**FACULTY OF COMMERCE**

**DEPARTMENT OF ACCOUNTING**

**BACHELOR OF COMMERCE HONOURS DEGREE**

**DISSERTATION TOPIC**

**An assessment of the ZINARA Road Fund: A case of Ministry of Transport and Infrastructural Development**

**By:**

**NOSTER LIVEVERE**

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# MIDLANDS STATE UNIVERSITY

## FACULTY OF COMMERCE

### DEPARTMENT OF ACCOUNTING

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### APPROVAL FORM

The undersigned certify that they have supervised the student Noster Livevere dissertation entitled, **"An assessment of the ZINARA Road Fund: A case of Ministry of Transport and Infrastructural Development,"** from July to September 2014 submitted in partial fulfilment of the requirements of Bachelor of Commerce Accounting Honours Degree Programme.

.................................................            …………………………..........
**Supervisor**                                           **Date**

………………………………            ……………………………………...
**Chairperson**                                          **Date**

…………………………….            …………………………………
**External Examiner**                                    **Date**

# MIDLANDS STATE UNIVERSITY

P. Bag 9055                                    Telephone: (263) 54 260404/260337/260667
GWERU                                          Fax:      (263) 54 260233/260311
ZIMBABWE

## FACULTY OF COMMERCE

### DEPARTMENT OF ACCOUNTING

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### RELEASE FORM

**NAME OF AUTHOUR**               **LIVEVERE NOSTER**

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**SIGNED.......................................**          **DATE……………………………**

**PHYSICAL ADDRESS**                                   **House no. 2 Hatineti Road**

                                                       **Zengeza 5, Chitungwiza**

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# DEDICATION

This dissertation is a dedication to my sisters Lucia and Christen who have always stood by me through thick and thin and to my late parents Mr. and Mrs. Livevere who had always believed in me; may their souls rest in eternal peace.

**ABSTRACT**

The research seeks to assess the road fund policy used by ZINARA a case of Ministry of Transport and Infrastructural Development This was motivated by the fact that ZINARA is failing to receive enough revenue to meet its operations and obligations. In literature different sources reviewed different policies used in funding the maintenance and rehabilitation of roads. The best practices in road funding that can be implemented were also reviewed. A descriptive research design and stratified sampling method were used in collecting data for the research. A sample size of 40 was used out of a population of 60 and 32 were successful which represents 80% response rate of questionnaire which administered to gather primary data. All interviews which were conducted were 100% successful. Secondary data was extracted the organisation's records in support of primary data.On the other hand, the major finding were critically analysed and results from the presented data helped in formulating recommendation to the study.

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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

In this chapter, the researcher presents the background of the study, statement of the problem, main topic, sub-research questions, and research objectives for conducting the research, significance of the study, delimitations, limitations, assumptions, abbreviations and summary.

### 1.1 Background tothe Study

Zimbabwe National Road Administration (ZINARA) is a corporate body which was established in 2002 and its core business, in consultation with the minister of Transport and Infrastructural Development, is fixing road user charges and collecting such charges or any other revenue of the Road Fund. Zinara is also responsible for the allocation and disbursements to Road Authorities of funds from the Road Fund in accordance with rules prescribed by the Road Administration. Road Authorities consists of Department of Roads, Urban Councils, District Development Fund (DDF) and Rural District Councils (RDCs). Zinara is empowered by the Act to audit the use of the funds to Road Authorities and to ensure that disbursed funds are utilized for the purpose for which they are intended.

Zinara, as the country's road fund, is made up of various road user charges which comprise of vehicle licence fees, toll fees, grants and loans, abnormal load charges, road transit fees and fuel levy. This was since from a transfer of the collection of such funds from ZIMRA to ZINARA in October 2012.

Despite Zinara's mission which is to effectively fund the maintenance of the national road network through fixing, collection, disbursement & monitoring of funds used for the preservation, enhancement and expansion of the network to achieve economic growth and sustainable development. It has not been an easy road to execute their mission. The corechallenge has remained that of funding.

"There is a perception that Zinara is collecting a lot of money, but this is not true because it is collecting at least $40 million annually which can only fix less than a 30 kilometre stretch of road," Mpofu the Minister of Transport and Infrastructure Development said addressing

journalists after a meeting with driving school operators in Bulawayo. "If we rely on the money gathered by Zinara, it will take more than 100 years to repair the country's roads," he added on.

**Table 1.1 Allocations made to the provinces for the 2012 fiscal year.**

| PROVINCE: | DISBURSEMENTS | BUDGETED AMOUNTS |
|---|---|---|
| | $ | $ |
| MANICALAND | 3,167,090.00 | 225,000,000.00 |
| MIDLANDS | 3,634,626.00 | 222,500,000.00 |
| MASHONALAND CENTRAL | 2,388,387.00 | 115,500,000.00 |
| MASHONALAND EAST | 8,645,424.00 | 505,000,000.00 |
| MASVINGO | 2,641,041.00 | 210,500,000.00 |
| MASHONALAND WEST | 3,771,280.00 | 200,000,000.00 |
| MATEBELELAND NORTH | 5,922,307.00 | 300,000,000.00 |
| MATEBELELAND SOUTH | 3,367,591.00 | 221,500,000.00 |
| GRAND TOTAL | 33,537,719.00 | 2,000,000,000.00 |
| | | |
| MINIMUM REVENUE REQUIRED | | (2,000,000,000.00) |
| REVENUE FROM ROAD FEES | | 33,537,719.00 |
| DEFICIT | | (1,966,462,281.00) |

*Source: ZINARA financial statements 2012*

The above information shows that the road fund is facing a deficit on funds. The rehabilitation of existing national road network requires a minimum of US$2 billion. This eliminates the construction of new roads. Donor funding has not been coming through and lines of credit have not been forthcoming. Since 2012 with the fees which were charged on toll plazas, Zinara was collecting US$40 million annually. Funding is needed to help pay back the US$206, 6 million that Zinara borrowed from the Development Bank of Southern Africa to finance the rehabilitation our national roads.

**1.2 Statement of the Problem**

ZINARA is currently the only corporate body which has the mandate to collect various road-user charges. Despite tollgate revenues that rose by almost 100 % early 2013 after Zinara took control of toll collection from to ZIMRA in October 2012 and millions of dollars secured from loan funds, ZINARA has of late been failing to receive enough revenue to meet its operations and obligations. The deficit has persuaded the research to be undertaken.

**1.3 Main Research Question**

An assessment of the ZINARA Road Fund: a case of Ministry of Transport and Infrastructure Development.

**1.4 Sub-research Questions**

- ➢ What is the ZINARA Road Fund policy?
- ➢ What are the policy implementation guidelines?
- ➢ What is the capacity of personnel to implement guidelines?
- ➢ What challenges are in place over the policy?
- ➢ What controls are in place over policy implementation?
- ➢ What is the best practice in the road fund policy implementation?

**1.5 Objectives of the Study**

- ➢ To examine the ZINARA Road Fund policy.
- ➢ To evaluate the policy implementation guidelines.
- ➢ To assess measures taken by personnel to implement guidelines.
- ➢ To investigate challenges that are in place over the policy.
- ➢ To assess controls in place over the policy.
- ➢ To assess the best practice in the road fund policy implementation.

**1.6 Significance of the Study**

**To the researcher**

The study is done in partial fulfilment of the requirements for the Bachelor of Commerce Honours degree in Accounting of the Midlands State University.

The research also enables the researcher to gain some research skills for other research studies in future.

**To the university**

The research if useful is used as reference material for the University and other related researches.

**To ZINARA and Ministry of Transport and Infrastructure Development**

The findings of this study are going to provide recommendations for further considerations.

## 1.7 Delimitations

The research is only limited to MOTID Head Office, Harare and the period under consideration is 2011 to 2014.

## 1.8 Limitations
**Time**

The period and time was a limiting factor as the project had to be finished before the semester ends. The use of emails and internet has been very useful in getting information from the company and other sources relevant to the study.

Respondents to interviews had busy work schedules which delayed data gathering. The researcher had to use weekends and after work hours to carry out the study.

**Confidentiality**

Some of the information was not available to the research as it was considered highly confidential. Since these are government properties access to the material was likely to be limited. The researcher therefore used sources of information that were at disposal during work-related learning with a guarantee that findings were for academic purposes only.

**Financial constraints**

The research faced challenges in meeting the printing, photocopying, internet food and travelling expenses among others that are inherent to the study. The researcher had to make personal finance sacrifices to overcome this.

## 1.9 Assumptions

The study was carried out on the following underlying assumptions;

The study respondents would be co-operative and provide reliable data.

There were no changes in regulations over the research period.

**1.10 Abbreviations**

ZINARA-              Zimbabwe National Road Administration

ZIMRA-               Zimbabwe Revenue Authority

MOTID-               Ministry of Transport and Infrastructure Development

**1.11 Summary**

This chapter covered background of the study, statement of the problem, main research question,

sub-research questions, and objectives of the study, significance of the study, assumptions and

delimitations. Chapter two focuses on literature review.

# CHAPTER 2

# LITERATURE REVIEW

## 2.0 Introduction

This chapter covers the road funding policies, policy implementation guidelines, measures taken by personnel to implement guidelines, challenges over the policy implementation, controls over the policy and the best practice in the road funding policy implementation.

## 2.1 Road Funding Policies

According to Matt Shands (2007), "The idea behind road funding policy is to create a more equitable revenue system if vehicles were charged a road user fee that more accurately reflect the costs to repair or maintain road and bridge infrastructure resulting from damage imposed by each class of vehicle." There are three common transport policies used in funding of roads and highways infrastructure. Many states envisage various sources of road funding such as fuel tax, tolling, vehicle tax and concessions.

According to www.wikipedia.org 14/08/14 (18:59) Fuel tax are excise taxes that are enforced on the sale of engine fuels, for example diesel, petrol, gasoline and many others. Fuel tax can be able to be enforced at a fixed rate or as anadjustable rate tax that is tied to price increases, often as a percentage of the price of fuel. In most countries the fuel tax is imposed on fuels which are intended for transportation. Revenue generated from fuel levies has recently been experiencing a decline globally. Revenue collected from fuel levies is actually declining worldwide because of improved engine technology. A car that was taking 10 litres per 100km 20 years ago today is taking seven or six litres — that means the fuel levy will decline. The introduction of hybrid vehicles means that fuel consumption is going down, therefore the fuel levy is declining (www.sanral.za) 15/08/14 (18:14).

Tolling is funding policy in which a toll road in a private or public roadway of which a fee (toll) is assessed for passage. It is a form or road pricing typically implemented to help recuperate the cost of road construction and maintenance which on public roads amounts to a form of taxation. Tolls are collected at points known as toll booth, plazas, gates etc. Due to a decrease in revenues generated from fuel taxes, many countries have diverted from fuel taxes to tolling as a way of

funding road and highway infrastructure. According to Matt Shands (2007) there are several advantages of tolling that have caused it to be considered an effective and efficient way of raising funds and these are as follows:

**a) Fostering public-private partnership by attracting private capital.**

The tolling system promotes the growth and development of relationships between the public and the private sectors. It is a technique that attracts investors in the private sector, since toll plazas can be leased to increase revenue generated from them.

**b) Drawing on the public willingness to pay direct user charges**.

Toll gates are designed in such a way that entrance to vehicles on roadways is given when the road-user first pays a fee (toll) which gives the right to surpass the toll gate.

**c) Leveraging new sources of capital such as additional debt**

Tolling is one of the efficient source of generating revenue. Funds generated from tolls is therefore used to finance road infrastructure projects.

d) Allowing additional transportation facilities to be developed more quickly than would be possible under conventional public procurement funding and ownership.

The tolling system is considered to be the most effective and efficient policy for road funding in most countries around the world. Although in most states some appropriations are made to the department responsible for the construction of roads through the budget, these lumpsum amounts are as a result insufficient.

**e) Facilitating value pricing plans.**

Tolling system helps in allocating different road user charges looking at the criteria used by the system.

Disadvantages related to tolling are as follows:

**a) Cost of borrowing capital.**

When implementing the tolling system capital is needed to build the toll gates and because of lack of funds many governments and up borrowing capital from the private sector.

**b) Restricted availability because of the distance between access points.**

Different states differ in distance between which tolls are planted but usually they are placed far from each other and as a result a few toll gates are planted in a certain area or province.

**c) Disproportionate impacts of tolling on low income motorists and associated equity issues.**

Road-user charges are not related classes of motorists in a certain state. However this has an impact on low income motorists.

**d) Negative public opinion that views tolls on top of fuel taxes as double taxation.**

Since most countries envisage in more than one road funding policy, the implementation of the tolling system have always received a negative opinion from the public on top of other road funding policies as double taxation.

According to [www.wikipedia.org](www.wikipedia.org) 14/08/14 (19:05) Vehicle tax is tax levied as an excise duty and which must be paid for most types of vehicles which are to be used or parked on the public roads. Vehicle tax and charges include goods and services tax, luxury car tax, heavy vehicle charges, congestion tax, vehicle registration charges, stamp duty, wheel fees, abnormal fees and overload fees. Vehicles used on public road should display the current vehicle licence (tax disc) as a proof of payment. This excise duty imposed on vehicles is ring fenced (earmarked) for road construction and paid directly into a specific road fund.

According to Luis Acosta (2014), most countries rely on fuel tax and existing studies recommend a change to road user fee system such as vehicle miles travelled system as source of revenue for road funding. Other states use the tolling methods in acquiring their revenue for the sponsoring roads. In Japan and France, from the studiesillustrated that tolls are used in relation with the vehicle weight and the distance traveled. In the Netherlands, tolls are referred to as mobility rates as cars are charged for the use of road as they enter fee payment gateways.

Luis Acosta (2014), said that some United States have previously piloted researches with substituteroad funding mechanisms. A good example is Oregon which has conducted researches on road user charges. One of the researches done in 2006 to 2007 established that a distance fee charge might be applied to substitute the fuel tax as the main revenue source for road funding. A

second study was done in 2012, further indication of the feasibility of a road-usage charge directed by the private sector using the mileage reporting and the payment system.

Several countries, like the United State, have fuel tax that is committed to the funding of maintenance and construction. Other countries such as Austria, England, Germany, Italy and Mexico place fuel and other excise taxes and fund roads from general revenues. Japan used the method of dedicating fuel and vehicle taxes to road infrastructure.

Road funding poling can also be referred to as road pricing. Bob Arnold, Vance C. Smith et al (2010) evidenced that road pricing has a long account in the form of toll bridges, turnpikes and tunnelspremeditated to generate funds to cater for the construction, maintenance of these facilities. In exercise, road pricing offers a tool for road users to reduce congestion and to generate revenues. Controlling traffic congestion improve cost of doing business, promotes environmental goals and sustain liability and quality of life with road feegrounded on amount of traffic reduction sought, that is, facility pricing, congestion pricing, cordon or urban area pricing. Revenue generated is used to pay for roadgroundwork, processes or transportation system capacity with road user charges i.e., flat-toll rates, adjustable charges and distance based user fees.

