Transfers from senior governments – transfer from a state or province to a local agency
- Other, such as sales of public property, fines for traffic violations, and the like.
- Transfer of the asset to a PPP, which can range from finance to design and build to operations
- Public-private partnerships
- Tax-investment financing - attracting private finance through future tax revenues
- Development changes from developers
- Loans
- Carbon finance/charges
- Tariffs
- Domestic savings
- Debt - from commercial banks, non-banking finance companies, insurance companies and the external commercial borrowings (ECB)
- Equity
- Public sector
- Private sector
- Bond market
- Cross-border public-private partnership
- International infrastructure funds
- Development agencies
- Donors
2.4. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING

Bothra (2011: 1) states that the need for infrastructural development is of utmost importance to any country in the world and infrastructure development is the most important system that leads to growth and development of an economy. Transport infrastructure is categorized in the following categories (OECD, 2008:17) and the current study has adopted these categories:

- Road infrastructure
- Rail infrastructure
- Airport infrastructure
- Ports infrastructure
- Inland infrastructure

The results of the study of Ray (2015:11, 14-21) were in agreement with the study of Cohen, Freiling and Robinson (2012: 10) who conducted a study on the sources of financing transport infrastructure. Their study revealed that the following are the major sources of road construction financing:

- Public-private partnerships - partnerships are financed by both governmental incomes and private investment, where a private company carries out the construction of the required infrastructure (e.g. road) and collects tolls for a certain period of time and the PPPs cannot replace public funding of infrastructure but they always supplement what the government spends.
- Tax deductible infrastructure investment.
- Fixmyroad.gov - community web entrance for recognizing required road repair projects and requesting extra duty deductible financing for road maintenance, which is fixmyroad.gov. The proposed framework welcomes citizens to sign into a web entry using a driver’s permit number, choose roads for repair or development, give to particular activities, check donations levels, and track the advancement of road repairs. State lawmaking bodies could set subsidizing benchmarks for every venture and wait for a specific level of donations before leading achievability contemplates or supporting undertakings. The site would not provide enough money to fund any projects but will help the government to gauge the public needs, increase maintenance expenditure.
- Fee for use lanes - tolls on the high occupancy lanes (HOT).
The study of Brits (2010:41) was in agreement with the studies of Ray (2015:11, 14-21) and Cohen et al. (2012: 10) who also revealed that the following are the various major sources of transport infrastructure financing:

- Toll revenues – raised by means of the road user charges and these revenues are used for maintenance and upgrading of the roads
- Capital market loans – loans which are raised from the capital and money market
- Bonds – medium and long-term bonds are supplied, guaranteed by the government
- Private sector investment – funding supplied through public private partnerships and concession toll roads

Furthermore, Sinha (2014:5-15) revealed that transport infrastructure projects can be financed through the following major sources:

- Life insurance
- Pension funds
- Infrastructure finance companies (IFC)
- Infrastructure debt funds - the major sources of long term finance

The study of Calitz and Fourie (2010:7-8) revealed that transport infrastructure can be financed through different sources and the following are the major sources of transport infrastructure financing as revealed by their study:

- Cash from tax payers / taxation revenues
- Lenders to government / government enterprises (loans / guarantees)
- Private investors (equity)
- Development agencies (loans)
- Donors (grants)

The study conducted by Bothra (2011: 2-5) revealed that there are various sources that can be used to obtain funds to finance transport infrastructure, namely roads, rail and airports, port and inland and the following are the major sources used to obtain finance for transport infrastructure:

- Public private partnership
- Bank financing
- India infrastructure finance company limited (IIFCL)
- Infrastructure finance companies (IFCs)
- Foreign direct investment
- Foreign institutional investors’ investment
- Infrastructure bonds
- Infrastructure debt funds

The current study adopted the categories studied by Calitz and Fourie (2010: 6-8); Sinha (2014: 5-15); Bothra (2011:2-5); Ray (2015: 11, 14-21); Cohen et al (2012: 10) and Brits (2010: 41) who identified the following sources of finance as the major sources of transport infrastructure financing:

- Public-private partnerships - financed by both governmental incomes and private investment
- Tax deductible infrastructure investment
- Fee for use lanes - tolls on the high occupancy lanes (HOT)
- Toll revenues
- Capital market loans – loans which are raised from the capital and money market
- Bonds – medium and long-term bonds are supplied; guaranteed by the government.
- Private sector investment – funding supplied through public private partnerships and concession toll roads
- life insurance
- Pension funds
- Infrastructure debt funds - the major sources of long-term finance.
- Cash from tax payers / taxation revenues
- Lenders to government / government enterprises (loans / guarantees)
- Private investors (equity)
- Development agencies (loans)
- Donors (grants)
- Bank financing
- Infrastructure finance companies (IFCs)
- Foreign direct investment
- Foreign institutional investors investment
- Infrastructure bonds

2.5. CHALLENGES FACING INFRASTRUCTURE FINANCING
The National Development Plan report of 2010 (2012) states that infrastructure faces various challenges and the following are some of the challenges infrastructure faces:

- To provide infrastructure that encourages economic growth and job creation;
- To maintain existing infrastructure; and
- To provide infrastructure and services to the poor in order to eliminate poverty.

Kutoane (2014:14-17) conducted a study on the opportunities and challenges of infrastructure financing in sub-Saharan Africa and the study identified the following as the major challenges facing infrastructure financing in sub-Saharan Africa:

- Financial capacity to execute mega-infrastructure projects is still lacking.
- Technical know-how has to be imported.
- Infrastructure regulatory and policy frameworks at regional levels are not harmonized.
- Lack of alignment with national and regional priorities is a primary failure factor in terms of the execution of infrastructure projects.
- Raising finance and reaching financial closure for complex infrastructure projects is challenging.
- There is a lack of experienced project promoters.
- Conflict of interest of different parties involved in project execution often affects the commitment of all partners.
- Insufficient revenue collection on infrastructure projects affects the coverage of operating expenses, maintenance or expansion.
- There is a shortage of private sector investors willing to risk capital on long-term complex projects.
- There are no capital market sources of long-term funding for Greenfields.
- There is a poor investment climate in many countries – public debt is rising in most high growth countries.
- Regional/cross-border projects endure high cost of preparation and lack of regional institutional drivers.
- There are risks of border closures, contract cancellations, political interference and regional conflicts.
- Tariffs do not cover costs – arbitrary setting.
- Poor public investment framework leads to poor public infrastructure spending in PPPs.
- There is a lack of infrastructure maintenance capacity.
- Frequent delays in licensing and permitting.
- There are poor and costly tendering and procurement procedures.
- There is a lack of credit worthiness of SSA countries.
- Cost overruns occur due to lack of adequate planning and lengthy contract negotiation.

The study of Rodrigue (2013:1) identified the following as the major challenges facing infrastructure financing, especially the transport infrastructure:

- **Lack of funding** - Transport financing initiatives are normally not adequate for keeping up and enhancing the execution of transport frameworks. This was a noteworthy driver behind privatization and deregulation in traveller and cargo transport commercial ventures around the world. The base financing model is picking up force.

- **Divergence of purpose** - Transport funding initiatives ought to be intended to advance efficiency additions, for example, expanded openness, limit and execution. Numerous venture activities are politically rather than industrially determined, which is unique in the motivation behind transportation. ??
- **Uncertainty in outcome** – Transport funding initiatives vary in their likely effects on transport framework execution. This underlines the trouble of surveying duplicating impacts connected with particular foundation ventures.

- **Time frame misalignment** - There is frequently a misalignment between the time scope of the infrastructure venture and the time scope of the financing. This underlines the difference between the long-term character of infrastructure and the short-term viewpoint predominant in finance.

However, few studies or no studies have been conducted in this area of this research. The current study adopted the categories employed by Rodrigue (2013: 1) and Kutoane, (2014:14-17) who identified the following as the major challenges facing transport infrastructure financing:

- Financial capacity to execute mega-infrastructure projects is still lacking.
- Technical know-how has to be imported.
- Infrastructure regulatory and policy frameworks at regional levels are not harmonized.
- Lack of alignment with national and regional priorities is a primary failure factor in terms of the execution of infrastructure projects.
- Raising finance and reaching financial closure for complex infrastructure projects are challenging.
- There is a lack of experienced project promoters.
- Conflict of interest of different parties involved in project execution often affects the commitment of all partners.
- Insufficient revenue collection on infrastructure projects affects the coverage of operating expenses, maintenance or expansion.
- Shortage of private sector investors willing to risk capital on long term complex projects.
- No capital market sources of long term funding for Greenfields.
- Poor investment climate in many countries – public debt rising in most high growth countries.
- Regional/cross-border projects endure high cost of preparation and lack of regional institutional drivers.
- Risk of border closures, contract cancellations, political interference and regional conflicts.
- Tariffs do not cover costs – arbitrary setting.
Poor public investment framework leads to poor public infrastructure spending in PPPs.

There is a lack of infrastructure maintenance capacity.

There are frequent delays in licensing and permitting.

Tendering and procurement procedures are poor and costly.

There is a lack of credit worthiness of SSA countries.

Cost overruns occur due to lack of adequate planning and lengthy contract negotiation.

There is a lack of funding.

There is a divergence of purpose.

Outcomes are uncertain.

There is a misalignment in time frames.

### 2.6. ROLES OF TAXATION REGARDING ECONOMIC DEVELOPMENT

Pfister (2009:5) and Besley and Persson (2013:53-54) state that taxation is integral to the current economic development agenda. It gives a steady stream of income to finance development needs, for example, fortifying physical infrastructure, and is intertwined with various other approach territories, from great supervision and formalizing the economy, to prodding development. On a very basic level, a charge approach shapes the environment in which international exchange and investment takes place. Infrastructure development growth is dependent on the collected tax revenues of a country. (Pfister, 2009:6) revealed that there is a good relationship between taxation and infrastructure and also showed that each factor is depending on the other, for example, tax collection revenues are the sources of infrastructure financing and infrastructure facilities generate money for the government (tax on users of facilities or user charges). In addition, Pfister (2009:6) and Besley and Persson (2013:53-54) state that taxation provides the following functions to a nation in relation to economic development:

- It offers the state funds required to build the required infrastructure on which economic development and growth are created.
- It generates an easy environment where business can be conducted without complications and provides an opportunity to create wealth of a nation.
- It forms the way government activities are undertaken.
- It plays a central role in domestic resource mobilization.
- It provides an opportunity to predict future infrastructure development based on the total revenues.
- It helps a country to reach its development goals.

Furthermore, the study of Pfister (2009: 6) revealed that most governments are aiming to use taxation to:

- invest their social and physical infrastructure needs;
- provide a steady and foreseeable financial environment to encourage economic growth and investment;
- encourage good governance and responsibility by strengthening the relationship between government and citizens; and
- Guarantee that the expenditures and paybacks of growth are fairly shared.

In addition, the results of the study of Pfister (2009:6) were in agreement with the National Treasury (2014: 46) in that taxation provides various functions to a nation which lead to economic growth. The following are the functions of taxation by the National Treasury (2014: 46):

- Provide public services
- Conduct business
- Create jobs
- Deliver funds for infrastructure development
- Construct wealth
- Public subsidization

The relationship between taxation and infrastructure development in relation to economic development is fascinating and not complicated. Most physical infrastructure creates very large sums of money for the government in different ways, for example, the construction of roads is funded by tax revenues and the user of the roads are charged (e.g. tolls) for using those specific roads (Calitz & Fourie, 2010:8). Furthermore, the results of the study of Waidyasekera (2007:1-2) were in agreement with the studies of Pfister (2009: 6) and Besley and Persson (2013: 53-54) who also identified that the following are the main functions of taxation in relation to economic development:
To raise revenue for the government for its public expenditure.
To reduce inequalities through a policy of redistribution of income and wealth.
For social proposes such as discouraging certain activities which are considered undesirable.
To ensure economic goals through the ability of the taxation system to influence the allocation of resources.
To increase the level of savings and capital formation in the private sector partly for borrowing by the government and partly for enhancing investment resources within the private sector for economic development.
To protect local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises.
To stabilize national income by using taxation as an instrument of demand management.

However less studies or no studies have been done in this area of this research. The current study adopted the categories studied by Pfister (2009: 6); Besley and Persson (2013: 53-54) and Waidyasekera (2007: 1-2) who revealed the following, as the connection between taxation and economic development by identifying the roles of taxation in relation to economic development:

- To raise income for state to funds public infrastructure on which economic development and growth are created;
- To generates an easy environment where business can be conducted without complications and provides an opportunity to create wealth of a nation;
- To form the way government activities are undertaken;
- To play as a central role in domestic resource mobilization;
- To provide an opportunity to predict future infrastructure development based on the total revenues;
- To enable a country to reach its economic development goals;
- To decrease inequalities through a policy of reallocation of income and wealth;
- For social propositions such as discouraging certain activities which are considered unwanted;
To increase the level of savings and capital creation in the private sector partly for borrowing by the government and partly for improving investment resources within the private sector for economic development;

- To safeguard local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises; and

- To steady national revenue by using taxation as an instrument of demand management.

2.7. ROLES OF INFRASTRUCTURE DEVELOPMENT REGARDING ECONOMIC GROWTH

Infrastructure development plays an important role in stimulating economic growth in any country. This infrastructure is used to create employment for the nation and reduce poverty. For any country in the world to have a better economy, that country must be well developed and all types of infrastructure must be well established in that country. Further infrastructure development is a system of developing the economy of any country in the world. The study of Nallathiga (2015:76-77) revealed that infrastructure plays a significant role in the economic development of any country in the world by:

- providing the required services that upkeep economic growth by increasing the productivity of labourers and capital;

- reducing the costs of production and raising profitability, production, income and employment; and

- Ensuring the effective functioning of the economy.

The study of Sahoo (2011:1) reveals that infrastructure development is a major factor that contributes greatly to the overall economic development in the following ways:

- It directs investment on infrastructure, creates production facilities and stimulates economic growth.

- It reduces transaction costs and trade costs, improving competitiveness.

- It provides employment opportunities.

- It provides physical and social infrastructure to the poor.
Shortage of infrastructure will prevent sustainability of growth and poverty reduction for any nation. Transport, an essential part of the tertiary division, is of critical importance in a nation's economic development. With the headways, complexities and sophistications of the cutting edge world, a nation cannot think of achieving financial flourishing without a quick advancement of the transport segment. Transport is a fundamental economic infrastructure for the quick advancement of any area. The absence of transport facilities impedes the procedure of financial improvement, regardless of the possibility that a locale is enriched with rich common assets. Transport has been perceived as a vital element of a nation's general development. Luke and Walters (2010) highlighted that suitable levels of infrastructure are usually recognized as having a positive effect on economic growth and development. Furthermore, infrastructure plays two roles in any economy: first, it serves as an intermediate good which implies that it enables the movement of labour, capital and other inputs to production, hence improving productivity and reducing costs; it also increases information flows, opening new opportunities and reducing irregularities and other market inadequacies. Secondly, it serves as a final good, suggesting that the consumption of infrastructure services improves quality of life through access to power, clean water, telephones, and serviceable roads and mass transit – all providing people with greater movement and improved choice, leading to an improvement in incomes and welfare.

However, few or no studies have been done in this area of this research. The current study adopted the categories employed by Nallathiga (2015:76-77) and Sahoo (2011:1) who identified the following as the major roles of infrastructure development regarding economic development:

- Providing the required services for the upkeep of economic growth by increasing the productivity of labourers and capital;
- Reducing the costs of production and raising profitability, production, income and employment;
- Ensuring the effective functioning of the economy;
- Directing investment on infrastructure, creating production facilities and stimulating economic growth;
- Reducing transaction costs and trade costs improving competitiveness;
- Providing employment opportunities; and
- Providing physical and social infrastructure to the poor.
2.8. LESSONS LEARNT

The reviewed literature in this chapter identified the following as the major sources of infrastructure financing: toll revenues; property taxes; general taxation; transfers from a state or province to a local agency; public property; fines for traffic violations; public-private; tax-investment financing; development agencies; loans; tariffs; domestics savings; debt; equity; bond market; cross-border public-private partnership; international infrastructure funds and donors (grants). The study also identified the following as the major sources of transport infrastructure financing: public-private partnerships; tax deductible infrastructure investment; fee for use lanes; toll incomes; capital market; bonds; private sector investment; life insurance; pension funds; infrastructure debt funds; cash from tax payers / taxation revenues; lenders to government; government enterprises (loans / guarantees); private investors (equity); development agencies (loans); donors; bank financing; infrastructure finance companies (IFCs); foreign direct investment; foreign institutional investors investment and infrastructure bonds.

Furthermore the reviewed literature identified the following as the major challenges facing infrastructure financing: raising finance and reaching financial closure are for complex infrastructure projects is challenging; lack of experienced project promoters; conflict of interest of different parties involved in project execution often affecting the commitment of all partners; insufficient revenue collection on infrastructure projects affecting the coverage of operating expenses, maintenance or expansion; shortage of private sector investors willing to risk capital on long term complex projects; no capital market sources of long term funding for Greenfields and poor investment climate in many countries – public debt rising in most high growth countries.

