2019

An Assessment of the impact of the Integrated National Transport Policy in the road sector within Nairobi County.

Adhiambo, Evelyn Maureen
Strathmore Business School
Strathmore University

AN ASSESSMENT OF THE IMPACT OF THE INTEGRATED NATIONAL TRANSPORT POLICY IN THE ROAD SECTOR WITHIN NAIROBI COUNTY

EVELYN MAUREEN ADHIAMBO
STUDENT NO. 79185

DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER'S IN PUBLIC POLICY & MANAGEMENT AT STRATHMORE UNIVERSITY

SCHOOL OF BUSINESS
STRATHMORE UNIVERSITY
NAIROBI, KENYA

MAY, 2019

DECLARATION AND APPROVAL

Declaration

This research paper is my original work and has not been presented to anybody, college or organization and is submitted to the Strathmore University, School of Business in partial fulfillment for the award of a Masters in Public Policy and Management.

This project does not contain any material that has been accepted for the award of any other certification elsewhere. To the best of my knowledge and belief, no material previously published or written by another person has been included in this project, except where due reference is made in the text.

EVELYN MAUREEN ADHIAMBO

Approval

This dissertation of Evelyn Maureen Adhiambo was reviewed and approved by the following:

Prof. Robert Mudida
Senior Lecturer, Strathmore University,

Dr. George Njenga,
Dean School of Business, Strathmore University,

Prof. Ruth Kiraka,
Dean School of Graduate Studies, Strathmore University

ABSTRACT

"*Moving a working Nation*" was the driving theme in the formulation and implementation of the Integrated National Transport Policy, 2009. The policy document identified several challenges which were, inhibitors in the sector from were performing its role with respect to National, Regional and international integration. Some of these challenges included inadequate infrastructural development and maintenance, insufficient funding and gaps in the legal, institutional and regulatory framework for the sector. The policy document subsequently provided policy solutions for each sector with a view to addressing the said challenges. This study investigated the impact of the Integrated National Transport Policy in the road sector within Nairobi County from 2010 to 2015. This was done by identifying impacts on implementation by assessing the policy overlaps, policy gaps, system and institutional failures, that have either emerged or have persisted overtime, with a keen focus on the policies that guided infrastructure, funding, regulation and enforcement. Data was collected using both primary and secondary sources. Primary data relied on empirical scholarly research articles, self-administered questionnaires and in-depth interviews with public officers at levels or ranks drawn from various state agencies who were purposively selected. Secondary data was sourced from organizational records, surveys and reports for other research and surveys conducted that were associated to the road sector within Nairobi county. The findings of this study found that the Integrated National Transport Policy in the road sector, had a positive and significant effect on infrastructural development and expansion of roads. It also had a Integrated National Transport Policy in the road sector, had a positive and significant effect on funding and if was further observed that implementation of the road transport policy had a positive and significant effect on regulation & enforcement. This study therefore, recommends a complete overhaul of the road sector transport policy to fully address the question of infrastructural, funding and review or realignment of the various legislation to facilitate ease of enforcement of the various road laws within Nairobi County.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

Abbreviation	
APEC	Asian, Pacific Economic Cooperation
CBD	Central Business District
COMESA	Common Market for Eastern and Southern Africa
EU	European Union
GDP	Gross Domestic Product
IAPs	Individual Action Plans
INTP	Integrated National Transport Policy, 2009
KNBS	Kenya National Bureau of Statistics
KRB	Kenya Roads Board
KURA	Kenya Urban roads Authority
MOTI	Ministry of Transport and Infrastructure
MOUD	Ministry of Urban Development
NCC	Nairobi City County
NTSA	National Transport and Safety Authority
NUTP	National Urban Transport Policy
OECD	Organization for Economic Cooperation and Development
SANRAL	South African National Roads Agency
SPSS	Statistical Package for Social Sciences
SSATP	African Transport Policy Program
UT	Urban transport
WHO	World Health Organization

DEFINITION OF TERMS

"Road Agency" means any organization or body specified in the Third Schedule, with responsibility for defined categories of roads.

"Road Network" means the entire road network in Kenya, whether classified or unclassified, of regional or local importance, public or otherwise howsoever described.

Cess is tax on the movement of agricultural produce raised by local authorities in Kenya. The tax applies to all farm agricultural produce, livestock and products marketed in all outlets managed by local authorities and on transit by road within the country.

Class A roads encompass transnational highways connecting townships of international significance, ports and linking international borders (Republic of Kenya, 2012).

Class B roads are countrywide highways that connect centres of national importance (Republic of Kenya, 2012).

Class C roads refer to major highways which connect regional towns or link to upper highways (Republic of Kenya, 2012).

Enforcement Agencies are administrative divisions in Government charged with implementation of law and government policy related to the road transport sector.

Funding are modalities put in place to identify financial avenues that will facilitate road infrastructural development.

Legislation is a mandate or standard enacted by a national law-making body or parliament at state or federal level. It is enforceable, with positive or negative consequences of noncompliance. In some countries, the term used is an act (WHO, 2013).

Public Road is defined as a highway, traffic lane, path, alleyway or route or ground held in reserve for use of mode of right of entry to two or multiple premises RoK 2012.

Road Infrastructure includes road facilities and equipment; the network, parking Spaces, Bus Shelters, Draining System, Bridges and Pedestrian Footpaths.

Transport or Motor Vehicle Laws address topics such as driving privileges, licensing and vehicle registration, road signs and signaling, driving conduct, motor vehicle manufacturing standards and commercial driver working hours. Such laws are not limited to safety on the roads but can include transport infrastructure (WHO, 2013).

Transport Policy deals with the development of a set of constructs and propositions that are established to achieve particular objectives relating to social, economic and environmental development, and the functioning and performance of the transport system. In this study, it refers to the Road Transport Policy.

ACKNOWLEDGEMENTS

I would like to give thanks to God for enabling me to complete this work successfully. This study came into reality due to enabling roles played by various individuals. First and foremost, I am very grateful to my supervisor for his professional guidance and support throughout the study. The nature of this work demanded me to work for long hours and even during weekends. For this reason, my special thanks go to my family, for their patience and care throughout my study period. I am grateful to my employer, the Public Service Commission for sponsoring me for this course. In a special way I would like to thank my fellow public officers and employees drawn from the Ministry of Transport and Infrastructure, Kenya Roads Board, National Transport and Safety Authority, Traffic Police Headquarters' and select employees from the County Government of Nairobi department of Public Works, Roads and Transport for their input and support throughout this study.

DEDICATION

This study is dedicated in Memory of my dear Mother, Marciana Apondi Ochieng and to my family for their moral support throughout the period of my study.

CHAPTER ONE
INTRODUCTION

1.1 Background on the Study

Transport policies encompass the advancement of a set of concepts and structures that are established in order to achieve certain goals relating to social, economic and ecological constructs in order to ensure proper functioning and performance of a given transport system. Policies in the transport sector arise because of the importance of transport in virtually every aspect of national life, Burrton (1993). Transport is taken by Governments of all types, from those that are interventionist by political ideology to the most liberal, as a vital factor in economic development. Burrton et al., (2005) identifies two perspectives on transport policy and observe that they vary considerably between countries. At one extreme is the Anglo-Saxon perspective that leaves much to the individual and market forces, with government simply being a facilitator with minimal intervention when serious market failures emerge. At the other extreme is the continental European philosophy of direct government planning and control, with the markets treated cautiously and only allowed when they meet clear official objectives. Batra, (2009) opines that Transportation policies affect the productivity of cities in which people live, especially in Urban Centre's. Urban road transportation policies affect the quality of people's lives in several of ways from the intangible as articulated by policies and regulations to the tangible like road infrastructure and related facilities and to a great extent influenced by funding. Wagenvoort et al, (2010), further opines that no Nation can achieve continuous development without focusing on investing in public infrastructure and providing sufficient financing. Wagenvoort, (2009) further states that funding for road infrastructure has a direct impact on development in two broad aspects; directly by influencing they physical development of road networks, maintenance of existing roads and related facilities and indirectly by spurring growth and ensuring economic growth and proper overarching policies and legislation that govern the management of the sector.

The development of Kenya's transport policies has been sluggish. This is as observed in the various sessional papers as anchored in the various development plans. The first national development plan covered the years 1964-1970, and was anchored in the Sessional Paper No. 10 of 1965 titled African socialism and its Application to Planning in Kenya. On road policies, Wasike (2001) groups Kenya's public policy on roads infrastructure over the post-independence broadly under three decades. The first decade referred to as period of rapid growth, the second as a period of continuous decline and the third and fourth decades 1982 to late 1990's being the era of structural adjustments and reforms. Noteworthy, the Sessional Paper No. 5 of 2006 identified impediments in the road sector under three main areas which entailed infrastructural challenges, legislative challenges and inadequate funding. The Economic Recovery Strategy for wealth and employment creation between the year 2003 to 2007 informed a policy shift and led to the constitution of the National Transport policy committee, that policy paper lead to the Integrated National Transport Policy, 2009 which recognized the critical issues facing the sector and proposed policy recommendations and strategies to address the aforementioned deficiencies.

1.1.1 Integrated National Transport Policy

The policy paper on the Integrated national Transport Policy for Kenya, (2009), identified a number of challenges inhibiting the transport sector from performing its facilitative role in respect of national and regional economies. The report highlighted poor quality of transport services, inappropriate modal split, Unexploited Regional Role of the Transport System, Transport System Not Fully Integrated, Urban Environmental Pollution, Lack of an Urban/rural Transport Policy, Institutional Deficiencies, Inadequate human resource capacity and lack of a Vision for the Transport Sector. The aim of the Integrated National Transport policy (INTP), (2009) was to address the challenges and provide strategic direction on how to ensure that the transport sector becomes a facilitator towards Kenya's socio-economic development and economic growth to ensure realization of vision 2030. With the advent of the new constitutional dispensation, both the National and County Government. All county governments were expected to customize the policy depending on their scope as guided in Schedule 4 of the Constitution of Kenya, 2010.

The researcher approached this study from a view point based on three key thematic areas as the basis of assessing impact of the INTP, 2009 in the road sector within Nairobi county. The three thematic areas included Infrastructure, Funding, Regulation and Enforcement in the road sector.

The organization for Economic Cooperation and Development, OECD (2002), defines infrastructure as a structure of public facilities in a nation, together with roads, buildings and powerlines. Kenya's infrastructure networks follow population density and therefore, road transport plays an important role in road infrastructure within Nairobi and its environs. Infrastructure provides an enabling operational environment for all other sectors in the Kenyan economy, due to its interlinking role. Road Infrastructure is a broad term which entails road construction and related networks, road rehabilitation, road maintenance and associated road facilities like bus shelters, pedestrian footpaths and parking spaces.

The scope of road transport comprises the entire road network and includes all road facilities upon which road transport operates, whether classified or unclassified, of regional or local importance and whether the road is public or private. The road sector in Kenya plays a major role in the economy and accounts for a huge portion of transportation demand as evidenced by the ever-increasing demand for better road infrastructure. Traffic on the national highways has grew by 7.5% per year, World Bank Report (2007a). In the statistical release by the Kenya National Bureau of Statistics (KNBS), for the third quarter ending December, 2015, the road transport sector grew by 8.7 per cent compared to 7.8 per cent growth recorded in the same quarter of 2014 which was attributed to increased demand for freight transport and a fall in oil prices during the review period. Further, there has been a sharp increase in motor vehicle ownership over the years leading to heavy traffic congestion during peak hours and stiff competition for limited road space among motorists, pedestrians and motor cyclists. Traffic congestion is further manifested in long queues of slow-moving vehicles and long waiting times, particularly within the central business district and its environs, KNBS, (2015).

Road sector funding refers to financial strategies in in place to efficiently and effectively implement road transport policy within Nairobi County. Funding for the sector was sourced through the exchequer (annual budgetary allocation from the National and County Government), road fund, road levies, fees, licenses, import duty and multilateral financial institutions such as the World Bank, donor countries and public private partnerships. Funding for the road agencies in Kenya is influenced to a great extent by their scope and class of road under their purview. This is governed by the Kenya Roads Board Act, (1999). Funding is a key factor in ensuring that the envisioned road transport policies are implemented fully. However, inadequate funding has been the biggest impediment in implementation of various policies as evidenced by the declining budgetary allocation for the sector and an over-reliance on multilateral financial institutions and donors, Mugambi(2016).

Regulations refer to the various policy guideline that operationalizes the Kenya Roads Act,2012 while on the other hand, enforcement, refers to the agencies mandated to ensure the various regulations in the road sector are applied as envisioned in the law. The Act, provided for the establishment of three authorities whose focus was on the national of roads in relation to development, rehabilitation and maintenance. The County government on the other hand, were mandated with the role of development, rehabilitation and maintenance of County roads, proper utilization of road facilities within the county, traffic control and issuance of business permits. The enactment of the National Transport and Safety Authority, (2012) provided avenue of ensuring enforcement of the road sector regulation through licensing and ensuring safety on the roads. Omondi, (2013) notes that the many agencies with overlapping mandates created more challenges for the sector than ever before.

1.1 Research Problem

The road transport sector faces a myriad of unprecedented challenges ranging from inadequate infrastructure and related facilities to insufficient funding coupled with a complex institutional framework charged with management of the sector. Liu (2017). Berg et al., (2017) provide further concerns for the sector, especially for low and middle-

income countries by observing that the current potential for transport investments and policies meant to boost sustainable and inclusive growth are declining. This is evidenced by increased transport costs and over-regulation of the sector with a multiplicity of institutions undertaking somewhat similar roles.

Following the institutionalization of the Integrated National Transport Policy, (2009), specifically for the road sector, it has been observed that the policy has had a minimal influence on road infrastructure as evidenced with the apparent lack of road facilities, deteriorating road infrastructure, especially county roads and to some extent highways and arterial roads, which could be adduced to insufficient funding. Funding for the sector has been hampered by the over-reliance on the Government exchequer, which is affected by various factors from the tax regimen and road levies to effects of international oil barrel pricing. Further, the effect of the various policies and legislation as issued by the National and by extension Country Government, has created bottlenecks to spur growth for the sector. Taking cue from the current state of affairs, the sector is over-regulated with many institutions undertaking overlapping mandates, thereby curtailing enforcement of the various regulations. This study therefore sought to assess the impact of the integrated national transport policy in the road sector within Nairobi County.

1.2 Research Objectives

In this research, the main objective was to assess the impact of the Integrated National Transport Policy in the road sector within Nairobi County.

The specific objectives were to:

a) Assess the extent on how the integrated national transport policy has influenced road infrastructural development within Nairobi County.

b) Evaluate how the integrated national transport policy has impacted on road funding within Nairobi County.

c) Determine how the integrated national transport policy has affected implementation and enforcement of road transport regulations within Nairobi County.

1.3 Research questions

a) To what extent has the integrated national transport policy has influenced road infrastructural development and maintenance?

b) How has the integrated national transport policy has impacted on road funding within Nairobi County?

c) To what extent has the integrated national transport policy has affected implementation and enforcement of road transport regulations within Nairobi County?

1.4 Scope of the study

This research was to assess the impact of the integrated national transport policy in the road sector and covered the duration from, 2010 to 2015. The area of study was within Nairobi County. The study targeted 100 respondents drawn from the Ministry of transport and Infrastructure - State Department for Transport, Kenya Roads Board, National Transport and Safety Authority, Kenya Traffic Police Headquarters and The County Government of Nairobi – department of Public, Works, Roads and Transport. The study focused on the key personnel at the government ministries responsible for policy development, implementing and enforcement agencies related to transportation policy with a keen bias on road transport. The study was conducted between the December, 2015 to June, 2016.

1.5 Hypothesis

The hypothesis of this study presupposes:

H_1: Implementation of the road transport policy has no positive and significant influence on Infrastructure within Nairobi County.

H_2: Implementation of the road transport policy has no positive and significant influence on Funding within Nairobi County

H_3: Implementation of the road transport policy has no positive and significant influence Regulation & Enforcement within Nairobi County.

1.6 Significance of the study

The findings from this study were useful in assessing the impact of the integrated national transport policy on aspects of policy, practice and academia, especially regarding implementation of the integrated national transport policy for the road sector within Nairobi County.

On policy relevance, the findings of this study could be used by the Ministry of Transport and Infrastructure and all related State Agencies, Nairobi County and the Police Traffic Department, to inform review of the existing road sector transport policy and develop better road transport planning strategies and programmes to harness opportunity in the sector, spur economic development and enhance the quality of livelihood by easing road transit or fully utilizing alternative transport modes. Further, this study could be replicated the specific various sub-countries within Nairobi country which face similar problems and thereby contribute to the achievement of the Economic and Social pillars as espoused in the Kenya Vision 2030 policy documents as well as ensure equitable distribution of resources, public participation in policy making and accountability as enshrined in the Constitution of Kenya, 2010 and other relevant legislation.

On the academic sphere, this study would open up new frontiers as a point of reference and knowledge on the subject under study. It would further bridge the knowledge gap in the transport policy with a bias on the road sub-sector by developing pointers that to demonstrate if the policy is achieving its desired outcome by assessing the impact of thje policy on the road sector specifically within Nairobi County.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

In this chapter, the researcher took a review of the theoretical perspectives on transport policy, assessed the impact of transport policies, identified theories on transport policy, highlighted empirical studies from select countries, and thereafter briefly highlighted the research gaps in the Integrated National Transport Policy and the consequent impact to the road sector which informed the conceptual framework and the research approach as used in this study.

2.1 Theoretical literature

In this section, the researcher commenced by examining the nature of transport policies the theoretical literature and a review of theories in place in transportation policy and how these theories impact on transport policy.

2.1.1 Nature of Transport Policy

Slack and Notteboom, (2013) elucidate the distinction between transportation policy as dealing with the development of a set of constructs and propositions that are established to achieve particular objectives relating to social, economic and environmental development and the functioning performance of the transport system. While transport planning encompass the preparation and implementation of actions designed to address specific problems and therefore they perceive transport policy as a concomitantly a public and private endeavor. They further view that governments are often the most involved in the policy process by the virtue that they either own or manage many components of the transport system and as by the virtue of government's role to manage transport systems due to the important public service they provide in addition to imposing a regulatory framework. On the other hand, the private sector has much leverage into the policy process through its asset allocation decisions, which in turn reflects in new public

transport policy paradigms like public-private partnerships in road infrastructural developments.