There three categories of road pricing which are congestion pricing, environmental pricing and tolling. Congestion pricing is a fee charged by time of day to reduce traffic, maintain target travel speeds and manage traffic flow. Environmental pricing is a fee charged to decrease the environmental influences of traffic. Tolling is a general chargedfunded to access a road, tunnel or bridge to raise funds to cover the costs of operations and construction.

## 2.2 Policy Implementation Guidelines

According to Saka Luqmma (2010), the setting dedicated funds is viewed as allotting and has received some conflict from the International Monetary Fund and various finance ministries. With revenues largely from related to road use charges, the setting up of such the funds is seen as reserving. Mostly in African countries, set up their road fund which are derived from more than 95% of their revenues from charges such as vehicle registration fees, overloading fees and transit fees. The remaining 5% or so flow from other charges such as levy on fuel. The creation of these funds are led to a predictable flow of funds for road maintenance.

Kumar (2005) show that with the setting up of road funds, the finances for repairs have amplified from 15% to 20% in the 1990s. The paybacks of such improvements in the financing of maintenance has also been recognized by road users. The sustainability of maintenance funding in Africa remains problematic, with only 30% to 80% of road maintenance needs being met through existing road funds. The setting up of the road funds was not intended to exclude some level of government budgetary support.

Moreover the road-user charges is the main basis of revenue for reserves does not appear to have robust mechanisms for adjustment in relation to inflation and needs. Therefore there is need to search of ways of making road maintenance fundingmaintainable, if the dropping of the road infrastructure is to be stopped in Africa for social-economic growth. Tanzania's road fund is regarded as one of the wellperforming funds in Africa. Nonetheless, the inflow to the revenues is viewed as meeting only about 50% of the country's road maintenance needs. The challenges in road maintenance funding in Tanzania is a typical example of the problem in Africa. Theexample of Tanzania challenges of funding road maintenance in the region are discussed and suggestions are made for making road maintenance funding bearable.

**2.3 Measures taken by Personnel to Implement Guidelines**

N. Gananadha (2009) suggested that insufficientroad funding had further been problematicalcaused by the poor institutional framework in which roads have been managed. Lack of clearly defined responsibilities, lack of managerial accountability, poor conditions of service, weak and ineffective management structures have all contributed to the poor use of the meagre funds. Accordingly, roads assistances suffer from lack of suitable experienced and qualified staff to plan, organize, monitor, programme, and regulate work embarked on by own forces as well as by private contractors and consultants. It has thus long been clear that the problem of road maintenance is not one of engineering but of policies and management.

According to N. Gananadha (2009) there are four key issues that has to be identified by personnel which are necessary when implementing new policy guidelines. These are collection and disbursement of road maintenance funds, improving the operational efficiency of road maintenance, development of organisation and management of roads and improvement of staff utilisation, motivation and retention.

N. Gananadha suggested that these recommendations endorsed may be summarised under four main headings as follows:

**2.3.1 Funding Road Maintenance**

A road-user tariff need be introduced to provide acceptable and committed funds for road maintenance, with the proceeds to be deposited in an autonomous road fund. A board of management should be recognized for the management of the road fund with members from key government ministries, and from private sector road organisations. The activities of the road fund should be audited by independent auditors.

**2.3.2 Management and organisation of Roads**

An independent highway authority should be proven to take over accountability for the organisation and management of the nation's road network. The authority shall be administered by a board to be appointed by the President. The board should report to the Ministry designated to be responsible for the authority. One third of the members should represent government departments and local authorities, while the remaining shall comprise representatives of private sector stakeholders. Sound business performs should be agreed by the authority, including competitive tendering for required works and services, auditing by auditing by qualified external auditors, commercial accounting systems.

**2.3.3 Improving operational efficiency**

Private sector contribution in road maintenance should be increased by introducingsuitable business environment for use of consultants and contractors and for involving the private sector in efforts to achieve better use of government plant and equipment. Use of labour-based methods should be enabled to the point feasible by proactive government regulations and policies.

**2.3.4 Staff training and incentives**

Terms and conditions of employment to be proven by the suggestedindependent road authority, ought to be adequately competitive, performance related to motivate, attract and preserve staff with the required qualifications and competence and expedite dismissal of non-performing staff. An organisation which trains staff should be established that with full use of present facilities and capacity, will be able to backsuitable and maintainable training of managers and other personnel for the road sector.

**2.4 Challenges over Policy Implementation**

According to R. Arnold, Vance. C Smith et al (2010) transport infrastructure is crucial for social-economic progress. It delivers the essentialrelations between markets and the centres of making for the economic sectors such as industry, mining and agriculture. Transport is a mainissue in formulating the price of goods and services. An effective transport structure can help decrease transport costs and support growth directly or indirectly by sponsoring trade and higher productivity. Pirvu et al (2009) added that the maintenance and progress of suitable road infrastructure is therefore an essentialelement to economic growth. Awkwardly, as a result of the insufficient funding of the road maintenance, roads in the region have declined to the point where rehabilitation and in some cases reconstruction may be necessary. The road networks therefore become blockages to socio-economic growth.

The particular challenges faced by road funding projects are, of course, inextricably linked; policy reform, increased funding, better preparation, and improved management and delivery all leverage each other. Policy reforms can stretch available investment funding, lower investment risks, and thus attract more funds. Improved management capacity combined with supporting policy measures are also needed to stem existing waste and ensure that new resources are effectively used. The overall value of resources lost to inefficiency in infrastructure sectors has been increasing annually. Raising more funds to redress infrastructure deficit remains an overarching constraint (www.infrastructuregov.au 15/08/14 (18:45).

**2.4.1 The private sector will need to play a crucial in filling the infrastructure deficit.**

Public financing whether from government or from international donors—will not suffice to scale up investments in infrastructure. There is a severe shortage of bankable projects that would attract private investors. A major challenge with private financing for infrastructure is the shortage of investors willing and able to assess and take on the long-term risk associated with complex projects. While many institutional investors seek stable, long-term, income streams from already existing and operational projects, they tend to avoid the level of risk that is generally associated with new projects.

Private sector developers and lenders have additional concerns to bring down financial risks that governments must better understand and address. These include the need for transparency in decision making, accountability and multiple non-tariff barriers. These concerns apply for

example to the quality of financial reporting and disclosures, and acknowledging and managing conflicts of interest as well as delays in processing applications for licenses and permits.

There are not enough private sponsors with the capability, balance sheets, and risk tolerance to provide a strong competitive environment for large projects. This is particularly true when country risks are high, and is aggravated by donors' traditional procurement policies that may provide a disincentive for developers to spend money in advance of a costly tendering process.

### 2.4.2 Capital budgets are not executed

According to Bhatt and Khanal (2007)Every year some huge funds in infrastructure capital budgets go unspent within the budget cycle, mainly in the roads sector. Underlying reasons include delays in project planning, procurement, and implementation. An overhaul of the public investment framework is needed to address this problem.

Long preparation and delivery times and improper planning can lead to significant cost overruns. Many funded integration projects take well over 10 years from inception to delivery, and cost overruns are common. Recognizing these issues, Africa could learn from the European example, where European countries are deploying increasingly sound procurement and management methodologies to reduce time and cost overruns. Donor support can reduce cost overruns and delays by financing studies according to international best standards and ensuring governments have the necessary financial and human resources to see through project preparation and implementation.

### 2.4.3 Utilities perform poorly

These inefficiencies take the form of abnormally high distribution losses and unacceptably low revenue collection. These inefficiencies can be reduced through governance and management reforms and through greater private sector involvement in service provision.

Effective project management is essential to limit risk and cost overruns and streamline delivery, though currently too much emphasis is placed on oversight and control. Large capital projects are complex, require a great deal of experience to manage successfully, and rely on having the right talent in place at the right time.

Weak contractor performance is a systemic problem in a number of infrastructure projects. The result is often implementation delays and cost overruns. Contract incentives, and penalties, need to be carefully considered during commercial negotiations so that the delivery of the total project is the key output, rather than the completion of isolated parts. If incentives drive the latter, then fragmented and delayed delivery is likely to be the outcome. But it needs to be recognized that this is a common problem with infrastructure procurement across the globe and despite considerable research and experimentation, solutions remain elusive.

## 2.4.4 Infrastructure is not maintained

Neglect of road maintenance, has resulted to be a pervasive problem but represents a false economy, imposing substantial costs on road users and leading to higher costs of eventual asset rehabilitation. It is estimated that millions of dollars a year could be saved through adequate preventative maintenance of road networks.

## 2.4.5 Lack of competition

It implies that the benefits and rents from new infrastructure can be diverted. This can take many forms including unsolicited proposals for infrastructure development often leading to high development costs. Along transport corridors and at ports, investments in physical infrastructure are often not matched by lower prices, suggesting rent capture.

Insufficient legal case history add to the challenges, especially for projects that span different legal systems. Use of international arbitration tribunals and reliance on expert opinions are considered best practice in project finance, but these principles are not always recognized in regional dialogue and coordination in recent years. Groups of countries go forward on common objectives, but each country or subset of the group moves as its own pace, depending on how fast it can implement the chosen strategy. However, cooperation frameworks are not fully incorporated into legislation or ratified by parliament at national levels.

While there has been an increased focus on regional infrastructure projects, delivering these large and complex projects has proven a challenge for developed and developing countries alike.

## 2.4.6 Current tariffs do not cover cost

According to Robinson that each dollar saved on required road maintenance increases vehicle operating costs by up to US$10 over the life of the road. Further, the cost of rehabilitation or reconstruction can also be up to 20 times more expensive than the cost of sustained maintenance over the life of the road. Nevertheless, despite the growing awareness that maintenance is necessary for the optimal performance of road infrastructure, maintenance has not always received the attention it deserves. This has largely been attributable to inadequate financing and deficiencies in the management of the road sub-sector. The road sub-sector has not always been managed as part of the market economy but usually as a social service.

Expenditures for maintaining roads have usually come from general revenues and are the first to be cut during difficult periods. Zietlow and Bull (2009) indicated that experience from nearly all developing countries and most developed countries show that it is virtually impossible to secure adequate and stable flow of funds for road maintenance through general government budget financing procedures, especially if allocations depend on the annual political budget debate. Heggie (2010) estimates that generally less than half of the required funds to prevent further deterioration of the road networks in Sub-Sahara Africa was being made available during the 1980s. The result was that substantial portions of the road networks were in poor condition. The consequence of this was that vehicle operating costs were high and travel times longer. The lack of adequate funds, more often than not, was exacerbated by inadequate institutional frameworks within which roads were managed.

According to Ryan. D (2011) many countries have adopted additional road funding and financing measures, but they are not sufficient to cover the needs of their operations and obligations. Shifts in funding available to counties for their road and bridge projects coupled with state imposed limitations on county traditional revenue streams forced counties to find new funding and financing solutions for transportation. Sometimes, residents are supportive of county funding initiatives for transportation, because they see the tangible results of the funding. Even with all these local efforts, many states have a hard time keeping up with the funding needs of their road and bridge systems.

## 2.5 Controls over Policy Implementation

Anne Balcerac de Richecour and Ian G. Heggie (2008) suggested that when responsibility for road financing is delegated to a road fund, the managers of the road fund need to have clear objectives against which they and their constituents can evaluate their performance. There are four major areas where clear objectives are required:

• Is the road fund a bank account managed by the existing road agencies, or is it a separate administrative body?

• Are the funds used to finance routine maintenance, periodic maintenance, new investment, all road expenditures, or a sub-set of such expenditures?

The road funds should either have: (i) bank accounts managed by one road agency (ii) separate bank accounts managed by several different road agencies; or (iii) a separate administrative body set up specifically to manage the funds. In the first two cases, the road funds are simply bank accounts controlled by the individual road agencies. In the third case, the road fund is a separate legal entity governed by specific legal provisions. It is generally managed by a board, has its own staff, and is required to keep accounts and publish regular reports. The road funds are thus financing mechanisms, not executing agencies. Their function is confined to channeling funds into a bank account held either at the central bank or at a commercial bank. Planning and programming of road works is generally carried out under the guidance of the Ministry responsible for roads while execution of road works is invariably carried out by specialized road agencies.

### 2.5.1 Bank Account Managed by One Road Agency

When one road agency is responsible for managing an entire road network, the road fund may be managed by the same road agency. However, when the road fund is managed by the same organization which manages the road network, management tends to become pre-occupied with the immediate day-to-day management of the road network, and management of the road fund receives insufficient attention.

### 2.5.2 Bank Accounts Managed by Several Road Agencies

When several road agencies are entitled to draw from a road fund, the revenues may either be split at the source and managed separately by each road agency, or managed by one of the road

agencies. However, the management of the road fund by one of these agencies creates obvious conflicts of interest. Some of these conflicts can be resolved by splitting the revenues at source, paying them into separate bank accounts and leaving the separate road agencies to manage their own allocations. However, unless the parent ministry has a consistent way of dividing the revenues between the different road agencies, this procedure may result in continual arguments.

**2.5.3 Bank Accounts Managed by a Separate Administrative Body**

To avoid the above problems separate administrative bodies should be set up to manage their road funds. For example in Benin, each road fund was set up which is a type of public agency which enjoys more commercial freedom than a regular public enterprise. Although it doesn't work particularly well, the advantage of such an arrangement is that the road fund has its own staff and is able to manage its affairs along regular commercial lines. Austria and Hungary have created roads board to manage the road fund. The arrangement in Austria appears to be working quite well, while those in Hungary, have unfortunately resulted in creation of large, expensive agencies with high costs and vague responsibilities. Separate road fund administrations need to be small, efficient organizations with clear terms of reference, to ensure that administrative costs are kept to a minimum.

N. Gananadha (2009) also summarised systems and procedures over policy implementation to ensure total transparency and accountability in the management of the road fund. This included the following: -

(i) System for receipt of money

(ii) Banking system

(iii) Internal control system

(iv) Auditing system - financial audit

(v) Technical audit system - appointment of Consultants at every level of disbursement of fund.

(vi) Reporting system

(vii) Information dissemination system

**2.6 The Best Practice in the Road Fund Policy Implementation**

According to Luisa. G (2011)When the revenues available to the road sector are significantly less than the amount required to maintain the road network in a stable long-term condition and to undertake justified improvements the main road agency should prepare an explicit long-term financing plan showing the size of the financing gap and suggesting how it might be bridged.

Among other things, the financing plan should consider the scope for:

(i) getting better use out of existing resources by, for example, contracting out more design and implementation work to the private sector (or exposing in-house work to competition from outside contractors);

(ii) increasing revenue mobilization by simplifying road user taxes and charges, restructuring them and improving revenue administration to reduce avoidance, evasion and leakage and;

(iii)allocating additional revenues from the government's consolidated budget. In the case of the financing plan needs to identify where the additional revenues might come from and at what cost whether by taking funds away from other sectors and or raising clearly identified taxes and charges.