The reviewed literature in this chapter revealed that there is a relationship between taxation and economic development and the two are linked to each other in a way that one depends on the other for growth purposes. In addition, the literature review indicated that taxation gives a steady stream of income to finance growth requirements, for example, fortifying physical infrastructure, and is intertwined with various other approach territories, from great supervision and formalizing the economy to stimulating development. On a very basic level, taxation shapes the environment in which international exchange and investment take place. Taxation provides the state with funds required to build the required infrastructure on which economic development and growth are created; it generates an easy environment where business can be conducted without complications.
and provides an opportunity to create wealth of a nation; it forms the way government activities are undertaken; it plays a central role in domestic resource mobilization; it provides an opportunity to predict future infrastructure development based on the total revenues; it helps a country to reach its development goals; reduces inequalities through a policy of redistribution of income and wealth; it ensures economic goals through the ability of the taxation system to influence the distribution of resources; it increase the level of savings and capital formation in the private sector; it protects local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises and stabilizes national income by using taxation as an instrument of demand management. The growth of economic development depends on taxation revenues and the growth of taxation revenues depend on the development growth.

The study further revealed that infrastructure development plays an essential role in economic growth. The infrastructure development is used to create employment for the nation and reduce poverty. For any country in the world to have a better economy, that country must be well developed and all types of infrastructure be well established in that country. Further infrastructure development is a system of developing the economy of any country in the world. Infrastructure provides the required services that upkeep economic growth by increasing the productivity of labourers and capital; it reduces the costs of production and raising profitability, production, income and employment; it ensures the effective functioning of the economy; it direct investment on infrastructure generates production accommodations and encourages economic growth; it reduces business costs and trade costs improving effectiveness; it provides employment opportunities and it provides physical and social infrastructure to the poor.

2.9. CONCLUSION

The literature reviewed in this section indicated that there is a serious relationship between taxation and economic development in any country and that this relationship needs to be understood by government in order to enable them to use taxation revenues to encourage economic growth by investing in infrastructure. In addition, it was also shown in the literature that infrastructure development plays an essential role on economic growth. The next chapter covers an international literature review of transportation infrastructure financing in India and China.
CHAPTER THREE

TRANSPORTATION INFRASTRUCTURE FINANCING: INTERNATIONAL PERSPECTIVE

3.1. INTRODUCTION

This chapter covers the overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in India and China. Unrelated view of scholars and researchers on the same topic is reviewed in this chapter.

TRANSPORTATION INFRASTRUCTURE FINANCING IN INDIA

No or very few have been done concerning the challenges facing transportation infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in India.

3.2. INDIAN INFRASTRUCTURE

The study of Laskar and Murty (2004:1) revealed that the Indian construction industry is the second biggest industry of the nation after agriculture. It makes a critical commitment to the national economy and gives work to a large number of individuals. The utilization of different new innovations and the organization of venture administration techniques have made it conceivable to embrace undertakings of a very large scale. In its way of headway, the industry needs to overcome a number of difficulties. In any case, the industry is still confronted with some major challenges, including housing, disaster resistant construction, water management and mass transportation.

The construction industry is considered to be one of the major industries that stimulate the economic growth of a country and most countries in the world depend on the construction sector to improve their economy. This industry holds positive benefits, not only to the government, but to the nation as a whole. Swarup (2007: 3), Sahoo (2011: 1), Laskar and Murty (2004:1) state that India has become the second fastest growing economy in the world and the construction industry
contributes approximately 8 per cent to the GDP. The Indian government has placed its focus on the construction industry since this sector is the largest employer in India, followed by the agricultural sector. In addition, Laskar and Murty (2004:1) state that the construction sector of India generates around 31 million jobs for the nation and the government proposes to achieve a 9 per cent GDP growth during the eleventh plan period. Infrastructure development is the key for the India government to achieve this goal. The following associations and councils were established to improve the effectiveness of the construction industry in India: the Construction Industry Development Council (CIDC); the National Building Construction Corporation of India (NBCC); the Builders’ Association of India (BAI); the National Builders Organization (NBO) and the Bureau of Indian Standards. These councils became the apex body of construction industry of India and was joined by Government of India, Planning Commission of India and the construction sectors of India (Swarup, 2007:2). The India construction industry is divided into three divisions and the following lists the three divisions in Indian construction:

- General contractors – commercial, industrial, build residential, and the like.
- Special trade contractors – electrical, painting, plumbing, carpentry work, and the like.
- Heavy engineering construction contractors – tunnels, roads, bridges, ports, highways, harbors, and the like.

All these types of construction contribute to the economic growth of India. However, the Indian construction industry is faced with massive challenges including housing, disaster-resistant construction, mass transportation and water management (Laskar & Murty, 2004:1). Current experience of numerous new mega-projects is a clear indicator that the industry is poised for a bright future. Laskar and Murty (2004:1-2) state that India’s economy is growing faster than expected and this growth is enabled by construction developments taking place in the country. One of the biggest challenges the Indian industry faces is the provision of funds for infrastructure development. The studies of Laskar and Murty (2004: 15) and Swarup (2007: 12) revealed that India still needs to provide transport infrastructure such as expressways, national highways and state highways, major district roads, other district roads and village roads to enable movement of trade of goods and services. Furthermore, the study of Sahoo (2011: 1) revealed that India is facing major issues in the infrastructure segment and these issues include the following:

- Infrastructure financing
• Land acquisition and environment clearances
• Participation of private sector
• Stable policy structure
• Institutional set up
• Tariff policy

It is the responsibility of the government to finance the expected infrastructure investment and it is also their responsibility to ensure that the environment for infrastructure development is improved through both private and public investments (Sahoo, 2011:1). The required improvements are possible through providing the following:

• Additional steady and protected policy structure
• Safety of property rights
• Suitable pricing
• Funding policies

Additionally, the government may provide guarantees and support to ensure confidence and feasibility for infrastructure projects in order to attract private investors. Sahoo (2011:1) states that government can provide equity up to 100 per cent in all infrastructure segments in order to attract foreign investors. It is the goal of the Indian government to find ways to fund the huge infrastructure development projects in India. The transport infrastructure of India still needs serious attention and efforts are being made to find sources of finance to finance transport infrastructure and also for a coordinated approach among roads, railways, airports and ports to ensure that interlinking of infrastructure services is effective and efficient. Furthermore, Sahoo (2011:1) states that the sustainability of the Indian economic growth will depend on developing quality infrastructure networks all over the country.

3.3. CURRENT SOURCES OF INFRASTRUCTURE FINANCING IN INDIA

Funding infrastructure is been an issue to many developing and developed countries in the world. The study conducted by Nataraj (2014: 5-11) in India revealed that infrastructure is financed by the following sources:

• Domestic savings
• Debt - from commercial banks, non-banking finance companies, insurance companies and the external commercial borrowings (ECB)
• Public-private partnerships

Further, Nataraj (2014: 8) states that the non-banking finance companies (NBFCs) increased their borrowing to fund the following infrastructure:

• Power infrastructure
• Telecommunication infrastructure
• Road infrastructure

Additionally, Nataraj (2014: 8) states that the non-banking finance companies’ funding infrastructure in India includes the Power Finance Corporations (PFCs), the Rural Electrification Corporation (RECs), the Infrastructure Development Finance Company (IDFCs), the India Infrastructure Finance Company Limited (IIFCL), Larsen & Toubro (L&T) infrastructure and the Industrial Finance Corporation of India (IFCI). The study of Sinha (2014: 5-15) also revealed that the Indian government uses the following sources to obtain funds to finance infrastructure and these are considered the main sources of long-term financing:

• Banks – commercial banks, life insurers (life fund) and non-life insurers
• Life insurance and pension funds – life funds, pension and annuity funds and unit linked (ULIP) funds
• Bond market
• Infrastructure finance company (IFC)
• Infrastructure debt fund
• Long maturity tax-free infrastructure bonds
• India Infrastructure Finance Company Limited (IICL)

Sinha (2014: 13) further state that infrastructure projects require long-term financing, and life insurance, pension funds, infrastructure finance companies (IFC) and infrastructure debt funds are the major sources of long-term finance. The functions of banks can be to offer short-term financing during the construction period of a project. The results of studies by Nataraj (2014:5-11) and Sinha (2014: 5-15) were also in agreement with the study conducted by Bothra (2011: 2-5)
which revealed that the India government uses various sources to obtain funds to finance infrastructure. The following are the major sources of finance in India:

- Public private partnership
- Bank financing
- India infrastructure finance company limited (IIFCL)
- Infrastructure finance companies (IFCs)
- Foreign direct investment
- Foreign institutional investors investment
- Infrastructure bonds
- Infrastructure debt funds

3.4. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING IN INDIA

This paper focused on the following transportation infrastructure financing in India:

- Railways infrastructure financing
- Roads infrastructure financing
- Airport infrastructure financing
- Inland infrastructure financing
- Ports infrastructure financing

The transport infrastructure in India plays an important role in simulating economic growth. The transport infrastructure facilitates access and allows the country trade and conduct business easily. The transport infrastructure of India comprises the following (Sahoo, 2011: 18):

- Roads infrastructure – supporting economic development and allowing trade and investment to take place in India;
- Rail infrastructure – supporting economic development;
- Airport infrastructure – supporting economic development; and
- Ports infrastructure – supporting economic development.

Additionally, Sahoo (2011:18) states that India faces major challenges in the transport infrastructure sector and infrastructure projects, namely roads, railways, ports and power are owned and managed by the state and it is the state’s responsibility to provide funds for transport
infrastructure financing. However, the government still requires the assistance of the private participation in the financing of transport infrastructure in India. The study conducted by Bothra (2011: 2-5) revealed that the Indian government uses various sources to obtain funds to finance transport (roads, rail and airports) infrastructure. The following are the major sources of finance for transport infrastructure in India:

- Public private partnership
- Bank financing
- India infrastructure finance company limited (IIFCL)
- Infrastructure finance companies (IFCs)
- Foreign direct investment
- Foreign institutional investors investment
- Infrastructure bonds
- Infrastructure debt funds

The results of the study of Bothra (2011: 2-5) were in agreement with the study of Nataraj (2014: 8) which also showed that the following are the major sources of finance for transport (roads, rail and airports) infrastructure in India:

- Life insurance
- Pension funds
- Infrastructure finance companies (IFC)
- Infrastructure debt funds

Furthermore, the results of the study of Sinha (2014: 5-15) also revealed that the Indian government uses various sources to obtain funds to finance transport (roads, rail and airports) infrastructure. These are considered to be the main sources of long-term financing:

- Banks – commercial banks, life insurers (life fund) and non-life insurers
- Life insurance and pension funds – life funds, pension and annuity funds and unit linked (ULIP) funds
- Infrastructure finance company (IFC)
- Infrastructure debt fund
- India infrastructure finance company limited (IICL)
These results were in agreement with the study conducted by Bothra (2011: 2-5), Sinha (2014: 5-15) and Nataraj (2014: 8) on the Indian infrastructure which included transport, power, telecommunication, electricity and water infrastructure. Furthermore, Maniar (2013) identified the following as the major sources of transport infrastructure (roads) financing in India:

- Government’s general budgetary sources
- Dedicated accruals under the Central Road Fund
- Lending by international institutions:
  - a. World Bank
  - b. African Development bank (ADB)
  - c. Japan Bank for International Cooperation (JBIC)
- Private financing under PPP frameworks:
  - a. Build-Operate-and-Transfer/Design-Build-Finance-Operate-and-Transfer (DBFOT) – Investment by private firms and returns through levy and retention of a user fee
  - b. Build-Operate-and-Transfer (Annuity) - BOT (Annuity) - Investment by private firm and returns through semi-annual payments from National Highways Authority of India (NHAI) as per bid
  - c. Special purpose vehicle (SPV) (with equity participation by NHAI)
  - d. Market borrowings

### 3.5. CHALLENGES FACING INFRASTRUCTURE FINANCING IN INDIA

India faces multiple challenges in financing its infrastructure. The City of London and Execution Noble (2012: 2) conducted interviews with the domestic investors and developers involved in financing infrastructure projects in India. The results of the interviews revealed that India faces multiple issues in infrastructure development. The following are the major issues facing infrastructure financing in India:

- Political and bureaucratic challenges;
- Lack of a meaningful supply of bankable projects;
- Lack of transparency in the PPP bidding;
- Lack of transparency in the awarding process of PPP projects;
• Delays in regulatory approvals;
• Delays in land clearances;
• Lack of availability of the right kind of long-term debt;
• Taxation issues; and
• Lack of an independent regulatory authority.

3.6. ROLES OF TAXATION REGARDING ECONOMIC DEVELOPMENT IN INDIA
Chadha (2009: 2) states that tax policies of India play a significant part in the economy through their impact on both efficiency and equity. Additionally, Chadha (2009:2) states that a good tax system must retain in view issues of revenue supply and, at the same time, also attempt to create tax revenues for the upkeep of government expenditure on public services and infrastructure development. The Indian government implements a good tax system in the state that guarantees generation of revenues for the state to support the development of infrastructure. Tax revenues collected by any state are used to deliver public services and finance infrastructure in many countries. Taxes in India are levied by the central government and the state governments. Some minor taxes are likewise exacted by the local authorities, for example, the municipality. Sales expenses is one of them. Deals Tax registration is obligatory for any business element with a turnover of over Rs. 5 lakhs offering merchandise for sale in India. The power to impose an assessment comes from the Constitution of India which assigns the ability to demand different expenses between the Central government and the State. A vital limitation on this force is Article 265 of the Constitution which indicates that “No duty might be exacted or gathered aside from by the power of law”.

3.7. ROLES OF INFRASTRUCTURE DEVELOPMENT REGARDING ECONOMIC GROWTH IN INDIA
Sahoo (2011:1) states that infrastructure development, either economic or social, is one of the major determinants of economic growth, mostly in developing countries such as India. The investment in physical and social infrastructure positively stimulates economic growth. Furthermore, Sahoo (2011:1) states that infrastructure development forms one of the main features contributing to the whole economic development in the following ways:
• Direct investment on infrastructure generates production facilities and encourages economic activities.
• It reduces transaction costs and trade costs, improving competitiveness.
• It provides employment opportunities.
• It provides physical and social infrastructure to the poor.

Infrastructure development in India is considered as the most important factor which contributes to production growth by encouraging economic activities, productivity and improving the quality of life. This indicates that a lack of infrastructure spending will lead to a lower productivity growth in any country (Sahoo, 2011:8). Further infrastructure is considered to have a positive and significant effect on productivity growth. Infrastructure development is a means of promoting economic growth and it is essential for any country to invest in infrastructure that will leads to economic growth. Sahoo (2011: 18) states that transport infrastructure plays an essential part in stimulating the development of the backward regions and enabling them to participate in the mainstream economy by opening them to trade and investment. The study of Nallathiga (2015:76-77) in India revealed that infrastructure plays a significant role in the economic development of any country in the world by:

• Providing the required services that upkeeps economic growth by increasing the productivity of labourers and capital,
• Reducing the costs of production and raising profitability, production, income and employment, and
• Ensuring the effective functioning of the economy.

3.8. LESSONS LEARNT FROM INDIA

The Indian literature reviewed in this chapter revealed that India obtains funds to finance infrastructure from different sources which include the following: public private partnership; bank financing; India infrastructure finance company limited (IIFCL); infrastructure finance companies (IFCs); foreign direct investment; foreign institutional investors investment; infrastructure bonds and infrastructure debt funds. The study also identified the following as the major sources of transport infrastructure financing in India: public private partnership; bank financing; India infrastructure finance company limited (IIFCL); infrastructure finance companies (IFCs); foreign
direct investment; foreign institutional investors investment; infrastructure bonds and infrastructure debt funds.

Further the literature reviewed identifies the following as the major challenges facing infrastructure financing in India: political and bureaucratic challenges; lack of a meaningful supply of bankable projects; lack of transparency in the PPP bidding; lack of transparency in the awarding process of PPP projects; delays in regulatory approvals; delays in land clearances; lack of availability of the right kind of long-term debt; taxation issues; and lack of an independent regulatory authority.

The study further revealed that the Indian government believes that there is a serious relationship between taxation and economic development in India, and also that taxation revenues in India are used to finance infrastructure development, to provide public services and to create employment for citizens of India. Furthermore, the Indian literature reviewed also revealed that there is a serious relationship between infrastructure development and economic growth in Indian. The following are the roles of infrastructure development regarding economic growth in India: providing the required services that upkeep economic growth by increasing the productivity of labourers and capital; reducing the costs of production and raising profitability, production, income and employment; ensuring the effective functioning of the economy; directing investment on infrastructure to create production facilities and stimulate economic growth; reducing transaction costs and trade costs, thereby improving competitiveness; providing employment opportunities and providing physical and social infrastructure to the poor.

**TRANSPORTATION INFRASTRUCTURE FINANCING IN CHINA**

**3.9. CURRENT SOURCES OF INFRASTRUCTURE FINANCING IN CHINA**

Infrastructure financing is the most important focus in many countries in the world. China is one of the biggest countries in the world and developing rapidly therefore the government is trying to meet the demand for infrastructure to maintain their economic growth. The study of Chong and Poole (2013: 69) revealed that China finances its infrastructure from various sources and the country is able to meet some of its infrastructural needs demanded by the growing population. Their study revealed the following as the major sources of infrastructure financing in China:
- Tax revenues
- Government debt
- Revenue bonds
- Infrastructure investment by government enterprises (GTEs)
- National development banks (NDBs)
- World bank
- Users charges – tolls
- Budget transfers
- Debt financing
- Equity financing
- Government grants

The results of the study of Chong and Poole (2013:69) were in agreement with the study of Zhao and Cao (2011:11-14) who also reported that China finances its infrastructure from various sources and from these sources China is able to meet some of its infrastructure demands to deliver public services to the citizens. The following are the major sources of infrastructure financing in China as revealed by Zhao and Cao (2011:11-14):

- Central and local budgetary allocation – earmarked grants
- Local earmarked taxes – value added tax, product tax and business tax
- Fees and user charges – user charges fee for using infrastructure and water resources fees, and the like
- Land transfer fee – collected revenues from leasing land rights and charging land use fees
- Debt financing – domestic loans and bond financing
- Equity financing – self-raised funds, foreign capital and stock financing

Furthermore, the results of the study of Zhao and Cao (2011:11-14), and that of Chong and Poole (2013:69) were in agreement with the study of Wu (2011: 12 ) who also identified the following as the major sources of infrastructure financing in China:

- Budgetary allocations – central budgetary allocation and local budgetary allocation
- Local taxes – maintenance and construction tax and public utility surcharge
Fees and user charges – water resources fees, infrastructure connection fees, user charges and land transfer fee
Borrowings – domestic loans, foreign capital, bonds and stock financing
Self-raised funds

3.10. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING IN CHINA
This study focused on the following transportation infrastructure financing in China:

- Railways infrastructure financing
- Roads infrastructure financing
- Airport infrastructure financing
- Inland infrastructure financing
- Ports infrastructure financing

For any country to have a good trading system, transport infrastructure is required in order to support the trading of goods and services to maintain economic growth. The study of Zhao and Cao (2011) also revealed that there are sources of transportation infrastructure financing in China. The results of the study showed that roads are financed through:

- tolls revenues and
- Road-user charges - vehicle purchase tax, road maintenance fee and highway transport management fees.

