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FINANCIAL EFFECTS OF GHANA ROAD FUND MISAPPROPRIATION: A CASE STUDY ON THE GHANA HIGHWAY AUTHORITY

BY

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A LONG ESSAY SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION DEGREE

MAY, 2019

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DECLARATION

I, the undersigned student do hereby declare that this Dissertation is the result of my own original research and that no part of it has been presented for another Degree in any University. All sources of borrowed materials have been duly acknowledged.

…… ……

RICHARD OFORI **DATE**

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CERTIFICATION

I declare that the preparation and the presentation of this Dissertation were in accordance with the guidelines on supervision of Dissertation laid down by the University.

…… ……..

DR. LORD MENSAH **DATE**

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DEDICATION

This Project is dedicated to the Almighty God and to my family and friends who have been of great help to us in the course of this journey.

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ACKNOWLEDGEMENT

My first appreciation goes to the Almighty God for his blessing and strength throughout our study. Again, many thanks to the University of Ghana for instituting this programme for Knowledge acquisition, developing skills in research and acquainting us on what was needed in the program.

My sincere gratitude also goes to my supervisor, Dr. Lord Mensah for his persistent help in all the steps of the project, from topic selection to writing the final report, and his immense contribution to the success of the study. Besides, his gracefulness, fascinating guidance, good advice, constructive criticism, support, and flexibility are learnable.

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ABSTRACT

The study on the financial effect of road fund had to be conducted because of the problem of limited attention and literature committed towards this aspect of research in Ghana's knowledge space. Following this problem the current study investigated financial effects of Ghana road fund misappropriation in the Ghana Highway Authority. The specific objectives include; to help identify the causes of the misappropriation funds to projects by the road agencies, to run a comparative analyses of funding road developmental projects as against road rehabilitation projects, to assess the effect of funds misappropriation within the road construction sector of Ghana.

The study adopted the quantitative method of research. The study used descriptive and cross sectional designs. The data was sampled from staff, consultants and contractors from the Ghana Highway Authority. All together 35 responses were gathered. The instrument used for data gathering is well-structured questionnaire as well as an annual report spanning 2015-2018. The study was concluded based on the key objectives outlined in this study. The study therefore concludes that the causes of the misappropriation of road funds include the delays in monthly payment of vital projects, Inflation rates, Project disputes/project litigation, schedule completion slippage and government interference. In comparing developmental projects to rehabilitation road projects respondents indicated that the later was less expensive- over GHS 99,135,117.27 was lost through developmental projects alone. Also government role in misappropriating road funds can lead to corruption.

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CHAPTER ONE

INTRODUCTION

1.0 Background of study

Good Roads are an essential part of any developing economy. Well advanced countries all over the world have invested heavily on road infrastructure. Well advancing African countries such as Rwanda and South Africa have all invested heavily in road development and rehabilitation. A country's economic development and national integration depends on the level of development of its road infrastructure. The level of development of the road infrastructure undeniably affects the efficiency of movement of goods and services.

Following post-independence, the government's budgetary allocation for road maintenance could not be sustained and the nation's road network started to deteriorate rapidly. Efforts made to increase normal budgetary allocations failed to provide adequate funds to clear the increasing backlog of road maintenance works.

In recognition of this, the government under the Provisional National Defense Council (PNDC) established the Ghana Road fund in 1985 to serve as the source of funding for the maintenance of all roads in the country. The Ministry of Finance, Ministry of Roads and Highways and the Controller and Accountant General jointly administered the Fund up until January 1997. These government institutions made allocations from the Fund to the Road Agencies i.e. Ghana Highway Authority (GHA), Department of Feeder Roads (DFR) and the Department of Urban Roads (DUR) for the maintenance of roads.

First and foremost, Ghana Highway Authority is charged with the responsibility for the administration, planning, control, development and maintenance of trunk roads, ferries and related facilities in the country. Whereas the Department of Feeder Roads is charged with the

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responsibility for the administration, planning, control, development and maintenance of feeder roads and related facilities in the country. Last but not least, the Department of Urban Roads is charged with the responsibility for the administration, planning, control, development and maintenance of urban roads and related facilities in the country (MoRH, 2017).

As a result of these government agencies competing for limited funds, restructuring plan of the need for Fund to establish a suitable management system became absolutely necessary. Following the difficulties allocation of funds for road maintenance projects. Consequently, in September 1997, the Ghana Road Fund Act (Act 536) was signed by the President unto the statute books of the country. This Act, provides the basis for the establishment of the Road Fund Board, the management and utilization of the Fund and the general financial provisions for the maintenance of roads in the country.

As a developing country, sustainable funding for road maintenance has proved to be difficult over the past years. Many developing countries manage a road systems which are larger than they can afford (Boamah, 2002). Thus it is not surprising that the sustainability of the Fund as a secure source of road maintenance is in danger due to the huge arrears overhang on the Fund (Nketiah, 2009).