However Eduardo Soares (2011) in trying to come up with the best practice that can be implemented in road funding, the information below show different road funding policies used in different countries.

In Brazil, the government administers a federal transportation system, which is implemented through federal agencies. Regardless of the type of administration, the federal government is authorized to apply financial resources to the system. In 2001, a new federal agency subordinated to the Ministry of Transportation was created to implement the policies formulated for administering the infrastructure of the federal transportation system, including the operation, maintenance, servicing or replacement, adjustment of capacity, and expansion of the infrastructure through the building of new roads and terminals. A federal tax levied on the import and sale of oil, natural gas, ethanol fuel and their derivatives to finance transportation infrastructure programs. 29% of the collected proceeds are obligated to the financing of transportation infrastructure programs. The states may collect an annual vehicle licensing fee which has a fixed value for each vehicle category determined by each state. In addition, each

state may impose a vehicle property tax, with a rate up to 4%. Brazil is not contemplating the enactment of a vehicle-miles-traveled tax.

All Australian states and territories require an annual vehicle registration fee to be paid in order to use a vehicle on public roads; the cost of which varies from state to state and is dependent on the type of vehicle. The fee is colloquially known as rego.

In Belgium passenger cars pay a registration fee based on the engine displacement and power output digressive towards 2014 (66% in 2012, 33% in 2013, 0% in 2014) and environmental criteria such as carbon dioxide g/km output increasingly towards 2014. The more $CO_2$ g/km the car produces, the higher the fee will be. Every year, the plate number owner has to pay the annual road tax contribution. This tax is based on the engine displacement. Due to $CO_2$ based regulations, diesel cars with above average displacement are favoured, and petrol cars with bigger displacements are put at a disadvantage. A supplementary annual fee has to be paid for cars that run on LPG/CNG to compensate financial loss for the state due to the absence of excise at the pump.

In France, the road tax was abolished for private vehicles in 2001 and was replaced by a tax on toll road operators at a rate of €6.85 per 1000 km travelled. In addition a tax is levied on vehicles registered to companies. Since 2006 the tax is levied according to carbon dioxide emissions ranging from 2 euros per gram to 19 euros per gram.

In Germany, the motor vehicle tax is an annual tax on all vehicles. It ranges from 5 euro per 100cc to 25 euro per 100cc for petrol engines and 13 euros to 37 euros for diesel engines. Vehicles first registered before June 30, 2009 are taxed according to engine displacement, whereas vehicles which were registered after that date are taxed solely based on $CO_2$ emission in grams per km (g $CO_2$/km).

In Hong Kong, the license fee is according to the category of passenger cars, goods vehicles, taxis, etc. of the vehicle first. Then, for passenger cars known as private cars, it is calculated by the engine size. The lowest tax band is under 1500cc, then the tax band changes at 2500cc, 3500cc and 4500cc. Due to this system of license fee, most of 1600cc to 1800cc car models cannot sell well. Most people prefer 1500cc for compact cars. Due to this reason, some

manufacturers provide only the 1500cc version of their compact cars to Hong Kong market such as Toyota Corolla and Nissan Tiida. Both of these two cars only have 1500cc version average.

In Hungary, since 2009 this tax is based on the vehicle's engine performance and the vehicle's age. Before this so-called performance tax, this tax was based on the vehicle's weight and unofficially it was called a weight tax.

In India, road tax is imposed by both the central (customs duty, Central excise, and central sales tax), state government (motor vehicles tax, passengers and goods tax, state VAT, and toll taxes) and local bodies. At the time of purchase of the vehicle, the central excise duty, central sales tax and state VAT are levied at the rates of 10%, 3%, 2% and 12.5% respectively. The motor vehicles tax is calculated on the basis of various factors including engine capacity, seating capacity, unladed weight and cost price.

In Ireland, motor tax is payable as an annual duty subject to exemptions in Ireland. Prior to 2008 the annual tax was levied on the engine size ranging from €199 pa for an engine under 1,000cc to €1,809 for cars with an engine over 3,001 cc. Since July 2008, the tax rates for new private cars are based on the vehicle's carbon dioxide emissions. The tax bands for CO2 emissions range from €170 pa with emissions of 0-80 g to €2,350 pa with emissions over 225g. Commercial vehicles no matter what size engine or co2 is €333 the highest rate is €2456 for passenger vehicles. All Vintage vehicles are €56. An Irish vehicle is known as vintage when it reaches 30 years old.

In Japan, a tax is collected under the Local Tax Act that is paid every May based on the engine's displacement. The tax is determined by whether the vehicle is for business or personal use, then based on the engine's displacement starting with engines below 1000cc, and increasing at 500cc intervals to a top bracket of 6000cc and above. Personal vehicles pay more than vehicles identified as business use. Kei cars (Japanese vehicles with 660cc engines and reduced exterior dimensions) have significant tax merit because its tax is about quarter of 1000cc car.

In Luxembourg, an annual tax is applied to each vehicle. In 2013, the annual tax is e.g. EUR 224 for a BMW 330D 2004 model.

In Mexico, till 2011, the federal government charged an annual vehicle tax named tenencia, depending on the value and other vehicle characteristics. Although the tax was federal, the States

where charging the tax. This tax was created in 1961 and in 2006 represented about 1.6% of the total tax income. In 2012, the vehicle tax became a state matter with some states charging the tax, others charging a partial tax mostly on cars above certain value and others charging no tax.

In the Netherlands, a tax is applied to your vehicle based on its weight and fuel type, and the province. Cars producing less than 50 g/km $CO_2$ and classic cars over 40 years old are exempt from road tax.

In Norway, a registration fee is applied to all new motor vehicles when sold new. The fee is calculated by several variables such as vehicle classification, emissions, vehicle weight and engine power and generally rewards vehicles with smaller engines, low emissions and low weight. This fee can be in the hundreds of thousands Norwegian kroner. In addition, there is an annual road tax applied to motor vehicles, failure of payment will generally lead to license plates being withdrawn. The road tax varies by vehicle classification, as of 2013 for ordinary passenger cars (less than 7 500 kg) it is 2940 Norwegian kroner (with a slightly higher amount, 3425, for diesel cars without DPF - diesel particulate filter).

In Spain two taxes apply to motor vehicles:

a) The registration tax applies at purchase time to the purchase price. It is a national tax and the rate varies from 0% to 14.75% depending on c02 emissions. In some cases regions may fix their own rates.

b) The mechanical vehicle circulation tax is an annual tax. The tax is a municipal tax whose rate varies widely across the country. The tax is calculated according to the Tax horsepower of the vehicle. In Madrid and Barcelona the rates for 2011 ranges from 22 euros to 224 euros.

In the United Kingdom it is a requirement to pay vehicle excise duty, which is paid to the government for a vehicle licence (or tax disc), which must be displayed on most motor vehicles used on public roads. Since 1937 there has been no direct relationship between the tax and government expenditure on public roads. The registered keeper of a vehicle that is not used or kept on public roads must complete a Statutory Off Road Notification (SORN).

USA is the world's largest private owner of toll roads. Recently some Illinois lawmakers have been proposing leasing out the four- leg toll way system under a similar the state could reap

more than $24 billion for road construction. Each state requires an annual registration fee and are also allowed impose a vehicle tax which varies from state to state. For example, in Illinois municipalities have their own annual vehicle registration fee. In Massachusetts, the excise tax is billed separately from registration fees, by the town or city in which the vehicle is registered. The state of New York, on the other hand, charges a tax based on the vehicle's weight, rather than on its value, which is charged at the time of registration renewal. In California and New Hampshire, the registration tax is calculated by the current value of the vehicle. As a result, older and more inexpensive vehicles will have a low registration fee, whereas newer and more expensive vehicles will have fees in the hundreds of dollars. There is also a federal highway use tax for vehicles with gross weights of 55,000 pounds or more, including trucks, truck tractors and buses. Generally, vans, pickup trucks, panel trucks and the like are not subject to this tax.

## 2.7 Summary

This chapter is aimed at exposing literature review on the research topic. It also replicated the studies carried out by other researchers on different road funding policies, policy implementation guidelines, measures taken by personnel to implement such guidelines, challenges over the policy implementation, controls over the policy implementation and the best practice in the road fund policy implementation. Chapter three is on research methodology.

# CHAPTER 3

## RESEACH METHODOLOGY

### 3.0 Introduction

This chapter is centred on the research methodology which comprises of research designs population, sampling, research instruments, types of questions, data validation, data analysis and presentation. The thrust of this synopsis is to justify the research design and the type of sampling to be employed by citing out their advantages and disadvantages. It seeks to identify and justify the research instruments that the author will use in conducting the data collection process for the research. The methodology will provide the plan of the study. A summary of the chapter concludes the section.

**3.1 Research Design**

According to Bickle (2009) research design is the deliberately planned arrangement of conditions for analysis and collection of data in a manner that aims to combine relevance to the research purpose with economy for procedure. Research designs refers to the overall strategy that can be used to integrate the difference components of the study in a coherent and logical way, thereby, ensuring that the research problem will effectively address. It constitutes the blueprint for the collection, measurement and analysis of data. The function of a research design is to ensure that the evidence obtained enables you to effectively address the research problem as unambiguously as possible. Rajashekar (2013) it should indicate the various approaches to be used in solving the research problem, sources and information related to the problem and, time frame and the cost budget. Essentially, the research design creates the foundation of the entire research work. Latha (2004) argued that there various types of research designs but they may be broadly put in three categories which are explanatory, descriptive and hypothesis-testing research designs.

**3.1.1 Explanatory research design**

It also referred to as formulative research design. It formulates the research problem for an in-depth or precise investigation from an operational aspect. According to Bryman (2008) in this type of design, a vague problem is selected and understood and is then followed by an exploratory research to find a new hypothesis and then carrying out conclusion research decision to finally get new ideas. Neville (2007) suggested that research projects that are exploratory or explanatory in nature are designed to discover the 'why', that is, reasons or motives for things. It is suitable for research that tries to understand the relationships between variables, and where you need to probe, explore or seek for new insights into a subject. Explained below are some of the advantages of the explanatory design.

Explanatory research design can be achieved through individual surveys and referring to secondary sources of data etc. secondary data plays an important role in such research designs.

Also, when reviewing related literature, following or surveying people having practical experience in the problem related field, it is the most common research method used by an explanatory researcher.

### 3.1.2 Descriptive research design

It is directed at making careful observations and detailed documentation of a phenomenon of interest. According to Thakur (2003) a descriptive research design aims to get accurate description of the community, institution or events in a manner that involves minimum bias and there is maximum reliability. Bhattacherjee (2012) added that it is directed at making careful observations and detailed documentation of a phenomenon of interest. Listed below are of advantages and disadvantages related to descriptive research design.

### 3.1.3 Advantages of descriptive research design

Data can include case studies, observation or surveys and give several angles on the information. Examples within descriptive research surveys can give statistical information about an event as well as give an idea about how people experienced the event.

The study does not involve certain variable to be studied, it provide a lot of information. It is useful in identifying further areas of study of research. It is very useful in studying abstract ideas like customer satisfaction etc. where it is not possible to develop models.

The study is also very flexible, the researcher select the method depending on what the researcher expect to find rather than selecting the method and then studying.

This type of research is that the researcher cannot identify the cause behind a phenomenon, the researcher can just describe and the observations.

### 3.1.4 Disadvantages of descriptive research design

Confidentially is a big disadvantage of descriptive research. Subjects to the researcher may not always be truthful and instead will give answer that feel that they feel that the researcher wants to hear. In interviews, participants may also refuse to answer any question that they question are too personal or difficult.

Descriptive research also carried with it an observer's paradox, if a participant knows that someone is observing them, they may change the way that they act.

Subjectivity and error also play a disadvantageous role in descriptive research. Questions presented by a researcher are predetermined and prescriptive, while studies can contain errors. A

researcher may choose what information to use and ignore data that does not conform to their research

### 3.1.5 Justification of choice of research methodology

The descriptive research method can be perceived to be ideal because of its ability to yield conclusive results and findings in a descriptive manner. This method enabled the research to get conclusive information about how the best practice in road funding policy can be implemented.

### 3.2 Population

Bhattacherjee (2012) defines population as all people or items (unit of analysis) with the characteristics that one wishes to study. The unit of analysis may be a person, group, organization, country, object, or any other entity that you wish to draw scientific inferences about.

### 3.3 Sampling

According to Bhattacherjee (2012) sampling is defined as the statistical process of selecting a subset which is referred to as "sample" of a population of interest for purposes of making observations and statistical inferences about that population. Kothari (2004:153) said, "Sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a judgment or inference about the aggregate or totality is made. In other words, it is the process of obtaining information about an entire population by examining only a part of it."

Bhattacherjee (2012) went on to give merits of sampling when carrying out a research. Sampling saves time and money. Usually a sample study is less expensive than a census study and produces results at a relatively faster speed. Sampling enables more accurate measurements for a sample study which is generally conducted by trained and experienced investigators. Also, sampling remains the only way when population contains infinitely many members and sampling remains the only choice when a test involves the destruction of the item under study. Sampling usually enables to estimate the sampling errors and, thus, assists in obtaining information concerning some characteristic of the population.

### 3.3.1 Systematic sampling

According to Bhattacherjee (2012) systematic sampling relies on arranging the study population according to some ordering scheme and then selecting elements at regular intervals through that ordered list.

Advantages associated with systematic sampling were stated by Robert (2011) as fast and convenient thereby saving time and costs, simple to use, periodicity, averaging samples together as well as eliminating bias. However, disadvantages of systematic sampling are that there is the possibility of losing vital information from the population, it may not be possible to select the required sample size if the population is too small and it may not be good for periodic data.

### 3.3.2 Stratified random sampling

Bhattacherjee (2012) further explained stratified sampling that where the population embraces a number of distinct categories, the frame can be organized by these categories into separate "strata." Each stratum is then sampled as an independent sub-population, out of which individual elements can be randomly selected. There are several potential benefits to stratified sampling.

First, dividing the population into distinct, independent strata can enable researchers to draw inferences about specific subgroups that may be lost in a more generalized random sample.

Second, utilizing a stratified sampling method can lead to more efficient statistical estimates, provided that strata are selected based upon relevance to the criterion in question, instead of availability of the samples.

Third, it is sometimes the case that data are more readily available for individual, pre-existing strata within a population than for the overall population; in such cases, using a stratified sampling approach may be more convenient than aggregating data across groups.

Finally, since each stratum is treated as an independent population, different sampling approaches can be applied to different strata, potentially enabling researchers to use the approach best suited or most cost-effective for each identified subgroup within the population.