The study of Wang, Zhang, Li and Zhao (2011:2982-2984) revealed that transport (road, airport, seaport, rail and inland) infrastructure is financed from numerous sources in China. The following are the major sources of transport infrastructure financing in China:

- Construction and maintenance taxes
- Central grants
- Local grants
- Domestic loans
- Foreign investment
- Self-raised funds
- Public utility surcharge
Water resources fee

These results of the study of Wang et al. (2011: 2982-2984) were in agreement with the results of the studies of Zhao and Cao (2011:11-14), and Chong and Poole (2013:69) who also identified the following as the major sources of transport infrastructure financing in China:

- Central and local budgetary allocation – earmarked grants
- Local earmarked taxes – value added tax, product tax and business tax
- Land transfer fee – collected revenues from leasing land rights and charging land use fees
- Debt financing – domestic loans and bond financing
- Equity financing – self-raised funds, foreign capital and stock financing
- Fees and user charges – water resources fees, infrastructure connection fees, user charges and land transfer fee
- Self-raised funds

Furthermore, the results of the study of Wang et al. (2011:2982-2984), Zhao and Cao (2011:11-14), and Chong and Poole (2013:69) were in agreement with the results of the study of Wu (2011: 12) on urban infrastructure financing and economic performance in China. The results of the study identified the following as the major sources of transportation infrastructure financing in China:

- Budgetary allocations – central budgetary allocation and local budgetary allocation
- Local taxes – maintenance and construction tax and public utility surcharge
- Fees and user charges – water resources fees, infrastructure connection fees, user charges and land transfer fee
- Borrowings – domestic loans, foreign capital, bonds and stock financing
- Self-raised funds

3.11. LESSONS LEARNT FROM CHINA

The literature review revealed that China uses numerous sources to finance its infrastructure to meet its infrastructure demand. The study revealed that China finances its infrastructure from the following major sources: tax revenues; government debt; revenue bonds; infrastructure investment by government enterprises (GTEs); national development banks (NDBs); World Bank; user
charges; budget transfers; debt financing; equity financing, self-raised funds and government grants.

Furthermore, the study also revealed that China finances its transportation infrastructure from various sources and numerous scholars identified the following as the major sources of transport infrastructure in China: construction and maintenance taxes; central grants; local grants; domestic loans; foreign investment; self-raised funds; public utility surcharges and water resources fees.

3.12. CONCLUSION

This chapter revealed that there are current sources of infrastructure financing and transportation infrastructure financing. It also indicated that there are challenges facing infrastructure financing, in addition, and the roles of taxation and infrastructure development regarding economic growth in India and China were highlighted. However, very few studies have been conducted concerning the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in India and China. The next chapter covers the review of African literature on transportation infrastructure financing in Namibia and Ghana.
CHAPTER FOUR

TRANSPORTATION INFRASTRUCTURE FINANCING: AFRICA PERSPECTIVE

4.1. INTRODUCTION
This chapter covers the overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in Namibia and Ghana. Unrelated view of scholars and researchers on the same topic is reviewed in this chapter.

TRANSPORTATION INFRASTRUCTURE FINANCING IN NAMIBIA
No or very few studies have been conducted concerning the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in Namibia.

4.2. INFRASTRUCTURE IN NAMIBIA
Namibia's economy is limited and firmly connected to that of South Africa. Gross domestic product development has displayed considerable fluctuations, having arrived at the midpoint of 3.1 per cent more than 1998-2001, then quickening to 5.6 for each penny in 2002-04, and easing back to 4.6 for each penny in 2005-06. Development is conjecture to normal around 4.8 for every penny and 4.9 per cent in 2007 and 2008 respectively. There cent quickening of development was made conceivable by expanded worldwide interest for minerals, reflected in high universal costs for key fare wares such as precious stones, uranium, zinc, copper and gold. The monetary structure has remained genuinely stable over the past decade, with services contributing somewhere in the range of 55 per cent of worth included. Business confidence is solid, as appeared by the consecutive records came to by the IJG1 Business Atmosphere Index delivered month to month by the Windhoek-based Establishment for Public Policy Research (IPPR), which in September 2006 rose by 2.6 focuses to 139.5 focuses (Runji, 2003; Kiggundu, 2002).
4.3. CURRENT SOURCES OF INFRASTRUCTURE FINANCING IN NAMIBIA

The study conducted on the financing of public infrastructure in Namibia by Namakalu, Niishinda, Kadhila, Fillipus, Mukasa and Mushendami (2014:22-24) revealed that infrastructure is financed through various sources. The following are the major sources of finance for infrastructure in Namibia:

- Government funding
- User fees
- Concessional loans
- Guarantees
- On-lending
- Bond issuances
- Loans from DFIs

Furthermore, the results of the study of Namakalu et al. (2014: 22) highlighted that Namibia is also considering financing their infrastructure through the following sources:

- Public-private partnerships
- Privatization
- Listed infrastructure fund
- Pension funds
- Long-term insurance investments

The study of Kiggundu (2002: 1) conducted on road infrastructure financing in Namibia revealed that Namibia finances its road infrastructure through the following major sources:

- Fuel levies
- Vehicle license fees
- Road tolls
- Abnormal and awkward load fees
- Weight-distance charges
- Entry fees for foreign registered vehicles
- Parking and traffic congestion charges
- Overload fees
The above results of the study of Kiggundu (2002: 1) were in agreement with the study of Ranji (2003: 8) on roads infrastructure financing in Namibia and the results of the study revealed that the following are the major sources of roads infrastructure financing in Namibia:

- Weight-distance charges
- Cross-border charges
- Registration fees (vehicle registration fees)
- License fees
- Fuel levies
- Road user charges
- Overloading fines and fees
- Abnormal vehicle charges

4.4. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING IN NAMIBIA

This study focused on the following transportation infrastructure financing in Namibia:

- Railways infrastructure financing
- Roads infrastructure financing
- Airport infrastructure financing
- Inland infrastructure financing
- Ports infrastructure financing

The results of the study of Runji (2003: 8) conducted on roads infrastructure financing in Namibia was in agreement with the results of the study of Kiggundu (2002: 1), also conducted on road infrastructure financing in Namibia. The results of the study revealed that Namibia finances its road infrastructure through the following major sources:

- Fuel levies
- Vehicle license fees
- Road tolls
- Abnormal and awkward load fees
- Weight-distance charges
- Entry fees for foreign registered vehicles
- Parking and traffic congestion charges
- Overload fees

The transportation (railways, roads, and airport, inland and sea ports) infrastructure in Namibia is financed through various sources. In addition, the results of the study of Namakalu et al. (2014: 22) conducted in Namibia revealed that transport infrastructure is financed from the following major sources:

- Government funding
- User fees
- Concessional loans
- Guarantees
- On-lending
- Bond issuances
- Loans from DFIs

Furthermore, the results of the study of Namakalu et al. (2014: 22) conducted in Namibia showed that the Namibians are planning to also finance their transportation infrastructure through the following major sources:

- Public-private partnerships
- Privatization
- Listed infrastructure funds
- Pension funds
- Long-term insurance investments

4.5. CHALLENGES FACING INFRASTRUCTURE FINANCING IN NAMIBIA

Financing infrastructure in many African countries is still a major problem caused by the environmental conditions and climate effects. Namibia is facing multiple challenges in financing infrastructure and these are caused by a lack of private investors in the country due to the high cost of providing infrastructure. The study conducted by the African Development Bank (2009: 9) identified the major challenges Namibia faces concerning infrastructure financing as follows:

- Inadequate capacity
- Recurrent droughts resulting in low agricultural productivity
- High cost of providing infrastructure (transport, energy and water) due to vast size of country with a population thinly spread

### 4.6. ROLES OF TAXATION REGARDING ECONOMIC DEVELOPMENT IN NAMIBIA

Collection of taxation is a system of any country in the world to raise revenues for government. Without taxation governments would not be able to function or meet their obligations. More importantly, taxation revenues aid government to finance infrastructure needs within a country and achieve infrastructure development. The Ministry of Finance (2010) states that the Namibian tax system comprises added or less equal share of VAT and personal income taxes, a lower share of company taxes and no taxation of property. This again displays the supply side direction of the previous and the current government. An endogenous growth theory would suggest a high share of state income accrues from VAT. Endogenous growth theory would also not recommend high income taxes, because it reduces the incentive to save and therefore to accumulate capital. However, the Namibian tax structure overpowers demand and the development of the internal market. Most of the Namibian revenues stem from indirect taxes. A total of 51 per cent of the Namibian revenues are accumulated by indirect taxes, and only 48 per cent of revenues are collected by indirect taxes. This is challenging because indirect taxes affect the poor most. A higher share of direct, progressive taxes would lead to a more equal income distribution and thereby to consumption.

Furthermore, the Ministry of Finance (2011) highlighted the fact that the Namibian government decided to implement a zero VAT rate on basic food. This will definitely favour growth and development. Another concept of redistributive tax policy would be to impose a tax on luxury goods. In addition, since property tax is almost non-existent, its rate should be increased. The taxation potential is high in countries with high inequality in the distribution of income and wealth. Since Namibia is the country with the highest Gini-coefficient in the world, the taxation potential is very high. In short, for increasing growth rates, Namibian fiscal authorities should increase the progressive personal income tax, rather than increasing VAT. But even more importantly, property tax should be raised. In this way the poor in the country would have higher incomes, which will lead to growth, because they spend most of these incomes again. Lower taxes for those who have
the highest propensity to consume will lead to demand and growth. Also competitiveness will increase, because the industry sector will gain from the demand.

4.7. ROLES OF INFRASTRUCTURE DEVELOPMENT REGARDING ECONOMIC GROWTH IN NAMIBIA

Infrastructure development is the focus of many countries in the world, especially in sub-Saharan Africa. The economic growth of many countries is dependent on infrastructure development and vice versa. Namibia still needs to accelerate its infrastructure in order to stimulate economic growth by development in the country. The study of Namakalu et al. (2014: 5) conducted in Namibia revealed the type of infrastructure in Namibia and its associated role on the economic growth. The following are the roles of infrastructure development in Namibia as revealed by the study of Namakalu et al. (2014: 5):

- Road infrastructure – road network facilitates trade between Namibia and its neighbouring countries. The trans-Kalahari highway links the port to Botswana and the Gauteng Province, the industrial heart of South Africa and this road network facilitates trade.

Runji (2003) and Kiggundu (2002) state that there is a complex relationship between infrastructure and economic growth. While infrastructure development is imperative and essential for industrial take-off and economic development, the need for growth does not automatically mean higher or increased need for infrastructure and additional infrastructure does not automatically guarantee more economic growth. Theoretically, infrastructure may affect aggregate output in two main ways: (i) directly, considering the sector contribution to GDP formation and as an additional input in the production process of other sectors; and (ii) indirectly, raising total factor productivity by reducing transaction and other costs thus allowing a more efficient use of conventional productive inputs. Thus, infrastructure can be considered as a complementary factor for economic growth. But the quality of infrastructure depends on the availability and diligence of investments in an economy as it requires huge capital outlay and a structured investment approach. In Namibia, institutional investors such as the Government Institutions Pension Fund (GIPF), the broader pension fraternity as well as the Development Bank of Namibia (DBN) and the financial actors such as the asset managers, investors, insurance and commercial banks, are crucial towards
availing on a diligent and prudent basis investments in infrastructure for ensured development of Namibia.

4.8. LESSONS LEARNT FROM NAMIBIA

It has been observed from the literature review that Namibia finances its infrastructure through the following major sources: government funding; user fees; concessional loans; guarantees; on-lending; bond issuances; loans from DFIs; public-private partnerships; privatization; listed infrastructure fund; pension funds; long-term insurance investments; fuel levies; vehicle license fees; road tolls; abnormal and awkward load fees; weight-distance charges; entry fees for foreign registered vehicles; parking and traffic congestion charges, and overload fees. Furthermore, the study revealed that Namibia finances its transportation infrastructure (roads, railways, air ports, inland and sea ports) through the following sources: fuel levies; vehicle license fees; road tolls; abnormal and awkward load fees; weight-distance charges; entry fees for foreign registered vehicles; parking and traffic congestion charges; overload fees; government funding; user fees; concessional loans; guarantees; on-lending; bond issuances; loans from DFIs; public-private partnerships; privatization; listed infrastructure fund; pension funds and long-term insurance investments.

Furthermore, the study showed that Namibia faces challenges in financing infrastructure. The following are the challenges facing infrastructure financing in Namibia: inadequate capacity; recurrent droughts resulting in low agricultural productivity and the high cost of providing infrastructure (transport, energy and water) due to the vast size of the country with a population thinly spread. Furthermore, the study also showed that taxation plays an important role regarding economic development by raising funds to finance infrastructure and allowing a country to reach its development goals. In addition, the study showed the roles of infrastructure development regarding economic development. The following are the roles of infrastructure development regarding economic growth: facilitating trade and also allowing countries to communicate via working together.
4.9. CURRENT SOURCES OF INFRASTRUCTURE FINANCING IN GHANA

The study of Amoa-Gyarteng (2015: 152) conducted in Ghana revealed that there are major sources of financing infrastructure development available in Ghana. The major sources include the following:

- Public finance - government provides funds for the project (own equity or borrowed funds).
- Corporate finance - private companies provide funds for the project.
- Project finance - group of firms which establish a special purpose vehicle (SPV) to fund projects.

Owusu-Manu et al. (2015: 38) conducted a study on real estate’s development in Ghana and the study revealed that the following are the sources of infrastructure financing on real estate’s development:

- Loans (Debts)
- Mortgage loans
- Hire purchase
- Long-term leasing
- Trade crediting
- Sub-contracting
- Cash flow from operations
- Co-operating shares
- Disposal of assets
- Venture capital (VC)
- Sale and lease back
- Industrial/Commercial finance
- Bonds
- Sale of common stock
- Government grants
- Debentures
- Equity
• Retained profits

4.10. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING IN GHANA

This study focused on the following transportation infrastructure financing in Ghana:

• Railways infrastructure financing
• Roads infrastructure financing
• Airport infrastructure financing
• Inland infrastructure financing
• Ports infrastructure financing

The transportation infrastructure is important to any country for facilitating trades and allowing connectivity with other countries. There are significant benefits from transportation infrastructure and some of these benefits also stimulate economic growth. The study conducted by Amoah-Gyarteng (2015:152) in Ghana showed that transportation infrastructure is financed from different sources. The major sources include the following:

• Public finance - government provide funds for the project (own equity or borrowed funds).
• Corporate finance - private companies provide funds for the project.
• Project finance - group of firms which establish a special purpose vehicle (SPV) to fund projects.

4.11. LESSONS LEARNT FROM GHANA

It has been observed from the literature review that Ghana finances its infrastructure through the following sources: public finance whereby the government provides funds for the project (own equity or borrowed funds); corporate finance whereby private companies provide funds for the project; project finance whereby groups of firms establish a special purpose vehicle (SPV) to fund projects; loans (Debts); mortgage loans; high purchase; long term leasing; trade crediting; sub-contracting; cash flow from operations; co-operating shares; disposal of assets; venture capital (VC); sale and lease back; industrial/commercial finance; bonds; sale of common stock; government grants, debentures; equity and retained profits. Also, the study revealed that transportation infrastructure is financed through the following sources in Ghana: public finance whereby the government provides funds for the project (own equity or borrowed funds); corporate
finance whereby private companies provide funds for the project and project finance whereby
groups of firms which establish a special purpose vehicle (SPV) to fund projects.

4.12. CONCLUSION
This chapter revealed that there are current sources of infrastructure financing, of transportation
infrastructure financing, as well as challenges facing infrastructure financing. In addition, the roles
of taxation and infrastructure development regarding economic growth in Namibia and Ghana
were discussed. However, very few studies have been done concerning the challenges facing
infrastructure financing, and the role of taxation and infrastructure development on economic
growth in Namibia and Ghana. The next chapter covers a South African literature review on
transportation infrastructure financing in South Africa.
CHAPTER FIVE

TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA

5.1. CHAPTER INTRODUCTION
This chapter covers the overview of the current sources of infrastructure financing, the sources of transportation infrastructure financing, the challenges facing infrastructure financing, and the roles of taxation and infrastructure development regarding economic growth in South Africa. Unrelated view of scholars and researchers on the same topic is reviewed in this chapter.