1.1 Problem statement

In Ghana, road construction projects are classified as either Rehabilitation or Developmental Projects. Developmental Road Projects involve the construction or upgrading of new or existing roads so as to increase capacity. Road Rehabilitation Projects involves the intervention that reduces the rate of road pavement deterioration (Boamah, 2002). This includes the improvement

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of an unpaved or paved road including widening, earthworks and construction of drainage structures for as to provide traffic accessibility to road users in an efficient and safe way.

These rehabilitation projects are undertaken by the respective road agencies and submitted to the road fund for funding consideration. With no established guidelines, fund allocation is not transparent and constantly subjected to political and administrative manipulation in which funds required for road maintenance are used for developmental projects leading to the distress of the Fund (Boamah, 2002). Ghana annually requires not less than $2.5 billion for road infrastructure for the next ten years in order to close the current infrastructure gap (Brushett, 2005). However, comparing this huge financial requirement to that of the current balance sheet of the road fund, it is less likely that the current situation will improve as a result of the misappropriation. This study sought to evaluate the financial implications of the misappropriation of the road fund on existing roads maintained by the Ghana Highway Authority.

1.2 Objectives of the study

1.2.1 Main Objective

The overall objective of this study is to evaluate the financial implications of the misappropriation of funds for road maintenance projects by the Ghana Highway Authority and its financial effect on the fund.

1.2.2 Specific objectives

The study specifically seeks:

I. To help identify the causes of road fund misappropriation

II. To run a comparative analyses of funding road developmental projects as against road rehabilitation projects.

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III. To assess the effect of funds misappropriation within the road construction sector of Ghana.

1.3 Research questions

- What are the causes of the misappropriation funds to projects by the road agencies?
- How are the funding of road developmental projects comparable to road rehabilitation projects?
- What are the effects of funds misappropriation within the road construction sector of Ghana?

1.4 Summary of Research methodology

This research adopted a Quantitative approach in which both primary and secondary data was relied upon for analyses. A survey style was subsequently employed to make use of structured questionnaires to collect data.

The researcher in the process:

I. Reviewed available literature on the Road Agencies and the Ghana Road Fund.

II. Administered structured questionnaires for primary data from the road agencies.

III. The data collected was then analyzed by using descriptive statistics, abandonment analysis and one-way anova to help identify the significant benefits or losses.

IV. Secondary data was collected on both past and ongoing road developmental and rehabilitation projects

V. Findings were summarized for an informed conclusion.

VI. Following the summary of findings and conclusions, recommendations were made.

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1.5 Scope of research

This study was on the financing of road developmental projects using road maintenance funds by the road agencies with specific focus on the effect on the Ghana Road Fund. This was achieved by running a comparative analysis on the financial impact of utilizing funds meant for road maintenance as against road development. This research was limited to road construction projects awarded by the road agencies and funded by the Fund. This study did not address issues relating to the payment process nor the criteria for funds allocation by the Fund.

1.6 Significance of the study

As a result of the genuine concerns and public outrage due to the poor maintenance nature of the existing road network against increased government spending on road development by road agencies, there is the need to bring to light the financial implications for the misallocation of road projects by the road agencies on the fund and the nation as a whole. Thus, results from this research provide a detailed representation of the causes of the misallocation of the road projects by the road agencies in Ghana. It also gives an indication of the financial impact on the Fund resulting from the misallocation of road projects by the government agencies. Subsequently, this study serves as an example of a rational and financial implication for other specialized funds facing similar challenges in the country. Expectations are that the study outcome will significantly contribute to existing knowledge on the performance of the road fund by providing a clear and distinct account of the financial effect of project misallocation. It is also anticipated that the study will provide a wealth of evidence for subsequent work by the MoRH.

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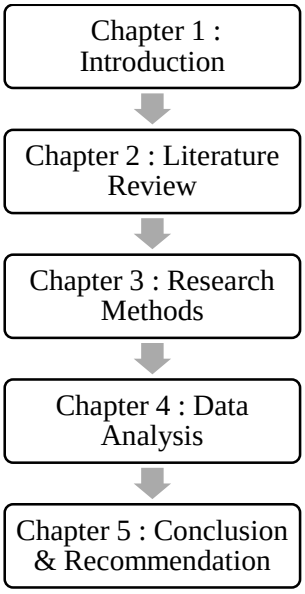
1.7 Chapter disposition



Chapter one begun with an introduction to the background of the research area. It also defines the research problem for which it was conducted, the aim and the objectives. It finally set out the scope of the research and present the expected benefits.

Chapter Two reviewed the existing literature on the theoretical basis and methods used for project awarding by the road agencies and subsequent funding by road funds. It further discussed the theoretical differences, current practice limitations and the challenges of these practices on road funds. It finally presents the gaps in existing knowledge in the performance of the road fund.

Chapter three presents the research methodology. It describes the different components of the research work, the activities involved and the sequence of implementation. It also provides a detailed explanation of the analytical tools and equations applied with their subsequent data requirements.

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Chapter four deals with the analysis of the data collected. It subsequently compares the related financial impact of the results of project funds required for road maintenance as against project road development.