Karuna (2012) justified stratified random sampling that it is more representative and beneficial against the bias of deliberate selection. He further mentioned that this sampling method is less expensive, has administrative convenience, provides greater precision and is most suitable for

skewed universe. Despite the above cited advantages, Shoo (2005) disagreed that stratified sampling needs more attention which result in more time being consumed. Moreover it is complicated and expensive.

### 3.3.3 Clustered sampling

Kothari (2004) explained that clustered sampling technique is used when the total area of interest happens to be a big one, the only convenient way in which a sample can be taken is to divide the area into a number of smaller non-overlapping areas and then to randomly select a number of these smaller areas usually called clusters. Thus in cluster sampling the total population is divided into a number of relatively small subdivisions which are themselves clusters of still smaller units and then some of these clusters are randomly selected for inclusion in the overall sample.

In reference to information obtained from (www.hawaii.edu2014/08/31 17:51) cluster sampling is considered to be easy and convenient. However with the possibility that members of units are different from one another, decreases the technique's effectiveness. Kothari (2004) added that this sampling technique with no doubt, reduces cost by concentrating surveys in selected clusters. Cluster sampling is used only because of the economic advantage it possesses; estimates based on cluster samples are usually more reliable per unit cost.

### 3.3.4 Justification of using stratified random sampling

Since the research requires information from different stakeholders, the researcher used the stratified random technique of sampling. This allows different representatives of stakeholders to be put in groups, each also known as a strata and from each group an individual will be randomly picked. These representatives of sub groups will be subject to either interview or questionnaires.

### 3.3.4 Sample size

According to Rajasekar (2013) the size of the sample refers to the number of items to be chosen from the universe to form a sample. The sample size must be optimum. An optimum sample may be defined as the one that satisfies the requirements of representativeness, flexibility, efficiency and reliability. When deciding the size of sample, a researcher should determine the desired precision and the acceptable confidence

The research used a total sample size of 40 made up of 10 top and middle level managers from various departments and also 30 employees all from different departments. The sample size was based on the relevant subgroup of the population and proportional allocation of the subgroups was done to get a true and fair presentation of the population. The sample size is illustrated in the table below.

**Table 3.1: The Sample size**

| DEPARTMENT | POPULATION | SAMPLE SIZE |
|---|---|---|
| Policy and Planning | 10 | 10 |
| Finance and Administration | 15 | 10 |
| Human Resources | 15 | 10 |
| Roads | 20 | 10 |
| **Total** | **60** | **40** |

*Source: Primary data*

## 3.4 Data Sources

This research was based on both primary and secondary data sources in order to gather information that is valuable and meaningful.

### 3.4.1 Primary Data

According to Taylor (1996) primary data sources includes self-administered questionnaires and personal interviews. Primary data was used because the data was very useful and direct, thus meeting the exact needs of this work, data was also up to date and very recent thus making the research more objective, the data was also presumably reliable to use, as it was coming directly from the various parties involved and also due to the nature of the data obtained, which is first hand detail. However, the primary data method of collection was very costly. It took quite a lot of financial input in order to fairly distribute the questionnaires, conduct interviews as well as obtain feedback from the various respondents.

### 3.4.2 Secondary Data

The secondary data sources included published sources like textbooks, Internet, journals, business magazines, newspapers, published financial statements. These sources were useful in providing important information used during the process of designing the questionnaires for the

survey. Although secondary data in some cases would not give enough detail and fail to meet the exact requirements of the research, it was less expensive to use than primary data collection. Secondary data was also used because less time and effort was expended in analysing and interpreting data that had been compiled already and due to time constraints, the researcher required some data quickly and secondary data was the best method to use. Taylor (1996) suggested that the use of document reviews saves administrative time and costs and thus time and a lot of money was saved through the use of secondary data.

However the information was not designed to meet the project's needs and some of the information was obsolete given the drastic changes that take place in the financial sector on a daily basis. There was also no control over the procedure that was used for collecting, analysing and interpreting the data, thus accuracy of the secondary data was subjective

## 3.5 Research Instruments

In the quest to gather relevant and useful data about the research topic the researcher conducted primary and secondary research.

### 3.5.1 Questionnaires

According to Tuckman (1978: 196) a questionnaire is, "… a document containing questions designed to solicit information for analysis." This suggests that through the use of questions a researcher may be able to collect data from the subjects of that particular research for analysis. Neville (2007) supported that questionnaires facilitate the collection of data by asking all, or a sample of people, to respond to the same questions. Therefore in this research both closed and open-ended questions were included in the questionnaire. Leedy (1989) and Robson (1995) are of the opinion that no survey can be done properly and produce good results without the use of questionnaires. This is because questionnaires are flexible enough to allow the respondents to answer them at any time they are free and relaxed.

### 3.5.1.1 Advantages of using questionnaires

Questionnaires are time conscious as a number of people can undertake to answer them at the same time. This is achieved through answering questions that are provided written on paper by filling in the space provided or by ticking on response expected.

Questionnaires provide factual information, opinions and attitudes of the respondents.

Use of questionnaires enables the researcher to obtain high quality of data because the respondents have enough time to read and understand the questions before answering them.

Easy to convert data solicited from questionnaires into useful information.

### 3.5.1.2 Disadvantages of using questionnaires

Although questionnaires are of great importance to this research, it is also imperative to note some of the pitfalls inherent in the use of questionnaires.

Some research questions are sensitive and confidential in nature to some respondents

The respondents may not return some questionnaires to the researcher.

The questionnaire may be regarded as a rigid instrument because it does not leave room for clarification of some of the items that may be clear to the respondents. The researcher is not given a chance to probe on some of the interesting or unclear responses that are given in the questionnaires.

### 3.5.2 Types of Questions

There are commonly two different types of questions from which questionnaires are formulated. These are open-ended and closed questions. In most cases they are used separately but they can also be used both at the same time. An illustration was given by Kumar (2005) using a combination of both. This way it is possible to find out how many people use a service and what they think of the service in the same form.

### 3.5.2.1 Open-ended questions

Open-ended questions allow respondents to answer in their own words. Neville (2007) added that an open questions is a question that is posed, but space is left for the respondent's own answer. Kumar (2005) further explained that questionnaires of such a type does not contain boxes to tick but instead leaves a blank section for the response to write in an answer. For example an open-ended question might be used to find out what people think about a service. As there are no standard answers to these questions, data analysis is more complex. As it is opinions which are sought rather than numbers, fewer questionnaires need to be distributed.

### 3.5.2.2 Advantages of open-ended questions

Allow respondents to include more information including their feelings, their attitudes and understanding of the research subject and this ultimately allows researchers to better access the respondents' true feelings on the research matter.

They cut down on two types of response error; respondents are not likely to forget the answers they choose if they are allowed to answer freely.

### 3.5.2.3 Disadvantages of open-ended questions

If these questions are analyzed quantitatively, the qualitative information is reduced to coding and answers tend to lose their original meaning i.e. they lack that statistical evidence required to make research conclusions.

### 3.5.3 Closed questions

According to Kumar and Ranjit (2005) closed ended questions include all possible answers, prewritten response categories, and respondents are asked to choose among them. Neville (2007) suggested that closed questions are usually used where a limited number of alternative responses to the set question are provided. For example multiple choice questions, scale questions - type of questions used to generate statistics in quantitative research. As these follow a set format, and most responses can be entered easily into a computer for ease of analysis, greater numbers can be distributed. An illustration given by Kumar (2005) is that a closed questionnaire might be used to find out how many people use a service

### 3.5.3.1 Advantages of closed-ended questions

According to Kothari (2004) closed-ended questions are more easily analyzed. Every answer can be given a number or value so that a statistical interpretation can be assessed. Closed-ended questions are also better suited for computer analysis.

Closed-ended questions take less time from the interviewer, the participant and the researcher in large scale surveys hence is a less expensive survey method.

## 3.5.3.2 Disadvantages of closed-ended questions

Because of the simplicity and limit of the answers, closed questions may not offer the respondents choices that actually reflect their real feelings.

There is no room for the respondent to explain that they do not understand the question or do not have an opinion on the issue.

## 3.5.4 Likert Scale

According to information from http://www.wikipedia.org (2014-08-31 17:56) a likert scale is a psychometric scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research, such that the term is often used interchangeably with rating scale, or more accurately the Likert-type scale, even though the two are not synonymous. An illustration of a likert scale is given below:

**Table 3.2: Likert Scale**

| ITEM | Strongly Agree | Agree | Undecided | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| POINTS | 1 | 2 | 3 | 4 | 5 |

*Source: Secondary data*

## 3.5.4.1 Advantages of likert scale

It is easy to understand since it uses a universal method of data collection.

Working with quantitative data, it is easy to draw conclusions, reports, results and graphs from the responses.

The respondents are not forced to express an either or opinion, rather allowing them to be neutral should they so choose.

## 3.5.4.2 Disadvantages of likert scale

Respondents usually have a tendency of automatically avoiding 'extremes', therefore answering

There is a social desirability bias since respondents may agree with statements as presented to portray themselves or their organizations in a more favorable way.

## 3.6 Interviews

Interviews are a more personalized form of data collection method than questionnaires, and are conducted using the same research protocol as questionnaire surveys, that is, a standardized set of questions.

According to Bhattacherjee (2012) there three main types of interviews. The most typical form of interview is personal or face-to-face interview, where the interviewer works directly with the respondent to ask questions and record their responses. Personal interviews may be conducted at the respondent's home or office location. This approach may even be favored by some respondents, while others may feel uncomfortable in allowing a stranger in their homes. However, skilled interviewers can persuade respondents to cooperate, dramatically improving response rates.

A variation of the personal interview is a group interview, also called focus group. In this technique, a small group of respondents, usually 6-10 respondents, are interviewed together in a common location. The interviewer is essentially a facilitator who lead the discussion, and ensure that everyone has an opportunity to respond. Focus groups allow deeper examination of complex issues, it triggers people to think of other ideas when they hear other responding. However, focus group discussion may be dominated by a dominant personality, and some individuals may be reluctant to voice their opinions in front of their peers or superiors, especially while dealing with a sensitive issue such as employee underperformance or office politics.

A third type of interview survey is telephone interviews. In this technique, interviewers contact potential respondents over the phone, typically based on a random selection of people from a telephone directory, to ask a standard set of survey questions. A more recent and technologically advanced approach is computer-assisted telephone interviewing (CATI), increasing being used by academic, government, and commercial survey researchers, where the interviewer is a telephone operator, who is guided through the interview process by a computer program displaying instructions and questions to be asked on a computer screen. The system also selects respondents randomly using a random digit dialing.

### 3.6.1 Advantages of using interviews

The interviewer has the opportunity to clarify any issues raised by the respondent or ask probing or follow-up questions.

The interview provides a platform for the researcher to meet the respondents especially the corporate executives who might be reluctant to fill in the questionnaires because they may feel that it's inappropriate to provide sensitive and confidential information to someone they have never met before.

The interviews manage to establish a friendly environment between the researcher and the interviewer. This makes a lot of information to be divulged even in areas which the researcher might have considered of no specific significance to the study but very helpful to the results of the study.

### 3.6.2 Disadvantages of using interviews

Interviews are considered to be time consuming and resource-intensive.

Special interviewing skills are needed on part of the interviewer

Face to face interviews have the potential to introduce bias into the study because the interviewee may in some instances decide to tell the interviewer what he or she thinks the interviewer want to hear.

There is no uniformity in the wording because of the adjustments in questioning hence the results cannot be compared.

Respondents may want to be interviewed but might prefer answering questionnaires as there is great anonymity is answering questionnaires than interview

### 3.7 Data Validation

Borg (1975) defines validity as the degree to which a test measures what it purports to measure. An analysis of instruments used was carried out after the research to ensure that the instruments used to collect data were valid to ensure that they provided accurate results. The instruments were reliable which implies that they were free from bias and error. The aim of the analysis is to ensure that the questions asked are properly answered and do not give bias to the research

results. The questions were valid and reliable while the interviews gave an atmosphere for a high response rate and for clear clarifications and explanations.

**3.8 Data Analysis**

The analysis involves arranging and structuring of data to produce information. The qualitative data from the research was processed in order to discover what could be concluded from the information gathered through literature review, field surveys and from other secondary sources.

Data summarization was used in this study. The data from the questionnaires was analysed, using qualitative and statistical analysis basically to come out with percentages of respondents with similar answers. Interviews and observations were also analysed and explained. Open ended questions were narratively explained. This was done to ensure all the data gathered was easy to manage.

**3.9 Data Presentation**

Data was presented from the findings obtained through the use of questionnaires, interviews and secondary sources of data. The data was mostly presented in qualitative form where possible. For easier visual understandings some results were presented graphically others in the form table and, pie charts. This has been undertaken to necessitate easier interpretation of the results by various users of the information on the assessment of the Zinara road fund.

**3. 10 Summary**

In this chapter, the researcher focused on research methodology citing the different research designs that can be used. The target population was identified, and the different methods of sampling explained. These sampling methods were the basis to come up with the sample size as cited. Different sources of data were also covered in this chapter. Moreover, the research instruments used are explained and justified, as well as how they were administered. The next chapter focuses on the presentation of data, description, analysis and discussion of the findings.

# CHAPTER 4

## DATA PRESENTATION AND ANALYSIS

### 4.0 Introduction

This chapter deals with the presentation, interpretation and analysis of data findings. The discussions on these are the basis on which conclusions and recommendations are to be made. This chapter came in response to the research objective in chapter one which is of assessing the Zinara Road Fund at Ministry of Transport and Infrastructural Development head office.

### 4.1 Response Rate

According to Sanders et al (2007) the actual response rate can be calculated using the formula:

$$\frac{\text{The number of respondents}}{\text{The total number of sample size}} \quad * \quad 100\%$$

### 4.1.1 Questionnaires Response Rate

A total of 40 questionnaires were distributed to the top management and other employees from which 32 questionnaires were completed, that is 32/40 (80%) and 8 of them were not returned, which is 8/40 (20%). The response rate of the survey is summarized in table 4.1below:

**Table 4.1 Questionnaire Response Rate**

| Category of Respondents | Targeted Respondents | Actual Respondents | Response rate (%) | Defaulters (%) | Total (%) |
|---|---|---|---|---|---|
| Policy and Planning | 10 | 8 | 80 | 20 | **100** |
| Finance and Administration | 10 | 6 | 60 | 40 | **100** |
| Human Resources | 10 | 8 | 80 | 20 | **100** |
| Roads | 10 | 10 | 100 | - | **100** |
| **Total** | **40** | **32** | **80** | **20** | **100** |

**4.1.2 Interview Response Rate**

A total of five interviews were scheduled to be undertaken targeting only the top management. The research decided to use personal interviews in order to obtain clarity in some areas. The research managed to interview the 5 officers. This represented a response rate of 100 %. The response rate of 100% was quite significant enough to justify the study and therefore gave credibility to the findings that were presented and discussed hereafter.