Burton, (1993) gives a contrary view by stating that transportation policies is an all government affair and a key mechanism in promoting, developing and shaping the national economy. The rise of transport policies has been due to the extreme importance of transport in virtually every aspect of national life. Rodrigue et al (2006) on the other hand concurs with Burton and views transport on a broader perspective with policies developed to establish sovereignty or to ensure control over national space and boarders, which raises questions on public safety and the environment, and led to the development of policies requiring licenses, imposing equipment's standards and setting of speed limits. Rodrigue et al, (2006) further opines that governments have large number of instruments at their disposal to carry out transport policy and the important instrument is public ownership. This has been verified by the direct control of the state on transportation is widespread as evidenced by public agencies in place on transport infrastructure such as roads and airports. Public ownership also extends to include the operation of transport modes. Rodrigue concurs with this assertion and notes that in many countries airlines, railways and ferries are owned and operated by public agencies.

Kloop, (2011) brings to the fore a different view on transport policy by introducing a term "transport policy instruments". On this, he discloses that in spite of the abundance of policy instruments, there is no single silver bullet to fit all national and regional circumstances and concludes that urban transport policies are complicated, and this therefore calls for integrated and comprehensive programmes for the medium- to long-term; by taking account the local and regional context.

Slack, Notteboom and Rodrigue, (2013) sustain Kloop's viewpoint on the discourse on transport policies as a reflection of reflect the interests of decision makers and their approaches to solving transport problems. To them, the interests and approaches are both place specific meaning that they apply to a particular area of jurisdiction and time specific implying that they are established to reflect the conditions of transport and intended solutions as a point in time. In their concluding discourse, it is widely

appreciated that policies change and evolve, as the conditions change and as different sets of problems are recognized therefore implying that policies are dynamic.

2.1.2 Trends in the Development of Transport Policy

Transportation policy has evolved overtime from as early as the seventeenth to the twentieth century. It has been a painstaking period where forces, socio-political and economic interests have influenced the transport policy overtime and the balancing act of all players involved in the sector. This part brings to the fore discourse that has been written by various researchers and authors on the trends of the sector with a keen bias on the road sector and the impact it has had on the twenty first century and notably still evolving.

Rodrigue et al, (2013) view public policies as being a reflection of interests of policy makers and their approaches to solving transport problems. These problems are usually specific to a particular jurisdiction and intended to provide solutions at a particular point in time. It is their view that policies change and evolve as conditions change and as new problems emerge. Burton, (1993) affirms this point by acknowledging the dynamic nature of policy as reflected in the way policy instruments have been employed over the years. In the nineteenth century, when many of the modern transport systems were being developed, the prevailing political economy was one of laissez-faire, which was of the view that the private sector should be the provider of transport services and infrastructure.

Berg et al., (2015) note that the period between 1940s and 1970s was characterized by nationalization when socialist ideology was put into practice throughout the world. For example, the European transport industry saw the emergence of large national companies in public transport, freight and rail among other modes. These large nationalized companies could mobilize new sources and technologies, thereby contributing to the national objectives of economic growth and full employment. By 1960s, transportation had come under the sway of public policy initiatives that exerted an enormous influence on the industries and their spatial structures. At the same time, there was also a growing body of evidence that indicated that public ownerships and regulations were not always in the public interest. Transportation costs that were fixed by the regulatory authorities

were maintained at higher levels than were necessary, which demonstrated that many regulatory boards had been "captured" by those they were supposedly regulating, so that they were frequently acting to protect the industries rather than the public. At the same time, there was a crisis of public finances in many countries, where the cost of operating the state-owned transportation industry were seen to be unsustainable. The recent trends in transport policy towards liberalization and privatization have not necessarily weakened government interventions. Government policy orientations have changed. Governments are beginning to exert greater control over environment and security or safety concerns that are replacing former preoccupations with economic matters.

In as much as there has been a reduction of policy involvement on economic regulation, the influence of public policy on especially road transport is still influential though very contentious. This has been evidenced by the enactment of various legislation and policies in for the road sector in Kenya.

2.1.3 Impact of Transport Policy

Dantas and Ribeiro (2007) opine that road transport infrastructure policies create impacts not only to the transportation system, but also to the social, economic and environmental system, with most studies performing a posteriori analysis of the impacts, after the implementation of a policy, noting the observed and expected changes and comparing them in order to evaluate the policy's efficiency and effectiveness. In their study on impact of transport infrastructure policies in Brazil, Dantas and Riberio, (2007) found that within a given framework the impacts are measured in terms of short-term, medium-term and long term, with the transport system having a short-term high impact and low impact for both the medium and long timer. This approach is based on the assumption that impacts of transport infrastructure policies are solely the result of immediate changes in the transport and activity systems. Despite the widespread adoption of this approach, there has been growing criticism regarding the lack of comprehensive databases and evaluation methods that help planners in identifying the true dimension of the impacts as postulated by Greiving and Wegener,(2001).

Ellison (1992) further expounds on the impact of transport policies on the road system in South Africa, He notes that the system was characterized by a programme of increasingly expensive subsidies aimed at supporting the movement of workers, government ownership of carriers and infrastructure, direct government regulation on rates and a system of entry regulation that protected the incumbents. The consequent result of complete Government ownership self-regulation led to a sharp increase of costs to the Government which led to its inability to sustain the transport subsidies that underpinned the separation of non-white workers from their work locations. This led to the removal of statutes of the policy and consequently the government launched a policy of transport deregulation and proposed privatization of government owned carriers though this faced rebuttal by the political elite.

2.2 Theories in Transport Policy

This study examined two theories on transport policy which were, Black-hole theory of highway investment and vehicular traffic flow theory.

2.2.1 Black-Hole Theory of Highway Investment

Gunnarsson (2000) in his paper on Mobolistics, notes that transport is a complex system based on numerous decisions. He further opines that transportation system is highly adaptive in time and space but is also very sensitive to disturbances which can result to system collapse, thus inclinations towards a paradigm shift in transportation solutions as the epoch of "building away the problems" through large investments in road infrastructure as a result of road infrastructural development, increase in car ownership and automobile traffic has resulted with a negative impact on the public transport system and facilities for non-motorized transport with a near total collapse of the system.

Plane (1995) developed the black-hole theory of highway investment which states that enlarged investments in highway facilities result in greater ease of travel and hence altered travel patterns, including an increase in average trip length and in the number of trips made. Over time, this increase demand stimulated by the initial investment leads to demand on transportation facilities, funding and resultant imposition of stringent

regulations through policy or otherwise and the process repeats itself. This familiar phenomenon has been referred to as the black-hole theory because it is claimed that investing in highways is like throwing money into a black hole. Simply put, adding new routes makes congestion worse, not better. From this theory, it was deduced that road infrastructural development policies can yield both intended and unintended outcomes. Construction of a new road to ease traffic or decongest a given area leads to an induced demand for vehicular travel and use of the alternative route (new route). This leads to a further congestion of the road that was initially meant to address traffic congestion. Therefore, infrastructural policies need to weigh on the impact of the intended and unintended outcomes. This can be done by providing more options in addressing a given challenge in the sector. For instance, when constructing a new road, policy makers should make adequate provision for non-motorized transport. This will ensure a balancing-off of the road usage and in the long run ease traffic congestion.

2.2.2 Vehicular Traffic Flow Theory

This theory was first developed by Frank Knight in 1920s and modified by Wardrop's in 1952. Vehicular traffic flow model states that flow is a product of velocity and density hence assumes density relates to velocity. This model is explained through the driver's aggressiveness approach where if a driver's aggressiveness is deliberate, then this increases risk due to lack of patience as an attempt to save time. This is a deviant behavior which surpasses the limits of safe driving and as a result puts other road users at risk from collision. Taking cue from the policy, urbanization and increased purchasing power of the people has led to an increase of the number of cars on our roads and as a result let to congestion and crowded roads. This has increased the level of stress on the drivers due to time pressure and this leads to drivers' illegal use of road shoulders, obstruction and dangerous changing of lanes. To address this deviant behavior, it is imperative to have in place proper regulations to govern the sector with sufficient enforcement mechanisms. Further, implementation of regulations requires proper and sufficient funding to ensure enforcement is achieved.

2.3 Empirical literature

The researcher in this section has endeavored to broadly assess the impact of transport in both the developed and developing economies, and further highlight the existing debates on European transport policy and the status of the African transport policy. The section concludes by providing extensive studies on urban transportation in select developing countries in Africa, Latin America and Asia.

2.3.1 Debates on European transport policy

Papaioannou and Stasinopoulos, (1991) present detailed historical background on the road transport policy on infrastructure for the European Community. In their view, the community policy on road transport was informed by three events in 1985 which gave a new impetus to the development of a common policy, which entailed the creation of communities without frontiers, creation of free market for international inland transport by adapting a non-discriminatory basis of bilateral quotas and elimination of distortions of competition during the transition phase. In order to harmonize these measures to facilitate market access, Papaioannou and Stasinopoulos, (1991) identified three main areas in road transport where distortions of competition might arise, social, technical and fiscal. To address these inequalities, they note that efforts to hamornize competition between modes and improve road safety and working conditions were realized by the regulations published in the early 1970's. However, the said regulations lacked flexibility and were difficult for transporters and drivers to implement correctly. As a consequence, there was an urgent need to relook the existing regulations with a view to harmonize and address, specifically aspects on the tax structure, cargo vehicle weights and dimensions and road tolls. On the other hand, Giorgi and Pohoryles (2001) provides an overview of the past legal developments within the European Union that brought about the transformation from national transport policies to a common transport policy which identified the problems encountered in its implementation; and identified the conflict areas, common to all European countries.

In highlighting implementation or road transport impacts, Trigalo and Barone (2011) highlight the consequent problems of co-ordination encountered in the decision-making and implementation of major infrastructure projects, which majorly highlighted the need for co-ordination among the various institutions. In order to address the impact of decision making in transport policies, Banister and Stead (2003) illuminate how the exercise of scenario-building can help policy development and decision-making. In this approach, desired 'Images of the Future' are defined in line with the objective of sustainable transport and other policy targets of the common transport policy; and through a 'back-casting' process, various policy packages are created, and policy paths defined as those that may be used for reaching the desired future. As a consequence, the resulting policy packages and policy paths are also valuable in revealing policy actions for achieving sustainable transport outcomes on infrastructural development which is influenced by sufficient funding and a comprehensive regulatory framework.

A general assessment on the contributions to the debate on European transport policy brings to the fore key impacts of the policy issues that emerged and the consequent efforts put in place in order to provide corrective measures taking into account equity especially for road transport and inter-territorial relationships as relates to the European transport policy. What stands out is the need to promote research-driven policy-making, which would be able to address the problems and conflicts within the sector.

2.3.2 Status of African transport policy

Most African countries have clearly established overarching transport policy objectives. In most cases, these are documented in a formal guiding national transport policy document. They are regularly updated in some countries, but not in others. After several years of notable economic growth, policy-makers in Africa face the challenge of sustaining this momentum by continuously adapting policies to a changing environment. Recent GDP growth in Africa has been over 5% per annum. The continent has shown resilience during the 2009 economic downturn with 4.5% GDP growth in 2010 and more than 5% growth in 2011 OECD 2010.

A performance review conducted on the African Transport Policy Performance Review, by the Africa Transport Policy Programme (SSATP) in selected Anglophone and Francophone countries in 2013 highlighted the impact of transport policies focusing on the main transportation modes, excluding maritime and aviation. The study was conducted in six countries: Ethiopia, Benin, Burkina Faso, Gabon, Ghana and Zambia, all being considered, for the purpose of portraying a fair cross-section of the Sub-Saharan Africa transport sector circumstances and impacts on infrastructural development, funding and legislation. The paper addressed some fundamental policy issues and consequent impacts, that affect transport performance in Sub-Saharan African countries and was intended for transport sector policy level decision-makers.

In his review on Africa transport policies, Runji (2015) notes that the most significant and common barriers to the successful implementation of transport sector strategies include; inadequate human resources capacity to ensure proper policy, funding and infrastructural development. In most countries, there are too few qualified technical resources, with many appointees lacking the technical know-how on road transport dynamics. Runji, (2015) further observes that this is generally the case across all transport sector departments but is most acute within road sector departments.

Taking cue from the annual report by World Bank on Sub-Saharan Africa Policy Programme in 2011, it is apparent that in the implementation of transport policies, there is need to assess the intended and unintended impacts on the sector with a view to arresting some of the negative impacts or providing alternative solutions to ensure a seamless implementation or road transport policy.

2.4 Socio-economic Impact of road transport policies in Africa

Road transport policies provide modalities in the management, financing and regulating the sector. Road network in Africa can be viewed through two different systems, which are governed by different sets of policies international trade and intra-regional trade. The African Development Bank report (2002) notes that a small number of international road transport corridors play a crucial role in maintaining the economies of landlocked

countries in Africa thereby it informs the nature of the policy with much focus on the main international trade corridors that connect the landlocked counties of each sub-region to their respective ports. Howe, (1975) notes that in Africa, there are no reliable estimates of actual road usage for both passenger and cargo, in the post 1965 era. He however draws inferences of the number of motor vehicles and length of the road network as having increased at an average of more than seven roads at a rate of about 3%. In his view, the figures indicate that the tonnage has been growing at about double the rate in comparison to the rest of the world. Owen, (1964) concurs with this view that the post – 1965 era saw the road transport emerge as a serious competitor to the rail and the tragedy is that this competition assisted in the downfall of the railway, with little effective control of the predictable pressure from road transport to move goods previously transported by rail. This was attributed by the lack of common carrier obligation especially of cargo on the roads and with little regulation on over-loading coupled with no clear structure on the frequency of operations which attracted more investment channeled towards construction of highways and road network within urban towns. World Bank loans and credits to Africa up to the year 1972 allocated 44% for highway construction and maintenance and the railway allocated 30%.

2.5 Urban Transport in selected developing countries

The study endeavoured to highlight the impact of road transport policies on urban transportation from select developing countries by providing studies on urban transportation on the impact of road transportation policies. The researcher identified countries in Africa, Asia, South America that shared similar characteristics with Kenya and draw comparisons. The countries identified were South Africa, Brazil, India and Kenya.

2.5.1 South Africa

In the African continent, South Africa is the most urbanized with about 65% of the population living in towns and cities, and the percentage has been increasing steadily at the rate of about 2.6% per year due to the relatively high though declining birth rates and a continuous inflow of rural-urban migration coupled with immigration from other

countries in Africa, CoCT, (2011). This is further reinforced by Todeschini and Dewar, (2013) who note that as an emerging economy, South Africa faces many developmental challenges, which include high population growth particularly among the poorest households, high levels of poverty with the largest racial group who are Africans making up the majority of the poor. According to the National Department of Transport, (2010), South African Road network comprises of about 2.1% surfaced national and non-toll roads, 46.1% of surfaced provincial roads, 29.5% rural roads and 22.3% municipal and other roads which total to about 754,600 km of roads and streets according to the responsible sphere of government and type of road. Table 4 shows the approximate length of Road networks in South Africa.

Transport policy implementation in South Africa is structured on a framework set out by the moving South Africa Strategy (1999) and the National Land Transport Transition Act No. 22 of 2000, which set out the vision of an efficient public transport system through the use of targeted subsidies and the provision of high-quality comprehensive transport infrastructure by providing roads and related facilities. On impacts related to the regulatory role, the National Department of Transport plays a largely facilitative function by developing policy and legislation, which is then implemented through provincial departments, local government and a range of public entities. It also has agencies that are mandated to deliver transport infrastructure and oversee the enforcement of regulation. They include the South African Roads Agency Limited (SANRAL), The South African Rail Commuter Corporation (SARCC), The Road Traffic Management Corporation (RTMC) and the Cross-border Road Transport Agency (CBRTA) which regulates cross-border passenger, freight and road transport and finally the civil Aviation Authority, which regulates air traffic and civil aviation.

South African National Roads Agency (SANRAL) was established in 1998 as an independent, statutory company with the mandate was to finance, improve, manage, maintain and upgrade the national road network. The two primary sources of income are from Non-toll roads which comprise 87% of the national road network and funded from allocations made by the National treasury. Toll roads constituted 13% of the national road

network, are funded either through public-private partnerships or from capital market borrowings. The south African road network under the purview of SANRAL consist of 22 197 km of roads. This network connects major cities, towns and rural areas with the aim of supporting economic growth, social development and contributing to job creation.

Funding of the road sector in south Africa is through national treasury allocations, collection of road tolls and engagement with the private sector who finance sections of toll roads. 87% of the national road network that is not tolled is maintained, upgraded and expanded through tax-based revenue allocation from the national treasury. On law enforcement, funds have been committed to increase law-enforcement capacity especially relating to public transport. The law enforcement strategy includes strengthening capacity of existing public transport law enforcement units in the various provinces and establishing such units where necessary. The downside is that funds have never been sufficient, and the focus has only been on public transport, while overlooking private transport which makes a huge percentage especially in the upmarket areas. The law enforcement personnel lack capacity on their area of operation and their numbers are relatively low.

Decision making systems within the local government are structured within disciplinary 'silos'. Where, different departments that are frequently staffed by different disciplines or professions make decisions about different elements of the city, frequently without inter-departmental dialog. As a result, budgets have been determined departmentally, often based on historical allocations. One consequence is that local, provisional, and national government budgets have become a "turf struggle" between different departments seeking to increase their share of the budget. In this struggle, transportation planning has emerged on top and outgunned planning departments which are ostensibly concerned with the performance of the urban whole. As a consequence, it is noted that in the last five decades, major transportation decisions have been made in relative isolation from urban structural issues and the issue of using transport to address the structural inequalities has never been tackled. A recent national legislation – the spatial Planning and land Use Management Act (Act No. 16 of 2013) calls for local authorities to

produced integrated development plans, supported by a budget to be reviewed every 5 years. The legislation has however had little impact and the business as usual approach has remained.