5.2. SOUTH AFRICAN INFRASTRUCTURE
The South African government structure spending is expected to be the answer for decreasing poverty, disparity and unemployment and creating financial growth. The SIPs are relied upon to contribute fundamentally to meeting the employment creation focuses of five million occupations by 2020 (NGP) and 11 million employments by 2030 (NDP). The broad infrastructure programme is aimed at redressing deficient and wasteful infrastructure, and enhancing and expanding the nation's infrastructure system. This infrastructure drive is pushed by financial development goals and more extensive social concerns (to wipe out destitution and lessen imbalance by 2030). At the end of the day, the state faces the following triple infrastructure challenges (National Development Plan 2010, 2012):

- To provide infrastructure that encourages economic growth and job creation
- To maintain existing infrastructure
- To provide infrastructure and services to the poor in order to eliminate poverty.

The idea of government investing in public infrastructure to support production and trade and therefore growth and improvement is well established. The disagreement regarding public investment lies in the conviction that assets assigned to investment decipher into a proportional estimation of open capital stock that, by bringing down the cost of production or circulation, advantages the private portion and impacts general development. In the post-war years (1950s and 1960s), the monetary models fundamental the five-year arrangements and industrialization techniques depended strongly on large amounts of public investment. Nevertheless, South Africa
has certain difficulties that obstruct the necessary utilization of the assets for development. Given these shortcomings, and the significance of public infrastructure for state growth and regional performance, there is an urgent need to get public infrastructure right for the benefits of the nation (National Treasury, 2014; National Development Plan, 2030). Infrastructure is divided into different categories (Goel, 2003: 2). South African infrastructure includes the following:

4) Economic or physical infrastructure – this consists of transport, roads, water systems, electricity, communications, irrigation, intermediate goods and output, increasing productivity, science and technology and information systems

5) Social infrastructure – this consists of education and health facilities

6) Institutional infrastructure – this consists of banking and civil administration.

5.3. CURRENT SOURCES OF INFRASTRUCTURE FINANCING IN SOUTH AFRICA
The National Treasury (2014:4) stated that infrastructure is financed through different sources. The following are the major sources of finance for infrastructure in South Africa:

- **Tariffs** – this refers to the customs duties or taxes imposed by governments when goods are imported or exported. The following are some of the functions of tariffs:
  a) Function as a source of income for the state
  b) Give protection to domestic industries
  c) Solve trade misrepresentations

- **Public-private partnerships** – most scholars still debate about the correct definition of “PPP”. There is no precise and broadly accepted definition of PPP and the idea of PPP is still interrogated even today by various scholars. Public-private partnerships are normally acknowledged as long-term cooperative institutional arrangements between the public and private sectors to accomplish numerous purposes. The PPP is now a favourite tool for providing public services and developing society for both developing and developed countries in the world. This tool has been adopted by the South African government because of its benefits.

- **Taxes** – refers to the compulsory, unrequited payments to the general governments. It is an obligatory levy made by public authorities for which nothing is received directly in return. Taxes are considered as allocations of money to the public sector, but they eliminate
loan transactions and direct payments for publicly produced goods and services. Taxes have numerous functions for the government and the South African government uses taxes revenue for the following purposes (Pfister, 2009: 6; National Treasury, 2014: 46):

- Deliver public services
- Conduct business
- Create jobs
- Provide funds for infrastructure development
- Create wealth
- Public subsidization

In short, the South Africa government uses tax revenues to meet its targeted economic growth.

- **Loans** – refer to the money obtained by government or individuals from financial institutions or lenders. Calitz and Fourie (2010:7-8) state that most governments obtain funds in the form of a loan from lenders or financial institutions to finance infrastructure. The South African government adopted this system of making loans to finance infrastructure, as this appears to be a fair system when a lower rate of interest is being charged on the loan, especially as the tax payers are normally going to repay the loan. The system works this way: government obtains a loan to finance infrastructure. When the required infrastructure is completed, in the case of a highway or roads, the government will charge the users (e.g. tolls) for using the roads and the collected money will be used to repay the loan. Normally the user charges will take care of the debt servicing and the operational cost.

Brits (2010: 41) states that it is the responsibility of the South African National Roads Agency to provide funds for road infrastructure when the state budget is unable to provide finances. Furthermore, the study conducted by Brits (2010:41) in South Africa revealed that there are various major sources for funding the national road network of South Africa which include the following:

- Toll revenues – raised by means of the road user charges and these revenues are used for maintaining and upgrading the roads.
- Capital market loans – loans which are from the capital and money market.
- Bonds – medium and long-term bonds are supplied, guaranteed by the South African government.
- Private sector investment – funding is supplied through public-private partnerships and concession toll roads.

The study of Calitz and Fourie (2010: 7-8) conducted in South Africa showed various sources of infrastructure financing. The results were in agreement with the results of the studies of Owusu-Manu et al., (2015: 38), Uddin et al. (2013), Sinha (2014:5-15), Bothra (2011:2-5) and Ray (2015:7). The following are the major sources of infrastructure financing:

- Tax revenues
- Lenders to government or enterprises (loans or guarantees)
- Private investors (equity)
- Development agencies (loans)
- Donors (grants)

5.4. SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA

This study focused on the following transportation infrastructure financing in South Africa:

- Railways infrastructure financing
- Roads infrastructure financing
- Airport infrastructure financing
- Inland infrastructure financing
- Ports infrastructure financing

The results of the study conducted by Brits (2010: 41) were in agreement with the results of the studies of Ray (2015:11, 14-21) and Cohen et al. (2012: 10) who also revealed that the following are the various major sources of transport infrastructure financing:

- Toll revenues – elevated by means of the road user charges and these revenues are used for maintenance and upgrading of the roads
- Capital market loans – loans which are from the capital and money market
- Bonds – medium and long-term bonds are supplied, guaranteed by the government
- Private sector investment – funding supplied through public private partnerships and concession toll roads
The study of Calitz and Fourie (2010: 7-8) conducted in South Africa revealed that transport infrastructure can be financed through different sources. The following are the major sources of transport infrastructure financing as revealed by their study:

- Cash from tax payers / taxation revenues
- Lenders to government / government enterprises (loans / guarantees)
- Private investors (equity)
- Development agencies (loans)
- Donors (grants)

According to the National Treasury (2014: 4), transport infrastructure is financed through different sources. The following are the major sources of finance for transport infrastructure in South Africa:

- Tariffs
- Public-private partnerships
- Taxes
- Loans

5.5. CHALLENGES FACING INFRASTRUCTURE FINANCING IN SOUTH AFRICA

South Africa's financial decisions since 1994 have added to positive total national output (GDP) development rates, enhanced welfare and ways of life, and access to mass monetary framework by a dominant part of the population. The nation has gained much ground in lessening destitution and imbalance yet still faces massive deficits in financial and social foundation (National Development Plan 2030, 2012). The principle mainstays of government financial strategy, the New Growth Path (NGP), the Industrial Policy Action Plan and the National Development Plan (NDP) are secured in a massive sloping up of current capital consumption by the state. In the 2014 Budget, government apportioned an aggregate of R847 billion to public infrastructure investment, specifically the transport and power segments. This was reconsidered downwards by R34.2-billion to R813.1-billion in the 2015 Budget in view of lower-than anticipated financial development and the need to contain use (Gu, 2009).
Infrastructure improvement is key to the NDP, therefore elevated amounts of investment in infrastructure will proceed into the predictable future. In 2012, the Presidential Infrastructure Coordinating Commission (PICC) grown South Africa's first national infrastructure plan, which recognizes 18 vital coordinated ventures. The SIPs are groups of infrastructure ventures considered as key for advancing financial development and supporting administration conveyance to poor people. They cover seven expansive sorts of infrastructure: geographic, spatial, energy, social infrastructure, learning, local reconciliation, and water and sanitation (National Treasury, 2007; 2014).

The South African government structure spending is expected to succeed in decreasing poverty, disparity and unemployment and creating financial growth. The SIPs are relied upon to contribute fundamentally to meeting the employment creation focuses of five million occupations by 2020 (NGP) and 11 million employments by 2030 (NDP). The broad infrastructure programme is aimed at redressing deficient and wasteful infrastructure, and enhancing and expanding the nation's infrastructure system. This infrastructure drive is pushed by financial development goals and more extensive social concerns (to wipe out destitution and lessen imbalances by 2030). At the end of the day, the state faces the following triple infrastructure challenges (National Development Plan 2010, 2012):

- To provide infrastructure that encourages economic growth and job creation
- To maintain existing infrastructure
- To provide infrastructure and services to the poor in order to eliminate poverty

The idea of government investing in public infrastructure to support production and trade and therefore growth and improvement is well established. The disagreement for public investment lays on the conviction that assets assigned to investment decipher into a proportional estimation of open capital stock that, by bringing down the cost of production or circulation, advantages the private portion and impacts general development. In the post-war years (1950s and 1960s), the monetary models fundamental the five-year arrangements and industrialization techniques depended strongly on large amounts of public investment. Nevertheless, South Africa has certain difficulties that obstruct the compelling utilization of the assets for development. Given these shortcomings, and the significance of public infrastructure for state growth and regional
performance, there is a demanding need to get public infrastructure right for the benefits of the nation (Gu, 2009).

Gu (2009) showed all the challenges to be overcome during infrastructure financing in order to implement required infrastructure development. These challenges originate from government officials most of the time, especially in the local municipalities. The following are some of the challenges Eskom has identified during the implementation of their NDP SIPs:

- Accelerated approvals - regulatory approvals for items such as water use licenses, land and rights and others impacting infrastructure projects must be accelerated.
- Effective communication - on-going communication must be controlled across spheres of government to communities and business, making them aware of progress and activities in their area.
- Active coordination and capacity building - bulk cut across provinces and all government entities must participate and coordinated plans. Capacity building in government and businesses must be proactively managed to plan procure and execute projects.
- Urban planning - municipalities must make provision for additional resources and strengthen local services to accommodate pressure from the mass influx of out-of-town workers and new residents including new businesses. Methods to improve access to land for servitudes required.
- Ethical conduct - underpinning the success of government’s infrastructure plan is honesty, fair practice and avoiding corrupt behaviour.

It is very important for the government to ensure that private investors and development agencies are fairly treated and according to the conditions of their agreement to avoid projects’ abandonment. Most investors and development agencies are attracted by the benefits a certain investment contains. Since government has adopted the system of using private investors and development agencies to finance their required infrastructure and plans to increase their economy through the infrastructure development system, it is also essential to provide investors or development agencies with better conditions for their investments.

Further, it is commonly known that infrastructure projects frequently necessitate large investments. They also have a long gestation periods and they quite often require multiple parties such as private sector firms, government and private investors to come together to execute the proposed
projects. So the government and private sector must provide funds to implement and maintain the projects, as they may derive private benefits in participating in the projects. Furthermore, the government’s ability to finance infrastructure is sometimes limited by fiscal shortfalls. This may be a big challenge to the private investors, because this can potentially limit the willingness of private investors to supply the required capital to the government which is in a bad fiscal position (Acharya & Sundaresan, 2014: 1).

5.6. ROLES OF TAXATION REGARDING ECONOMIC DEVELOPMENT IN SOUTH AFRICA
The study of Pfister (2009: 7) conducted in South Africa revealed that there are concerns which must be addressed in order to make tax work in favour of investment and development. The following is the list of the concerns to be addressed:

- National resource utilization and broadening the tax base;
- Tax evasion;
- Investment climate and initiative development

These challenges need to be addressed and rectified to enable tax revenues to be used in the service of investment and development. Normally taxes are used to finance infrastructure and the services of the infrastructure pay back the money in the form of tax charges. Many countries use taxation to finance infrastructure to improve their quality of life and to achieve economic growth. Taxation is considered as the most essential element of economic growth to any country. The National Treasury Report (2014: 45) highlighted that South Africa's tax structure shapes part of the premise of the nation's open investment. The harmony between the three main taxes, namely individual salary charge, esteem included duty (VAT) and corporate income charge, gives the establishment to an assessment framework that reacts adaptably and reasonably to the business cycle. While ostensible aggregate duty income declined from 27.6 per cent of GDP in 2007/08 to 24.4 per cent in 2009/10 as a consequence of the 2009 retreat, charge income is relied upon to recover to 25.9 per cent of GDP in 2013/14, upheld by solid development in corporate salary expenses and civilizations responsibilities. Ostensible aggregate duty incomes are evaluated to develop at a normal of 10.4 per cent for each year over the medium term, achieving 26.5 per cent of GDP in 2016/17. This goal is set by the South African government in order to collect enough tax revenue
to meet the required infrastructure development in the country as the South African government believes that numerous infrastructure developments in the country will stimulate economic growth. In addition, meeting the requirements for infrastructure development will depend on the total tax revenue collections and strong economic growth. It is a goal of any country to ensure that citizens benefits equally from infrastructure development.

The results of the study of Pfister (2009:6) conducted in South Africa were in agreement with the National Treasury report of 2014 of South Africa which also indicated that taxation provides various functions to a nation which leads to economic growth. The following are the functions of taxation in South Africa indicated by the study of Pfister (2009):

- Provide public services
- Conduct business
- Create jobs
- Deliver funds for infrastructure development
- Construct wealth
- Public subsidization

The relationship between taxation and infrastructure development in relation to economic development is fascinating and not complicated. Most physical infrastructure creates very large sums of money for the government in different ways, for example, the construction of roads are funded by tax revenues and the users of the roads are charged (e.g. tolls) for using those specific roads (Calitz & Fourie, 2010: 8). Furthermore, the results of the study of Waidyasekera (2007: 1-2) were in agreement with the results of the studies of Pfister (2009:6) and Besley and Persson (2013:53-54) who also identified that the following are the main functions of taxation in relation to economic development:

- To raise revenue for the government for its public expenditure;
- To reduce inequalities through a policy of redistribution of income and wealth;
- For social proposes such as discouraging certain activities which are considered undesirable;
- To ensure economic goals through the ability of the taxation system to influence the allocation of resources;
To increase the level of savings and capital formation in the private sector partly for borrowing by the government and partly for enhancing investment resources within the private sector for economic development;

To protect local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises; and

To stabilize national income by using taxation as an instrument of demand management.

5.7. ROLES OF INFRASTRUCTURE DEVELOPMENT REGARDING ECONOMIC GROWTH IN SOUTH AFRICA

It is revealed that economic theory recognizes five channels through which infrastructure can positively influence economic growth (Fedderke & Garlick, 2008:3). In addition, the studies of Fedderke and Garlick (2008: 3) and Perkins (2011) revealed that infrastructure plays an essential role in aiding economic growth. Infrastructure act in the following ways:

- Factor of production – infrastructure may be considered as a direct input into the production process. It is said that an increase in the stock of infrastructure would increase the output of the economy as a whole, directly encouraging economic growth. An Example of this channel would be the role of power generation infrastructure;

- Complement to other factors – infrastructure may be considered as a complement to other inputs into the production process in two senses:
  i. Improvements in infrastructure may lower the cost of production,
  ii. Good infrastructure increases productivity of other inputs in the production process;

- Stimulus to factor accumulation – infrastructure may impact growth indirectly, by boosting the accumulation of other factors (schools, roads, electricity, and the like) of production or by boosting the productivity of these factors of production;

- Stimulus to aggregate demand – this is mostly applied by government;

- Tool of industrial policy – this is mostly applied by government: it focuses on the potential for infrastructure spending by government to act as a tool of industrial policy;

- Growth as a determinant of infrastructure spending – this is applied by private sector firms. Private sector firms may invest directly in infrastructure (though this has been relatively uncommon in South African history) or they may lobby government to engage in particular
infrastructure investments in order to transport this output, communicate with potential buyers of this output and train more skilled workers to produce this output in the future.

These results of the study by Fedderke and Garlick (2008: 3) were in agreement with the results of the study of (Calitz & Fourie, 2010), namely that economic theory recognizes five channels through which infrastructure can positively impact on economic growth. The following are the five channels through which infrastructure can positively impact on economic growth:

- As a direct input into the production process and hence as a factor of production;
- By complementing other inputs into the production process, in the sense of lowering or raising the cost of production;
- Stimulating factor accumulation through, for example, providing facilities for human capital development;
- Boosting aggregate demand through increased expenditure during construction, and possibly during maintenance operations; and
- Serving as a tool to guide industrial policy.

Furthermore, the study of (Calitz & Fourie, 2010) highlighted the fact that infrastructure development is a prerequisite for poverty alleviation and employment creation in poor countries. The study showed the following reasons why infrastructure development is important as well as its benefits on economic growth:

- Well-developed infrastructure ensures better living conditions for the general population and
- Well-developed infrastructure improves the competitiveness of private businesses.

**5.8. LESSONS LEARNED**

The reviewed literature in this chapter identified the following as the major sources of infrastructure financing in South Africa: toll revenues; property taxes; general taxation; transfers from a state or province to a local agency; public-private; development agencies; loans; tariffs; domestics savings; debt; equity; bond market and donors (grants). The study also identified the following as the major sources of transport infrastructure financing in South Africa: public-private partnerships; toll incomes; private sector investment; cash from tax payers / taxation revenues;
lenders to government; government enterprises (loans / guarantees); private investors (equity) and development agencies (loans).

Furthermore the reviewed literature identified the following as the major challenges facing infrastructure financing in South Africa: to provide infrastructure that encourages economic growth and job creation; to maintain existing infrastructure and to provide infrastructure and services to the poor in order to eliminate poverty. The study also revealed that there is a direct relationship between taxation and economic development. The following are the roles of taxation on economic development in South Africa: to raise revenue for the government for its public expenditure; to reduce inequalities through a policy of redistribution of income and wealth; for social proposes such as discouraging certain activities which are considered undesirable; to ensure economic goals through the ability of the taxation system to influence the allocation of resources; to increase the level of savings and capital formation in the private sector partly for borrowing by the government and partly for enhancing investment resources within the private sector for economic development; to protect local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises and to stabilize the national income by using taxation as an instrument of demand management.