**4.2 Presentation of the respondents' demographic data.**

**Table 4.2 Respondents' gender.**

| GENDER | No. of Respondents | Percentage Response (%) |
|--------|--------------------|-----------------------|
| Males | 20 | 62.5 |
| Females | 12 | 37.5 |
| **Total** | **32** | **100** |

*Source: Primary Data*

Above findings reflects that 20/32 (62.5%) were males and 12/32 (37.5%) were females. Out of this data, 12/32 (37.5%) occupied top management positions and 20/32 (62.5%) are the middle and lower positions of the organisation. This implies that they can comprehend and understand the thrust of the researcher's study.

**Table 4.3 Respondents' experience on current positions**

| Experience in Positions | 1yr | 1-5yrs | 6-10yrs | >10yrs | Total |
|-------------------------|-----|--------|---------|--------|-------|
| Responses | 4 | 24 | 4 | 0 | 32 |
| Percentage Responses (%) | 12.5 | 75 | 12.5 | 0 | 100 |

*Source: Primary Data*

The researcher found that 4/32 (12.5%) have less than I year; 24/32 (75%) are in 1-5 years range; 4/12 (12.5%) are in 6-10 years range and 0/32 (0%) are above 10 years.

On the whole 4/32 (12.5%) have less experience and 30/32 (87.5%) have more experience. The results show that there is reliability on the researcher's findings.

**4.3 Existence of the Road Fund Policy at ZINARA.**

**(i) Presence of the road fund policy at ZINARA.**

**Table 4.4 Existence of the road fund policy at ZINARA.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 32 | 0 | 0 | 0 | 0 | **32** |
| Percentage | 100 | 0 | 0 | 0 | 0 | **100** |

*Source: Primary Data*

Research data given above shows that 32/32 (100%) strongly agreed; 0/32 (0%) agreed; 0/32 (0%); 0/32 (0%) uncertain; 0/32 (0%); 0/32 (0%) disagree and 0/32 (0%) strongly disagreed.

On aggregation 32/32 (100%) agreed whilst 0/32 (0%) disagreed.

Results show that there is agreement on the existence of the road fund policy at ZINARA.

**(ii) Formal documentation of the road fund policy.**

**Table 4.5 Documentation of the road fund policy**

| Response | Strongly Agreed | Agreed | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 28 | 4 | 0 | 0 | 0 | **32** |
| Percentage | 87.5 | 12.5 | 0 | 0 | 0 | **100** |

*Source: Primary Data*

From the study findings, the researcher found that 28/32 (87.5%) strongly agreed; 4/32 (12.5%) agreed; 0/32 (0%); 0/32 (0%) uncertain; 0/32 (0%); 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed.

In total 32/32 (100%) agreed whereas 0/32 disagreed

Findings indicate that there is a consensus on the formal documentation of the road fund policy.

**(iii)Communication of the road fund policy to road-users and other stakeholders**

**Table 4.6 Communication to road users and other stakeholders.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 8 | 8 | 0 | 8 | 8 | **32** |
| Percentage | 25 | 25 | 0 | 25 | 25 | **100** |

*Source: Primary Data*

Findings above indicate that 8/32 (25%) strongly agreed; 8/32 (25%) agreed; 0/12 (0%) uncertain; 8/32 (0%) disagreed and 8/32 (0%) strongly disagreed.

Generally 16/32 (100%) agreed whilst 16/32 (0%) disagreed.

The results demonstrate that there is an argument that the road fund policy is communicated to management, subordinates and new personnel.

**(iv)Communication of the road fund policy to new personnel.**

**Table 4.7 Road fund policy communication to new personnel.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 8 | 8 | 0 | 8 | 8 | 32 |
| Percentage | 25 | 25 | 0 | 25 | 25 | 100 |

*Source: Primary Data*

The primary data indicate that 8/32 (25%) strongly agreed; 8/32 (25%) agreed; 0/32 (0%) uncertain; 8/32 (0%) disagreed and 8/32 (25%) strongly disagreed on the communication of the policy to new personnel.

Overally 16/32 (100%) agreed whilst 16/32 (50%) disagreed.

The results evince that there is also an argument that the road fund policy is communicated to new personnel.

**(v) Clarification is given to road-users for better understanding on the policy.**

**Table 4.8 Clarification of the road fund policy for better understanding**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Agree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 0 | 8 | 6 | 6 | 12 | **32** |
| Percentage | 0 | 25 | 18.75 | 18.75 | 37.5 | **100** |

The above mentioned data findings can alternatively be presented on a pie chart in fig 4.1.
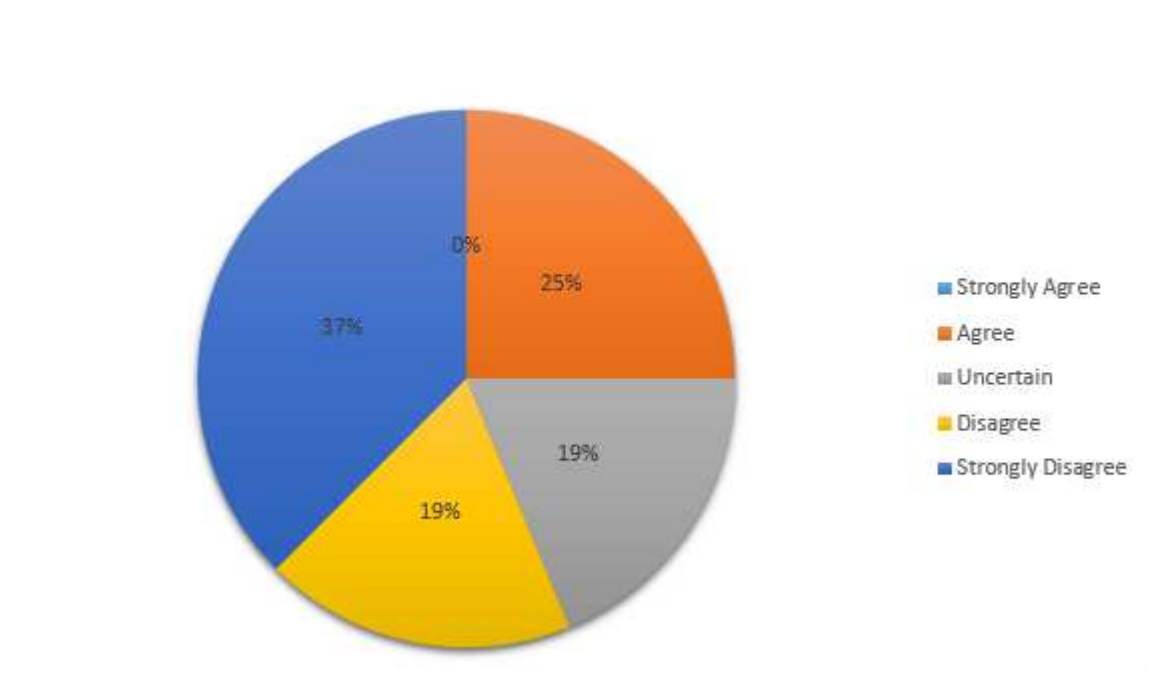


**Fig 4.1 Clarification of road fund policy to employees**

0/32 (0%) strongly agreed; 8/32 (25%) agreed; 6/32 (18.75%) uncertain; 6/32 (18.5%) disagreed and12/32 (37.5%) strongly disagreed.

Altogether 2/12 (17%) agreed whilst 10/12 (83%) disagreed.

The results point that there is disagreement on the clarification of the road fund policy to employees for better understanding.

**4.4 ZINARA Road Fund Policy Implementation Guidelines**

**(i) Presence of road fund policy implementation guidelines.**

**Table 4.9 Existence of road policy implementation guidelines**

| Response | Strongly Agreed | Agreed | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 10 | 10 | 2 | 8 | 2 | **32** |
| Percentage | 31.25 | 31.25 | 6.25 | 25 | 6.25 | **100** |

*Source: Primary Data*

The findings can alternatively be presented using a graph in fig 4.2.
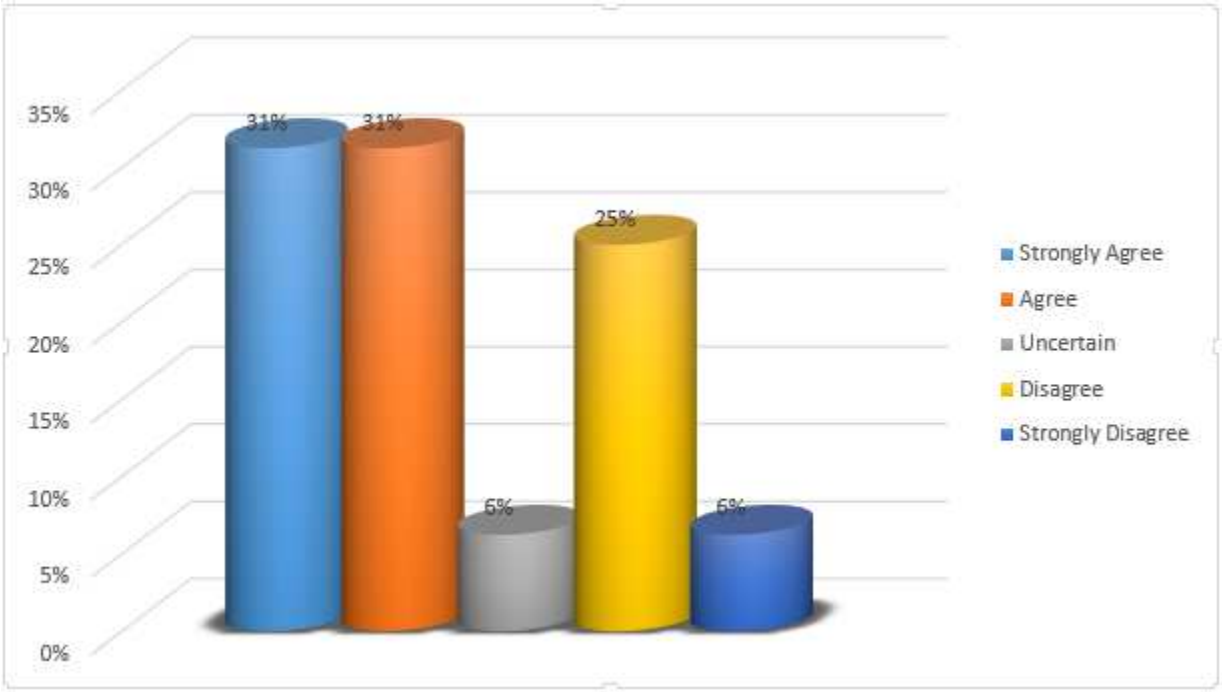


**Fig 4.2 Existence of policy implementation guidelines**

10/32 (31%) strongly agreed on the existence of policy implementation guidelines 10/32 (31%) agreed; 2/32 (6%) uncertain; 8/12 (25%); disagreed and 2/12 (6%) strongly disagreed.

All in all 20/32 (100%) agreed whilst 12/32 (0%) disagreed.

Resultantly, there is agreement on the presence of road fund policy implementation guidelines at ZINARA.

**(ii) Documentation of the road fund policy implementation guidelines**

**Table 4.10 Documentation of the road policy implementation guidelines**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 8 | 8 | 6 | 6 | 4 | **32** |
| Percentage | 25 | 25 | 18.75 | 18.75 | 12.5 | **100** |

*Source: Primary Data*

The findings can alternatively be shown using a graph Fig 4.3.
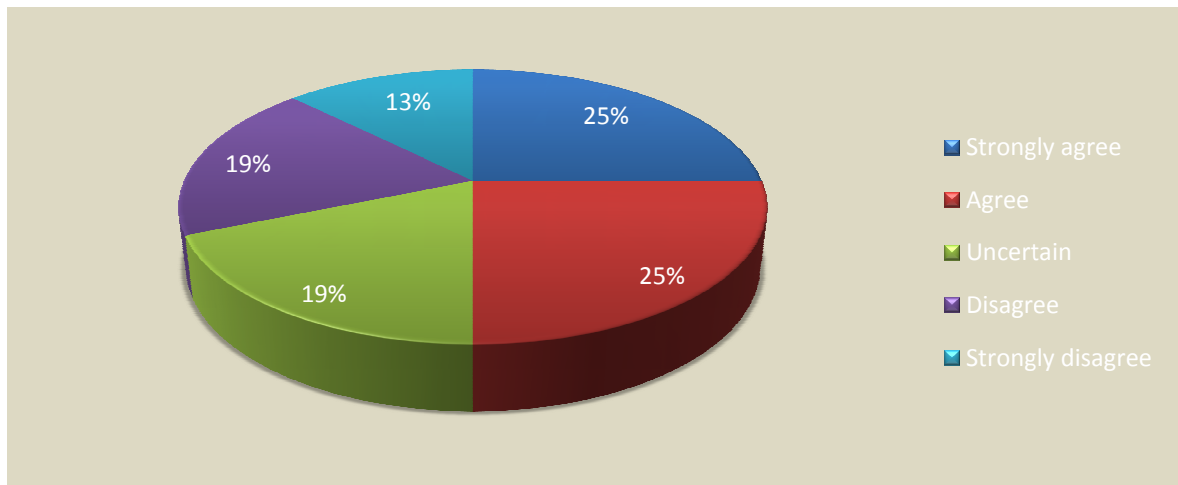


**Fig 4.3 Documentation of the road fund policy implementation guidelines.**

8/32 25%) strongly agreed; 8/32 (25%) agreed; 6/32 (18.75%) uncertain; 6/32 (18.75%) disagreed and 4/32 (12.5%) strongly disagreed.

All in all 50% agrees and 50% disagrees on the documentation of the policy implementation guidelines.