In order to achieve significant improvement in the transport sector in the South African cities, there has been proposals in place to consider each city to have an Integrated Transport Authority to coordinated with the central and provincial government and with authority over all modes of movement especially public transport have an interdisciplinary collaboration with the department of spatial planning with an agreed objective of promoting a more convenient, just, sustainable and efficient city.

2.5.2 Brazil

Pojani and Stead, (2017) note that the past three decades has seen the country become more urban but, until recently, not much wealthier. The country has had a history of passive resistance to urbanization and urban population growth. However, attempts to curb the rapid growth of cities have failed, and the growth in low income urban population has largely been unplanned. Vasconcellos, (2013) notes that Brazils intense period of urban growth led to the formation of several megacities and metropolitan areas and cities grew by 2-5 times. He further observed that due to inadequate provision of proper land use regulations and enforcement policies, it led to a negative impact on the urban areas as witness with uncontrolled urban expansion. This therefore led to the road infrastructure expansion being radial. The new radial roads had four to six lanes and bus services were organized along them to transport peripheral workers. In contrast, the wealthy areas had some freeways and expressways built to accommodate an increasing number of automobiles.

Vasconcellos, (2013) highlights the negative impacts of unreliable road transport policies in Brazilian cities particularly low-quality road infrastructure for the non-motorized transport, unreliable public transport services, pollution, congested roads during peak hours and inequality in mobility and transportation access. He further notes that there lacks a clear and comprehensive policy on road user facilities and points out that in most

cities, the responsibilities are fragmented with no proper mechanism to monitor policy implementation especially as relates to enforcement of the policies.

On funding, public transport provision and traffic management are primarily the legal responsibility of the municipalities. Expenses are covered by the local budget. However, due to the enormous social and economic disparities in the country, many cities in Brazil have minuscule budgets and cannot fulfill their transport related tasks. Vasconcellos, (2013) further notes that of 5,600 cities, only 500 have sufficient funds to provide an urban transport system. As a result, they rely on financial help from the state and federal governments that at times lack the funds to sustain the sector. In the case of large capital investments for instance, metros, suburban and Bus Rapid Transports, all cities need financial support from upper levels of government. This gives the reason why in Brasilia mass transit infrastructure has developed slowly.

At the regional (metropolitan) level, political clashes are common. While metropolitan regions were formally created in the 1970s, the Brazilian Constitution does not confer them with decision-making powers. Only the federal, state, and municipal governments are empowered to make decisions and mayors have substantial authority within their cities. This therefore means that metropolitan agencies, which were created by state governments, often face opposition from mayors who perceive them as encroaching on their jurisdictions. Under these circumstances, it has become difficult to reach long-term agreement on policy proposals.

On impact of the enforcement policies and outcomes of unintended consequences, it was observed that majority of the large cities had their own human and technical resources to manage their daily traffic operations. Local inspectors are empowered to impose fines on violators. This led to a reduction of traffic accidents for a period but, accidents increased again later when motor cycles use were introduced in the sector. In the year 2000 the City Statute, an ambitious planning law, was adopted. Cities were required to analyze the relationship and mutual impact of land use and transport while preparing master plans. Only a few cities were able to achieve the political consensus, institutional coordination,

and financing required to implement the law. Overall, the City Statute failed to generate real changes or act as a guide to urban development.

The introduction of a new tax on oil industry famously known as *Contribuição sobre a Intervenção no Domínio Econômico* was meant to use the revenue from tax to reduce the environmental impact of transport and subsidize fuel purchases while at the same time build transport infrastructure. The tax generated a large amount of funds. However, funds were gradually diverted to the Department (Ministry) of Finance in order to cover debt payments to international financing agencies. However, the tax fund on oil was discontinued in 2012.

Noteworthy was the Mobility Law that was adopted in 2011 requiring all cities of more than 20,000 inhabitants to prepare mobility plans. The law defined how mobility plans should be designed and empowered cities to restrict excessive car use in their areas. It stipulated that all mobility plans must be prepared by 2014 – a deadline which has now been extended. In the face of financial and technical constraints, few cities met this target. This experience revealed that the laws, as with many others in Brazil meant for the cities, were based on unrealistic expectations.

2.5.3 India

India is one of the world's fastest-growing economies with a GDP growth rate estimated at 5.8%, International Monetary Fund (IMF), 2015. The road length in Delhi has increased at the rate of 4.53% per year, which, of course, is not in pace with the growing population. The road density in Delhi is around 155 km per 100,000 people and about 80 vehicles per km. Despite having a large number of extremely large cities and rapid rates of urbanization, India is predominantly a rural country and its hundred most populated cities account for only 16% of the total population IIHS (2012). Gogoi, (2013) and Gupta (2014) note that the driving forces of India's urbanization are diverse and include natural population growth, rural-urban migration, and changes in municipal boundaries and area reclassification.

Urbanization in India especially in the most populated cities has had positive impacts; this has been realized by their contribution of 43% of the total GDP IIHS, (2012). However, the sheer number of people living in urban areas poses transportation problems of an unrivalled magnitude. Nair, (2015) notes that the growing motorization has not necessarily translated into increased accessibility but rather sprawling development patterns in both planned and planned settlements. These settlements, has severed linkages between residential, employment, recreational, educational and other activities. As a consequence, this has adversely impacted on economic efficiency of Indian cities as well as health and wellbeing of urbanites. With almost one third of India's urban population living below the poverty line, the mobility problems of the poor who cannot afford private transport and cannot access public transport are forced to travel increasingly long distances by foot or cycle.

The key factors that stand in the way of resolving urban transport impediments in cities within India are institutional, including a weak administrative framework, limited planning capacity and the lack of integrated land use and transport IIHS, (2015). Despite the several ambitious road policies launched by the national government, local governments have been unable to match up and transform the face of transport in their cities as cited by Mahadevia et al, (2013).

Motor vehicle ownership, in 2012, was about 160 million registered in India MoRTH, GoI, (2013), while motorization remains low by international standards of 11 cars per 1000 people. The correlation is presented is as shown in figure 2.1.

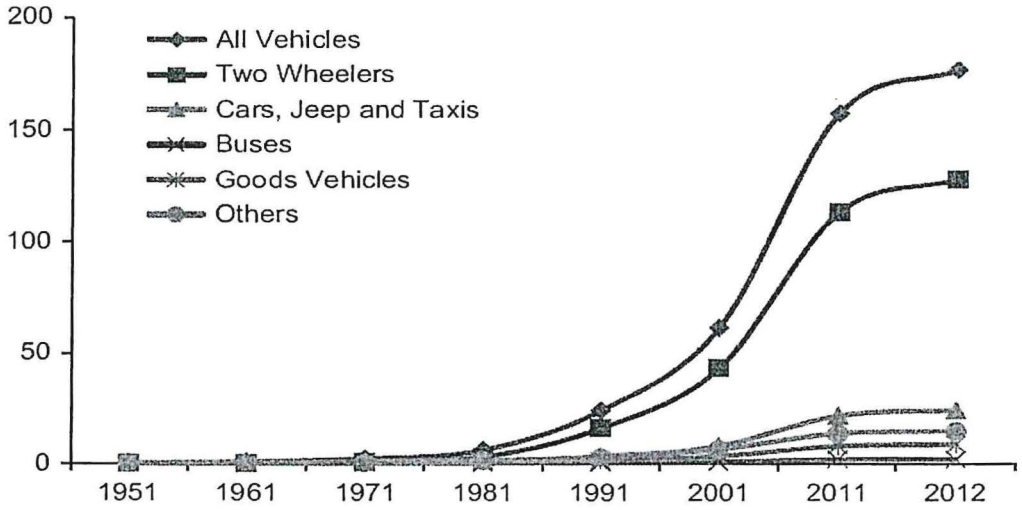

Figure 2. 1: Trends in Registered Vehicles in India

Source: MoRTH, GoI, (2013)

Ghate and Sundar, (2013), provide reasons behind the exponential increase in motorized vehicle ownership in India's rapid economic growth as being the impact of deregulation of the automobile sector which gave impetus to domestic vehicle production. Deregulation acted as an incentive for numerous manufactures to enter into the market coupled with affordable fuel, efficient cars and motorized two wheelers. The easy access to auto finance and low insurance rates also gave rise to car ownership and public transport development has not kept pace with the increase in travel demand which has consequently compelled people to turn to either cars or informal para- transit MoUD, (2008).

Gogoi, (2013) and Gupta, (2014) note that in almost all cities in India, the typical government road policy response to easing congestion has been the construction of additional road infrastructure – ring roads, signal-free corridors and fly-overs, with some equipped with pedestrian overpasses in some cases or the expansion of existing infrastructure. This has led to a negative impact as exhibited in the emergence urban sprawl and produced some extremely unlivable and unsustainable urban spaces and structures. In Bengaluru for example, recent road construction projects not only did not alleviate traffic but resulted in a high congestion index, with bottlenecks merely shifted

around the city, Directorate of Urban Land Transport, (2011). Gupta, (2014) further notes that often, the reasons behind these investment choices are political. While much of the population is poor that they cannot afford motorized transport and have to spend hours walking and cycling for travel, government policies on road transport have focused on serving the needs of an elite minority. The concentration of wealth and power is among an economic and political elite that has distorted transport policies in India as espoused by Pucher et al, (2005).

On road infrastructure and related facilities, Bhatt and Mehta, (2013) note that only 30% of the urban roads have sidewalks, this behaviour is detrimental to pedestrian safety and comfort. Rye, (2010) further explains that the lack of parking spaces on both on and off-street adds to the congestion problem. In some cities, like Madurai, Agra and Pune, nearly 60% of the road length is blocked by on-street parking. In the densest cities like Mumbai and Delhi, a parking place occupies more space than a low-income family of four as explained by Gauthier, (2012). The parking shortage is a product of irrational parking pricing, combined with poorly enforced parking policies.

Rathi, (2013) discourse that India's urban road transport policies, are plagued by institutional fragmentation, low levels of institutional coordination, limited planning capacity, lack of public participation, and restricted scope of land use and transport integration. The responsibilities for policies, planning, investment, operations, and management are scattered among a myriad of national, state, and local governmental organizations.

On regulation and enforcement, local authorities have minimal powers and are not legislatively or financially empowered to plan and act. Most decisions lay with state governments, which are far removed from the concerns of particular cities. Urban residents are thus leading to a disconnected from transport governance. They do not for instance have a forum in which to share information or advocate solutions NTDPC, (2013). In larger cities, transport governance is particularly difficult, not only due to scale of issues and a lack of citizen input, but also because larger cities often include other transport infrastructure like rail network which is typically overseen by national and state

agencies, which are currently eight. This in turn creates a major scope for conflicts and inefficiencies and further, the local governments have low planning capacity and insufficient professionals. On the other hand, traffic regulations as currently in existence are not well known due to lack of proper driver training. Moreover, regulations are rarely enforced by the police. In traffic cases presented in court, the police do not regard the issues as raised by the pedestrians but rather show favoritism towards the motorists, even if they might be at fault, since motorists are perceived to be more affluent than the non-motorized travelers.

2.5.4 Kenya

Nairobi being the constitutes eight sub counties with a population of about 3.2 million residents, which is higher during the day Statistical Abstract, KNBS, (2013). Gachanja, (2015) notes that, nationally, the registration rate of new motor vehicles has increased from 63,486 vehicles in 2011 to 94,017 vehicles in 2013. Motor cars have increased at a faster rate of 7% than buses and mini-buses (5%), which implies that personal vehicles are becoming more popular as a mode of transport in the country and especially in Nairobi. It is estimated that out of the approximately 2 million registered motor vehicles in Kenya in 2013, about 60% were located in the Nairobi Metropolitan.

Kebathi, 1984 observes that Nairobi City faces a fairly typical plethora of inter-related urban malaises which include high levels of poverty and social segregation, (*UNEP*). Khayesi and Amekudzi 2011, Mitullah et al. captures Nairobi's serious traffic problems more bluntly as being limited transport choices, and little to no planning for pedestrians and cyclists. Combined, these problems degrade urban life by making daily routines and movement around the city stressful, unhealthy, expensive, and sometimes precarious.

In Nairobi County the problem in the road sector has intensified with the implementation of the INTP, 2009. The consequent impact to the sector led to creation of several fragmented institutions charged with managing the sector as guided by the National government through acts of parliament with blurred and in other instances overlapping roles. This has led to policy conflicts and institutional inefficiencies and difficulties in enforcement. On infrastructure, the sector especially within Nairobi has been struggling to

maintain county roads and even expansion. National government through the various state agencies have tended to focus on major highways mostly financed through loans or donor funds. On revenue generation for the sector, the National and County government rely on the exchequer which is heavily dependent on revenue received. Notably, the many state agencies created appropriate a huge percentage of these funds on operational functions.

2.6 Gaps in the literature on road transport policy in select developing countries

The literature review revealed that in most developing countries, decisions concerning road transportation infrastructure is usually made to meet the utilitarian needs of a given populace. It is generally observed that in a vast number of cities, infrastructural development tends to be more complex within urban centres and having a ripple effect on adjacent cities or municipalities. It further is evident that, road infrastructure is not informed by grounded research and a lack of proper planning of a given area by taking into cognizance future expansion needs and provision of alternative modes in order to avoid over reliance on the road sector only.

Another glaring empirical gap observed was that in most developing countries, road infrastructure funding is to a large extent sourced from state budgets, which are generated from various taxes and levies. The monies are thereafter re-distributed depending on the need and the government's interests through the various agencies and lobbyists (driven by personal or public interests). Unfortunately, it was noted that very little interest is placed on the economic viability of a given road before embarking on development, expansion or maintenance. Conspicuously absent was a lack of clear policy guidelines on sustainability and mechanisms to monitor and evaluate the project on other sources or road funding, which include international loans, Grants and public private partnerships. This overtime has created loopholes for inefficiencies and exploitation by the receiving State and to some extent conflicts on the intended outcome with regard to what has been presented as a complete project outcome.

In conclusion, it can be presumed that, in the countries under reference, there are several policies, legislation and institutions meant for the road sector. This has overtime hampered management of the sector, which has led to a lack of accountability in the management of resources, institutional conflicts, lack of technical capacity and over-regulation, which has a precipice for stifling institutional independence. Indeed, from the aforementioned gaps, the Integrated Transport Policy intended to address some of these inadequacies facing the road sector in Kenya, and, in this research, within Nairobi County.

2.7 Conceptual Framework

The conceptual framework was adopted from the key three research questions guiding this study. The variables under the study have been represented diagrammatically in figure 8 to show the relationship between infrastructure, funding, regulatory and enforcement as the independent variables and the transport policy as dependent variable with a bias on the Road sub sector in Nairobi County.

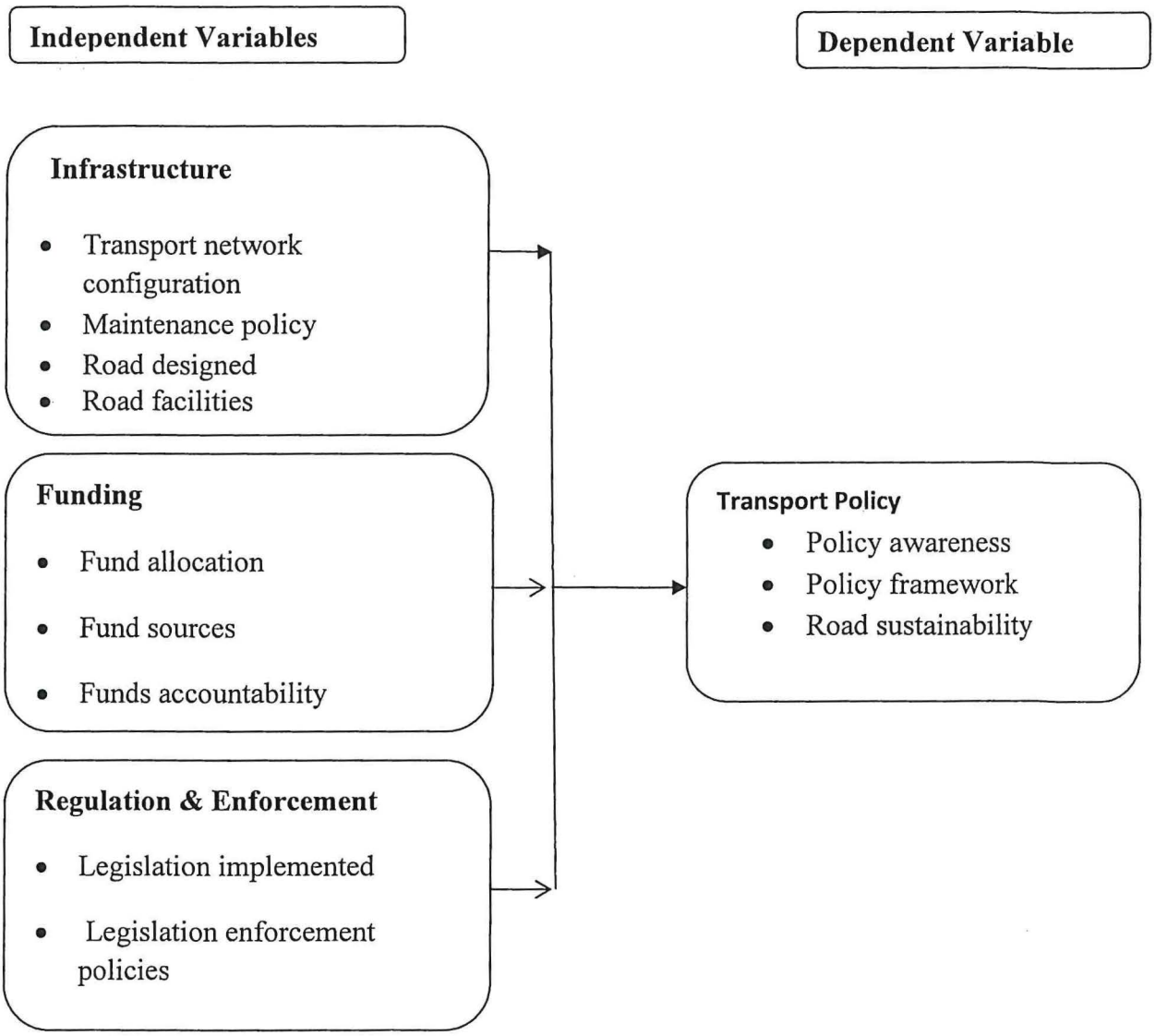

Figure 2. 2: Conceptual framework

Source: Author (2019)

In this study, the dependent variable was the Transport Policy (INTP) while the independent variables were infrastructure, funding, regulation and enforcement. The study was meant to assess the impact of the transport policy in the road sector on infrastructure, funding, regulation and enforcement as shown in figure 2.1.