The study further revealed that infrastructure development plays an essential role in economic growth. The infrastructure development is used to create employment for the nation and reduce poverty. Infrastructure development plays an important role regarding economic growth by acting as a factor of production; a complement to other factors; a stimulus to factor accumulation; a stimulus to aggregate demand; a tool of industrial policy and growth as a determinant of infrastructure spending

5.9. CONCLUSION
This chapter revealed that there are current sources of infrastructure financing and transport infrastructure financing. There are challenges facing infrastructure financing. The roles of taxation and infrastructure development on economic growth in South Africa were also discussed. However, very few studies have been conducted concerning the challenges facing infrastructure financing, and the roles of taxation and infrastructure development on economic growth in South Africa. The next chapter covers the research methodology adopted for this study.
CHAPTER SIX

RESEARCH METHODOLOGY

6.1. CHAPTER INTRODUCTION
This chapter reveals the research methodology selected for this study and the explanations behind this selection. Furthermore, the study design, population and sample methods are also explained. In addition, the chapter will explain the following:

- The area of the study; and
- The tool used to collect data.

6.2. RATIONALE OF THE STUDY
The motivation for conducting this research was to improve the knowledge about other sources of infrastructure financing rather than taxation revenues. The outcomes of this study will hopefully contribute to a better understanding of the roles of taxation and infrastructure development regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the results will provide a better understanding of the sources of transport infrastructure financing.

6.3. RESEARCH APPROACH AND DESIGN
Pilot and Hungler (1993:14) describe quantitative research as a study conducted to obtain data from respondents by the use of self-report, which is the respondents’ response to a sequence of questions posed to them by the researcher. This study used a quantitative exploratory descriptive design to identify, analyze and describe the roles of taxation regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transportation infrastructure financing and the roles of infrastructure development regarding economic growth in Gauteng Province, South Africa were examined. The current study collected data through a structured questionnaire which was distributed to the respondents by the researcher.
6.3.1. Exploratory descriptive design
The study was exploratory because it explored the roles of taxation regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, it explored the sources of transportation infrastructure financing and the roles of infrastructure development regarding economic growth in the Johannesburg Metropolitan Municipality in Gauteng Province in South Africa. This was chosen for gaining a better understanding of infrastructure financing, and its advantages and disadvantages, and also its benefit to the economy. This study attempted to identify and describe the roles of taxation regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transport infrastructure financing and the roles of infrastructure development regarding economic growth in Gauteng Province, South Africa were examined.

6.4. RESEARCH AREA
This study was conducted in Gauteng Province in the Johannesburg Metropolitan Municipality in South Africa (See Figure 3.1). The study focused on professionals working for the Department of Infrastructure Development and construction professionals. These included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals who are involved in construction projects. The area was chosen because the researcher is familiar with the area and secondly, because of the high number of construction projects taking place in the area. The study covered the roles of taxation and infrastructure development regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the study covered the sources of transport infrastructure financing in South Africa.
6.5. RESEARCH SETTING

Data was collected in projects that are based in the Johannesburg Metropolitan Municipality in Gauteng Province in South Africa.

6.6. TARGETED AREA AND RESPONDENTS

The industry of construction is one industry that involves different professionals working together to achieve one goal. These professionals are involved from the inception stage to the completion stage of projects. The study was conducted on a construction site in the Johannesburg Metropolitan Municipality in Gauteng Province in South Africa because the research targeted construction professionals who include engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals who are involved in construction projects and...
professionals working for the Department of Infrastructure Development in Gauteng Province as the respondents of the study. Questionnaires were distributed to the construction professionals who worked full time on site, and emailed to the construction professionals who worked in head offices. Some were also distributed to the Department of Infrastructure Development.

6.7. RESEARCH POPULATION
According to Burns and Grove (1993:779), a population is defined as all individuals, objects and events that meet the sample criteria for inclusion in a study. The research population for this study comprised all the construction professionals who include engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals that are involved in construction projects and professionals working for the Department of Infrastructure Development in the Gauteng Province in the Johannesburg Metropolitan Municipality in South Africa. In addition, construction professionals were selected regardless of being registered with a specific council. All who were aged 23 or older were considered as part of the population. In this study, the participants could be either sex or any race.

6.8. SAMPLE
A convenient sample consists of subjects included in the study because they happen to be in the right place at the right time (Polit & Beck, 2004: 292). A sample of 150 subjects was selected from the Gauteng Province in the Johannesburg Metropolitan Municipality in South Africa. Pilot and Beck (2004: 291) define sampling as the process of selecting a portion of the populace to describe the entire populace. Accessible subjects were entered into the study until a sample size of 130 was reached. Subjects who met the sample criteria were identified by the researcher and explanations were made to them about the purpose of conducting the study. The sample size of 130 was the total number of subjects who were willing to participate in the research and who met the sampling criteria provided below.

The construction professionals and professionals working for the Department of Infrastructure Development had to meet the following criteria to be included in the sample. They should:

- have 1-5 years’ experience or more, regardless of being registered with a specific council
• Be willing to participate
• be of either sex or any race

6.9. DATA COLLECTION
Questionnaires were used to collect data appropriate to the study’s objectives and research questions. The selected respondents were given questionnaires on site on 05 June 2016. When 100 respondents had completed the questionnaires, the completed questionnaires were collected by the researcher for data analysis purposes.

Data was collected in the projects that were based in the Johannesburg Metropolitan Municipality in Gauteng Province in South Africa. The data collection period took approximately two month plus two weeks in order to give respondents time to fill in the questionnaires without any pressure. It took an average of 15-20 minutes to complete one questionnaire.

6.10. DATA COLLECTION INSTRUMENT
Seaman (1991:42) defines data collection instruments as devices used to collect data, such as questionnaires, tests, structured interview schedules and checklists. A questionnaire was selected as a data collection tool for this study. The questionnaire type adopted in this study was a closed-ended questionnaire, which provided the respondents with options to choose from when completing the questionnaires. The closed-ended questionnaire was chosen for this study because it is easier to interpret and analyze the data from respondents.

6.10.1. Development of the questionnaire
This study attempted to identify the roles of taxation regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transportation infrastructure financing and the roles of infrastructure development regarding economic growth were examined. The literature review indicated that most countries support infrastructure development as this helps to achieve economic growth. Their economy.

The sections of the questionnaire were adopted from the literature review. The drafted questionnaire was checked by the supervisor at the University of Johannesburg. Variations
recommended were applied to the questionnaire. The questionnaires were typed in a simple English format and were precise and concise (See Appendix 2: Questionnaire). A pilot study was conducted with five construction professionals on construction sites to test the understanding of the terms provided in the questionnaire.

6.10.2. Structure of the questionnaire

The questionnaire comprised the following five sections:

Section A: Personal data

Section B: The current sources of infrastructure financing

Section C: The sources of transportation infrastructure financing

Section D: Challenges facing infrastructure financing

Section E: The role of taxation regarding economic development

Section F: The role of infrastructure development regarding economic growth

The questionnaire was used to elicit information on the roles of taxation and infrastructure development regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, there were also questions about the sources of transport infrastructure financing in South Africa. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree); 1 (no) to 5 (don’t know) and 1 (not a challenge) to 5 (very serious challenge) was adopted for the questionnaire.

Table 6.1: Questionnaire survey

<table>
<thead>
<tr>
<th>Survey responses</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire sent out</td>
<td>130</td>
</tr>
<tr>
<td>Questionnaire received back</td>
<td>100</td>
</tr>
<tr>
<td>Usable questionnaire</td>
<td>100</td>
</tr>
<tr>
<td>Usable response rate (%)</td>
<td>76.92%</td>
</tr>
</tbody>
</table>
The collected data from the respondents was then checked and transferred to an Excel Microsoft spreadsheet before being analyzed. All pie charts and bar charts were done using Excel Microsoft and mean item scores, standard deviations and ranking were done using the Statistical Package for Social Sciences (SPSS).

6.11. PERIOD OF COLLECTION
The data was collected by the researcher between 05 June 2016 to 25 July 2016 (a period of one month plus three weeks.

6.12. MEAN ITEM SCORE
The researcher used the five-point Likert scale to determine the roles of taxation and infrastructure development regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transport infrastructure financing in Gauteng Province in South Africa with reference to the identified factors from the reviewed literature were also determined. The following scales were used in the questionnaire:

**SCALE A**
1. Strongly disagree (SD)
2. Disagree (D)
3. Neutral (N)
4. Agree (A)
5. Strongly agree (SA)

**SCALE B**
1. Not a source
2. Yes, minor contribution
3. Yes, moderate contribution
4. Yes, major contribution
5. Don’t know

**SCALE C**

1. Not a challenge
2. Minor challenge
3. Moderate challenge
4. Serious challenge
5. Very serious challenge

This five-point scale was used to calculate the mean item score (MIS) for the factors of the roles of taxation and infrastructure development regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transportation infrastructure financing were also assessed by the respondents. All calculated mean item scores were used to determine the ranking of each factor. The ranking showed the researcher which factors were ranked the first, second and so on by the respondents. The mean item score (MIS) was calculated for each item as follows:

\[
\text{MIS} = \frac{n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{N} \quad \text{Equation 1.0}
\]

Where:
- \(n_1\) = Number of respondents for strongly disagree
- \(n_2\) = Number of respondents for disagree
- \(n_3\) = Number of respondents for neutral
- \(n_4\) = Number of respondents for agree
- \(n_5\) = Number of respondents for strongly agree
- \(N\) = Total number of respondents
All the calculated MISs were then ranked in descending order (from the highest to the lowest) of their mean item score (MIS).

6.13. CONSISTENCY
Consistency and reliability statistic measure of Cronbach’s alpha was conducted to check an internal consistence. Cronbach’s alpha is used to measure internal consistency of a test or scale, it defines the extent to which all the items in a test measure the same notion or idea and therefore it is connected to the inter-relatedness of the items within the test (Tavakol & Dennick, 2011:53). The Cronbach’s alpha was adopted in the current study to check the internal consistence and the outcomes of the internal consistence for each category of the questions are indicated in Table 6.2 below.

**Table 6.2: Consistence test using the Cronbach’s alpha**

<table>
<thead>
<tr>
<th>Category</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current sources of infrastructure financing</td>
<td>0.744</td>
</tr>
<tr>
<td>Sources of transportation infrastructure financing</td>
<td>0.759</td>
</tr>
<tr>
<td>Challenges facing infrastructure financing</td>
<td>0.923</td>
</tr>
<tr>
<td>Roles of taxation on economic development</td>
<td>0.891</td>
</tr>
<tr>
<td>Roles of infrastructure development on economic growth</td>
<td>0.841</td>
</tr>
</tbody>
</table>

The Cronbach’s alpha of above 0.7 is adequate, meaning that an alpha of above 0.7 is probably a realistic goal (George & Mallery, 2003). The data analysis was carried out as the internal consistence tests indicated that the Cronbach’s alpha of the current study was within the acceptable values and all items in the study were measuring the same concept and all the items were inter-related.

6.14. DATA ANALYSIS
Pallant (2011) states that it is self-evident that most of the quantitative data analysis requires the use of relatively sophisticated forms of statistical analysis, and therefore a sophisticated statistical software package is required for the researcher to be able to manipulate the data and run the
required tests. The study used the Statistical Package for Social Sciences (SPSS) computer software and Excel Microsoft to analyze the collected data from respondents. Some conclusions were also drawn from the data. Data was presented and analyzed in the form of frequencies and percentages. Frequency tables were drawn from the data collected and data was also presented in pie chart diagrams, bar graphs and tables.

6.15. LIMITATION OF THE STUDY
This research was restricted to the construction industry and the Department of Infrastructure Development in South Africa. This research was only based on the construction professionals and professionals from the Department of Infrastructure Development in Gauteng Province in South Africa. The respondents included engineers, architects, quantity surveyors, construction managers, project managers and other specialist professionals that are involved in construction projects. In addition, the study only determined the role of taxation regarding economic development, the challenges facing infrastructure financing and the current sources of infrastructure financing. Furthermore, the sources of transport infrastructure financing and the role of infrastructure development regarding economic growth in South Africa were also examined.

The study followed a quantitative research approach, and questionnaires were used as the data collection techniques. The study involved a preliminary descriptive examination of the perceptions and experiences of construction professionals. The main reason of using this method was to focus only on the parties involved in the construction projects, their experiences in the construction industry. Construction professionals with less than 5 years of experience were not included in the study.

6.16. ETHICAL CONSIDERATION
The permission to carry out the study was required from and granted by the Site Manager, Contract Manager and Site Agent in the projects which were taking place in Gauteng Province in South Africa. All the construction professionals who participated in this study were informed about the study and their permission was obtained. The procedure of completing the questionnaire was explained to the participants. (See Appendix 2: Questionnaire). Participants were guaranteed that their contributions are most significant, and that their identities would be protected by the
researcher (Appendix 1: Cover Letter). Furthermore, participants were informed in writing of the voluntary nature of their participation and that they could withdraw from the study at any time without penalty. They were also advised that at any time during the process they could refuse to answer any question.

6.17. CONCLUSION

This section deliberated the study methodology adopted for this study and further defined the study approach and strategy, population and sample, questionnaires, data-collection instrument and ethical considerations. The following chapter 7 discusses the findings and data analysis.
CHAPTER SEVEN

FINDINGS AND DATA ANALYSIS

7.1. CHAPTER INTRODUCTION
This chapter discusses the data analysis and findings of the study. The results presented were obtained from structured questionnaires which were sent out to the research respondents, who included consultants, architects, project managers, construction managers, engineers, and quantity surveyors. An analysis of the data and an interpretation of the results were obtained from the questionnaire, which was sent out to the research respondents to complete. This questionnaire served as the foundation of the quantitative data collection for the study. Data was presented clearly with the aid of tables, percentages and graphs, where possible. In addition, the research respondents completed all questions in the research questionnaire, which consisted of eleven (11) questions. The analysis was done using all one hundred returned useful questionnaires (100) completed by the research respondents out of the one hundred and thirty (130) questionnaires which had been sent out, reflecting a 76.92 per cent response rate.

The questionnaire comprised the following five sections:

Section A: Personal data

Section B: The current sources of infrastructure financing

Section C: The sources of transportation infrastructure financing

Section D: Challenges facing infrastructure financing

Section E: The roles of taxation regarding economic development

Section F: The roles of infrastructure development regarding economic growth
7.2. BIOGRAPHICAL DATA
The following section discusses the gender distribution, age group distribution, ethnicity group, highest qualification, current employment position and years of experience of the research respondents with the aid of pie charts and bar graphs.

7.3. DATA ANALYSIS

7.3.1. Section A: Background information of respondents
Figure 7.1 indicates that out of the 100 respondents, 62.0 per cent were male and 38.0 per cent were female.

![Figure 7.1: Respondents’ gender](image)

Findings relating to the respondents’ age group as presented in Figure 7.2 revealed that 16.0 per cent of the respondents were in the age group of 21-25 years old, 18.0 per cent of the respondents were in the age group of 26-30 years old, 31.0 per cent of the respondents were in the age group of 31-35 years old, 18 per cent of the respondents were in the age group of 36-40 years old, 10.0
per cent of the respondents were in the age group of 41-45 years old and only 7.0 per cent of the respondents were in the age group of 46-50 years old.

![Figure 7.2: Respondents’ age group](image)

Figure 7.3 indicates the respondents’ ethnicity, which revealed that 41.0 per cent of the respondents were African, 22.0 per cent of the respondents were White, 23.0 per cent of the respondents were Coloured and 14.0 per cent of the respondents were either Indian or Asian.
Figure 7.3: Respondents’ ethnicity

Figure 7.4 indicates the respondents’ highest educational qualification, which showed that 9.0 per cent of the respondents had a certificate, 32.0 per cent of the respondents had a National Diploma, 44.0 per cent of the respondents had a Bachelor’s degree, 12.0 per cent of the respondents had a Master’s degree and only 3.0 per cent of the respondents had a Doctorate.

Figure 7.4: Respondents’ highest educational qualification
Figure 7.5 shows the respondents’ current employment position, which revealed that 13.0 per cent of the respondents were consultants, 15.0 per cent of the respondents were architects, 24.0 per cent of the respondents were project managers, 6.0 per cent of the respondents were construction managers, 16.0 per cent of the respondents were engineers and 26 per cent of the respondents were quantity surveyors.

Figure 7.5: Respondents’ current employment position

Figure 7.6 shows the respondents’ experience in their current position, which indicated that 38.0 per cent of the respondents had experience of up to five years, 32.0 per cent of the respondents had experience that ranged between six and ten years, 23.0 per cent of the respondents had experience that ranged between 11-20 years and only 7.0 per cent of the respondents had experience of more than 20 years.
7.3.2. Section B: The current sources of infrastructure financing in Gauteng Province of South Africa

Table 7.1 indicates the respondents’ ranking of the current sources of infrastructure financing in Gauteng Province of South Africa. Table 7.1 reveals that infrastructure finance companies (IFCs) were ranked first with a mean item score (MIS) of 3.82 and standard deviation (SD) = 0.520; bank financing was ranked second with a MIS of 3.80 and SD = 0.492; sales of public property were ranked third with MIS of 3.78 and SD = 1.040 and public-private partnerships were ranked fourth with a MIS of 3.77 and SD = 0.548.