**(iii) Availability of financial usage guidelines on road maintenance programs**

**Table 4.11 Availability of financial usage guidelines for road fund policy implementation**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 0 | 8 | 16 | 8 | **32** |
| Percentage | 0 | 0 | 25 | 50 | 25 | **100** |

*Source: Primary Data*

The research findings in table 4.11 can be graphically presented as follows:
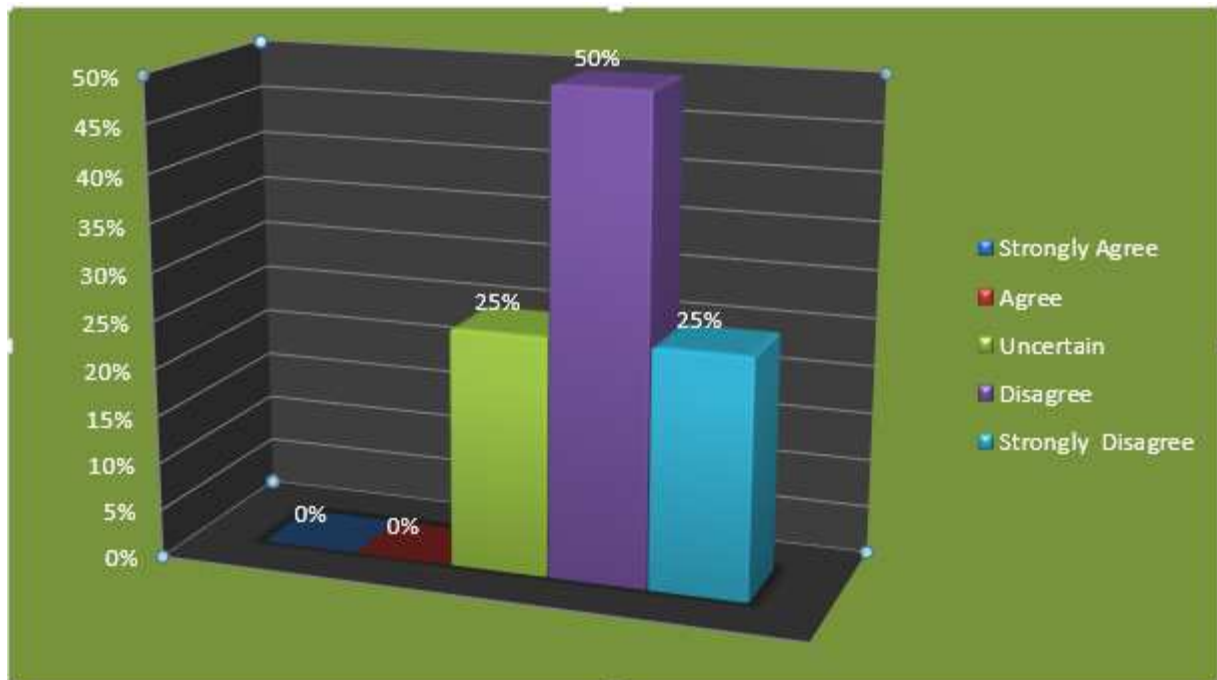
**Fig 4.4 Availability of financial guidelines on the road fund policy implementation**

The researcher found that 0/32 (0%) strongly agreed; 0/32 (0%) agreed; 8/32 (25%) uncertain; 16/12 (50%) disagreed and 8/32 (25%) strongly agreed.

In summary 0/32 (0%) agreed while 32/32 (100%) disagreed.

The outcomes show that there is a disagreement on the readiness of financial guidelines on the road fund policy implementation. Certainly not, are financial usage guidelines are in place for road fund policy implementation at ZINARA.

**(iv)Compliance with policy implementation guidelines**

**Table 4.12 Compliance with road fund policy implementation guidelines.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 4 | 4 | 16 | 8 | **32** |
| Percentage | 0 | 12.5 | 12.5 | 50 | 25 | **100** |

0/32 (0%) strongly agreed; 4/32 (12.5%) agreed; 4/32 (12.5%) uncertain; 16/32 (50%) disagreed and 8/32 (25%) strongly disagreed.

All in all 12.5% agrees and 87.5% disagrees on the compliance with the policy implementation guidelines.

**4.5 Controls over Road Fund Policy Implementation**

**(i) Presence of controls on the road fund policy implementation**

**4.13 Presence of controls in road fund policy implementation**

| Response | Strongly Agreed | Agreed | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 28 | 4 | 0 | 0 | 0 | **32** |
| Percentage | 87.5 | 12.5 | 0 | 0 | 0 | **100** |

The researcher found that 28/32 (87.5%) strongly agreed; 4/32 (8%) agreed; 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed on the presence of controls in the road fund policy implementation.

Overally 32/32 (100%) agreed on which 0/32 (0%) disagreed.

Resultantly there is an agreement on the existence of controls on the road fund policy implementation.

**(ii) Controls over road fund policy are clearly defined as well as responsibility areas**

**Table 4.14 Clarification of controls over the road fund policy.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 4 | 16 | 6 | 6 | 0 | **32** |
| Percentage | 12.5 | 50 | 18.75 | 18.75 | 0 | **100** |

*Source: Primary Data*

On the other hand, the above-mentioned results are clearly demonstrated in fig 4.5
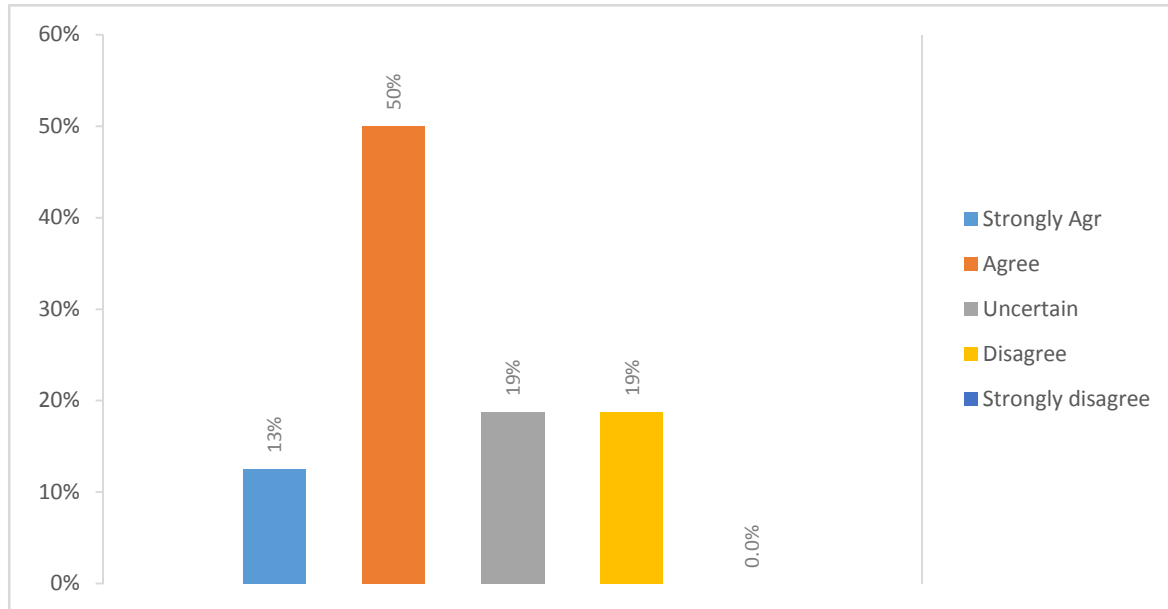


**Fig 4.5 Clarification of controls over the Zinara road fund policy**

From the results, the researcher came up with 4/32 (12.5%) strongly agreeing; 16/32 (50%) agreeing; 6/32 (18.75%) uncertain; 6/32 (18.75%) disagreeing and 0/12 (0%) strongly disagreeing.

All in all 20/32 (62.5%) agreed as 12/32 (37.5%) disagreed.

From the interviews 50% agreed and 50% disagreed.

The results display that there is agreement on the clarification of controls over the road fund policy.

**(iii) Authorization limits on road maintenance expenditure by responsible personnel.**

**Table 4.15 Limits of authorization on road maintenance expenditure.**

| Respondents | Strongly Agreed | Agreed | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 2 | 0 | 2 | 8 | 20 | **32** |
| Percentage | 6.25 | 0 | 6.25 | 25 | 62.5 | **100** |

*Source: Primary Data*

The same results can bepresented clearly on the pie chart in fig 4.6.
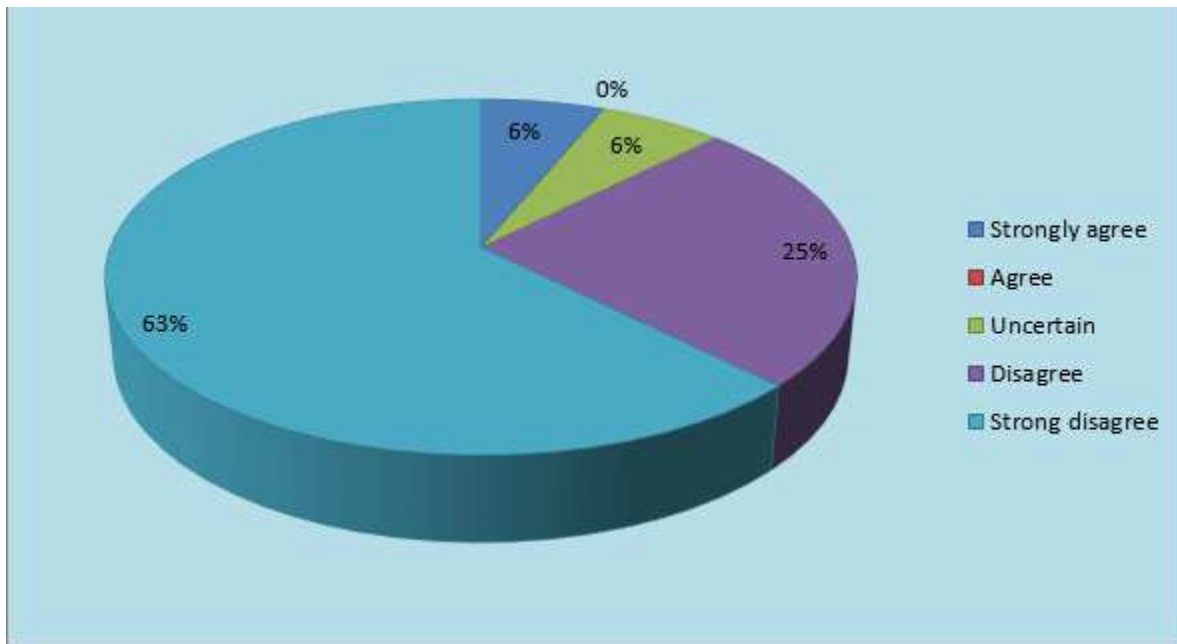
**Fig 4.6 Authorization limits on road maintenance expenditures.**

2/32 (6.5%) strongly agreed; 0/32 (0%) agreed; 2/32 (6.5%) uncertain; 8/32 (25%) disagreed and 20/12 (62.5%) strongly disagreed.

Entirely 2/32 (6.25%) agreed when 30/32 (93.75%) disagreed.

The researcher found that 1/5 (25%) of the interviewees agreed whilst 4/5 (75%) disagreed.

The results point that there is a disagreement on the authorization limits for different road maintenance expenditure levels.

**(iv)Controls are in place over funds available for the road maintenance.**

The table below shows how the respondents perceived on the currently available funds for road maintenance.

**Table 4.16 Controls available over funds available for road maintenance.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| | | | | | | |

| No. of respondents | 2 | 0 | 2 | 8 | 20 | **32** |
|---|---|---|---|---|---|---|
| Percentage | 6.25 | 0 | 6.25 | 25 | 62.5 | **100** |

2/32 (6.5%) strongly agreed; 0/32 (0%) agreed; 2/32 (6.5%) uncertain; 8/32 (25%) disagreed and 20/12 (62.5%) strongly disagreed.

Entirely 2/32 (6.25%) agreed when 30/32 (93.75%) disagreed.

The results point that there is a disagreement on controls over funds available maintenance.

**(v)Preparation of funding reports for road maintenance projects.**

The table below shows how the respondents reacted on the preparation of funding reports of road maintenance.

**Table 4.17 Preparation of reports on road maintenance funding.**

| Response | Strongly agreed | Agreed | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 8 | 24 | 0 | 0 | 0 | **32** |
| Percentage | 25 | 75 | 0 | 0 | 0 | **100** |

8/32 (6.5%) strongly agreed; 24/32 (0%) agreed 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed.

Exclusively 32/32 (100%) agree when 0/32 (0%) disagreed on the preparation of reports.

Looking at the information above it can be concluded that there is an agreement on the preparation of road maintenance funding reports.

**(vi)Regular review of funding reports for road maintenance projects by responsible personnel.**

The table below shows how the respondents answered on regular review of funding reports of road maintenance by the responsible personnel.

**Table 4.18 Regular review of reports on road maintenance funding.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 16 | 8 | 8 | 0 | **32** |
| Percentage | 0 | 50 | 25 | 25 | 0 | **100** |

*Source: Primary Data*

0/32 (0%) strongly agreed; 16/32 (50%) agreed; 8/32 (25%) uncertain; 8/32 (25%) disagreed and 0/32 (0%) strongly disagreed.

Totally 16/32 (50%) agreed when 16/32 (50%) disagreed.

From the information above it can be concluded that there is a balanced argument on the preparation of road maintenance funding reports.

**(vii)Availability of different levels of authorization on certain levels road maintenance expenditure**.

**Table 4.19 Availability of different levels of authorization on different levels of road maintenance expenditure.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 8 | 8 | 8 | 8 | **32** |
| Percentage | 0 | 25 | 25 | 25 | 25 | **100** |

*Source: Primary Data*

The information above it can be illustrated graphically as in Fig 4.7 below.
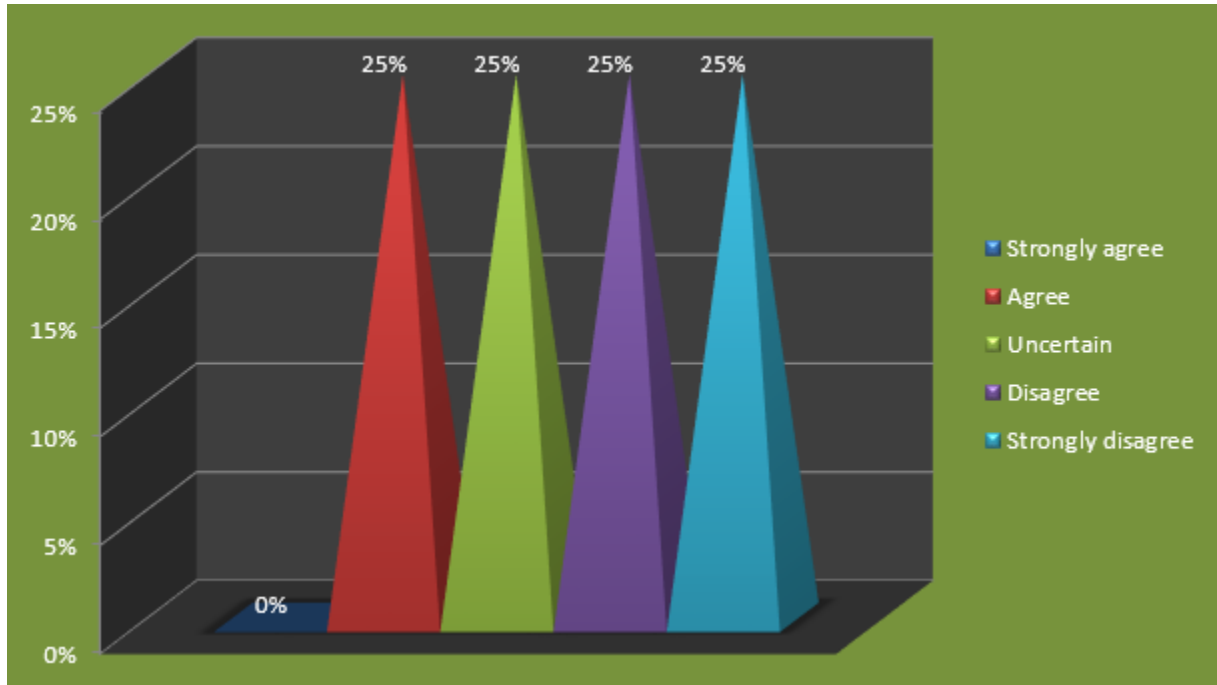
**Fig 4.7: Different levels of authorization of certain levels of road maintenance expenditure**

0/32 (0%) strongly agreed; 8/32 (25%) agreed; 8/32 (25%) uncertain; 8/32 (25%) disagreed and 8/32 (25%) strongly disagreed.