This conceptual framework is underpinned by the theory of utilitarianism which evaluates actions based on their consequences and is the most influential theories of justice. Bentham and Mill, (1949) espouse that utilitarianism is based on three key assumptions, which structure its understanding of justice. Firstly, utilitarianism is premised on the view that the human well-being "utility" is the only thing with intrinsic value and therefore the core of justice concerns. Secondly, utilitarian's interpret the principle of equal respect as giving equal weight to everyone's welfare and interests, regardless of the content of the preferences or the material situation of the person, and finally utilitarianism holds a strictly consequentialist view; the moral judgment of an action or policy should be based exclusively on its outcomes, particularly how it maximizes well-being. Accordingly, the policy that best aggregates people's conflicting preferences becomes simply a matter of efficient administration, where the best alternative is the one which maximizes aggregate net welfare for the greatest number of people, Kymlicka (2002).

2.7.1 Operationalization of variables

In this study, the researcher identified key aspects of the dependent and independent variables for purposes of seeking to define and measure each specific variable for this study. For purposes of measuring the variables the study used a three-point Likert scale 1-3 (which represents the extent and level of agreement).

2.7.2 Implementation of Transport Policy

In this study, Transport Policy means the Integrated National Transport Policy that was published and released for implementation in 2009 by the Government of Kenya. For purposes of this study an in order to assess the impact of the said policy, the researcher focused on policy awareness which entails the existence of the Integrated National Transport Policy, Policy Framework which encompass guidelines in place in the management of roads within Nairobi County and Road Sustainability was assessed by ascertaining the effectiveness of policies and guidelines that have been put in place in the Implementation of Transport Policy. Implementation of Transport Policy was measured using a three-point Likert scale.

2.7.3 Infrastructure

The study focused on infrastructure in terms of road network measured in kilometers within Nairobi County. To adequately assess the impact of transport policy on infrastructure, the study concentrated on length of roads constructed and maintained during the period under review coupled with sufficient provision of pedestrian footpaths, number of bridges, number of bus shelters, versatility of drainage system and number of parking spaces.

2.7.4 Funding

For purposes of this research, funding refers to financial strategies in that have been put in place to efficiently and effectively implement road transport policy within Nairobi County. To adequately evaluate the impact of transport policy on fund allocation, the researcher used budgetary allocation in Kenya shillings and in other instances US dollars. It focused on loans, grants and public private partnership as used in road construction and maintenance within Nairobi County. The study also concentrated sources of funds in Kenya shillings which entail, annual budgetary allocation from the National and County Government, fuel levy, cess, tax, court fines, toll fees, licenses, import duty and public private partnerships. Fund accountability was also a reliable indicator of funding as a measuring tool of road transport implementation policy. Accountability was measured using effective use of funds through a three point likert scale that have been allocated to finance road transport policy.

2.7.5 Regulation and Enforcement

In this study, regulation refers to a policy guideline that operationalizes an Act of Parliament in this case, the Kenya Roads Act. To adequately determine the impact of transport policy on regulation and enforcement, the study measured this by determining the extent to which road legislation has been implemented within Nairobi County through the use of likert scale. On enforcement, the researcher focused the levels of compliance to the various legislation and policies using the likert scale, various enforcement agencies tasked with the enforcement function. In this case Kenya Police (Traffic Department), National Transport and Safety Authority and Nairobi County – Enforcement Section. The study concentrated on the extent to which these enforcement agencies adheres to the

various regulations and apply in enforcement of these laws and policies through the use frequency of charges in court on related traffic offences and review of the various laws as relates to the road sector within Nairobi County.

2.7.6 Indicators and levels of measurement

In identifying the indicators, this study set levels of measurement for each variable with their broad and specific indicators together with the levels of measurement and data technique. The instrument used was the survey questionnaire and interview guide.

S/No	Objectives	Broad Indicators	Specific indicators	Level of Measurement	Data analysis technique
1.	Impact of the Integrated National Transport Policy in the road sector within Nairobi county.	• Policy awareness • Policy framework • Road sustainability	• Level of awareness on the existence of the Integrated National Transport Policy, 2009 through the use of likert scale. • Number of guidelines and policies in place on road transport sector within Nairobi County. • Effectiveness of policies and guidelines was measured through the use of Likert scale.	Ordinal Used labels to classify measurement into predefined rating. The researcher used a three-point Likert scale 1-3 (*which represents the extent and level of agreement*).	• Frequency • Percentage • Inferential statistics
2.	Assess the extent on how the integrated national transport policy has influenced road infrastructural development.	• Transport network configuration • Maintenance policy • Road designed • Road facilities	• Length of roads in kilometers • Number of pedestrian foot paths • Number of bridges • Number of bus shelters • Number of parking spaces • Versatility of road drainage system by use of the likert scale	Ordinal Used labels to classify measurement into predefined rating. The researcher used a three-point Likert scale 1-3 (*which represents the extent and level of agreement*).	• Frequency • Percentage • Inferential statistics
3.	Evaluate how the integrated national transport policy has impacted on road funding within Nairobi County.	• Fund allocation • Fund sources • Funds accountability	• Budgetary allocation by both the National and County Government in Kenya shillings. • Fund allocation through grants, loans, public private partnerships in US dollars. • Sources of funds for the road sector by use of the likert scale. • Assessing the efficient and effective use of allocated funds in implementation of policy through the use of likert scale.	Ordinal Used labels to classify measurement into predefined rating. The researcher used a three-point Likert scale 1-3 (*which represents the extent and level of agreement*).	• Frequency • Percentage • Inferential statistics
4.	Determine how the integrated national transport policy has affected implementation and enforcement of road transport regulations within Nairobi County.	• Legislation implemented • Legislation enforcement policies	• Extent to which road legislation has been implemented within Nairobi County by use of likert scale. • Levels of compliance on the various legislation and policies by the use of likert scale. • Extent of enforcement through the various agencies in adherence to the regulations by use of the likert scale. • Measuring the impact of enforcement by assessing the frequency of charges in court on traffic related offences and frequency of repeal or review of the regulations and policies.	Ordinal Used labels to classify measurement into predefined rating. The researcher used a three-point Likert scale 1-3 (*which represents the extent and level of agreement*).	• Frequency • Percentage • Inferential statistics

Source: Author, (2019)

2.8 Research approach

In this study, the researcher examined implementation of the road transportation policy phenomenon and explored the impact of the policy based on three thematic areas, infrastructure, funding and regulation. A thorough review of the existing literature was conducted. The researcher used both qualitative and quantitative methods to gather and analyze data. Formal qualitative data was gathered through in-depth interviews while quantitative data was gathered by use of the structured questionnaire. The purpose of using the two modes is to acquire more insights as highlighted by the researcher in the problem statement and based on the findings, offer viable recommendations in the area of road transportation policy within Nairobi County.

2.9 Summary of the chapter

Measuring the impact of road transport policies is not confined within a select locality. There is a growing realization among the various schools of thoughts that the sector has over the years, received insufficient attention. This has been coupled with the lack of properly grounded policies and sound institutional framework, especially in many developing countries. In the past, the provision of roads was strongly influenced by economic motives, while the current scenario of road provision is not only influenced by economics but also socio- political underpinnings. The social influence on road transport brings to the fore the formation, development and growth of urban societies while the political role demarcates the administrative boundaries, construction of new roads, maintenance of roads, regulation and enforcement of laws and policies.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methodology that was used in conducting this study by detailing the steps that were followed to assess the impact of the integrated national transport policy in the road sector within Nairobi county. The study was organized in the following structure; research design, population and sample design, data sources, data analysis methods, research quality and ethical considerations.

3.1 Research Design

In this study, the researcher used correlational research design in order to assess the impact of the integrated national transport policy within Nairobi county. The purpose was evaluate the impact of a pre-existing relationship between the dependent (transport policy) and independent variables (infrastructure, funding, regulation and enforcement) thereby showing a cause and effect relationship and seek provide predictions for a future event or outcome based on the variables. To do this, the researcher used survey questionnaires which were administered to the target respondents to seek their views. This was thereafter followed up with in-depth interviews from the identified respondents drawn from the various institutions and at various levels in hierarchy (policy developers, policy implementers, enforcers and regulators) who were tasked with various roles in the road sector. The researcher also reviewed various literature, reports, documents and journals in order to obtain valuable information as relates to the area of study This was meant to provide the researcher with more information on the impact of the transport policy within in the road sector. This design was preferred because it enabled the researcher to determine the prevalence and relationships among the variables and to forecast events from current data and knowledge.

3.2 Sampled Population

The population of this study were public officers drawn from the National and County Government. The agencies included the Ministry of transport and infrastructure – state department for transport, transport policy management directorate for roads, Kenya roads board, national transport and safety authority, Kenya traffic police. The assumption being that the target population is not homogeneous.

The sample population was drawn from the Ministry of transport and Infrastructure, whose main function is national roads development and transport policy Management, with a mirror sector at the Nairobi County who are also responsible for policy formulation, management of county roads with related road facilities and management of traffic. On the other hand, the Kenya Roads Board has the role of overseeing the road network in Kenya and coordination of development, rehabilitation and maintenance by ensuring optimal utilization of the fund in implementation of these activities. The National Transport and Safety Authority has the function of advising and making recommendations on matters relating to road transport safety and implement policies related to road transport and safety which is coupled with management and regulating the road transport sector on registration and licensing of motor vehicles and drivers respectively. The Kenya Police Traffic Department role is to ensure free flow of traffic, prevention and investigation of road accidents and enforcement of all laws, rules and regulations as stipulated in the respective legislation.

3.2.1 Target Population

In determining the target population for this study three distinct populations were considered drawn from the population and based on their levels of hierarchy tasked with various roles in the sector. They included policy developers (25 officers at senior level), policy implementers (45 officers at middle level), enforcers and regulators (64 officers at operational level). Totaling to 134 officers.

3.2.2 Determining the Sample size

This study focused on three key thematic areas on the impact of the integrated national transport policy on infrastructure, funding, regulation and enforcment. Therefore, since the sample needed not to proportionally represent the population, a heterogeneous purposive sampling was used. According to Saunders (2003), sampling is a strategic process that is mathematical and involves using the most practical procedures possible for gathering a sample that best represents a large proportion. The sample size for respondents for this study was calculated using the formula as given by Saunders et al.,(2016).

$$s = \frac{X^2NP(1-P)}{D^2(N-1)+X^2(1-P)}$$

Therefore using 134 public officers drawn from the various levels as the population size, with a 5 per cent margin of error and a 95 per cent confidence level, a sample size of 100 respondents was determined.

3.2.3 Key informant interview guide

In this study, the researcher conducted in-depth interview with the targeted respondents who were drawn from the various institutions and at various levels in hierarchy (*policy developers, policy implementers, enforcers and regulators*) who were tasked with various roles in the road sector. The purpose was to seek more clarification gain more insights on the area under study on the impacts of the integrated national transport policy in the road sector within Nairobi County.

3.3 Data collection method

This relied on both primary and secondary data sources. For primary data sources, data was collected by use of structured paper questionnaires and in-depth interviews and discussions by seeking expert opinions from the identified state agencies. The respondents were allowed a maximum of five days to fill the questionnaires (appendix

III). Thereafter, the researcher engaged a sampled respondent in an in-depth interview (appendix IV) to seek further information and clarification for the research. For secondary data sources, data was collected and analyzed through desk reviews of previous research done on the area under study and data extracted for purposes of this research.

3.4 Data Analysis

Data analysis was based on both descriptive and inferential statistics as drawn from the concepts and insights as presented from the data collected in order to assess the impact of implementation of the road transport policy document in Nairobi with a view to identifying the influence and effect of the policy and to propose viable recommendations for the study. Data was clustered based on both qualitative and quantitative categories while at the same time concepts and themes was thoroughly examined and define the implementation of the road transport policy between the National and County Government. Qualitative data was generated from the in-depth interviews with the key informants based on the three thematic areas; infrastructure, funding, regulation and enforcement. This enabled the researcher to assess the impact of the road transport policy in the road sector. A correlational test was conducted to ascertain the relationship between the variables.

Data was analyzed using SPSS software. The phenomenon under investigation was analyzed for both descriptive and inferential statistics and was presented by use of output tables, percentages, frequencies, bar graphs and pie-charts, to determine the relationship between the different variable's regression was arrived at. This helped the researcher draw conclusions and make recommendations.

To determine the impact of the integrated national transport policy for the road sector within Nairobi based on infrastructure status, funding, regulation and enforcement on transport policy, ordinary least square regression was used. The regression model was as thus:

$$T_p = f(I, F, Re)$$

$$T_P = A + b_1 I + b_2 F + b_3 Re$$

Where, T_P is the Integrated National Transport Policy

I is Impact on Infrastructure

F is Impact on Funding

Re is Impact on Regulation and Enforcement

3.5 Research quality

In order to ensure that this study conforms to research quality standards, internal validity was maintained by ensuring that the research instruments were accurate and relevant to the area under study to enable collection of relevant data which measured and answered the key research questions.

To ensure validity, a standardized questionnaire and in-depth interview question guide were used, and the criteria dictated the kind of impacts made identified through pre-defined measurement standards. The in-depth interviews were conducted by the researcher in collecting the data. External validity was further achieved by collecting data from a representative sample using the sampling methods in this study.

A pilot study was also conducted from a sample survey which was representative of the target population, Saunders et al., (2016) to help in identifying any challenges that may present in the questionnaire and minimize bias. Further, in carrying out the pilot study to determine the reliability of the research, an internal measure of consistency through Cronbach alpha was used. The cumulative values of the Cronbach alpha coefficient for

the variables Cronbach Alpha coefficient α=0.7 an indicator that the data used for this study was reliable. This is further expounded in the findings of this study.

3.6 Ethical considerations

In compliance with the National Science and Technology Act (Cap 250) and other related guidelines on research and also as guided by the Strathmore University, Ethics Review Committee, the researcher sought authority from the National Commission for Science, Technology and innovation (NACOSTI) for purposes of acquiring the affiliation application form which was duly filled and submitted, granting permission to undertake the study.

The researcher also sought authority to conduct research from the various state agencies through the respective authorized officers and was introduced by her employer, the Public Service Commission.

In protecting the respondents' autonomy, the researcher ensured anonymity of all the respondents while collecting data. Burns and Grove (1993) define anonymity as when subjects cannot be linked, even by the researcher, with his or her individual responses. Participants were required to give consent of their willingness to participate in the study based on the consent letter shown as appendix I.

3.7 Summary of the Chapter

In this chapter the methodology used in the research design , sampled population, data collection methods , data analysis and research quality were aligned with the specific objectives of this study. The chapter also describe the total population and determined the targeted population. This chapter also provided instruments used in data collection and ethical considerations.

CHAPTER FOUR
DATA ANALYSIS, RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

The chapter presents the findings of the analysis on the data that was collected from the field. The analysis is systematically presented as guided by the objectives of the study which entailed the assessment on the extent how the integrated national transport policy has influenced road infrastructural development, an evaluation of how the integrated national transport policy has impacted on road funding within Nairobi County and a determination on how the integrated national transport policy has affected implementation and enforcement of road transport regulations within Nairobi County. In achieving these objectives, both descriptive as well as inferential statistics were used in analysis.

4.4.1 Response Rate

In total, 100 questionnaires were issued to respondents of the study. From these questionnaires, 79 of them were dully filled up and returned. This was equivalent to a response rate of 79%. The response rate is in line with Yin (2017) who indicated that a response rate of over 70% is sufficient for analysis and presentation of the findings.

4.4.2 Reliability Results

The researcher carried out a pilot study to determine reliability of the research instruments. An internal measure of consistency through Cronbach Alpha was used to determine reliability. The findings are shown in Table 4.1 below.

Table 4. 1: Reliability Results

Variable	Number of Items	Cronbach Alpha Coefficient
Implementation of the Transport Policy	5	0.716
Impact of road policy on Infrastructure	5	0.871
Impact of road policy on Funding	5	0.786
Impact of road policy on implementation of Regulation & Enforcement	5	0.823

Source: Author (2019)

Table 4.1 indicates reliability on the impact of the Integrated National Transport Policy in the road sector within Nairobi County. From the findings, Implementation of the Transport Policy had Cronbach alpha coefficient $\alpha = 0.716$. Infrastructure had Cronbach alpha coefficient $\alpha = 0.871$, Funding had Cronbach alpha coefficient $\alpha = 0.786$, Regulation and Enforcement had Cronbach alpha coefficient $\alpha = 0.823$, and Therefore, all the values of Cronbach alpha coefficients for the variables were over 0.7 which shows that the data used in the study was reliable.

4.2 General Information

The study sought to determine the general information in terms of the name of the organization, level within the firm held by respondents, their gender as well as highest level of education. The study found out that most of the respondents were drawn from the Ministry of Transport and Infrastructure – State Department for Transport, Kenya Roads Board, National Transport and Safety Authority, Kenya Traffic Police and County

Government of Nairobi – Ministry of Public Works Roads and Transport. From these findings, it can be deduced that respondents of the study were knowledgeable on matters dealing with the impacts on the implementation of transport policy in the road subsector within Nairobi County.