Table 7.1: The current sources of infrastructure financing in Gauteng Province of South Africa

<table>
<thead>
<tr>
<th>CURRENT INFRASCTRUCTURE FINANCING</th>
<th>OF</th>
<th>MIS</th>
<th>SD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure finance companies (IFCs)</td>
<td>3.82</td>
<td>0.520</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bank financing</td>
<td>3.80</td>
<td>0.492</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sales of public property</td>
<td>3.78</td>
<td>1.040</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Public-private partnerships</td>
<td>3.77</td>
<td>0.548</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MIS</td>
<td>SD</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----</td>
<td>--------</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Foreign direct investment</td>
<td>3.75</td>
<td>0.783</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Domestic savings</td>
<td>3.74</td>
<td>0.613</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Development agencies (supplying loans)</td>
<td>3.72</td>
<td>0.637</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>User charges for the service involved</td>
<td>3.71</td>
<td>0.656</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Equity (private investors)</td>
<td>3.60</td>
<td>0.752</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Life insurance</td>
<td>3.60</td>
<td>0.829</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Private sector investment</td>
<td>3.53</td>
<td>0.745</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>General taxation</td>
<td>3.51</td>
<td>0.772</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Pension funds</td>
<td>3.51</td>
<td>0.823</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Tax-investment financing</td>
<td>3.28</td>
<td>0.854</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Cross-border public-private partnership</td>
<td>3.38</td>
<td>1.052</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Tariffs</td>
<td>3.27</td>
<td>0.802</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Donors (grants)</td>
<td>3.25</td>
<td>0.936</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Toll revenues</td>
<td>3.22</td>
<td>0.596</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Bond market</td>
<td>3.13</td>
<td>0.734</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Fines for traffic violations</td>
<td>3.11</td>
<td>0.994</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Property taxes</td>
<td>3.01</td>
<td>0.732</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Transfers from a state or province to a local agency</td>
<td>2.89</td>
<td>0.898</td>
<td>1920</td>
<td></td>
</tr>
</tbody>
</table>

**SD = Standard deviation; MIS = Mean item score; R = Rank**

Source: Primary data collection

The table 7.1 shows that equity (private investors) was ranked ninth with a MIS of 3.60 and SD = 0.745; life insurance was also ranked ninth with a MIS of 3.60 and SD = 0.829; private sector investment was ranked tenth with a MIS of 3.53 and SD = 0.745; general taxation was ranked eleventh with a MIS of 3.51 and SD = 0.772; pension funds were also ranked eleventh with a MIS of 3.51 and SD = 0.823. Additionally, the table further reveals that fines for traffic violations were ranked eighteenth with a MIS of 3.11 and SD = 0.994; property taxes were ranked nineteenth with a MIS of 3.01 and SD = 0.732 and transfers from a state or province to a local agency were ranked the least with a MIS of 2.89 and SD = 0.898.
7.3.3. Section C: The sources of transportation infrastructure financing in Gauteng Province of South Africa.

Table 7.2 indicates the respondents’ ranking of the sources of transportation infrastructure financing in Gauteng Province of South Africa. Table 7.2 reveals that foreign institutional investors investment was ranked first with a mean item score (MIS) of 3.85 and standard deviation (SD) = 0.592; bank financing was ranked second with a MIS of 3.82 and SD = 0.500; public-private partnerships were ranked third with a MIS of 3.81 and SD = 0.482 and toll revenues were also ranked third with a MIS of 3.81 and SD = 0.486.

Table 7.2: The sources of transportation infrastructure financing in Gauteng Province of South Africa

<table>
<thead>
<tr>
<th>SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING</th>
<th>MIS</th>
<th>SD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign institutional investors investment</td>
<td>3.85</td>
<td>0.592</td>
<td>1</td>
</tr>
<tr>
<td>Bank financing</td>
<td>3.82</td>
<td>0.500</td>
<td>2</td>
</tr>
<tr>
<td>Public-private partnerships</td>
<td>3.81</td>
<td>0.486</td>
<td>3</td>
</tr>
<tr>
<td>Toll revenues</td>
<td>3.81</td>
<td>0.486</td>
<td>3</td>
</tr>
<tr>
<td>Tax deductible infrastructure investment</td>
<td>3.80</td>
<td>1.025</td>
<td>4</td>
</tr>
<tr>
<td>Private investors (equity)</td>
<td>3.76</td>
<td>0.515</td>
<td>5</td>
</tr>
<tr>
<td>Cash from tax payers / taxation revenues</td>
<td>3.76</td>
<td>0.571</td>
<td>5</td>
</tr>
<tr>
<td>Infrastructure finance companies (IFCs)</td>
<td>3.75</td>
<td>0.626</td>
<td>6</td>
</tr>
<tr>
<td>Development agencies (loans)</td>
<td>3.74</td>
<td>0.645</td>
<td>7</td>
</tr>
<tr>
<td>Foreign direct investment</td>
<td>3.70</td>
<td>0.718</td>
<td>8</td>
</tr>
<tr>
<td>Infrastructure debt funds</td>
<td>3.66</td>
<td>0.794</td>
<td>9</td>
</tr>
<tr>
<td>life insurance</td>
<td>3.53</td>
<td>0.904</td>
<td>10</td>
</tr>
<tr>
<td>Pension funds</td>
<td>3.52</td>
<td>0.969</td>
<td>11</td>
</tr>
<tr>
<td>Capital market loans</td>
<td>3.49</td>
<td>0.674</td>
<td>12</td>
</tr>
<tr>
<td>Donors (grants)</td>
<td>3.36</td>
<td>0.835</td>
<td>13</td>
</tr>
<tr>
<td>Tariffs</td>
<td>3.36</td>
<td>0.990</td>
<td>13</td>
</tr>
<tr>
<td>Bonds market</td>
<td>3.32</td>
<td>0.973</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Primary data collection
Additionally, development agencies (loans) were ranked seventh with a MIS of 3.74 and SD = 0.645; foreign direct investment was ranked eighth with a MIS of 3.70 and SD = 0.718; infrastructure debt funds were ranked ninth with a MIS of 3.66 and SD = 0.794. Furthermore, the table indicates that donors (grants) were ranked thirteenth with a MIS of 3.36 and SD = 0.835; tariff were also ranked thirteenth with a MIS of 3.36 and SD= 0.990 and the bonds market was ranked the least with a MIS of 3.32 and SD = 0.973.

7.3.4. Section D: The challenges facing infrastructure financing in Gauteng Province of South Africa

Table 7.3 indicates the respondents’ ranking of the challenges facing infrastructure financing in Gauteng Province of South Africa. Table 7.3 reveals that political interference was ranked the highest with a mean item score (MIS) of 4.84 and standard deviation (SD) =0.368; cost overruns were ranked second with a MIS of 4.72 and SD = 0.621; lack of funding was ranked third with MIS of 4.61 and SD =0.852 and difficulty in raising finance was ranked fourth with a MIS of 4.58 and SD =0.755.

<table>
<thead>
<tr>
<th>CHALLENGES FACING INFRASTRUCTURE FINANCING</th>
<th>MIS</th>
<th>SD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political interference</td>
<td>4.84</td>
<td>0.368</td>
<td>1</td>
</tr>
<tr>
<td>Cost overruns</td>
<td>4.72</td>
<td>0.621</td>
<td>2</td>
</tr>
<tr>
<td>Lack of funding</td>
<td>4.61</td>
<td>0.852</td>
<td>3</td>
</tr>
<tr>
<td>Difficulty in raising finance</td>
<td>4.58</td>
<td>0.755</td>
<td>4</td>
</tr>
<tr>
<td>Lack of financial capacity</td>
<td>4.42</td>
<td>0.806</td>
<td>5</td>
</tr>
<tr>
<td>Lack of experienced project promoters</td>
<td>4.39</td>
<td>0.863</td>
<td>6</td>
</tr>
<tr>
<td>Technical skills has to be imported</td>
<td>4.37</td>
<td>0.950</td>
<td>7</td>
</tr>
<tr>
<td>Poor and costly tendering and procurement procedures</td>
<td>4.36</td>
<td>0.948</td>
<td>8</td>
</tr>
<tr>
<td>Contract cancellations</td>
<td>4.33</td>
<td>1.120</td>
<td>9</td>
</tr>
<tr>
<td>Lack of infrastructure maintenance capacity</td>
<td>4.32</td>
<td>0.815</td>
<td>10</td>
</tr>
<tr>
<td>Issue</td>
<td>MIS</td>
<td>SD</td>
<td>Rank</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Frequent delays in licensing and permitting</td>
<td>4.26</td>
<td>0.895</td>
<td>11</td>
</tr>
<tr>
<td>Shortage of private sector investors</td>
<td>4.11</td>
<td>1.043</td>
<td>12</td>
</tr>
<tr>
<td>Conflict of interest of different parties involved</td>
<td>3.92</td>
<td>0.837</td>
<td>13</td>
</tr>
<tr>
<td>Policy frameworks are not finalized in time</td>
<td>3.89</td>
<td>0.920</td>
<td>14</td>
</tr>
<tr>
<td>Insufficient revenue collection on existing infrastructure</td>
<td>3.83</td>
<td>0.697</td>
<td>15</td>
</tr>
<tr>
<td>No capital market sources of long term funding</td>
<td>3.82</td>
<td>0.687</td>
<td>16</td>
</tr>
<tr>
<td>Poor public investment framework</td>
<td>3.81</td>
<td>0.950</td>
<td>17</td>
</tr>
<tr>
<td>Regional/cross-border projects endure high cost of preparation</td>
<td>3.74</td>
<td>0.981</td>
<td>18</td>
</tr>
<tr>
<td>Lack of alignment with national and regional priorities</td>
<td>3.70</td>
<td>0.798</td>
<td>19</td>
</tr>
<tr>
<td>Poor investment climate</td>
<td>3.64</td>
<td>0.772</td>
<td>20</td>
</tr>
<tr>
<td>Tariffs do not cover costs</td>
<td>3.42</td>
<td>1.224</td>
<td>21</td>
</tr>
</tbody>
</table>

**Source: Primary data collection**

Further, the table shows that contract cancellations were ranked ninth with a MIS of 4.33 and SD = 1.120; lack of infrastructure maintenance capacity was ranked tenth with a MIS of 4.32 and SD = 0.815; frequent delays in licensing and permitting were ranked eleventh with a MIS of 4.26 and SD = 0.895; shortage of private sector investors was ranked twelfth with a MIS of 4.11 and SD = 1.043; and conflict of interest of different parties involved was ranked thirteenth with a MIS of 3.92 and SD = 0.837. Additionally, the table further reveals that regional/cross-border projects endure high cost of preparation was ranked eighteenth with a MIS of 3.74 and SD = 0.981; lack of alignment with national and regional priorities was ranked nineteenth with a MIS of 3.70 and SD = 0.798; poor investment climate was ranked twentieth with a MIS of 3.64 and SD = 0.772 and tariffs do not cover costs were ranked the least with a MIS of 3.42 and SD = 1.224.

7.3.5. Section E: The roles of taxation regarding economic development in Gauteng Province of South Africa

The respondents further ranked the roles of taxation regarding economic development in Gauteng Province of South Africa as follows. Table 7.4 indicates that steady national revenue was ranked first with a mean item score (MIS) of 4.47 and standard deviation (SD) = 0.611; raises income to
fund public infrastructure was ranked second with a mean item score MIS of 4.44 and SD = 0.592; enables a country to reach its economic development goals was ranked third with a MIS of 4.37 and SD =0.747; provides opportunity to predict future infrastructure development was ranked fourth with a MIS of 4.18 and SD =0.796 and provides opportunity to create wealth was also ranked fourth with a MIS of 4.18 and SD =0.957.

Table 7.4: The roles of taxation on economic development in Gauteng Province of South Africa

<table>
<thead>
<tr>
<th>ROLES OF TAXATION REGARDING ECONOMIC DEVELOPMENT</th>
<th>MIS</th>
<th>SD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady national revenue</td>
<td>4.47</td>
<td>0.611</td>
<td>1</td>
</tr>
<tr>
<td>Raises income to fund public infrastructure</td>
<td>4.44</td>
<td>0.592</td>
<td>2</td>
</tr>
<tr>
<td>Enables a country to reach its economic development goals</td>
<td>4.37</td>
<td>0.747</td>
<td>3</td>
</tr>
<tr>
<td>Provides opportunity to predict future infrastructure development</td>
<td>4.18</td>
<td>0.796</td>
<td>4</td>
</tr>
<tr>
<td>Provides opportunity to create wealth</td>
<td>4.18</td>
<td>0.957</td>
<td>4</td>
</tr>
<tr>
<td>Increases the level of savings</td>
<td>4.16</td>
<td>1.042</td>
<td>5</td>
</tr>
<tr>
<td>Plays a central role in domestic resource mobilization</td>
<td>3.87</td>
<td>0.630</td>
<td>6</td>
</tr>
<tr>
<td>Facilitates an easy environment to conduct businesses</td>
<td>3.74</td>
<td>0.645</td>
<td>7</td>
</tr>
<tr>
<td>Decreases inequalities through reallocation of income and wealth</td>
<td>3.73</td>
<td>0.802</td>
<td>8</td>
</tr>
<tr>
<td>Safeguard local industries from foreign competition</td>
<td>3.72</td>
<td>0.911</td>
<td>9</td>
</tr>
<tr>
<td>Discourages certain activities which are considered unwanted</td>
<td>3.47</td>
<td>1.000</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Primary data collection
Furthermore, the table indicates that respondents ranked decreases inequalities through reallocation of income and wealth eighth with a MIS of 3.73 and SD =0.802; safeguard local industries from foreign competition was ranked ninth with a MIS of 3.72 and SD =0.911 and discourages certain activities which are considered unwanted was ranked the least with a MIS of 3.47 and SD = 1.000.

7.3.6. Section F: The roles of infrastructure development regarding economic growth in Gauteng Province of South Africa

Table 7.5 indicates the respondents’ ranking of the roles of infrastructure development regarding economic growth in Gauteng Province of South Africa. It reveals that provides employment opportunities was ranked first with a mean item score (MIS) of 4.66 and standard deviation (SD) = 0.572; provides physical and social infrastructure to the poor was ranked second with a MIS of 4.64 and SD = 0.674; ensures the effective functioning of the economy was ranked third with a MIS of 4.34 and SD = 0.590; direct investment on infrastructure to inspire economic growth was ranked fourth with a MIS of 4.31 and SD = 0.526; provides services that safeguards economic growth was ranked fifth with a MIS of 4.23 and SD = 0.750; reduces transaction and trade costs improving competitiveness was ranked sixth with a MIS of a 3.83 and SD =0.766 and reduces the costs of productivity and profitability was ranked the least with a MIS of 3.74 and SD = 0.812.

Table 7.5: The roles of infrastructure development regarding economic growth in Gauteng Province of South Africa

<table>
<thead>
<tr>
<th>ROLES OF INFRASTRUCTURE DEVELOPMENT REGARDING ECONOMIC GROWTH</th>
<th>MIS</th>
<th>SD</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides employment opportunities</td>
<td>4.66</td>
<td>0.572</td>
<td>1</td>
</tr>
<tr>
<td>Provides physical and social infrastructure to the poor</td>
<td>4.64</td>
<td>0.674</td>
<td>2</td>
</tr>
<tr>
<td>Ensures the effective functioning of the economy</td>
<td>4.34</td>
<td>0.590</td>
<td>3</td>
</tr>
<tr>
<td>Direct investment on infrastructure to inspire economic growth</td>
<td>4.31</td>
<td>0.526</td>
<td>4</td>
</tr>
<tr>
<td>Provides services that safeguards economic growth</td>
<td>4.23</td>
<td>0.750</td>
<td>5</td>
</tr>
<tr>
<td>Reduces transaction and trade costs improving competitiveness</td>
<td>3.83</td>
<td>0.766</td>
<td>6</td>
</tr>
<tr>
<td>Reduces the costs of productivity and profitability</td>
<td>3.74</td>
<td>0.812</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Primary data collection

7.4. CONCLUSION
This chapter presented the data obtained from the respondents who answered the structured questionnaire which was given out by the researcher to the respondents who included consultants, architects, project managers, construction managers, engineers, and quantity surveyors, in Gauteng Province, South Africa. Data was presented clearly with the aid of tables, percentages and graphs, where possible. The next chapter concentrates on the discussion of the findings from the research analysis in relation to the research questions and the research objectives that were formulated in Chapter one. This is done to establish whether the research objectives were met.
CHAPTER EIGHT

DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

8.1. INTRODUCTION
This chapter discusses the findings obtained from the research analysis in relation to the research questions. In addition, the findings are discussed in relation to the literature reviewed in chapters two, three, four and five. This is done with the view to determining whether the defined research problems have been answered from the research findings and data analysis in chapter seven. The results have been presented in relation to the research question together with the relevant data as required. The biographical results are presented below.

8.1.1. Biographical data results
Findings from the 100 usable questionnaires revealed that 62.0 per cent of the respondents were male and 38.0 per cent were female. Findings relating to the respondents’ age group revealed that 16.0 per cent of the respondents were in the age group of 21-25 years old, 18.0 per cent of the respondents were in the age group of 26-30 years old, 31.0 per cent of the respondents were in the age group of 31-35 years old, 18.0 per cent of the respondents were in the age group of 36-40 years old, 10.0 per cent of the respondents were in the age group of 41-45 years old and only 7.0 per cent of the respondents were in the age group of 46-50 years old. Furthermore, the results revealed that 41.0 per cent of the respondents were African, 22.0 per cent of the respondents were White, 23.0 per cent of the respondents were Coloured and 14.0 per cent of the respondents were either Indian or Asian. Findings relating to the respondents’ highest educational qualification showed that 9.0 per cent of the respondents had a certificate, 32.0 per cent of the respondents had a National Diploma, 44.0 per cent of the respondents had a Bachelor’s degree, 12.0 per cent of the respondents had a Master’s degree and 3.0 per cent of the respondents had a Doctorate.