Wholly 8/32 (25%) agreed whereas 24/32 (75%) disagreed.

**(viii)Forecasting of road maintenance expenditure budgets in prior periods**.

**Table 4.20 Forecasting of road maintenance expenditure budgets.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 20 | 12 | 0 | 0 | 0 | **32** |
| Percentage Responses (%) | 62.5 | 37.5 | o | 0 | 0 | **100** |

*Source: Primary Data*

20/32 (62.5%) strongly agreed; 12/32 (37.5%) agreed; 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed.

Generally 32/32 (100%) agreed whereas 0/32 (0%) disagreed.

The above given information can be concluded that there is an agreement on the forecasting of road maintenance costs budgets.

**4.6 Evaluation of Controls over ZINARA Road Fund Policy Implementation**

**(i) An independent committee evaluates the controls over the road fund policy.**

**Table 4.21 Road fund policy control evaluation by an independent committee**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 26 | 6 | 0 | 0 | 0 | **32** |
| Percentage Responses (%) | 81.25 | 18.75 | 0 | 0 | 0 | **100** |

26/32 (81.25%) strongly agreed; 6/32 (18.25%) agreed; 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed.

All in all 32/32 (100%) agreed on which 0/32 (0%) disagreed.

The results show that there is consensus that an independent committee evaluates the controls on the road fund policy implementation.

**(ii) Regular evaluation of the road fund policy.**

**Table 4.22 Evaluation of policy on regular basis.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 0 | 8 | 16 | 8 | **32** |
| Percentage | 0 | 0 | 25 | 50 | 25 | **100** |

0/32 (0%) strongly agreed; 0/32 (0%) agreed; 8/32 (25%) uncertain; 16/32 (50%) disagreed and 8/32 (25%) strongly disagreed.

Overall 0 /32 (0%) agreed whilst 32/32 (100%) disagreed.

**(ii)Evaluation of the road fund policy cost effectiveness before implementation.**

**Table 4.23 Evaluation of policy for cost effectiveness.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 0 | 8 | 16 | 8 | **32** |
| Percentage | 0 | 0 | 25 | 50 | 25 | **100** |

*Source: Primary Data*

26/32 (81.25%) strongly agreed; 6/32 (18.25%) agreed; 0/32 (0%) uncertain; 0/32 (0%); disagreed and 0/32 (0%) strongly disagreed.

On the whole 32/32 (100%) agreed on which 0/32 (0%) disagreed.

The results show that there is consensus that an independent committee evaluates the controls on the road fund policy implementation.

**(iii) Comparison of budgeted and actual road maintenance expenditure budgets for variance analysis.**

**Table 4.24 Road funding costs budget comparisons.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 4 | 20 | 8 | 0 | 0 | **32** |
| Percentage | 12.5 | 62.5 | 25 | 0 | 0 | **100** |

*Source: Primary Data*

In lieu the findings can be presented graphically in fig 4.8
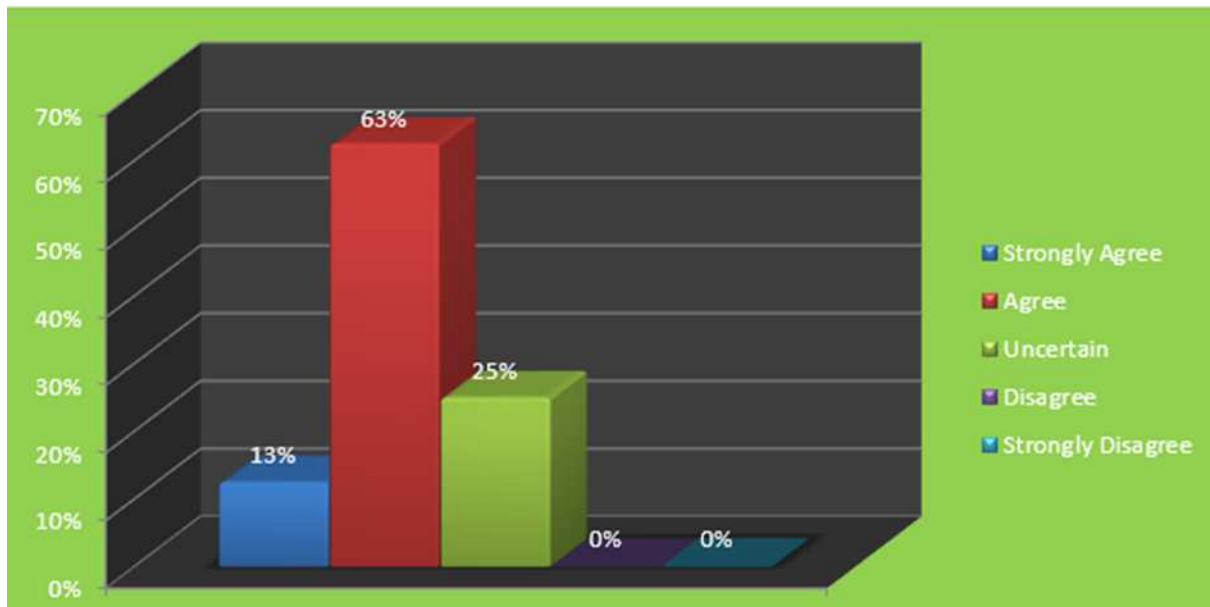
**Fig 4.8 Comparison of budgeted and actual road maintenance cost expenditures**

4/32 (12.5%) strongly agreed; 20/32 (62.5%) agreed; 8/32 (25%) uncertain; 0/32 (0%) disagreed and 0/12 (0%) disagreed.

Altogether 24/32 (75%) agreed whilst 8/32 (25%) disagreed.

Hence the results bear witness that there is agreement that road maintenance expenditure budgets are compared for variance analysis.

**(v)Perception of the respondents on the use of aids in evaluating the road fund policy**

**Table 4.25 Availability of aids in evaluating the road fund policy**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 16 | 0 | 16 | 0 | **32** |
| Percentage | 0 | 50 | 0 | 50 | 0 | **100** |

*Source: Primary Data*

From information given above 0/32 (0%) strongly agreed; 16/32 (50%) agreed; 0/32 (0%)uncertain; 16/32 (50%) disagreed and 0/32 (0%) strongly disagree.

Overally, 16/32 (50%) agreed and 16/32 (50%) disagreed.

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**4.7 Challenges encountered on the ZINARA Road Fund Policy Implementation**

**(i) Resistance from road users**

The information on the views of the respondents concerning the attitude of road users on implementing the road fund policy is in table 4.26 below:

**Table 4.26 Resistance of road users.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | TOTAL |
|---|---|---|---|---|---|---|
| No. of respondents | 24 | 8 | 0 | 0 | 0 | **32** |
| Percentage | 75 | 25 | 0 | 0 | 0 | **100** |

24/32 (75%) strongly agreed; 8/32 (25%) agreed; 0/32 (0%) uncertain; 0/32 (0%); disagreed and 0/32 (0%) strongly disagreed.

On the whole 32/32 (100%) agreed on which 0/32 (0%) disagreed.

Findings from the interviews were 100% in agreement.

Conclusively there is agreement that there is resistance from road users when road fund policy is being implemented.

**(ii) Lack of financial resources for projects execution**

**Fig 4.27 Inaccessibility of financial resources for program implementation.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 32 | 0 | 0 | 0 | 0 | **32** |
| Percentage Responses (%) | 100 | 0 | 0 | 0 | 0 | **100** |

32/32 (100%) strongly agreed; 0/32 (0%) uncertain; 0/32 (0%) disagree and 0/32 (0%) strongly disagreed on the inaccessibility of financial resources

All in all 32/32 (100%) agreed whilst 0/32 (0%) disagreed.

Results show that there is disagreement on the unavailability of financial resources for program implementation.

**(iii) Poor managerial commitment on the road maintenance projects.**

**Table 4.28 Management commitment to road maintenance programs.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 12 | 0 | 8 | 12 | **32** |
| Percentage | 0 | 37.5 | 0 | 25 | 37.5 | **100** |

The exhaustive information on the findings is also illustrated in fig 4.9.
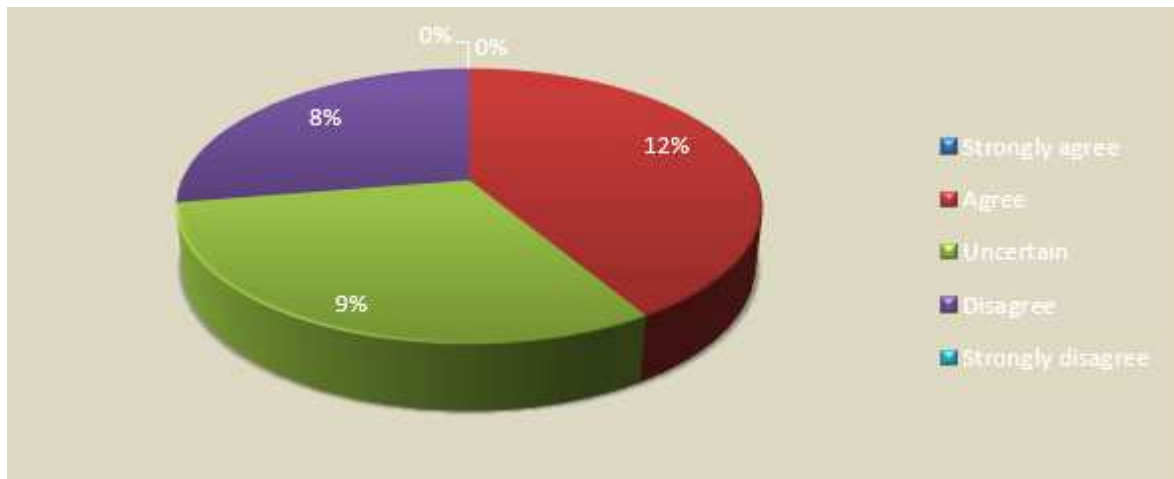


**Fig 4.9 Availability of financial resources for program implementation**

The researcher found that 0/32 (0%) strongly agreed; 12/32 (37.5%) agreed; 0/32 (0%) uncertain; 8/32 (25%) disagreed and 12/32 (37.5%) strongly disagreed.

Summing up 12/32 (37.5%) agreed whilst 20/32 (62.5%) disagreed.

The results exhibit that there is disagreement that management is not committed to road maintenance program implementation.

**(iv)Lack of competent and committed contractors.**

**Table 4.29 Lack of competent and committed contractors.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 24 | 0 | 8 | 0 | **32** |
| Percentage | 0 | 75 | 0 | 25 | 0 | **100** |

The table shows that 0/32 (0%) strongly agreed; 20/32 (75%) agreed; 0/32 (0%) uncertain; 8/32 (25%) disagreed and 0/32 (0%) strongly disagreed.

Summing up 24/32 (75%) agreed whilst 8/32 (25%) disagreed.

The results exhibit that there is an agreement that lack of competent and committed contractors is what is experienced in road maintenance programs.

**(v)Poor information network dissemination.**

**Table 4.30 Poor information dissemination.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 0 | 16 | 0 | 16 | 0 | **32** |
| Percentage Responses (%) | 0 | 50 | 0 | 50 | 0 | **100** |

Findings on information network dissemination are 16/32 (50%) strongly agreed; 16/32 (50%) agreed; 0/32 (0%) uncertain; 16/32 (50%) disagreed and 0/32 (0%) disagreed.

Altogether 16/32 (50%) agreed whilst 0/32 (0%) disagreed.

Results indicate that there is an argument on poor information network dissemination.

**4.8 Reviews of Controls on the Road Fund Policy Implementation**

**(i)Regular review on the road fund policy implementation.**

**Table 4.31 Reviewing of controls over the road fund policy implementation.**

| Responses | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of Respondents | 0 | 8 | 6 | 10 | 8 | **32** |
| Percentage Responses (%) | 0 | 25 | 18.75 | 31.25 | 25 | **100** |

0/32 (0%) strongly agreed; 8/32 (25%) agreed; 6/32 (18.25%) uncertain; 10/32 (31.25%) disagreed and 25/32 (0%) disagreed.

Altogether 8/32 (25%) agreed whilst 24/32 (75%) disagreed.

Information given above indicate that there is disagreement on review of controls over the road fund policy.

**(ii)Compliance with the Roads Act of Zimbabwe is also reviewed.**

**Table 4.32 Review on the compliance with the Roads Act of Zimbabwe.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 16 | 16 | 0 | 0 | 0 | **32** |
| Percentage | 50 | 50 | 0 | 0 | 0 | **100** |

16/32 (50%) strongly agreed; 16/32 (50%) agreed; 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) disagreed.

All in all 32/32 (100%) agreed whilst 0/32 (0%) disagreed.

This clearly point out that there is full compliance of the Roads Act of Zimbabwe by ZINARA when asserting its road policies.

**(iii)Feedback is given to ZINARA board on the completion each road maintenance project.**

**Table 4.33 Feedback given to the ZINARA board on the completion of every project.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of responses | 8 | 16 | 8 | 0 | 0 | **32** |
| Percentage | 25 | 50 | 25 | 0 | 0 | **100** |

Results show that 8/32 (25%) strongly agreed; 16/32 (50%) agreed; 8/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) disagreed.

Altogether 24/32 (75%) agreed whilst 8/32 (25%) disagree.

The statistics given above indicate that the board of ZINARA is given feedback on every completion of road maintenance.

**4.9 General Information regarding ZINARA Road Fund Programs**

**(i) Road maintenance programs funded by ZINARA are cost effective.**

**Table 4.34 Cost effectiveness of road maintenance programs**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 0 | 4 | 4 | 20 | 4 | **32** |
| Percentage | 0 | 12.5 | 12.5 | 62.5 | 12.5 | **100** |

0/32 (0%) strongly agreed; 4/32 (12.5%) agreed; 4/32 (12.5%) uncertain; 20/32 (62.5%) disagreed and 4/12 (12.5%) strongly disagreed.