From the findings on the levels held by respondents in the firm, it was established that respondents of the study were key personnel at the government ministries responsible for policy development, implementing and enforcement agencies related to transportation policy with a keen bias on road transport. Thus, respondents of the study were well versed with issues of the transport policy in the road subsector in Kenya hence they gave relevant information as presented hereunder.

The study analyzed gender distribution of the respondents. It was established that majority of the respondent's male. However, there were also female respondents in the study. This implies that both male and female respondents participated in the study and this enhanced diversity.

The levels of education of the respondents of the study are shown in Table 4.2.

Table 4. 2: Level of Education of Respondents

	Frequency	**Percent**
Diploma	9	11.4
Degree	52	65.8
Masters	17	21.5
Phd	1	1.3
Total	**79**	**100.0**

Source: Author (2019)

From Table 4.2, majority of the respondents 65.8% had degrees, 21.5% had masters, 11.4% had diplomas and 1.3% had PhDs. This shows that respondents who took part in the study were generally learnt and thus had knowledge on transport policy.

4.3 Road Transportation Policy

The dependent variable of the study was transport policy. The general information on this are shown in subsequent sections.

4.3.1 Awareness of Integrated National Transport Policy, 2009

Respondents were asked to indicate their awareness of the existence of the Integrated National Transport Policy, 2009. The findings are shown in Table 4.3.

Table 4. 3: Awareness of Integrated National Transport Policy, 2009

	Frequency	Percent
Yes	50	63.3
No	29	36.7
Total	**79**	**100.0**

Source: Author (2019)

The findings in Table 4.3 indicate that majority of the respondents (63.3%) were aware of the existence of the Integrated National Transport Policy, 2009. It can therefore be inferred from this finding that the targeted respondents of the study were knowledgeable on matters of transport policy which was the focus of the study.

4.3.2 Key Areas of Concern in the Road Transport Sub-sector

The study sought to establish the key areas of concern areas (in order of importance) that require attention and urgent address in the road transport sub sector in Nairobi. A three point Likert scale where 1=least priority, 2=moderate priority and 3=high priority was used. The findings are shown in Table 4.4.

Table 4. 4 Key Areas of Concern in the Road Transport Sub-sector

Category	Classification	Frequency	Percentage
Infrastructure	Least Priority	19	24.1
	Moderate Priority	20	25.3
	High Priority	40	50.6
	Total	**79**	**100**
Funding	Least Priority	19	24.1
	Moderate Priority	14	17.7
	High Priority	46	58.2
	Total	**79**	**100**
Regulation & Enforcement	Least Priority	19	24.1
	Moderate Priority	16	20.3
	High Priority	44	55.7
	Total	**79**	**100**

Source: Author (2019)

From Table 4.4, the key areas of concern as far as road transport sub-sector is concerned include infrastructure, funding as well as regulation & enforcement. From these areas, most of the respondents (58.2%) indicated that funding required high priority followed by regulation & enforcement (55.7%) and lastly infrastructure.

4.3.3 Effective and Consistent Implementation of the Transport Policy

The study sought to determine how effective and consistent has implementation of the transport policy been in Nairobi as relates to the following thematic areas; infrastructure, funding and regulatory. A three-point Likert scale was used where Highly Effective (3), Effective (2), Not Effective (1). The findings are presented in Table 4.5.

Table 4. 5: Effective and Consistent Implementation of the Transport Policy

Category	Classification	Frequency	Percentage
Infrastructure	Not Effective	10	12.7
	Effective	23	29.1
	Highly Effective	46	58.2
	Total	**79**	**100**
Funding	Not Effective	10	12.7
	Effective	24	30.4
	Highly Effective	45	57.0
	Total	**79**	**100**
Regulation &	Not Effective	10	12.7

Enforcement	Effective	21	26.6
	Highly Effective	48	60.8
	Total	**79**	**100**

Source: Author (2019)

The findings in Table 4.5, majority of the respondents (60.8%) indicated that regulation & enforcement have been highly effective in implementation followed by infrastructure (58.2%) and lastly funding (57.0%).

4.4 Transport Policy and Infrastructural Development

The first objective of the study sought to determine the extent to which the transport policy has affected infrastructural development. To achieve this objective, descriptive statistics including frequencies and percentages were used. The findings are reported in subsequent sections.

4.4.1 Extent which the Transport Policy, 2009 has Stimulated the Growth of the Road Sub Sector

Respondents of the study were asked to indicate the extent which the transport policy, 2009 has stimulated the growth of the road sub sector. This question was designed on a three point Likert scale where; to no extent (1); to some extent (2) and to a great extent (3). Table 4.6 gives the breakdown of the findings.

Table 4. 6: Extent which the Transport Policy, 2009 has Stimulated the Growth of the Road Sub Sector

Category	Classification	Frequency	Percentage
Infrastructural Development	To No Extent	10	12.7
	To Some Extent	15	19.0
	To a Great Extent	54	68.4
	Total	**79**	**100**
Expansion and Maintenance of Roads	To No Extent	10	12.7
	To Some Extent	17	21.5
	To a Great Extent	52	65.8
	Total	**79**	**100**
Enhanced Road Facilities	To No Extent	10	12.7
	To Some Extent	19	24.1
	To a Great Extent	50	63.3
	Total	**79**	**100**

Source: Author (2019)

From the findings in Table 4.6, the study noted that generally, the Transport Policy, 2009 has stimulated the growth of the road sub sector to a great extent. More specifically, most of the respondents (68.4%) noted that the Transport Policy, 2009 has greatly contributed towards infrastructural development, expansion and maintenance of roads (65.8%) and enhanced road facilities (63.3%). From these findings, it can therefore be inferred that transport policy has a great influence on infrastructural development.

4.4.2 Road Network and Facilitation of Modification, Expansion and Linkages

The study sought further to establish whether Nairobi's road network was designed to facilitate modification, expansion, linkages within the sub-county and adjoining counties. Table 4.7 gives the summary of the findings.

Table 4. 7: Road Network and Facilitation of Modification, Expansion and Linkages

	Frequency	Percent
Yes	52	65.8
No	27	34.2
Total	**79**	**100.0**

Source: Author (2019)

From Table 4.7, majority of the respondents (65.8%) said that Nairobi's road network was designed to facilitate modification, expansion, linkages within the sub-county and adjoining counties. This finding reinforces the previous findings that the Transport Policy, 2009 has been key as far as infrastructural development is concerned.

4.4.3 Frequency of Road Maintenance

Respondents were asked to indicate the frequency that roads are maintained during assessment of condition of the road network within Nairobi County. The statements were structured on a three-point Likert scale where; Never (1), rarely (2), Always (3). The findings are indicated in Table 4.8.

Table 4. 8: Frequency of Road Maintenance

Category	Classification	Frequency	Percentage
Highways *e.g. Mombasa Road, Thika road and Waiyaki way*	Never	6	7.6
	Rarely	14	17.7
	Always	59	74.7
	Total	**79**	**100**
Major arterial road *eg. Ngong road, Langata road*	Never	5	6.3
	Rarely	16	20.3
	Always	58	73.4
	Total	**79**	**100**
Minor arterial road *eg. peponi road, james gichuru road*	Never	4	5.1
	Rarely	18	22.7
	Always	57	72.2
	Total	**79**	**100**
Collector road *eg. Ladhes road, Jogoo road*	Never	4	5.1
	Rarely	18	22.8
	Always	57	72.2
	Total	**79**	**100**
Local Road eg. *Mumias south road, Rabai road*	Never	4	5.1
	Rarely	20	25.3
	Always	55	69.6
	Total	**79**	**100**

Source: Author (2019)

From Table 4.8, roads are generally maintained on a frequent basis. Most of the respondents (74.7%) said that highways are largely maintained followed by major arterial road (73.4%), minor arterial road and collector road at 72.2% respectively and lastly the local road (69.6%).

4.5 Transport Policy and Road Sector Funding

The second objective of the study was to assess how the transport policy influences road sector funding. The findings of the study are presented in subsequent sections below.

4.5.1 Funding and the Implementation of the Transport Policy in Road Sub Sector

Respondents of the study were asked to indicate how funding (both from local and national governments) affected the implementation of the transport policy in road sub sector within Nairobi County. This question was structured on a three point Likert scale

where; 1=not supported, 2=moderately supported and 3=significantly supported. Table 4.9 gives the breakdown of the analysis of the findings.

Table 4. 9: Funding and the Implementation of the Transport Policy in Road Sub Sector

Category	Classification	Frequency	Percentage
Policy Implementation	Not Supported	10	12.7
	Moderately Supported	17	21.5
	Significantly Supported	52	65.8
	Total	**79**	**100**
Infrastructural Development	Not Supported	10	12.7
	Moderately Supported	19	24.1
	Significantly Supported	50	63.3
	Total	**79**	**100**
Enforcement & legislation	Not Supported	10	12.7
	Moderately Supported	20	25.3
	Significantly Supported	49	62.0
	Total	**79**	**100**

Source: Author (2019)

The study established that funding plays an important role as far as the implementation of the Transport Policy in road sub sector is concerned. Most of the respondents (65.8%) said that funding greatly support policy implementation, infrastructural development (63.3%) enforcement & legislation (62.0%). Thus, funding is a critical component of implementation of the transport policy in road sub sector.

4.5.2 Efficient Utilization of the Funds Allocated to Roads

Respondents were asked to indicate whether between the periods 2010 to 2015, funds that have been allocated to the road sub-sector within Nairobi County have been efficiently utilized. The findings are shown in Table 4.10.

Table 4. 10: Efficient Utilization of the Funds Allocated to Roads

	Frequency	Percent
Yes	55	69.6
No	24	30.4
Total	**79**	**100.0**

Source: Author (2019)

From Table 4.10, most of the respondents (69.6%) said that the funds that have been allocated to the road sub-sector within Nairobi County have been efficiently utilized.

4.5.3 Key Sources of Funding for the Road Transport Sector

The study sought to establish the key sources of funding for road transport sector. A three point Likert scale was used where Essential [3], Somewhat Important [2] Not Important [1]. The findings are shown in Table 4.11.

Table 4. 11:Key Sources of Funding for the Road Transport Sector

Category	Classification	Frequency	Percentage
Policy Implementation	Not Important	9	11.4
	Somewhat Important	10	12.7
	Essential	60	75.9
	Total	**79**	**100**
County Government	Not Important	11	13.9
	Somewhat Important	6	7.6
	Essential	62	78.5
	Total	**79**	**100**
Fuel Levy	Not Important	10	12.7
	Somewhat Important	19	24.1
	Essential	50	63.3
	Total	**79**	**100**
Import duty	Not Important	9	11.4
	Somewhat Important	10	12.7
	Essential	60	75.9
	Total	**79**	**100**
Parking & Toll fees	Not Important	7	8.9
	Somewhat Important	12	15.2
	Essential	60	75.9
	Total	**79**	**100**
Licenses	Not Important	9	11.4
	Somewhat Important	10	12.7
	Essential	60	75.9
	Total	**79**	**100**
Court fines	Not Important	9	11.4
	Somewhat Important	8	10.1
	Essential	62	78.5
	Total	**79**	**100**

Public Private Partnerships	Not Important	9	11.4
	Somewhat Important	9	11.4
	Essential	61	77.2
	Total	**79**	**100**

Source: Author (2019)

Table 4.11 gives the findings on the sources of funding of road transport sector. From the findings, the most essential source of funding for the transport sector is the county government and court fines at 778.5% respectively. Other sources of funds include public private partnerships (77.2%), policy implementation, import duty, parking & toll fees, licenses at 75.9% respectively and fuel levy at 63.3%. This shows that funds for road transport sector are from various and diverse sources.

4.6 Transport Policies and the impact on the Road Sector Regulations and Enforcement

The last objective of the study was to determine how transport policy has addressed the challenges of road sector regulations and enforcement. To achieve this objective, descriptive statistics were used including frequencies and percentages as shown in sections below.

4.6.1 Legislation in Place in the Management of the Road Transport Sector in Kenya

Respondents were asked to highlight the legislation in place in the management of the road transport sector in Kenya since the inception of the Transport Policy in 2009. From the findings, respondents indicated some of these legislations to include the Kenya Roads Bill, 2017 and the Road Transport Act, 2013.

4.6.2 Presence of Regulatory and Institutional Conflicts in the Management of the Road Transport Sector

The study sought to determine if there were there regulatory and institutional conflicts in the management of the road transport sector. The findings are shown in Table 4.12.

Table 4. 12: Presence of Regulatory and Institutional Conflicts in the Management of the Road Transport Sector

	Frequency	Percent
Yes	59	74.7
No	20	25.3
Total	**79**	**100.0**

Source: Author (2019)

Table 4.12 shows that most of the respondents (74.7%) said that there are regulatory and institutional conflicts in the management of the road transport sector.

4.6.3 Reactions on Road Sector Transport Management

The study sought to determine whether road sector transport management should be a National or County function. Table 4.13 shows the summary of the findings.

Table 4. 13: Reactions on Road Sector Transport Management

	Frequency	Percentage
County Government	22	27.8
National Government	37	46.8
Both County and National Government	**20**	**25.4**
Total	**79**	**100.0**

Source: Author (2019)

From Table 4.12, there were various reactions on road sector transport management with most respondents (46.8%) arguing that it should be a national government function, others (27.8%) felt it should be a County government function while 25.4% of the respondents said that it should be both a national as well as county government function.

4.7 Diagnostic Tests

In conducting regression analysis, a number of assumptions are observed. First, it is assumed that the data set is normally distributed. Secondly, it is assumed that there is no correlation between the independent study variables. It is also assumed that there is no serial correlation in the data set, and that the error term is not correlated with the dependent variable. All these assumptions are only confirmed through the use of diagnostic tests.

4.7.1 Normality Test

Normality test was carried out with the use of Skewness and Kurtosis. It was meant to determine whether the data set was normally distributed as required by regression analysis or not. According to RR, values of Skewness and Kurtosis within the range of +3 indicate that the data set is normally distributed. Table 4.14 gives the breakdown of the analysis of the findings.

Table 4. 14: Normality Test

	N	Skewness		Kurtosis	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Implementation of the road Transport Policy	79	-.231	.271	-.101	.535
Impact of road policy on Infrastructure	79	.078	.271	-.798	.535
Impact of road policy on Funding	79	.142	.271	-1.196	.535
Influence of road policy on implementation of Regulation & Enforcement	79	.238	.271	-.688	.535

Source: Author (2019)

The findings in Table 4.14 indicate that the values of Skewness and Kurtosis are all within the range of +3 or -3. This implies that the data set was normally distributed and thus the assumption of normality was not violated. Jöreskog, Olsson & Wallentin (2016) opine that normal distribution have values of Skewness and Kurtosis of +or-3.

4.7.2 Multicollinearity Test

Regression analysis usually assumes that there is no correlation between the independent variables in the data set. Whenever any of the independent variable is highly correlated

with another one, the situation is referred to as multicollinearity. The study used Variance of Inflation Factor (VIF) to test for multicollinearity in the data set. According to RR, values of VIF between 1-10 signify absence of multicollinearity in the data set. The findings are shown in Table 4.15.

Table 4. 15: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	**VIF**
Impact on Infrastructure	.150	6.673
Impact on Funding e	.350	2.861
Influence on Regulation and enforcement	.277	3.609

a. Dependent Variable: Implementation of the Transport Policy

Source: Author (2019)

From Table 4.15, the values of VIF are all within the range of 1-10. This shows that the data set did not suffer from multicollinearity which is desirable. In other words, there was no correlation between the identified impacts in the implementation of road transport policy. Vatcheva, Lee, McCormick and Rahbar (2016), the values of VIF between 1-10 shows that there is no multicollinearity problem in the data set and thus regression analysis can proceed.

4.7.3 Autocorrelation Test

The study carried out autocorrelation test to ensure that there is no serial correlation in the data set before carrying out regression analysis. Durbin Watson Statistics were used in testing for Autocorrelation. The findings are presented in Table 4.16.

Table 4. 16: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865[a]	.748	.738	2.45112	1.899

Source: Author (2019)

The findings in Table 4.16 indicate the value of Durbin Watson as 1.899, which is approximately 2. According to Rho and Vogelsang (2018), Durbin Watson values usually range from 0 to 4 and values close to 2 shows absence of autocorrelation. Hence, there was no serial correlation in the data set.

4.7.4 Heteroscedasticity Tests

Heteroscedasticity occurs when the variance of the error terms differ across observations. To test for Heteroscedasticity, scatter plots were used. The rule of thumb is that when the data points are spread without a clear observation of the shape and pattern, it would imply that there is no Heteroscedasticity in the data set. Figure 4.1 gives the breakdown of the findings.