Further, findings relating to the respondents’ current employment position revealed that 13.0 per cent of the respondents were consultants, 15.0 per cent of the respondents were architects, 24.0 per cent of the respondents were project managers, 6.0 per cent of the respondents were construction managers, 16.0 per cent of the respondents were engineers, and 26.0 per cent of the respondents were quantity surveyors. Furthermore, results relating to the respondents’ experience showed that
38.0 per cent of the respondents had experience of up to five years, 32.0 per cent of the respondents had experience that ranged between six to ten years, 23.0 per cent of the respondents had experience that ranged between 11-20 years and only 7.0 per cent of the respondents had experience of more than 20 years.

8.2. RESEARCH QUESTION 1

- What are the current sources of infrastructure financing in South Africa?

8.2.1. Findings

Based on the ranking (R), calculated standard deviation (SD) and mean item scores (MIS), it was observed that the major sources of infrastructure financing included infrastructure finance companies (IFCs) (SD=0.520; MIS=3.82; R=1); bank financing (SD=0.492; MIS=3.80; R=2); sales of public property (SD=1.040; MIS=3.78; R=3); public-private partnerships (SD=0.548; MIS=3.77; R=4); foreign direct investment (SD=0.783; MIS=3.75; R=5); domestic savings (SD=0.613; MIS=3.74; R=6); and development agencies (supplying loans) (SD=0.637; MIS=3.72; R=7). Further sources of financing were identified as user charges for the service involved (SD=0.656; MIS=3.71; R=8); equity (private investors) (SD=0.752; MIS=3.60; R=9); life insurance (SD=0.829; MIS=3.60; R=9); private sector investment (SD=0.745; MIS=3.53; R=10); general taxation (SD=0.772; MIS=3.51; R=11); and pension funds (SD=0.823; MIS=3.51; R=11). These findings were comparable to the findings by Haas et al. (2013) who revealed that user charges, property taxes, general taxation, public-private-partnerships, tax-investment financing, bonds and tariffs are the major sources of infrastructure financing and these results are in agreement with the results of the studies of Calitz and Fourie (2010: 6-8) and Ray (2015: 7) who also indicated that equity, debt, public sector, private sector, bond market, public-private partnership, cross-border public-private partnership and international infrastructure funds are the major sources of infrastructure financing. However, the study by Nataraj (2014: 5-11) ranked domestic savings as the first major source, debt the second major source and public-private partnerships the third major source of infrastructure financing. These results did not agree with the findings of the current study.
8.2.2. Implications of the findings
The findings revealed that infrastructure finance companies (IFCs) are the major source of finance in South Africa, which indicates that South Africa finances its infrastructure using finance companies – either domestic or foreign finance companies. This is an indication that South Africa is at risk of distributing its wealth to foreign companies when finance is obtained from foreign companies. This will happen because infrastructure projects are long and complex, and require large sums of money which are only offered by financing companies conditionally. Additional foreign financing companies finance infrastructure projects which are complex and large to make more profit from their investment. Most mega-projects (power station, roads, and the like.) in South Africa are financed by the government and projects such as developments projects (residential, malls and other related developments projects) are still financed by foreign companies (car insurance companies, life cover companies and other related companies). This shows that South Africa’s economy will grow slowly when all foreign financing companies decide to stop financing projects of any type in South Africa.

Bank finance was also indicated as a major source of finance in South Africa and the majority of these banks are foreign banks which also play a role in financing infrastructure. This implies that South Africa should find a way to finance infrastructure using domestic financing companies and domestic banks in order to achieve a fast growing economy, and avoid foreign finance companies which finance infrastructure projects and operate them for a long time to earn large sums of money from South Africa. It is very important for any country to develop a system of financing infrastructure projects which will not result in a situation where a country must repay other countries over a long period in order to have a good cash flow to cover other governmental responsibilities.

8.3. RESEARCH QUESTION 2
- What are the sources of transportation infrastructure financing in South Africa?

8.3.1. Findings
Based on the ranking (R), calculated standard deviation (SD) and mean item scores (MIS), it was observed that the major sources of transportation infrastructure financing included foreign institutional investors investment (SD=0.592; MIS=3.85; R=1); bank financing (SD=0.500;
MIS=3.82; R=2); public-private partnerships (SD=0.486; MIS=3.81; R=3); toll revenues (SD=0.486; MIS=3.81; R=3); tax deductible infrastructure investment (SD=1.025; MIS=3.80; R=4); private investors (equity) (SD=0.515; MIS=3.76; R=5); and cash from tax payers / taxation revenues (SD=0.571; MIS=3.76; R=5). In addition, financing is obtained from infrastructure finance companies (IFCs) (SD=0.626; MIS=3.75; R=6); development agencies (loans) (SD=0.645; MIS=3.74; R=7); foreign direct investment (SD=0.718; MIS=3.70; R=8); infrastructure debt funds (SD=0.794; MIS=3.66; R=9); life insurance (SD=0.904; MIS=3.53; R=10); pension funds (SD=0.969; MIS=3.52; R=11) and capital market loans (SD=0.674; MIS=3.49; R=12). These findings were in agreement with the study of Ray (2015:11, 14-21) and Robinson et al. (2012: 10) who revealed that public-private partnership and tax deductible infrastructure investment are the major sources of transportation infrastructure financing. Additionally, the findings were in agreement with the study of Brits (2010: 41) who also revealed that toll revenues, capital market loans, bonds and private sector investment are the major sources of transportation infrastructure financing. Furthermore, Sinhan (2014:5-15) ranked life insurance as the first major source, pension funds the second major source, infrastructure finance companies (IFC) the third major source and infrastructure debt funds the fourth major source. These findings are not in agreement with the findings of the current study. Calitz and Fourie (2010:7-8) ranked the major sources of transportation infrastructure financing as cash from tax payers/taxation revenues, lenders to government/government enterprises (loans/guarantees), private investors (equity), development agencies (loans) and donors (grants). These findings are also not in agreement with the findings of the current study.

8.3.2. Implications of the findings

Political interference, cost overruns and lack of funding were indicated as the major challenges facing infrastructure financing in South Africa. This implies that South Africa is one of the countries where investors are still not interested in investing their monies in infrastructure simply because of the continual political interference and cost overruns in the infrastructure projects. There is other evidence that shows that South Africa faces a major problem of political interference in construction projects during the financing stage, which indicates that it is going to be hard for South Africa to obtain potential finance investors who are willing to invest a large sum of money in infrastructure development. Cost overruns are haunting construction projects in South Africa because of the poor managerial skills of management tasked with the responsibilities of running
the projects. There are also other related factors contributing to the occurrence of cost overruns in South Africa. This is also an indication that South Africa must reduce the causes of cost overruns and political interference in the financing of infrastructure in order to attract potential finance investors without their having concerns of losing money.

8.4. RESEARCH QUESTION 3

- What are the challenges facing infrastructure financing in South Africa?

8.4.1. Findings

Based on the ranking (R), calculated standard deviation (SD) and mean item scores (MIS), it was observed that the major challenges facing infrastructure financing included political interference (SD=0.368; MIS=4.84; R=1); cost overruns (SD=0.621; MIS=4.72; R=2); lack of funding (SD=0.852; MIS=4.61; R=3); difficulty in raising finance (SD=0.755; MIS=4.58; R=4); lack of financial capacity (SD=0.806; MIS=4.42; R=5); and a lack of experienced project promoters (SD=0.863; MIS=4.39; R=6). Other challenges are the fact that technical skills have to be imported (SD=0.950; MIS=4.37; R=7); poor and costly tendering and procurement procedures (SD=0.948; MIS=4.36; R=8); contract cancellations (SD=1.120; MIS=4.33; R=9); lack of infrastructure maintenance capacity (SD=0.815; MIS=4.32; R=10); frequent delays in licensing and permitting (SD=0.895; MIS=4.26; R=11); a shortage of private sector investors (SD=1.043; MIS=4.11; R=12); conflict of interest of different parties involved (SD=0.837; MIS=3.92; R=13); policy frameworks not being finalized in time (SD=0.920; MIS=3.89; R=14) and insufficient revenue collection on existing infrastructure (SD=0.697; MIS=3.83; R=15). These findings were in agreement with the results of the study of Rodrigue (2013:1) who identified the lack of funding as the major challenge facing infrastructure financing. The findings of the current study were also in agreement with the study of Kutoane (2014: 14-17). However, the findings were not ranked the same as the ranking by Kutoane (2014: 14-17) who conducted a study on the opportunities and challenges of infrastructure financing in sub-Saharan Africa. The study ranked the major challenges facing infrastructure financing in sub-Saharan Africa as follows: (i) financial capacity to execute mega-infrastructure projects is still lacking, (ii) technical know-how has to be imported, (iii) infrastructure regulatory and policy frameworks at regional levels are not harmonized, (iv) lack of alignment with national and regional priorities is a primary failure factor in terms of the
execution of infrastructure projects, (v) raising finance and reaching financial closure are for complex infrastructure projects is challenging and (vi) lack of experienced project promoters.

8.4.1. Implications of the findings

Foreign institutional investors’ investment, bank financing and public-private partnerships are indicated as the major sources of infrastructure financing in South Africa. The literature review revealed that it is a negative approach for a country to use foreign institutional investors’ investment to finance infrastructure, as this comes with a price to pay as a country. When foreign institutional investors decide to stop providing finance for infrastructure development to certain countries, it is clear that most countries will have slow-growing economies and poor infrastructure developments. South Africa is one of the countries which uses foreign investors to finance its infrastructure. This indicates that South Africa is sharing its economic benefits with foreign investors and that South Africa might suffer when these foreign investors decide to stop supplying finance and demand their monies owed to them by the country. As mentioned above, countries which finance their infrastructure using foreign investors should develop a system that will enable them to use domestic investors to eliminate the risk of being obliged to foreign finance companies. South Africa will also suffer if foreign investors demand all its monies invested by foreign investors. Foreign investors mean that a country is indebted over a long period. Additionally, foreign investors collect large profits, which might result in a situation where a country will suffer and experience an economic downturn.

8.5. RESEARCH QUESTION 4

- What are the roles of taxation regarding economic development in South Africa?

8.5.1. Findings

Based on the ranking (R), calculated standard deviation (SD) and mean item scores (MIS), it was observed that the major roles of taxation on economic development included steady national revenue (SD=0.611; MIS=4.47; R=1); raising income to fund public infrastructure (SD=0.592; MIS=4.44; R=2); enabling a country to reach its economic development goals (SD=0.747; MIS=4.37; R=3); providing opportunity to predict future infrastructure development (SD=0.796; MIS=4.18; R=4); providing opportunity to create wealth (SD=0.957; MIS=4.18; R=4); increasing the level of savings (SD=1.042; MIS=4.16; R=5); and playing a central role in domestic resource
mobilization (SD=0.630; MIS=3.87; R=6). Additional benefits of taxation are that it facilitates an easy environment to conduct businesses (SD=0.645; MIS=3.74; R=7); decreases inequalities through reallocation of income and wealth (SD=0.802; MIS=3.73; R=8); safeguards local industries from foreign competition (SD=0.911; MIS=3.72; R=9) and discourages certain activities which are considered unwanted (SD=1.000; MIS=3.47; R=10). These findings were in agreement with the results of the studies of Pfister (2009:6) and Besley and Persson (2013:53-54) who also identified the following as the major roles of taxation on economic development: it offers the state funds required to build the required infrastructure on which economic development and growth are created; it generates an easy environment where business can be conducted without complications; it provides an opportunity to create wealth for a nation; it provides an opportunity to predict future infrastructure development based on the total revenues and it helps a country to reach its development goals. These findings were also in agreement with the results of the study of Waidyasekera (2007:1-2) who also revealed that taxation is used to raise revenue for the government for its public expenditure and to reduce inequalities through a policy of redistribution of income and wealth.

7.5.2. Implications of the findings
Steady national revenue raises the income to fund public infrastructure and enables a country to reach its economic development goals. These are indicated as the major benefits of taxation for economic development. It is very important for any government to use a tax system which will ensure that all tax monies are collected efficiently in order for the governments to operate properly. This implies that South Africa’s most viable source of income is taxation and these taxes are used to operate national government, provincial governments and regional governments. This indicates that if tax monies are not collected and monitored properly, South Africa will suffer from an unstable national revenue and this will make it difficult for the country to fund public infrastructure and reach its economic development goals. There is more evidence indicating that most countries with a good tax system have a good economy and infrastructure development is taking place in such countries.
8.6. RESEARCH QUESTION 5

- What are the roles of infrastructure development regarding economic growth in South Africa?

8.6.1. Findings

Based on the ranking (R), calculated standard deviation (SD) and mean item scores (MIS), it was observed that the major roles of infrastructure development on economic growth included providing employment opportunities (SD=0.572; MIS=4.66; R=1); providing physical and social infrastructure to the poor (SD=0.674; MIS=4.64; R=2); ensuring the effective functioning of the economy (SD=0.590; MIS=4.34; R=3); directing investment on infrastructure to inspire economic growth (SD=0.526; MIS=4.31; R=4); providing services that safeguard economic growth (SD=0.750; MIS=4.23; R=5); reducing transaction and trade costs improving competitiveness (SD=0.766; MIS=3.83; R=6) and reducing the costs of productivity and profitability (SD=0.812; MIS=3.74; R=7). The ranking of the findings of the current study were not the same as the ranking of Nallathiga (2015:76-77) who ranked the major roles of infrastructure development on economic growth as follows: (i) providing the required services that upkeep economic growth by increasing the productivity of labourers and capital; (ii) reducing the costs of production and raising profitability, production, income and employment and (iii) ensuring the effective functioning of the economy. Additionally, the ranking of Sahoo (2011: 1) was also not the same as the ranking of the findings of the current study on the major roles of infrastructure development on economic growth. Sahoo ranked the major roles of infrastructure development on economic growth as follows: (i) it directs investment on infrastructure, creates production facilities and stimulates economic growth; (ii) it reduces transaction costs and trade costs improving competitiveness; (iii) it provides employment opportunities and (iv) it provides physical and social infrastructure to the poor. However, the findings of Nallathiga (2015:76-77) and Sahoo (2011:1) were in agreement with the findings of the current study but were ranked differently.

7.6.2. Implications of the findings

Providing employment opportunities, providing physical and social infrastructure to the poor and ensuring the effective functioning of the economy were indicated as the major roles of infrastructure development regarding economic growth in South Africa. This implies that South Africa should invest more in infrastructure in order to provide more employment opportunities to
its citizens and, provide physical and social infrastructure to the poor. Additionally, infrastructure development boosts the South African economy in a way that this results in more economy-related opportunities in the country. Conversely, infrastructure development is used to ensure the effective functioning of the economy in South Africa. This implies that having more infrastructure development will result in the healthy functioning of the economy in South Africa whereas slow infrastructure development will result in poor functioning of the economy. The findings make it clear that South Africa should invest in infrastructure to achieve healthy functioning of the economy and enjoy other benefits which will be stimulated by infrastructure development.

8.7. CONCLUSION OF RESEARCH OBJECTIVES
The objective of this research study was to examine the roles of taxation and infrastructure development regarding economic development and the challenges facing infrastructure financing. Additionally, the study examined the current sources of infrastructure financing and the models of transport infrastructure financing in Gauteng Province, South Africa. This chapter presents the conclusions and recommendations of this research study. Discussions are also presented in relation to the objective of the study. In order to achieve this aim, the objectives of the study were the following:

- To determine the current sources of infrastructure financing in South Africa;
- To determine the sources of transportation infrastructure financing in South Africa;
- To examine the challenges facing infrastructure financing in South Africa;
- To assess the roles of taxation regarding economic development in South Africa; and
- To assess the roles of infrastructure development regarding economic growth in South Africa.

The researcher demonstrated how the current study answered the research objectives below.

8.7.1. RESEARCH OBJECTIVE 1
The first research objective was to determine the current sources of infrastructure financing in Gauteng Province, South Africa.

Looking at the literature, it was discovered that there are major sources of infrastructure financing indicated by various scholars. These major sources of finance comprise user charges for the service
involved, property taxes, general taxation, transfers from senior governments, other, such as sales of public property, fines for traffic violations, and the like, transfer of the asset to a PPP, which can range from finance to design and build to operations, public-private-partnerships, tax-investment financing, development changes from developers, loans, carbon finance/charges, tariffs, domestic savings, debt, equity, public sector, private sector, bond market, cross-border public-private partnerships, international infrastructure funds, development agencies and donors.

Viewing the findings obtained from the research questionnaires completed by respondents, it is observed that infrastructure finance companies (IFCs), bank financing, sales of public property, public-private partnerships, foreign direct investment, domestic savings, development agencies (supplying loans), user charges for the service involved, equity (private investors), life insurance, private sector investment, general taxation, pension funds, tax-investment financing, cross-border public-private partnership, tariffs, donors (grants), toll revenues, bond market, fines for traffic violations, property taxes and transfers from a state or province to a local agency are the major sources of infrastructure financing in Gauteng Province, South Africa. Thus, it can be concluded that the research objective was met looking on the findings from the structured questionnaire survey.

**8.7.2. RESEARCH OBJECTIVE 2**

The second research objective was to determine the sources of transportation infrastructure financing in Gauteng Province, South Africa.