Aggregately 4/12 (12.5%) agreed whilst 28/32 (87.5%) disagreed.

Results show that there is disagreement that road maintenance projects are cost effective.

**(ii) ZINARA's future plans in road maintenance programs.**

**Table 4.35 Future plans in road maintenance programs.**

| Response | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree | Total |
|---|---|---|---|---|---|---|
| No. of respondents | 30 | 2 | 0 | 0 | 0 | **32** |
| Percentage | 93.75 | 6.25 | 0 | 0 | 0 | **100** |

The detailed information on the findings is also illustrated in fig 4.10.
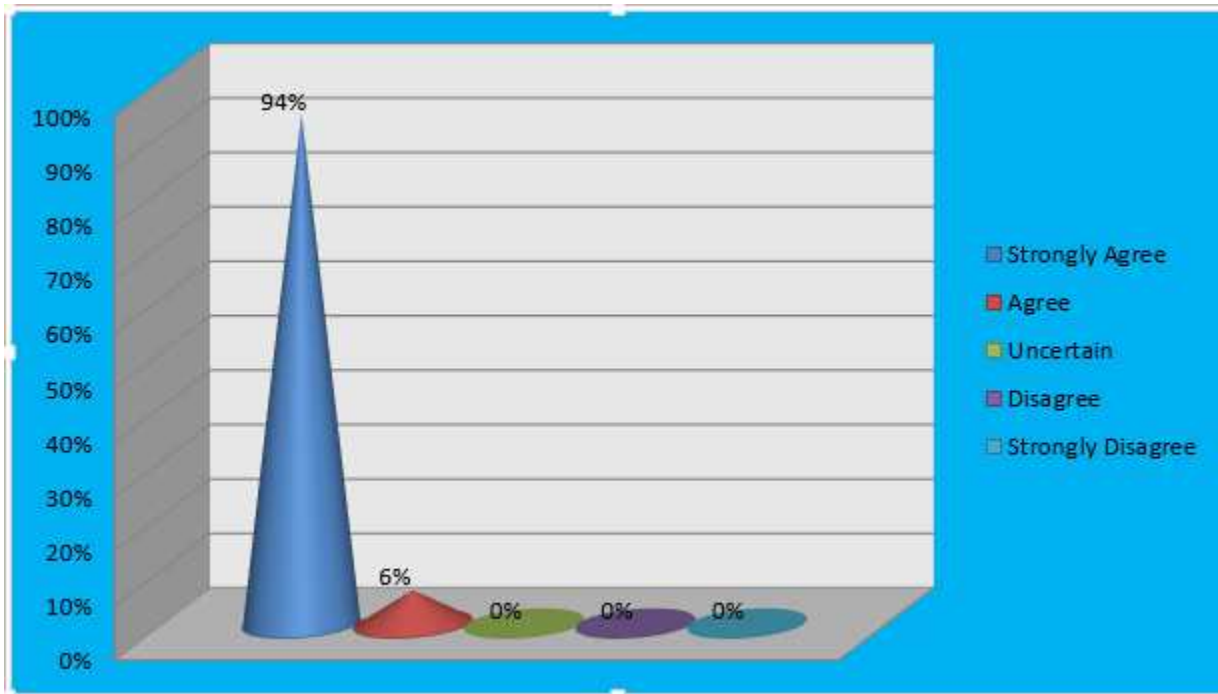


**Fig 4.10 Future planning in road maintenance.**

30/32 (93.75%) strongly agreed; 2/32 (8%) agreed; 0/32 (0%) uncertain; 0/32 (0%) disagreed and 0/32 (0%) strongly disagreed.

Overall 32/32 (100%) agreed on which 0/32 (0%) disagreed.

The results evince that there is agreement on ZINARA has bigger plans in road maintenance projects.

**4.10 Summary**

This chapter focused on the presentation, analysis and interpretation of data through the various data collecting instruments. This was achieved through the use of tables, charts and graphs. The next chapter will summarize the study, conclude and make recommendations.

# CHAPTER 5

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.0 Introduction

This chapter covers the summary of chapters, the major research findings, and conclusion for the research, recommendations and areas of further study.

### 5.1 Summary of chapters

The objective of this study was to assess the ZINARA road fund (A case study of Ministry of Transport and Infrastructural Development 2011-2014).

Chapter one covered the introduction of the research, the background to the study, research problem, main research question, sub research question, research objectives, significance of the study, delimitation of the study, limitations to the study, definition of terms.

Chapter two covered a review of available literature on various road fund policies, an evaluation of policy implementation guidelines, measures taken by personnel to implement such guidelines, the challenges that are in place over road fund policies, controls that are also in place over road fund policies and an assessment of the best practice in the road fund policy implementation.

Chapter three covered the research design, population, sample design sources of data, research instruments, and validity of research instruments, data presentation and analysis. Descriptive method was used as the research design. The stratified sampling method is the one which was use in carrying out the research. The population used was the Finance and Administration, Human Resources, Projects and Planning and Roads departments. Staff from these departments were given questionnaires to fill in and interviews were only done top management.

Chapter four has looked at data presentation and analysis. The data was obtained from questionnaires. A total of 40 questionnaires were distributed to the selected sample and 32 were successful representing 32/40 which is 80% response rate. In respect of interviews, 5 personal interviews were scheduled and all of them were successful, that is 5/5(100%)

## 5.2 Major findings

Reasons why ZINARA is failing long-term funding for the rehabilitation and maintenance of our national roads are given below:

The respondents admitted that there is an existence of a road fund policy at ZINARA. However, findings revealed that although the policy exist, there is no clarification on the implementation guidelines of the road fund policy and this results in employees not complying with the guidelines of the policy.

Also some respondents revealed that the major reason leading to deficit in funds is that there are no financial usage guidelines in place for the implementation of the road fund policy. No authorization limits on road maintenance expenditure is done by the responsible personnel. Such a scenario evidences weak controls being implemented over the available funds. This leading to transparency and accountability problems in the organisation.

The information gathered from the organisation also revealed that no evaluation is done on the cost effectiveness of the road fund policy before it is implemented. Although revenue is being collected through tollgates and other means used by ZINARA to generate funds for the maintenance and rehabilitation of roads, the current tariff do not cover costs.

According to the majority of the respondents there has been poor performance of utilities at ZINARA. The respondents argued that there is poor managerial commitment on road maintenance projects and this was also by lack of committed and competent contractors on such projects.

The information gathered shows that lack of financial resources which is leading to a funding gap of road maintenance is due to lack of involvement by the private sector. Public-private partnerships according to the findings are have not been fully utilized and these can be used to bridge the funding gap on undertaking the rehabilitation and maintenance of national roads.

Also, according to the findings there is a noticeable resistance from road users in compliance with the road fund policy. This was discovered due to road infrastructure not being maintained or taking longer to be maintained than expected.

## 5.3 Conclusion

In conclusion respondents revealed the following reasons, no clarification on the implementation of the road fund policy, no financial usage guidelines in place, do not cover costs, poor performance of utilities, need for public-private partnerships. Also some respondents revealed that ZINARA is facing resistance lately from its clients since the road infrastructure has not been able to finish its road maintenance projects in an acceptable period. These reasons triggered a gap or deficit in the funding of rehabilitation and maintenance of national roads.

## 5.4 Recommendations

Based on the conclusions established above, the research ended with the following recommendations.

- ➢ Clarification on the policy implementation guidelines, the management should ensure that proper and vibrant guideline and that all guidelines are accurately conversed throughout the organisation and ensure that everyone involved in the understand them. Hence this means that an appropriate road fund policy should be incorporated under the Road Fund with proper control system to certify compliance to regulations and procedures.

- ➢ There is a necessity to implement financial usage guideline thus improving transparency and accountability of funds for road maintenance. Gananadha (2009) said transparency in decision making and accountability, apply to the quality of financial reporting and disclosures, and acknowledging and managing conflicts of interest as well as delays in processing applications for licenses and permits.

- ➢ There is need to fully utilize the various forms of public-private partnerships to address the funding deficit in road funding. According to Gananadha (2009), the public-private partnerships mode of financing has become the practice in the UK and Europe taking different forms such as leasing, joint ventures or operation and management contracts.

- ➢ There also need to maximize the performance of utilities at ZINARA. According to Gananadha (2009),an autonomous highway authority should be established to take over responsibility for organisation and management of the nation's road network. One third of the members should represent government departments and local authorities, while the

remaining shall comprise representatives of private sector stakeholders. The board should report to the Ministry designated to be responsible for the authority.

> A road user tariff should be introduced to provide adequate and dedicated funds for road maintenance, with the proceeds to be deposited in an autonomous road fund. Gananadha (2009) also suggested that a board of management should be established for administration of the road fund with members from key government ministries. The activities of the road fund should be audited by independent auditors.

## 5.5 Further areas of research

Further research areas can be undertaken in the following areas investigating the revenue collection methods used by ZINARA and examining the tolling system used by ZINARA.

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**APPENDIX 1**

**COVER LETTER**



Midlands State University

Faculty of Commerce

Department of Accounting

P. Bag 9055

Gweru

10 September 2014

THE FINANCE DIRECTOR

Ministry of Transport and Infrastructural Development

P.O. Box CY 595

Causeway, Harare

 Dear Sir

**RE: APPLICATION FOR PERMISSION TO CARRY OUT AN ACADEMIC RESEARCH**

My name is Noster Livevere. I am seeking permission to carry out a research titled "**An assessment on the Zinara Road Fund at Ministry of Transport and Infrastructural Development Head Office, Harare."** The research is a requirement in fulfilling a Bachelor of Commerce Honours Degree in Accounting that I am pursuing at Midlands State University.

I promise that information obtained will be kept confidential and will be used for academic purposes only.

Your cooperation is greatly appreciated.

Yours faithfully

**Noster Livevere (R111754F)**

**APPENDIX 2**

**QUESTIONNAIRE**



**Questionnaire for Ministry of Transport and Infrastructural Development's employ**

An assessment of Zinara Road Fund: A case study of Ministry of Transport and Infrastructural Development.

**Instructions**

**1. Do not write your name on the questionnaire.**

**2. Show response by ticking the respective answer box and fill in the relevant spaces provided.**

**Questions**

**Personal Questions**

1. **Gender**:        Male ☐        Female ☐

**2.1 Position held…………………..……………………………………**

Manager ☐        Supervisor ☐        Accountant ☐

Others (specify)…………………………………………………………………………………

**2.2Department**

Policy and Planning ☐    Finance and Admin ☐    Human Resources ☐    Roads ☐

Others (specify)………………………………………………………………………………..

**3. You have been in the department for**:

Less than 1yr ☐     1-5yrs ☐     6-10yrs ☐     More than 10yrs ☐

Others (specify)………………………………………………………………

**4. Your experience in the current position**

Less than 1yr ☐     1-5yrs ☐     6-10yrs ☐     More than 10yrs ☐

Others (specify) …………………………………………………………………………

**5. Your highest academic qualification**

'A' Level ☐     Diploma ☐     Degree ☐     Masters ☐     Doctorate ☐

Others (specify) …………………………………………………………………………

……………………………………………………………………………………………

**6. The following is in regard to road fund policy.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)ZINARA has a road fund policy. | | | | | |
| (ii)The policy is formally documented. | | | | | |
| (iii)The road fund policy is communicated to road-users and other stakeholders. | | | | | |
| (iv)The policy is communicated to new personnel. | | | | | |
| (v)Clarification is given to road-users for better understanding on policy. | | | | | |

**7. Information regarding policy implementation guidelines.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)There are road fund policy implementation guidelines at ZINARA. | | | | | |
| (ii)The policy implementation guidelines are documented. | | | | | |
| (iii)Financial usage guidelines are also available road maintenance programs. | | | | | |

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (iv)Implementation guidelines are always complied with. | | | | | |

**8. The organization's road fund policy implementation includes the following information with regard to existence of controls.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)Road funding policy implementation controls are in place at ZINARA. | | | | | |
| (ii)Controls over road funding policy are clearly defined as well as responsibility areas. | | | | | |
| (v)Road funding projects are authorized by responsible personnel before they are implemented. | | | | | |
| (iv)Controls are in place over funds available for road maintenance. | | | | | |
| (vi)Funding reports for road maintenance projects are prepared. | | | | | |
| (vii)Funding reports for road maintenance projects are reviewed regularly by responsible personnel | | | | | |
| (viii)There are different levels of authorization limits on certain levels of road maintenance expenditure. | | | | | |
| (ix)Forecast on road maintenance expenditure budgets are prepared in the prior period. | | | | | |

**9. The following information relates to the evaluation controls of ZINARA road fund policy.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)An independent committee evaluates controls on implementation of the road funding policy at ZINARA. | | | | | |
| (ii)Evaluation of the policy is done regularly | | | | | |
| (iii)A road funding project is evaluated for cost effectiveness before it is implemented. | | | | | |

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (iv)Actual road funding expenditure budgets are compared with budgeted for variance analysis. | | | | | |
| (v)Financial records, interviews, observations, etc. are used for road funding policy evaluation. | | | | | |

**10. The organisation is facing the following challenges in road funding policy implementation.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i) Resistance from some road-users. | | | | | |
| (ii)Lack of financial resources for program implementation. | | | | | |
| (iii) Poor managerial commitment on road maintenance programs. | | | | | |
| (iv)Lack of competent and committed contractors. | | | | | |
| (v)Poor information network (dissemination). | | | | | |

Any other (specify)……………………………………………………………………………..

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

**11. Information relating to the reviews of controls on road fund policy implementation at ZINARA is as follows.**

| | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)Reviews are done regularly over controls on road fund policy implementation. | | | | | |
| (ii)Degree of compliance with the Road Acts of Zimbabwe is also reviewed. | | | | | |
| (iii)Feedback is given to ZINARA board after completion of each road maintenance project. | | | | | |

**12. The following information generally relates to the ZINARA road fund projects.**

|  | Strongly Agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| (i)Road maintenance projects funded by ZINARA are cost effective. |  |  |  |  |  |
| (ii)ZINARA has bigger plans for the future in road maintenance. |  |  |  |  |  |

Any other (specify)…………………………………………………………………………

……………………………………………………………………………………………….

**Thank you.**

**INTERVIEWS**



Research Interview Guide

I am kindly seeking your views and comments to the following questions relating to the organisation's road fund policy. Information and views given is treated in strictly confidential and is used for academic purposes only. Your utmost assistance is greatly appreciated.

**Questions**

1. What is the ZINARA Road Fund policy?

2. What are the policy implementation guidelines?

3. What is the capacity of personnel to implement guidelines?

4. What challenges are in place over the policy?

5. What controls are in place over policy implementation?

6. What is the best practice in the road fund policy implementation?