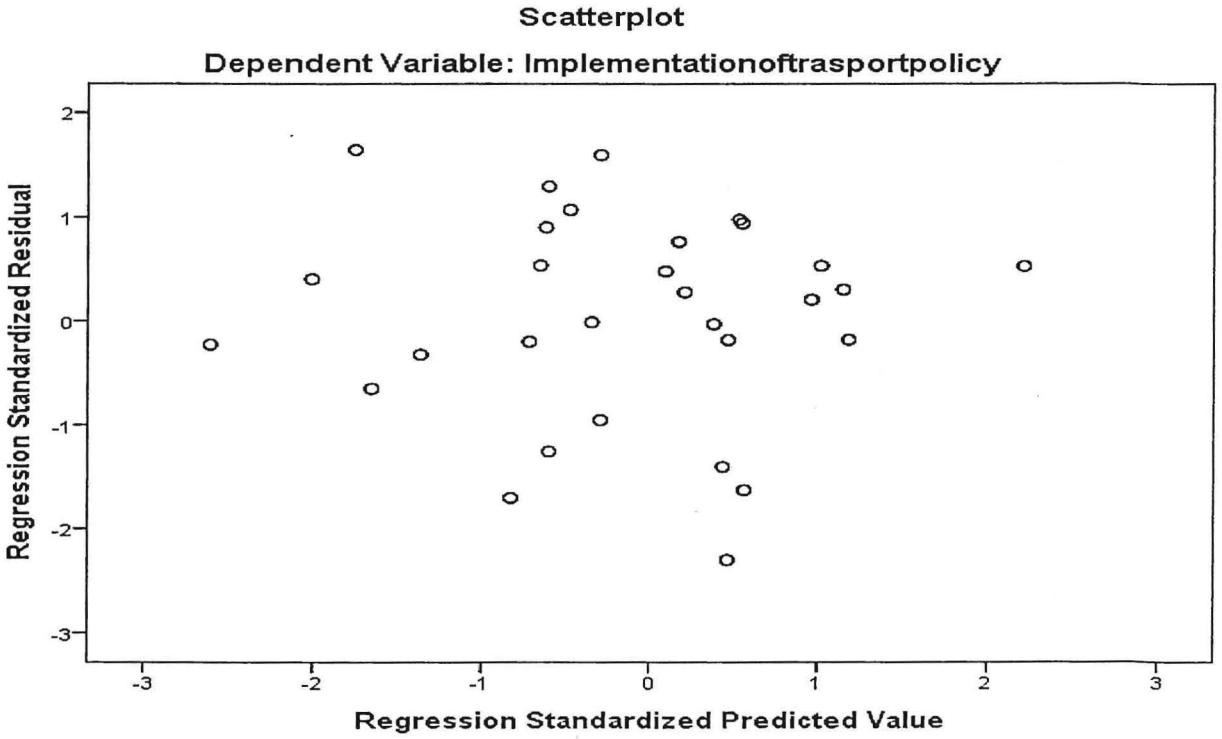

Figure 4.1: Heteroscedasticity Test

From Figure 4.1, the data points are widely spread with no clearly established pattern. This implies that there was no Heteroscedasticity in the data set. This is in line with

Chasco, Le-Gallo & López (2018) who argues that scatter plots with observations spread without a clearly distinct pattern show that there is no heteroscedasticity.

4.7.5 Test for Non-Linearity

In carrying out regression analysis, it was assumed that there exists linear relationship between the road transport policy on infrastructure, funding, regulation and enforcement within Nairobi County. To confirm this assumption, the study used the Normal PP plots as shown in Figure 4.2.

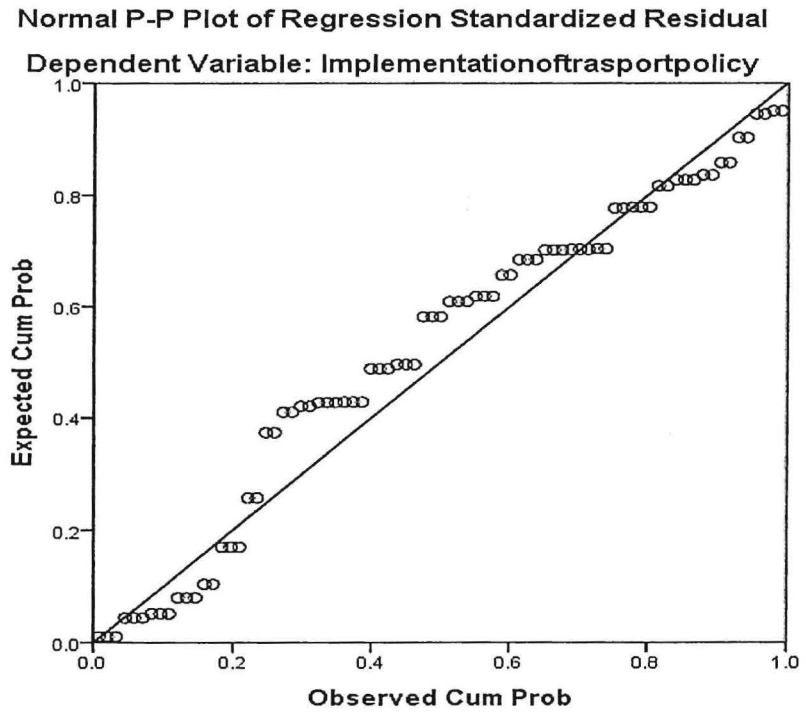

Figure 4.2: Test for Non-Linearity

As indicated in Figure 4.2, the data points fall within the normal line. This means that there is linear relationship between the road transport policy and the identified independent variables within Nairobi County.

4.8 Model Summary

In order to ascertain the impact of the road transport policy within Nairobi County, the researcher conducted regression analysis to effectively determine these effects. The study

first sought to determine if the regression model is fit to explain how implementation of transport policies has impacted on infrastructure, funding, regulation and enforcement within Nairobi County. The findings of the Model Summary are shown in Table 4.17. It shows the values of the coefficient of correlation R and the coefficient of determination R squared.

Table 4. 17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865[a]	.748	.738	2.45112

a. Predictors: (Constant), Infrastructure impact, Funding impact, Regulation & Enforcement impact.

Source: Author (2019)

From the findings in Table 4.17, the study established the value of the coefficient of determination as 0.748; this shows that the identified impacts explain 74.8% change in implementation of the transport policy. Thus, apart from the identified impacts, there are other factors affecting implementation of the transport policy that future studies could focus.

4.8.2 Analysis of Variance

The study sought to test for the level of significance of each variable (infrastructure impact, funding impact and Regulation and Enforcement impact) as presented in the study. An Analysis of Variance was conducted at 5% level of significance and the findings are shown in Table 4.18.

Table 4. 18: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1339.070	3	446.357	74.294	.000[b]
Residual	450.601	75	6.008		
Total	**1789.671**	**78**			

a. Dependent Variable: Implementation of the Transport Policy

b. Predictors: (Constant), Infrastructure impact, Funding impact, Regulation & Enforcement impact.

From Table 4.18, the value of F calculated is 74.294 with p-value $p<0.05$; this infers that the overall regression model was significant in estimating how road transport policy influences infrastructure, funding, regulation and enforcement.

4.8.3 Regression Coefficients

The findings on regression coefficients and the p-values showing significance of the study variables are shown in Table 4.19.

Table 4. 19: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	27.549	4.505		6.116	.000
Impact on Infrastructure	.698	.124	.562	5.645	.000
Impact on Funding	.492	.140	.475	3.524	.001
Impact on Regulation & Enforcement	.003	.001	.556	4.379	.000

a. Dependent Variable: Implementation of the Transport Policy

From the findings in Table 4.15, the following regression model is formulated;

$$Y = 27.549 + 0.698X_1 + 0.492X_2 + 0.003X_3 \ldots\ldots\ldots\ldots (i)$$

Whereby

Y = Implementation of the Transport Policy

X_1 = Infrastructure impact

X_2= Funding impact

X_3= Regulation & Enforcement impact

Thus, it can be seen that when all the factors are held constant, implementation of the road transport policy would be at 27.549. A unit change in infrastructure development and maintenance, other factors held constant, which would lead to 69.8% improvement in implementation of the transport policy. A unit changes in funding other factors kept constant would result into 49.2% increase in implementation of the transport policy. A unit change in regulation & enforcement other factors held constant would lead to 0.3% increase in the implementation of the transport policy.

At 5% level of significance, the study documents that impact on infrastructure was (β=0.698, $p<0.05$) has positive and significant effect on implementation of the transport policy. impact on Funding (β=0.492 $p<0.05$) has positive and significant effect on implementation of the transport policy. impact on Regulation & enforcement (β=0.003 $p<0.05$) has positive and significant effect on implementation of the transport policy.

4.8.4 Hypothesis Testing

From the formulated hypothesis, Table 4.20 gives the summary of the how they were tested.

Table 4. 20: Hypothesis Testing

Hypotheses	P-value and Beta Coefficients	Remark
H_1: Implementation of the road transport policy has no positive and significant influence on Infrastructure within Nairobi County.	β=0.698, $p<0.05$	Reject null hypotheses
H_2: Implementation of the road transport policy has no positive and significant influence on Funding. within Nairobi County.	β=0.492 $p<0.05$	Reject null hypotheses
H3: Implementation of the road transport policy has no positive and significant influence Regulation & Enforcement. within Nairobi County.	β=0.003 $p<0.05$	Reject null hypotheses

From Table 4.20, all the formulated null hypotheses are rejected in favor of the alternative hypotheses. Therefore, Implementation of the road transport policy has positive and significant effect on infrastructure within Nairobi County. Implementation of the road transport policy has positive and significant effect on Funding within Nairobi County. Implementation of the road transport policy has positive and significant effect on Regulation & enforcement within Nairobi County.

4.9 Discussion of the Findings

The impact of implementation of the transport policy had a positive and significant effect on Infrastructural development and road maintenance. The finding is in line with Runji (2015) who notes that the most significant and common barriers to the successful implementation of transport sector strategies include; inadequate human resources capacity to ensure proper policy, funding and infrastructural development. In most countries, there are too few qualified technical resources, with many appointees lacking the technical know-how on road transport dynamics.

Further, the impact of implementation of the transport policy had a positive and significant effect on Funding in implementation of the transport policy. The finding is in line with World Bank (2011) that external funding from donors is necessary to support transport sector spending. Among countries included in the review, the share of external funding support as a share of all transport sector spending ranged from 30% to 80%. According to Banister and Stead (2003), the resulting policy packages and policy paths are also valuable in revealing policy actions for achieving sustainable transport outcomes on infrastructural development which is influenced by sufficient funding and a comprehensive regulatory framework.

The impact of implementation of the transport policy had a positive and significant effect on Regulation & enforcement had positive and significant effect on implementation of the transport policy. This positive relationship implies that efforts to strengthen regulation and compliance would directly improve the implementation of the transport policy. The finding is consistent with Owen (1964) who opines that the post – 1965 era

saw the road transport emerge as a serious competitor to the rail and the tragedy is that this competition assisted in the downfall of the railway, with little effective control of the predictable pressure from road transport to move goods previously transported by rail. This was attributed by the lack of common carrier obligation especially of cargo on the roads and with little regulation on over-loading coupled with no clear structure on the frequency of operations which attracted more investment channeled towards construction of highways and road network within urban towns

4.10 Summary of qualitative data

In-depth Interviews conducted on this study to assess the impact of the road transport policy on infrastructure revealed that the policy led to construction of new roads especially highways and provision of road facilities albeit a few. It was further observed that the road network as planned in the earlier years had provision for expansion, modification and creating linkages with other counties. Currently, the county is repossessing all road reserves that have been illegally acquired. On funding, it was revealed that there is an over-reliance on the national government exchequer in managing the road sector and in financing implementation of policies and guidelines. It was the view of the respondents therefore, that there is an urgent need to consider other avenues for funding and putting in place policies to govern road sector funding within Nairobi County. On regulation, respondents were of the view that there is an urgent need to re-align all road sector laws with a view to addressing the multiplicity of roles and overlapping mandates. This it was viewed will address the issue of accountability and increase efficiency.

Another setback in the implementation of the road transport policy was a lack of capacity on the pre-requisite technical skills in assessing road infrastructure and related facilities, managing of road funds and interpretation of the laws governing the sector. Thereby impacting negatively in the implementation of the road transport policy as is currently operational. It was suggested that both the National and County government should invest more on building capacity for better planning and management of the sector. Further, a glaring gap was a complete lack of an automate county road data base, without

which, it was observed impacts on road transport policy since there are no sound base informing policy decisions and guidelines. These summaries informed the study in the recommendations and conclusions of this study.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the analyzed findings which is in line with the established objectives. The conclusions are also presented based on the key findings from the analysis. The limitations of the study are also presented with recommendations. The suggestions for further studies are also presented which future scholars can focus on.

5.2 Summary of the Findings

The main objective of the study was to assess the impact on the in implementation of the integrated national transport policy in the road sector within Nairobi County. The specific objectives were to: assess the extent to which the transport policy has affected infrastructural development; assess how the transport policy influences road sector funding and to determine how the road transport policy has affected implementation of road sector regulations and enforcement. To achieve these objectives, both descriptive as well as inferential statistics were used.

5.2.1 Transport Policy and Infrastructural Development

The first objective of the study sought to assess the extent on how the road transport policy has influenced infrastructural development within Nairobi county. The study established that road transport policy had a positive and significant effect on infrastructure. It was established that the Transport Policy, 2009 has stimulated the growth of the road sub sector to a great extent. More specifically, from majority of the respondents it was observed that the INTP, 2009 greatly contributed towards infrastructural development, expansion and maintenance of roads and enhanced road facilities. It can therefore be inferred that transport policy has a great impact on infrastructural development. Majority of the respondents reported that Nairobi's road network was designed to facilitate modification, expansion, linkages within the sub-county and adjoining counties. Roads were generally maintained on a frequent basis. On road maintenance, majority of the respondents reported that highways are largely

maintained followed by major arterial road, minor arterial road and collector road and lastly the local roads.

5.2.2 Transport Policy and Road Sector Funding

The second objective of the study sought to evaluate how the road transport policy has impacted on road funding within Nairobi county. From the findings, the study found that that the road transport policy had a positive and significant effect on funding. The study established that funding plays an important role as far as the implementation of the Transport Policy in road sub sector is concerned. Most of the respondents indicated that funding greatly affects implementation of road policies implementation, infrastructural development and enforcement & legislation. Therefore, funding is a critical component of implementation of the transport policy in road sub sector. Most of the respondents observed that the funds that have been allocated to the road sub-sector within Nairobi County have been efficiently utilized though not sufficient. From the findings, the most essential source of funding for the transport sector is the county government were National government exchequer allocations and court fines. Other sources of funds were funding from engagements in public private partnerships, parking & toll fees, licenses respectively levy. This indicated therefore that that funds for road transport sector are from various and diverse sources.

5.2.3 Transport Policies and Road Sector Regulations and Enforcement

The third objective of the study sought to determine how the road transport policy has affected implementation and enforcement of road transport regulations within Nairobi county. From the findings it was observed that implementation of the road transport policy had a positive and significant effect on regulation & enforcement. Most of the respondents noted that in as much as there are regulations in the sector, there are regulatory and institutional conflicts in the management of the road transport sector. On the whether the road sector is a national or county function, the majority of the respondents were of the view that road sector transport management should be a national government function while the minority were of the view that it should either be a County government function or be both a national as well as county government function.

5.3 Conclusion

5.3.1 Transport Policy and Infrastructural Development

Implementation of the road transport policy had a positive and significant effect on Infrastructure within Nairobi County. The Transport Policy, 2009 has stimulated the growth of the road sub sector to a great extent through its contribution towards infrastructural development, expansion and maintenance of roads and enhanced road facilities. Nairobi's road network was designed to facilitate modification, expansion, linkages within the sub-county and adjoining counties. Roads are generally maintained on a frequent basis. The highways are largely maintained followed by major arterial road, minor arterial road and collector road at respectively and lastly the local road.

5.3.2 Transport Policy and Road Sector Funding

Implementation of the road transport policy had a positive and significant effect on Funding plays an important role as far as the implementation of the Transport Policy in road sub sector is concerned as it greatly support policy implementation, infrastructural development and enforcement & legislation. Funds that are allocated to the road sub-sector within Nairobi County are efficiently utilized. There are diverse sources of funds used to finance the transport sector including county government and court fines. Other sources of funds include public private partnerships, policy implementation, import duty, parking & toll fees, licenses and fuel levy.

5.3.3 Transport Policies and the impact on Road Sector Regulations and Enforcement

Implementation of the road transport policy had a positive and significant effect on Regulation & enforcement. It was observed however, that there are regulatory and institutional conflicts in the management of the road transport sector. Different people have different reactions on road sector transport management but most people feet it should be left as national government function.

5.4 Recommendations of the Study

Drawn from the conclusions as highlighted, this study extracted recommendations as influenced by qualitative, quantitative, primary and secondary data as derived in this research on the Intergraded National Transport Policy, 2009. The recommendations are as per the key thematic areas of this research.

5.3.1 Infrastructure

On infrastructure, it is recommended that there is need to review and customize the integrated transport policy to address infrastructural development and expansion of roads within Nairobi County. In order to address over reliance on road transport, it would be prudent to put in place proper strategies and plans for road expansion and providing facilities for alternative road user mobility like non-motorized transport or other modes.

To practically actualize this, the County Government could consider an integrated planning of the road network and associated infrastructure as per the road classification as guided by the National Government, through the addition of a few missing links. This can improve the efficiency of the road network enormously by ensuring allocation of equitable road space for the motorists and pedestrians and ensuring universal accessibility through the provision of parking, bus shelters and bridges. Another facet could be consideration for the county to upgrade and or modernize high-density corridors in terms of introduction of new technology in the design, engineering, and construction methods by keeping in view options for alternative transport within the county for instance the introduction of light rail.

5.3.2 Funding

Having in-place a transport policy has proved not to be suffient in ensuring that the sector is fully funded according to this research. In ensuring that adequate funding is allocated for implementation of policy and financing of the various road projects and related facilities. There is therefore need to streamline the funding of the sector by taking keen interest in ensuring implementation of the reviewed policy sets clear guidelines on allocation of funds for tangible (roads) and intangible (policy implementation, monitoring

and evaluation) for the sector and putting in place guidelines for public private partnerships.

To practically actualize this, the County Government could consider exploring alternative sources of funding by engaging the private sector to mobilize funds for construction of major arterial roads, provision of road facilities and short stretches. A long-term strategy, through policy, to reduce maintenance costs, would be to encourage the use of low tare weight and heave haul multi-axle vehicles through suitable fiscal measures. In sourcing for revenue, a system of user charges could be explored and used as an important source of revenue for road maintenance and future construction. The creation of a County transport fund with the sole purpose of receiving all county road – related levies could be used to exclusively meet all maintenance and rehabilitation costs of the roads, while National Government developmental budgetary allocation could be used to fund new roads construction of road facilities.

5.3.3 Regulation and Enforcement

From the findings, it is imperative for the two levels of Government, national and county need to review and realign all the legislation with a view to outline the responsibility of each statutory institution and their scope of mandates. In the meantime, and taking cognizance the long procedure in amending laws, Institutions with overlapping roles should develop guidelines to ensure collaboration and consistency in approach in operation as regards especially enforcement of various legislation.

Further, it is acknowledged that the County has several pieces of by-laws and policies in the management of the various roads and related functions. It would therefore be prudent for the County to merge all these documents and develop a comprehensive policy document on the transport sector within the County.