From a review of the literature, it is discovered that there are major sources of transportation infrastructure financing as indicated by various scholars. These major sources of finance comprise public-private partnerships, tax deductible infrastructure investment, fee for use lanes, toll revenues, capital market loans, bonds, private sector investment, life insurance, pension funds, infrastructure debt funds, cash from tax payers / taxation revenues, lenders to government/government enterprises (loans/guarantees), private investors (equity), development agencies (loans), donors (grants), bank financing, infrastructure finance companies (IFCs), foreign direct investment, foreign institutional investor’s investment and infrastructure bonds.

Viewing the findings obtained from the research questionnaires completed by respondents, it is observed that foreign institutional investors investment, bank financing, public-private
partnerships, toll revenues, tax deductible infrastructure investment, private investors (equity), cash from tax payers/taxation revenues, infrastructure finance companies (IFCs), development agencies (loans), foreign direct investment, infrastructure debt funds, life insurance, pension funds, capital market loans, donors (grants), tariffs and bonds market are the major sources of transportation infrastructure financing in Gauteng Province, South Africa. Thus, it can be concluded that the research objective was met looking on the findings from the structured questionnaire survey.

8.7.3. RESEARCH OBJECTIVE 3

The third research objective was to examine the challenges facing infrastructure financing in Gauteng Province, South Africa.

The literature indicated that the following are the major challenges facing infrastructure financing: financial capacity to execute mega-infrastructure projects is still lacking, technical know-how has to be imported, infrastructure regulatory and policy frameworks at regional levels are not harmonized, lack of alignment with national and regional priorities is a primary failure factor in terms of the execution of infrastructure projects, raising finance and reaching financial closure are for complex infrastructure projects is challenging, lack of experienced project promoters, conflict of interest of different parties involved in project execution often affects the commitment of all partners, insufficient revenue collection on infrastructure projects affect the coverage of operating expenses, maintenance or expansion, shortage of private sector investors willing to risk capital on long term complex projects, no capital market sources of long-term funding for Greenfields, poor investment climate, regional/cross-border projects endure high cost of preparation and lack of regional institutional drivers, risk of border closures, contract cancellations, political interference and regional conflicts, tariffs do not cover costs – arbitrary setting, poor public investment framework leading to poor public infrastructure spending in PPPs, lack of infrastructure maintenance capacity, frequent delays in licensing and permitting, poor and costly tendering and procurement procedures, lack of credit worthiness of SSA countries and cost overruns due to lack of adequate planning and lengthy contract negotiation.

Findings obtained from the research questionnaires completed by respondents indicated that political interference, cost overruns, lack of funding, difficulty in raising finance, lack of financial capacity, lack of experienced project promoters, technical skills has to be imported, poor and costly
tendering and procurement procedures, contract cancellations, lack of infrastructure maintenance capacity, frequent delays in licensing and permitting, shortage of private sector investors, conflict of interest of different parties involved, policy frameworks are not finalized in time, insufficient revenue collection on existing infrastructure, no capital market sources of long term funding, poor public investment framework, regional/cross-border projects endure high cost of preparation, lack of alignment with national and regional priorities, poor investment climate and tariffs do not cover costs are the major challenges facing infrastructure financing in Gauteng Province, South Africa. Thus, it can be concluded that the research objective was met looking on the findings from the structured questionnaire survey.

8.7.4. RESEARCH OBJECTIVE 4
The fourth research objective was to assess the roles of taxation regarding economic development in Gauteng Province, South Africa.

The literature indicated that the following are the major roles of taxation in economic development: to raise income for state to funds public infrastructure on which economic development and growth are created, to generates an easy environment where business can be conducted without complications and provides an opportunity to create wealth of a nation, to form the way government activities are undertaken, to play as a central role in domestic resource mobilization, to provide an opportunity to predict future infrastructure development based on the total revenues, to enable a country to reach its economic development goals, to decrease inequalities through a policy of reallocation of income and wealth, for social propositions such as discouraging certain activities which are considered unwanted, to increase the level of savings and capital creation in the private sector partly for borrowing by the government and partly for improving investment resources within the private sector for economic development, to safeguard local industries from foreign competition through the use of import duties, turnover taxes/VAT and excises and to steady national revenue by using taxation as an instrument of demand management.

Findings obtained from the research questionnaires completed by respondents indicated that steady national revenue, raises income to fund public infrastructure, enables a country to reach its economic development goals, provides opportunity to predict future infrastructure development, provides opportunity to create wealth, increases the level of savings, plays a central role in domestic resource mobilization, facilitates an easy environment to conduct businesses, decreases
inequalities through reallocation of income and wealth, safeguard local industries from foreign competition and discourages certain activities which are considered unwanted are the major roles of taxation in economic development in Gauteng Province, South Africa. Thus, it can be concluded that the research objective was met looking on the findings from the structured questionnaire survey.

8.7.5. RESEARCH OBJECTIVE 5
The last research objective was to assess the roles of infrastructure development regarding economic growth in Gauteng Province, South Africa.

The literature indicated that the following are the major roles of infrastructure development on economic growth: providing the required services that upkeep economic growth by increasing the productivity of laborers and capital, reducing the costs of production and raising profitability, production, income and employment, ensuring the effective functioning of the economy, directing investment on infrastructure creates production facilities and stimulates economic growth, reducing transaction costs and trade costs improving competitiveness, providing employment opportunities and providing physical and social infrastructure to the poor.

Findings obtained from the research questionnaires completed by respondents indicated that infrastructure development provides employment opportunities, provides physical and social infrastructure to the poor, ensures the effective functioning of the economy, provides direct investment on infrastructure to inspire economic growth, provides services that safeguard economic growth, reduces transaction and trade costs improving competitiveness and reduces the costs of productivity and profitability are the major roles of infrastructure development on economic growth in Gauteng Province, South Africa. Thus, it can be concluded that the research objective was met looking on the findings from the structured questionnaire survey.

8.8. GENERAL RESEARCH CONCLUSION
The reviewed literature indicated that there are major sources of infrastructure financing and of transportation infrastructure financing. In addition, there are major challenges facing infrastructure financing in Gauteng Province, South Africa. Additionally, major roles of taxation and infrastructure development regarding economic growth in Gauteng Province, South Africa were also indicated by the literature review. Primary data was obtained through a questionnaire which
was sent out to the construction professionals. A total of 130 questionnaires were sent out and 100 were received back, representing a 76.92 per cent response rate. It was indicated by the findings that infrastructure finance companies, sales of public property and banking financing were the major sources of infrastructure financing in Gauteng Province. Foreign institutional investors’ investment, banking financing and public-private partnerships were the major sources of transportation infrastructure financing in Gauteng Province. Furthermore, the findings showed that political interference, lack of funding and cost overruns were the major challenges facing infrastructure financing in Gauteng Province. Steady national revenue enables a country to reach its economic development goals and raise income to fund public infrastructure. These were the major roles of taxation regarding economic development. Finally, the study showed provides employment opportunities, ensures the effective functioning of the economy and provides physical and social infrastructure to the poor. These are the major roles of infrastructure development regarding economic growth in the Gauteng Province of South Africa. The findings suggested that government should attract more investors to invest in infrastructure by providing reasonable returns on their investment in order to achieve economic growth and a steady national revenue.

The results from the current study supported the work done by various academics and scholars who conducted their studies on the same research topic. Further findings indicated that there is a strong relationship between taxation and infrastructure development regarding economic growth, where an increase in taxation revenues and infrastructure development leads to an increase in the economy in South Africa. Findings also indicated that of all the available major sources of financing in Gauteng Province of South Africa, not all are applicable to finance transportation infrastructure.

8.9. RECOMMENDATIONS
Infrastructure development plays an imperative role in aiding any country to achieve economic growth. It also aids many countries to create jobs and wealth. Infrastructure development is the system to be used by any government to sustain economic growth, and it is essential for all developing and developed countries to invest in infrastructure. In order to attract investors to invest in infrastructure and sustain economic growth in the country, the following are suggested:
• It is suggested that political parties should stop interfering in the infrastructure development processes when private investors finance projects.
• It is also suggested that national and regional governments should speed the process of licensing and permitting to investors.
• It is suggested that government should award mega-projects to the right companies to avoid cancellation of contracts by investors.
• Finally, it is suggested that the government should provide reasonable returns for investors on their investment in infrastructure.

8.10. AREAS FOR FUTURE STUDIES
The study further recommends the following as areas of possible research:

• A study should be conducted on infrastructure delivery and investment return models.
• A study should be conducted on infrastructure development strategies for developing countries.
• A study should be conducted on integrative infrastructure development planning.
• The findings of the current study indicated that political interference is a major challenge facing infrastructure financing in South Africa. A study should be conducted to identify ways to eliminate political interference in the financing of infrastructure.
• A study should be conducted to examine the effectiveness of the financing models when implemented in a certain project.
• A study should be conducted to evaluate the risks of financing infrastructure in the presence of poor licensing and permitting by government.
• Furthermore, a study should be conducted to evaluate the causes and effects of conflicts of interest of different parties involved in construction. This is also a major challenge facing infrastructure financing in South Africa.


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TO WHOM IT MAY CONCERN

Dear Sir/Madam

LETTER OF INVITATION FOR RESEARCH SURVEY

The Department of Construction Management and Quantity Surveying at the University of Johannesburg is undertaking a research project titled: AN ASSESSMENT OF TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA: A CASE OF GAUTENG PROVINCE.

To this end, we kindly request that you complete the following short questionnaire. It should take no longer than 20 minutes of your time. Your response is of the utmost importance to us. To protect your anonymity, please do not enter your name or contact details on the questionnaire.

A summary of the results of this research will be available at the Department of Construction Management and Quantity Surveying in October, 2016.

Should you have any queries or comments regarding this survey, you are welcome to contact me telephonically at +2779 563 6643 or email me at kgchiloane153@gmail.com.

Thank you in advance.
Yours faithfully

K.O Chiloane
APPENDIX 2: QUESTIONNAIRE
QUESTIONNAIRE ON TRANSPORTATION INFRASTRUCTURE FINANCING IN SOUTH AFRICA: A CASE OF THE GAUTENG PROVINCE

INSTRUCTIONS:

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CROSSING IN THE APPROPRIATE BLOCK OR WRITE DOWN YOUR ANSWER IN THE SPACE PROVIDED

Example of how to complete this questionnaire

Your gender? If you are male

<table>
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<tbody>
<tr>
<td>Female</td>
<td>2</td>
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</table>

SECTION A - GENERAL INFORMATION

This section of the questionnaire refers to background or biographical information. Although we are aware of the sensitivity of the questions in this section, the information will allow us to compare groups of respondents. Once again, we assure you that your response will remain anonymous. Your co-operation is appreciated.

1. Gender

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<td>Female</td>
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2. In which age group category do you fall under?

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<tr>
<td>26-30 years</td>
<td>2</td>
</tr>
<tr>
<td>31-35 years</td>
<td>3</td>
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<tr>
<td>36-40 years</td>
<td>4</td>
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<tr>
<td>41-45 years</td>
<td>5</td>
</tr>
<tr>
<td>46-50 years</td>
<td>6</td>
</tr>
<tr>
<td>51 years and above</td>
<td>7</td>
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</tbody>
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3. What is your ethnicity?

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<td>African</td>
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<td>White</td>
<td>2</td>
</tr>
<tr>
<td>Coloured</td>
<td>3</td>
</tr>
<tr>
<td>Indian or Asian</td>
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4. Your highest educational qualification?

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<td>National diploma</td>
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<tr>
<td>Bachelor’s degree</td>
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<td>Master’s degree</td>
<td>4</td>
</tr>
<tr>
<td>Doctoral degree</td>
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5. What is your current employment position?

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</thead>
<tbody>
<tr>
<td>Consultant</td>
<td>1</td>
</tr>
<tr>
<td>Architect</td>
<td>2</td>
</tr>
<tr>
<td>Project Manager</td>
<td>3</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>4</td>
</tr>
<tr>
<td>Engineer</td>
<td>5</td>
</tr>
<tr>
<td>Quantity Surveyor</td>
<td>6</td>
</tr>
</tbody>
</table>

6. How long have you worked in your current profession?

<table>
<thead>
<tr>
<th>Years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 5 years</td>
<td>1</td>
</tr>
<tr>
<td>6-10 years</td>
<td>2</td>
</tr>
<tr>
<td>11-20 years</td>
<td>3</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>4</td>
</tr>
</tbody>
</table>

**SECTION B: CURRENT SOURCES OF INFRASTRUCTURE FINANCING**

This section explores your knowledge regarding the *current sources of infrastructure financing* in the Gauteng Province of South Africa. 7. Below is a list of potential *sources of infrastructure financing*. For each source of financing please indicate whether it is to your knowledge currently used to finance infrastructure in Gauteng, South Africa, and if used, indicate the contribution it makes to the total spending on infrastructure.

<table>
<thead>
<tr>
<th>CSIF1</th>
<th>User charges for the service involved</th>
<th>Not a source</th>
<th>Yes, minor</th>
<th>Yes, moderate</th>
<th>Yes, major</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF2</td>
<td>Property taxes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF3</td>
<td>General taxation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF4</td>
<td>Transfers from a state or province to a local agency</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF5</td>
<td>Fines for traffic violations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF6</td>
<td>Pension funds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF7</td>
<td>Bond market</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CSIF8</td>
<td>Tax-investment financing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
SECTION C: SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING

This section explores your knowledge regarding the sources of transportation infrastructure financing in the Gauteng Province of South Africa.

8. Below is a list of potential sources of transportation infrastructure financing. For each source of financing please indicate whether it is to your knowledge currently used to finance infrastructure in Gauteng, South Africa, and if used, indicate the contribution it makes to the total spending on infrastructure.

<table>
<thead>
<tr>
<th>SOURCES OF TRANSPORTATION INFRASTRUCTURE FINANCING</th>
<th>Not a source</th>
<th>Yes, minor contribution</th>
<th>Yes, moderate contribution</th>
<th>Yes, major contribution</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>STIF1 Public-private partnerships</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF2 Tax deductible infrastructure investment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF3 Toll revenues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF4 Bonds market</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF5 Development agencies (loans)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF6 life insurance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF7 Pension funds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF8 Capital market loans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF9 Infrastructure debt funds</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF10 Cash from tax payers / taxation revenues</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF11 Tariffs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF12 Private investors (equity)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF13 Donors (grants)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF14 Bank financing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF15 Infrastructure finance companies (IFCs)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>STIF16 Foreign direct investment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
SECTION D: THE CHALLENGES FACING INFRASTRUCTURE FINANCING

This section explores your knowledge regarding the challenges facing infrastructure financing in the Gauteng province of South Africa.

9. Below is a list of potential challenges to achieving finance of infrastructure in Gauteng, South Africa. Based on your knowledge and experience, use the scale provided to indicate the degree to which each factor is a challenge to financing infrastructure in the Gauteng, South Africa context.

<table>
<thead>
<tr>
<th>CHALLENGES FACING INFRASTRUCTURE FINANCING</th>
<th>Not a challenge</th>
<th>Minor challenge</th>
<th>Moderate challenge</th>
<th>Serious challenge</th>
<th>Very serious</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFTF1 Lack of financial capacity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF2 Technical skills have to be imported</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF3 Policy frameworks are not finalized in time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF4 Lack of alignment with national and regional priorities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF5 Difficulty in raising finance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF6 Lack of experienced project promoters</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF7 Conflict of interest of different parties involved</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF8 Insufficient revenue collection on existing infrastructure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF9 Shortage of private sector investors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF10 No capital market sources of long-term funding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF11 Poor investment climate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF12 Regional/cross-border projects endure high cost of preparation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF13 Contract cancellations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF14 Tariffs do not cover costs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF15 Poor public investment framework</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF16 Lack of infrastructure maintenance capacity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF17 Frequent delays in licensing and permitting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF18 Poor and costly tendering and procurement procedures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF19 Cost overruns</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF20 Lack of funding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>CFTF21 Political interference</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

SECTION E: THE ROLES OF TAXATION ON ECONOMIC DEVELOPMENT

This section explores your perceptions regarding the roles of taxation on economic development in South Africa.

Please indicate your answer using the following 5-point Likert scale where:
10. To what extent do you agree or disagree that the following are the roles of taxation on economic development in South Africa?

<table>
<thead>
<tr>
<th>TAXATION…</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTED1 …raises income to fund public infrastructure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED2 …facilitates an easy environment to conduct businesses</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED3 …plays a central role in domestic resource mobilization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED4 …provides opportunity to predict future infrastructure development</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED5 …enables a country to reach its economic development goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED6 …provides opportunity to create wealth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED7 …decreases inequalities through reallocation of income and wealth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED8 …discourages certain activities which are considered unwanted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED9 …increases the level of savings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED10 …safeguard local industries from foreign competition</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RTED11 …steady national revenue</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

SECTION F: THE ROLES OF INFRASTRUCTURE DEVELOPMENT ON ECONOMIC GROWTH

This section explores your perceptions regarding the roles of infrastructure development on economic growth in South Africa.

Please indicate your answer using the following 5-point Likert scale where:

1 = Strongly disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA)

11. To what extent do you agree or disagree that the following are the roles of infrastructure development on economic growth in South Africa?

<table>
<thead>
<tr>
<th>INFRASTRUCTURE DEVELOPMENT…</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIDE1 …provides services that safeguards economic growth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE2 …reduces the costs of productivity and profitability</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE3 …ensures the effective functioning of the economy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE4 …direct investment on infrastructure to inspire economic growth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE5 …reduces transaction and trade costs improving competitiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE6 …provides employment opportunities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>RIDE7 …provides physical and social infrastructure to the poor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Thank you for your co-operation in completing the questionnaire.