5.4.3.1 Capacity Building

It would therefore be prudent for the County Government in collaboration with the National Government to build institutional capacity by creating a pool of knowledge that would sustain and enhance expertise as well as facilitate more informed planning. It

would also sponsor regular research to help formulate the right mitigation strategies, without merely adopting what other counties have tried. At individual levels, within the relevant transport department within the County a major exercise of training and skill development of the public officers and other public functionaries will be needed to make such officials aware of the nuances of County road sector transport planning and the specific issues involved in managing road sector transport.

5.4.3.2 Creation of County Database

The virtual lack of a database within the County has severely constrained the ability of the county to formulate sound policy, plans and the reliability to assess the impact of different initiatives that have been taken. Creation of a road network database with regular updates would be one of the important tasks; while at the same time would provide an avenue for research, development and technology upgrade.

All these thematic areas can only be achieved when there is a robust policy with backing of the law. Policy will guide the implementation while regulation will ensure enforcement. The development of such a policy will require the input of all stakeholders in the sector which in the long will make implementation straightforward and tolerable to a majority of the road users. There is also need to ensure that future policy initiatives should address the questions of integrated transportation, funding, sharing and disbursement of road funds through fiscal decentralization and road asset management, coupled with private sector involvement.

5.5 Limitations of the Study

The current study was limited to Nairobi County. This is a limitation because Nairobi County operates in a different geographical coverage as compared to other counties in Kenya. It would therefore be hard to replicate the findings to other counties within Kenya's jurisdiction. The study was also limited in assessing three impacts of the transport policy on infrastructure, funding and regulation and enforcement.

5.6 Areas for further research

With regards to further research on a Policy, there is need for research to inform Kenya's future strategic policy directions, which enacts an expansive set of performance demands on the roads system. On the other hand, following the enactment of the Non-motorized transport policy by the county government of Nairobi, it would be prudent to assess the impact more so, on road use and in managing traffic congestion.

REFERENCES

Acharya, S. R., Parumog-Pernia, M., & Morichi, (2012). African Policy programme. Evolving Concepts in Urban Transport. In *Transport Development in Asian Megacities* (pp. 15-31). Springer Berlin Heidelberg.

Acheampong, R. A., & Silva, E. (2015). Land use–transport interaction modeling: A review of the literature and future research directions. Journal of Transport and Land use, 8(3).

Adero, N., & Aligula, E., (2012). Challenges facing transport infrastructure in the East African Community. *Chapter in African Research and Resource Forum, Research Networking and Regional Development Policy-Making in the East Africa Community (EAC) , 90-113. Nairobi: (ARRF). Kenya Institute for Public Policy Research and Analysis (KIPPRA).*

Adjei E, Behrens R, Wasswa B, Zuidgeest M (2014) A travel behaviour change framework for the city of Cape Town. Centre for Transport Studies, University of Cape Town, Cape Town

African Development Bank (2013). Infrastructure Financing Trends in Africa. *Infrastructure Consortium Africa, BP 323. Tunis – Belvedere, Tunisia.*

Alam, M., A., & Ahmed F., (2013). Urban Transport Systems and Congestion: A Case Study of Indian Cities. *Journal of Transport Economics, Bulletin for Asia and the Pacific. No. 88* Vol.15 – 23-30.

Andre, D., and Riberio, K., (2000) Impacts of transport infrastructure policies. Annual Report on Sub-Saharan Africa Transport Policy (SSATP), (2011).*A World Bank publication.*

Bamberg, S., & Bos, T., (2011). Behaviour theory and soft transport policy measures. *Transport Policy Vol. 18, Issue 1, Pages 228 – 235, Elsevier.*

Banister, D. (2000). European transport policy and sustainable mobility. *Taylor & Francis.*

Banister, D. (2005). Unsustainable transport: City Transport in the New Century. *Madison Avenue – New York: Routledge-Taylor & Francis Group.*

Banister, D., (1995). Transport and Urban Development. *Handbook for Urban Transport, London.Glasgow.Weinheim.New York: An Imprint of Chapman & Hall.*

Basso, L. J., & Silva, H. E. (2014). Efficiency and substitutability of transit subsidies and other urban transport policies. American Economic Journal: Economic Policy, 6(4), 1-33.

Basso, L. J., & Silva, H. E. (2014). Efficiency and substitutability of transit subsidies and other urban transport policies. American Economic Journal: Economic Policy, 6(4), 1-33.

Batra L (2009) A review of urbanisation and urban policy in post-independent India. Jawaharlal

Bayliss, B., (1998). Regulation in the Road freight transport sector. *Journal of transport economics and policy* , 32(1) - 113 -131.

Berg, C., N., Deichmann, U., Liu, Y., & Selod, H., (2017). Transport policies and development. *The Journal of Develoment Studies, 53(4), 465-480.*

Beuthe, M., Himanen, V., Reggiani,A., and Zamparini,L. (2007). Transport Developments and Innovations in an Evolving World, *(1st Ed.) Springer.*

Bourne, E., Hamilton A., & Smith, Adam., (1894). *The Quarterly Journal of Economics, 8*(3), 328-344. Retrieved from http://www.jstor.org/stable/1883458.

Brian, S. N. & Rodrigue, J.P. (2012).Achieving sustainability in Urban Transport in developing and transition countries, Nature of Transport Policy. *Journal on Environment and Transport,* 28-35(154).

Burns, N., & Grove, S. K. (1993). The practice of research. *Conduct, critique & utilization, 4.*

Button, K., & Hensher, D., (2005). Handbook of Transport Strategy & Institutions. *Amsterdam: Elsevier Ltd.*

Cape Town Foreshore Joint Technical Committee (1948) Cape Town Foreshore Plan Final Report, Government Printer of the Union of South Africa.

Chasco, C., Le Gallo, J., & López, F. A. (2018). A scan test for spatial groupwise heteroscedasticity in cross-sectional models with an application on houses prices in Madrid. *Regional Science and Urban Economics, 68,* 226-238.

Dalkmann H., (2015).Shifting into gear: A new paradigm shift for tomorrows cities: Case Studies on resilience for cities. *(slide share - online).*

Dewar D, Le Grange L, Louw P (2004) The Klipfontein Corridor, Cape Town: conceptual underpinnings and initial spatial implications for context. Prepared for the Western Cape Provincial Government, Cape Town.

Dewar D, Todeschini F (2004) Rethinking urban transport after modernism: lessons from South Africa. Ashgate Publishers, Aldershot and Burlington

Eddington, R. (2006). The Eddington Transport Study-The case for action-Sir Rod Eddington's advice to Government-December 2006.

Ellison, A. (1992). South Africa's Transport Policies. *Journal of Transport Economics* and Policy, 26(3), 313-318. Retrieved from www.jstor.org/stable/20052990

European Commission (2001) European Transport Policy for 2010: Time to decide. *Luxembourg Office for official publications of European Communities.*

Fang, X., & Levinson, D., M., (2011). Evolving Transportation Networks, *Transportation Research, Economics and Policy, Springer Science.*

Fang, Y., Chu, F., Mammar, S., & Zhou, M. (2012). Optimal lane reservation in transportation network. *IEEE Transactions on Intelligent Transportation Systems*, *13*(2), 482-491.

Fifty (50) years of Transport Policy, (1953 – 2003). European conference of Ministers of Transport. *OECD.*

Findlay, C., & Kissling, C. (2005). Transport Policy within APEC. In Handbook of Transport Strategy, Policy and Institutions *(pp. 686-703). Emerald Group Publishing Limited.*

Foster, V., & Briceño-Garmendia, C. (2010). Africa's infrastructure: a time for transformation. *World Bank Publications.*

Gachanja. James., (2015). Mitigating Road Traffic Congestion in the Nairobi Metropolitan Region, *Policy Brief no 2/2015. Kenya Institute for Public Policy Research and Analysis.*

Gasson B (2000) The Urban Metabolism of Cape Town, South Africa: planning imperatives in an ecologically unsustainable metropolis. Unpublished paper presented at the Association of European Schools of Planning Congress, Brno, Czech Republic, July.

General Household Survey Analysis for Cape Town, September, Cape Town, City of Cape Town and Transport for Cape Town (2013), 2013–2018 Comprehensive Integrated Transport Plan, December, Cape Town.

Ghate AT, Sundar S (2013) Can we reduce the rate of growth of car ownership? Econ Pol Wkly 48(23):32–40

Gillen, D., & Rothengatter, W. (2013). Transportation Research, Economics and Policy. Government of India., (2014). Ministry of Urban Development, National Urban Transport Policy, *Ministry of Transportation.*

Giorgi, L., and Pohoryles, J., R., (2001). Transport Policy and Research: What future? *Contemporary trends in European social sciences, Burlington, VT – Ashgate.*

Goel R, Tiwari G (2014) Promoting low carbon transport in India: case study of metro rails.

Goel, R., & Guttikunda, S. K. (2015). Evolution of on-road vehicle exhaust emissions in Delhi. Atmospheric Environment, 105, 78-90.

Gogoi L (2013) Pattern of landuse/land cover and its impact on Guwahati city, Assam, India. Indian J Spat Sci 4(1):44–51

Gunnarsson, S., (2000) Mobolistics-Proposal to a Scientific Discipline – Urban Transport Systems. *Medaiaga. Lundas, Svedija, 7-8.*

Gupta R (2014) The pattern of urban land-use changes: a case study of the Indian cities. Environ Urban Asia 5(1):83–104

Gwilliam, K., B., Bullock, R., Carruthers, R., Kumar, A., Mundy, M., Nogales, A., & Sethi, K., (2011). Africa's Transport Infrastructure, Mainstreaming Maintenance and Management. *The World Bank, 2011.*

Halais, F., (2012). Has South America's most sustainable City Lost its Edge? Online *www.citylab.com/transportation/2012/06/.*

Hensher, D. A., & Button, K. J. (Eds.). (2007). Handbook of transport modelling Strategy, Policy and Institutions. *(Handbooks in Transport, Volume 6) , pp.686 – 703 Emerald Group Publishing Limited.*

Hollander, Y. & Prashker, J.N. Transportation (2006) 33: 481. doi:10.1007/s11116- 006-0009-1

Huang, Q., Parker, D. C., Filatova, T., & Sun, S. (2014). A review of urban residential choice models using agent-based modeling. Environment and Planning B: Planning and Design, 41(4), 661-689.

Iles, R., (2005). Public Transport in Developing Countries. ELSEVIER Inc. San DiegoCA 92101-4495, USA

Jacobs J (1962) The death and life of great American cities. Jonathan Cape, London, UK

Johannesburg 1990, Oakville Press, Cape Town, pp 93–101. United Nations Habitat (2008) State of the World's cities report: harmonious cities, United Nations human settlements program. Earthscan Publishers, London,

Johnson, F. X., & Silveira, S. (2014). Pioneer countries in the transition to alternative transport fuels: Comparison of ethanol programmes and policies in Brazil, Malawi and Sweden. Environmental Innovation and Societal Transitions, 11, 1-24.

Johnson, G., & Tengstrom, E., (2007). Book Review:Urban Transport Development – A complex issue. *Delft University of Technology - The Netherlands..*

Joshi R, Joseph Y (2015) Invisible cyclists and disappearing cycles: the challenges of cycling policies in Indian cities. Transfers 5(3):23–40

Joshi, D., & Achuthan, S. (2018). Leadership in Indian High-tech Start-ups: Lessons for Future. In *The Future of Leadership* (pp. 39-91). Palgrave Macmillan, Cham.

Jöreskog, K. G., Olsson, U. H., & Wallentin, F. Y. (2016). *Multivariate analysis with LISREL*. New York: Springer.

Kaberuka, D., Gurría, A., & Janneh, A., (2010). African Economic Outlook. Development centre of the organization for economic co-operation and development. *African Development Bank OECD.*

Kennedy, C., Miller, E., Shalaby, A., Maclean, H., & Coleman, J. (2005). The four pillars of sustainable urban transportation. *Transport Reviews, 25*(4).

Kharola PS, Tiwari G (2008) Urban public transport systems: are the taxation policies congenial for their survival and growth? Econ Pol Wkly 43(41):725–739

Khayesi, Amekudzi, & Mitullah (2012), Towards a Political Economy of Transportation Policy and Practice in Nairobi, Urban Forum, *(Center for Sustainable Urban Development, Earth Institute Columbia University New York, USA – Jacqueline M. Kloop). Volume 23, Issue 1, pp 1-21.*

Kloop, J.,M., (2012). Towards a Political Economy of Transportation Policy and Practice in Nairobi. *Springer, 1-21.*

Kumar M (2013) Hits and misses: bike-sharing initiatives in India. Sustainable Cities Collective.

Kymlicka, W. (2002). Contemporary Political philosophy: an introduction (2nd ed.), Oxford: Oxford University Press.

Le Corbusier (1930) Précisions: Sur Un État présent de L'architecture et de L'Urbanism, collection de l'Esprit Nouveau, Paris. Translated into English by Edith Schreiber and published in 1960 with a new introduction by Le Corbusier.

Litman, T. (2002). Evaluating transporation equity. World Transport Policy & Practice, 9(2), 50-65.

Litman, T. (2011). Introduction to multi-modal transportation planning. *Victoria Transport Policy Institute, 15.*

Lucas, K., Grosvenor, T., & Simpson, R. (2001). Transport, the environment and social exclusion. *York Publishing Services Limited.*

Macmillan, A., Connor, J., Witten, K., Kearns, R., Rees, D., & Woodward, A., (2014).The societal costs and benefits of commuter bicycling: simulating the effects of specific policies using system dynamics modeling. *School of Population Health, University of Auckland, New Zealand (Volume 122).*

Marcelo P., (2007) Transportation Policy in Brazil – National Plan for Logistics & Transportation. Hamburg - online: w*ww.lateinamerikaverein.de/fileadmin.*

Masahisa Fujita and Jacques-Francois Thisse(2002), Economics of Agglomeration: Cities, Industrial Location and Regional Growth *(1st Edition) Cambridge University Press- NY.*

May, A. D. (1991). Integrated transport strategies: a new approach to urban transport policy formulation in the UK. *Transport Reviews, 11*(3), 223-247.

MIT Press, Boston Department of Local Government and National Housing (1993) Guidelines for the provision of engineering services and amenities in residential townships. Division of Building Technology, Pretoria Department of the National Treasury Intergovernmental Relations Cities Support Programme

Mitchell, M., & Walters, J. (2011). Efficacy of recent transport policy making and implementation in South Africa. *Journal of Transport and Supply Chain Management, 5*(1), 241-263.

Mohan, R., (1996) India Infrastructure Report: Policy imperatives for growth and Welfare. *Report of the expert group on commercialization of infrastructure projects.*

Mohan, R., (2013). Approach to Transport Policy. *NTDPC Report.* Nuworsoo, C. (2006). New public transit system for Accra, Ghana. *Focus*, *3*(1), 12.

Morichi, S., & Acharya, S. R. (2007). New perspectives on urban transport policies for East Asian megacities. In *Proceedings of the Eastern Asia Society for Transportation Studies The 7th International Conference of Eastern Asia Society for Transportation Studies, 2007* (pp. 65-65).

Mubea, K., Goetzke, R., & Menz, G. (2014). Applying cellular automata for simulating and assessing urban growth scenario based in Nairobi, Kenya. International Journal of Advanced Computer Science and Applications, 5.

Mugenda, A. G., & Mugenda, A. G. (2012). Research methods dictionary. *Nairobi, Kenya: Applied Research & Training Services*.

Mugenda, O.M., & Mugenda, A., G. (2003). Research methods quantitative and qualitative approaches:Nairobi. *Applied Research and Training Services Press.*

Newman, P., Kosonen, L., & Kenworthy, J. (2016). Theory of urban fabrics: Planning the walking, transit/public transport and automobile/motor car cities for reduced car dependency. Town Planning Review, 87(4), 429-458.

Newman, P., Kosonen, L., & Kenworthy, J. (2016). Theory of urban fabrics: Planning the walking, transit/public transport and automobile/motor car cities for reduced car dependency. Town Planning Review, 87(4), 429-458.

Nyandika, O. F., & Ngugi, K. (2014). Influence of Stakeholders' Participation on Performance of Road Projects At Kenya National Highways Authority. European Journal of Business Management, 1(11), 384-404.

Nyandika, O. F., & Ngugi, K. (2014). Influence of Stakeholders' Participation on Performance of Road Projects At Kenya National Highways Authority. European Journal of Business Management, 1(11), 384-404.

OECD, (2008). Synthesis of Road Sector Evaluations. *Nordic Consulting Group, Kirkevj – Denmark*

Ogwude, I. C. (2011). Transport Infrastructure and Mobility in Nigeria. *JORIND*, *9*(1), 456-467.

Ollivier-Trigalo, M., & Barone, S. (2011). The regionalization of rail transport in France. An analysis of the interplay between actors (from the late 1990s through the 2000s. *Transport Policy*, *18*(4), 604-612.

Omeya, A., & Lubaale, G., (2012).Understanding the Tipping point of urban Conflict.

Oroje, D., O., Rambo, M., C., & Odundo, A., P., (2014). Agency Level Management of Roads Maintenance Levy Fund: Evidence from Kenya. *Global Journal of Business Research. Vol. 8 No. 1.*

Parker, J., M., Applying a System of Systems Approach for Improved Transportation, S.A.P.I.EN.S *[Online], 3.2 | 2010, Online since 09 September 2010.*

Perry C (1927) Regional Planning Association of New York, Regional Plan for New York State, NY.

Persson, J., and Song, D., (2010). The Land Transport Sector: Policy and Performance. *OECD, Working Paper No. 817 2010*).

Pirie, G. (2014). Transport pressures in urban Africa: practices, policies, perspectives. Africa's Urban revolution, 133-147.

Plane, D., A., (1995) Urban Transportation:- Policy - The Geography of Urban Transportation. *2nd Ed. New York: Guilford Pres.*

Presented at the 4th annual international conference on next generation infrastructures, Virginia Beach, VA, USA, 16–18 Nov 2011

Proost, D., OECD, (2010 -2014). What sustainable road transport future? Trends and Policy options for, International Transport Forum. *Discussion Paper 2010-14-International Transport Forum.*

Proost, S., & Van Dender, K. (2010). What sustainable road transport future? Trends and Policy options (No. 2010-14). *OECD/ITF Joint Transport Research Centre Discussion Paper.*

Public Transport Pillar, Republic of South Africa (2015) Integrating public transport: rethinking the role of the minibus-taxi sector, September.

Saunders., Lewis, P., and Thornhill, A.,(2016) Research Methods for Business students. *United Kingdom, Pearson Publishers.*

Republic of Ghana, (2008). National Statistical Service – *Ghana Statistical Service.*

Republic of Ghana, (2008). National Transport Policy – *Ministry of Transport.*

Republic of Kenya, (2007*).* Kenya Roads Act, *Government Printer.*

Republic of Kenya, (2009) Integrated National Transport Policy, *Ministry of Transport.*

Republic of Kenya, (2009). National Housing and Population Census Report, *Kenya. National Bureau of Statistics. Statistical Abstract 2014.*

Republic of Kenya, (2011) Urban Areas and Cities Act, *Government Printer.*

Republic of Kenya, (2012), Kenya Urban Roads Authority, *Government Printer.*

Republic of Kenya, (2012). National Transport and Safety Authority Act, *Government Printer.*

Republic of Kenya, (2014) Traffic Act, *Government Printer.*

Republic of Kenya, (2015). Statistical release on the Transport Sector, *Kenya. National Bureau of Statistics. Statistical Abstract 2014.*

Rho, S. H., & Vogelsang, T. J. (2018). Heteroskedasticity autocorrelation robust inference in time series regressions with missing data. *Econometric Theory*, 1-29.

Rizvi A, Sclar E (2014) Implementing bus rapid transit: a tale of two Indian cities. Res Transp Econ 48:194–204

Robinson, J. B. (1990). Futures under glass: a recipe for people who hate to predict. *Futures*, *22*(8), 820-842.

Rodrigue, J. P., Comtois, C., & Slack, B. (2013). The geography of transport systems. *Routledge.*

Roumboutsos, A., and Kapros, S., (2008) The Game Theory to Urban public Transport Integration Policy. *Transport Policy Journal Vol. 15 issue 4. Elsevier.*

Roychowdhury A (ed) (2013) Good news & bad news: clearing the air in Indian cities. Centre for Science and Environment, New Delhi

Runji, J., (2015). Africa transport policies performance review : The need for more robust transport policies. *Sub-Saharan Africa Transport Policy Program (SSATP) discussion paper no. 103. Washington, DC: World Bank Group.*

Rye T (2010) Parking management: a contribution towards liveable cities, Module 2c (Sustainable transport: a sourcebook for policy-makers in developing cities). Eschborn, Germany

Santos, G., Behrendt, H., & Teytelboym, A. (2010). Part II: Policy instruments for sustainable road transport. *Research in transportation economics, 28(1), 46-91.*

Sellier, A., Multon, S., Buffo-Lacarrière, L., Vidal, T., Bourbon, X., & Camps, G. (2016). Concrete creep modelling for structural applications: non-linearity, multi-axiality, hydration, temperature and drying effects. *Cement and Concrete Research, 79*, 301-315.

Singh S (2009) Road traffi c crashes: the scourge of UP's cities. Econ Pol Wkly 44(48):22–28

Singh S (2012) Urban transport in India: issues, challenges, and the way forward. Eur Transp 52(57)

Slack, B., Notteboom, T., & Rodrigue, J.,P., (2013). In Search of Evidence to Define Transport Policies, Transport sector data management system. *Policy Note & Guidelines, SSATP. Working Paper 104.*

Small, K. A., & Verhoef, E. T. (2007). The economics of urban transportation. *Routledge.*

Soesastro, H., (2003), APEC's overall goals and objectives, evolution and current status. *Institute of South East African Studies – Singapore.*

Song, L., and & Geenhuizen M., (2007) Journal on Transportation Policy. *Science Direct 173-183(316).*

SSATP Annual Report, (2012). Africa Transport Policy Program. Stead D., and Banister D., (2003): Transportation Planning and Technology: *Journal of Transportation Planning 26(6): 513-536, Research Gate .*

Susan, D. K., Jared, M. G., Richard, R. & Harris, M. (2007). Rural Roads: A Construction and Maintenance guide for California Landowners Sutcliffe, E., B., (2004). Review of Transport Policy and Research: What Future? *Journal of Housing and the Built Environment, 19*(2), 211–213.

The Energy and Resources Institute (2011) Review of comprehensive mobility plans. TERI, New Delhi, India

Thynell, M., Mohan, D., & Tiwari, G. (2010). Sustainable transport and the modernization of urban transport in Delhi and Stockholm. *Cities, 27*(6), 421-429.

Tiwari G (2001) Urban transport priorities: meeting the challenge of socio-economic diversity in cities—case study Delhi, India. Paper presented to the 20th annual South African transport conference, South Africa, 16–20 July 2001

Tiwari G (2002) Urban transport priorities: meeting the challenge of socio-economic diversity in cities, a case study of Delhi, India. Cities 19(2):95–103

Tiwari, G. (2007). Urban transport in Indian cities. *Urban age*, 1-4.

Tiwari, G. (2011). Key mobility challenges in Indian cities. International Transport Forum Discussion Paper.

Todeschini F (1991) Main street: from ribbon development to proclaimed main road—practice and policy. In: Japha D and V (eds) Proceedings of the national urban conservation symposium

Tolley, R., & Turton, B. J. (2014). Transport systems, policy and planning: a geographical approach. Routledge.

Topno, R., (2010). The economic impact of visceral leishmaniasis on rural households in one endemic district of Bihar, India. *Tropical Medicine & International Health*, *15*, 42-49.

Trends in the Transport Sector, (1970 – 2008). European conference of Ministers of Transport. *OECD.*

UKVan Ryneveld P (2015a) Framing the public transport challenge: rethinking the minibus-taxi industry. University of Cape Town Postgraduate Class PowerPoint Presentation, September.

Vaidyanathan V, King RA, de Jong M (2013) Understanding urban transportation in India as polycentric system. Policy Soc 32(2):175–185

Vaidyanathan V, King, RA (2011) Institutional analysis of urban transportation in Bangalore.

Van Geenhuizen, M., Reggiani, A., & Rietveld, P. (2007). New trends in policy making for transport and regional network integration. *Policy Analysis of Transport Networks*, 1-16.

Van Ryneveld P (2015b) Funding frameworks for public transport capital and operating expenditure in South Africa. University of Cape Town Postgraduate Class PowerPoint Presentation, August.

Vatcheva, K. P., Lee, M., McCormick, J. B., & Rahbar, M. H. (2016). Multicollinearity in regression analyses conducted in epidemiologic studies. *Epidemiology (Sunnyvale, Calif.)*, *6*(2).

Viner, J. (1949). Bentham and J. S. Mill: The Utilitarian Background. The American Economic Review 39(2), 360-382. Retrieved from http://www.jstor.org/stable/1812738

Wasike, W. S. (2001). Road infrastructure policies in Kenya: historical trends and current challenges (*KIPRA working paper No. 1.*).

Wilkinson P (2006) Transit oriented development: a strategic instrument for spatial restructuring and public transport system enhancement in South African Cities?. Proceedings of the 25th South African Transport Conference, pp 215–228.

World Health Organization. (2013). Strengthening road safety legislation: a practice and resource manual for countries. *World Health Organization.*

Xavier, J. C., & Boareto, R. (2005). The implementation of Brazil sustainable urban mobility policy. In *Eleventh Thredbo conference on competition and ownership in land passenger transport.*

Yigitcanlar, T., Rashid, K., & Dur, F. (2010). Sustainable urban and transport development for transportation disadvantaged: a review. *The Open Transportation Journal*, *4*, 1-8.

Zhang, H., Su, Y., Peng, L., and Yao, D., (2010) A review of game theory Applications in Transportation Analysis. *International Conference on Computer and Information Application (ICCA) Member of IEEE.*

APPENDIXES

Appendix I: Consent Form

To whom it may concern:

Consent to participate in a study on assessing the impact of the integrated national transport policy in the road sector within Nairobi county

Evelyn Adhiambo is a final year post graduate student at the Strathmore University, School of Business. she is conducting a survey for her research topic. The research is: ***An Assessment on the impact of the Integrated National Transport Policy in the road sector within Nairobi County.***

This questionnaire is strictly meant to provide vital information regarding this research work and will be treated with utmost confidentiality. Your response will help in understanding the status on the implementation of the road transport policy within Nairobi county and help in providing viable recommendations to the stakeholders and the public at large.

This questionnaire should take no more than 20 minutes to complete. Participating in this study is voluntary therefore, should not incur any financial costs, neither will you be reimbursed. You are free to withdraw from participating at any time, and you will not suffer any negative consequences of any kind in making that choice.

Should you have any queries or require any independent clarification about this study please do not hesitate to contact the administrator of Strathmore business school on 0703034414 or info@sbs.ac.ke. You will also receive a signed copy of this consent for your records.

YOUR SIGNATURE ON THIS CONSENT FORM INDICATES THAT YOU HAVE VOLUNTARILY AGREED TO PARTICIPATE IN THIS STUDY, AND YOU HAVE READ AND UNDERSTOOD THE INFORMATION GIVEN ABOVE AND ALL ISSUES RELATING TO THE STUDY HAVE BEEN CLEARLY EXPLAINED TO YOU.

Name of Participant: _____

Signature of Participant: _____

Signature of researcher: _____

Kindly provide your email if you wish to receive the findings of this study_____

Appendix II: Letter of Introduction
12th December, 2016

To whom it may concern:

INTRODUCTION

I am a Masters student at the Strathmore University, School of Business undertaking a Masters in Public Policy and Management. As part of my studies, I am required undertake a research thesis in my area of study.

My Thesis is on:

An Assessment on the Impact of the Integrated National Transport Policy in the Road Sector within Nairobi County.

The purpose of this questionnaire is to conduct a survey on the challenges faced in the implementation of the Transport Policy, 2009 in Kenya with a bias on the road sub-sector from 2010 to 2015 within Nairobi County.

Please note that the information received shall be used for only the purpose of this case study and shall be treated with utmost confidentiality.

Thank you.

EVELYN M. ADHIAMBO

Appendix III: Questionnaire

Dear Sir/Madam

This questionnaire is to be filled by the respondents drawn from the Ministry of Transport and Infrastructure, all related State Agencies, the County Government of Nairobi and the Kenya Traffic Police.

SECTION 1

1. Demographic Information

NAME OF ORGANIZATION:.....

LEVEL WITHIN THE ORGANIZATION:.....

AGE:..... GENDER:.....

HIGHEST_EDUCATIONAL QUALIFICATION:.....

Diploma ☐ Degree ☐ Masters ☐ Phd ☐

SECTION 2: General Information on Transportation Policy

2. Are you aware of the existence of the Integrated National Transport Policy, 2009?

Yes ☐ NO ☐

a) If yes, briefly give a highlight of the main aspects of the policy with focus on the road sub sector.

.....
.....
.....
.....
.....

b) What are some of the key policy issues in the said document?

.....
.....
.....
.....

3. In a scale of one (1) to three (3) where three (3) implies high priority, what do you think are the key areas of concern areas (in order of importance) that require attention and urgent address in the road transport sub sector in Nairobi?

High Priority (3), Moderate Priority (2), Least Priority (1)

Priority areas	**High Priority**	**Moderate Priority**	**Least Priority**
Infrastructure			
Funding			
Regulation & Enforcement			

4. In a scale of one (1) to three (3) where three (3) implies Highly Effective, how effective and consistent has implementation of the Transport policy been in Nairobi as relates to the following thematic areas?

Highly Effective (3), Effective (2), Not Effective (1)

Factor	**Scale**
Infrastructure	
Funding	
Regulatory	

SECTION 3: Thematic objective one: Infrastructure

5. In a scale of one (1) to three (3) where three (3) implies to a great extent has the transport policy, 2009 stimulated the growth of the road sub sector in Nairobi?

Influence of transport Policy	**To a great extent (3)**	**To some extent (2)**	**To no extent (1)**
Infrastructural Development			
Expansion and Maintenance of Roads			
Enhanced Road Facilities			

6. In your view, is Nairobi's road network designed to facilitate modification, expansion, linkages within the sub-county and adjoining counties?

Yes ☐ NO ☐

a) If yes, briefly give a highlight of some of the roads that have been so designed.

.....
.....
.....
.....
.....

b) If no, kindly suggest some of the roads that may require overhaul in order to facilitate redesign?

.....
.....
.....
.....

7. In a scale of one (1) to three (3), when assessing the condition of the Road network within Nairobi County, how frequently are these roads maintained?

   Never (1), Rarely (2), Always (3)

ROAD TYPE	Always	Rarely	Never
Highways *e.g. Mombasa Road, Thika road and Waiyaki way*			
Major arterial road *eg. Ngong road, Langata road*			
Minor arterial road *eg. peponi road, james gichuru road*			
Collector road *eg. Ladhes road, Jogoo road*			
Local Road eg. *Mumias south road, Rabai road*			

SECTION 4: Thematic objective Two: Funding

8. In a scale of one (1) to three (3) where three (3) implies significantly supported, how has funding both from the National and County Government affected the implementation of the transport policy in road sub sector within Nairobi County?

Influence of road sector funding	Significantly supported	Moderately supported	Not supported
Policy Implementation			
Infrastructural Development			
Enforcement & legislation			

Significantly supported (3) , Moderately supported (2), Not supported (1)

9. In your view, between the periods 2010 to 2015, have funds allocated to the road sub-sector within Nairobi County efficiently utilized?

Yes ☐ NO ☐

a) If yes, briefly give a highlight of some of the roads that in your view, funds were efficiently utilized.

.....
.....
.....

b) If no, briefly highlight of some of the roads that in your view, funds were inefficiently utilized?

.....
.....

.....

c) Kindly suggest modalities which the County Government could take up in order to ensure accountability in utilization of road sector funds?

.....
.....

.....

10. In order of importance, with three (3) being Essential and one (1) Not important, what are the key sources of funding for the road transport sector in Nairobi?

Essential [3], Somewhat Important [2] Not Important [1]

Factor	Essential	Somewhat Important	Not Important
National Government			
County Government			
Fuel Levy			
Import duty			
Parking & Toll fees			
Licenses			
Court fines			
Public Private Partnerships			

SECTION 5: Thematic objective Three: Legislation and Enforcement

11. Since the inception of the Transport Policy in 2009, kindly highlight the legislation in place in the management of the road transport sector in Kenya?

.....

.....

a) In your view, are there regulatory and institutional conflicts in the management of the road transport sector?

Yes ☐ No ☐

b) Kindly explain your response?

.....
.....
.....

How effective and consistent has enforcement of the road sector transport policy been in Nairobi?

.....
.....
.....

12. In your view, should road sector transport management be a National or County function?

National ☐ County ☐ Both (National & County) ☐

◦ Kindly explain your response?

.....
.....
.....

SECTION 6: Policy Shift Proposals

13. What are the policy strategies that can be promoted in order to move Nairobi County towards a sustainable road sector transport policy to realize transport sector targets in vision 2030 and spur economic growth?

.....
.....
.....
.....

Thank you

Appendix IV: Interview Guide

1. Introduction.
2. Climate Setting.

Guide

a) What role should transport policymakers play in shaping road infrastructural development and maintenance?

b) How can the road integration and coordination be improved within Nairobi County?

c) Does the Ministry/County Government have an Urban Road Transport Development Plan to cater for future infrastructural development needs and requirements?

d) Are there fiscal or other mechanisms that would foster better road design with related facilities in the implementation of policy?

e) What are some of the suggestions that you can provide that are potentially viable to enable implementation of road transport policy in relation to the various legislations in place?

f) How does the State Corporations created by Acts of Parliament correlate with existing State Agencies like Kenya Traffic Police in enforcing road transport policies?

g) Are there policies and guidelines in place that funding of the sector thorough donor or grant funding for road sector infrastructure and implementation of policies and guidelines?

h) How does the Ministry /County Government manage capacity of its personnel in the road sector?

i) Roads in Nairobi are classified according to their nature. Kindly tick [√] where these facilities are provided as per the table below.

fication of Road	Foot paths – Cabro or paved	Street lights	Bus stage shelters	Pedestrian overhead bridges	Parking
ways *e.g. Mombasa Road, Thika nd Waiyaki way*					
: **arterial road** *eg. Ngong road, ta road*					
r **arterial road** *eg. peponi road, gichuru road*					
:tor **road** *eg. Ladhes road, Jogoo*					
Road eg. *Mumias south road, road*					

Appendix V: Target Respondents

The researcher gathered data and relevant information from Government Agencies and related State Departments in the National and County Government in Kenya. The identified institutions (respondents) were from:

1. Ministry of transport and Infrastructure, - State Department for Transport;
    - Transport Policy Management Directorate (Roads),
    - Kenya Roads Board, and
    - National Transport and Safety Authority,
2. Kenya Traffic Police Headquarters.
3. The County Government of Nairobi – the Ministry of Public, Works, Roads and Transport.

Appendix VI: Work Plan

It is proposed to carry out the proposed research project on the basis of the following timetable

TIME	RESEARCH STAGE	WRITING/REPORTING STAGE
November 2015	Development of the project proposal and allocation of supervisor.	Proposal developed
January, 2016	Reading of literature Review in detail and seeking supervisor's assistance and guidance.	Short notes on literature review and fine tuning of the statement of the knowledge in the field and theoretical framework
February, 2016	Seeking Proposal Approval	Approved with amendments
March, 2016	Carry out research by distribution of questionnaires to the respondents and conducting oral interviews	Record findings
April, 2016	Analysis of findings and Reporting	Analysis of the findings and compiling data.
April, 2016	Revision of project report	Revised and updated.
May, 2019	Submission and examination	Final submission of the bound project report.