Chapter five summarized the findings, main conclusion and make recommendations on the results. Research limitations were explained in this chapter.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides the literature review in two major parts. The theoretical literature review and empirical literature are the key parts of this chapter. The theoretical literature explains the key theories needed while the empirical literature reviewed works that have been conducted by other scholars on similar subject.

2.2 Theoretical Literature

Parkman et al in 2000, addressed the importance of road maintenance and illustrated the consequence of road neglect. It is therefore acknowledged that roads not only enhance mobility but improving the economy as a whole.

This chapter therefore presents existing literature on Road Fund Management in Ghana and Africa as a whole. It subsequently reviews the development of the Ghana Road Fund as well as its objectives. Successively, the revenues of the Fund were discussed with a brief of the activities as well as the current deficit. It briefly defines the governmental agencies under the Fund as well as the national road condition. The Ghana Highway Authority was briefly discussed in the chapter in which the Road Maintenance Division of the Authority. The chapter concluded on the summary of fund management strategies employed by the Division as well as gaps in existing knowledge.

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2.3 Theoretical Review of Funds Management

Fund management is very crucial in developing a nation's infrastructure. With improper fund management it will be difficult to expand and develop road networks. Because of the essence of road fund management its inclusion in this study cannot be undermined. It is right that the concept of funding in this study deals with monetary resources. These monetary resources ought to help the operation and funding of roads in the country.

The term 'funds' has been used in the financial circles in different senses. The three most common usages of the term 'funds' are to refer to cash, to working capital and to the total financial resources. However, the concept of funds as working capital is the most popular one and in this study 'funds' refers to working capital. Working capital includes that part of total capital which is used for carrying out the routine or regular business operations. The success and efficiency of an organization to a large extent depends on effective utilization and management of working capital. Working capital can be gross working capital or net working capital. Gross working capital is defined as total of current assets (current assets include cash in hand, cash at bank, stock, debtors, bills receivables, prepaid expenses, etc.).

2.4 Road fund types

"First-generation" road funds were generally set up in the 1970s and 1980s during the period of fiscal stress and as such served as a means of solving failed budgetary systems. These funds were largely dependent on earmarked revenues which were mostly generated from governmental taxes. The primary objective of these funds was to ensure that road maintenance programs were effectively funded (Heggie and Vickers, 1998).

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However, these funds faced some challenges common amongst them was that the revenues generated were mostly from taxes which were not related to road activities thus, leading to inefficiency (Heggie and Vickers, 1998). Subsequently refined approach for road maintenance funding was developed and termed as "second-generation" or Commercialized Funds. These funds, as stated by Heggie and Vickers, were set up essentially to achieve specific objectives which were neither dependent nor related to government's overall fiscal targets and tend to impose a hard budgetary constraint on road agencies supplying road services.

In Africa the Sub-Saharan Africa Transport Policy Program (SSATP) was launched in 1987 under the United Nations Economic Commission for Africa (UNECA) and the World Bank with one of its first priorities to address road maintenance policies and help put road maintenance on a sustainable long term basis. In the process of rendering the SSATP operational, a number of components or initiatives were started, of which the Road Maintenance Initiative (RMI). The RMI commenced with a diagnostic phase led by a small team based in the World Bank and then branched out into a second phase of country level initiatives in nineteen countries of which Ghana is a part of. Hence creating an agency with a board on which users are represented, generating new user related sources of funding to address the deficit, managing the fund in a business-like fashion in each member country (Brushet, 2006).

2.5 Components of "second generation" or commercialized road funds

As pointed out by Brushet, advocates of second-generation road funds argue that specific changes in the structure of road maintenance financing make it possible to introduce better business processes, with benefits for performance. As such these funds possess some common components or characteristics which include:

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- Sound legal basis
- Strong oversight
- Agency which is a purchaser not a provider of road maintenance services
- Sound financial management systems, lean efficient administrative structure
- Regular technical and financial audits
- Revenues are incremental to the budget and come from charges related to road use

2.6 Sound Legal Basis

This is the basis of the road fund and must serve as the guiding principles of the fund which must contain a separate road fund administration with clear rules and regulations and finally established under a Financial Act. However, only a few countries have road funds established under a financial act. Inflexibility in legislation in several countries has caused difficulties such as cost sharing arrangements, fuel levy levels as well as the composition of board members (Heggie and Vickers, 1998).

As emphasized by Benmaamar, a number of road funds in Africa were poorly developed thus, are far from meeting the set standards of second generation funds. These funds fall short of administrative autonomy, financial autonomy and a regular auditing system.

Recent administrative experiences in West Africa show that at the establishment stage of road funds, the Ministry tends to use its powers to control the procedure for the designation and appointment of the chairman, the board members and the road fund manager. These institutional arrangements and practices undermine the road funds autonomy. There is less financial autonomy as a number of road funds are financially dependent and are still relying on general taxation as one of the main source of their revenues (e.g. Benin, Ethiopia and Mali). Similarly,

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legislation of some road funds allows expenditure on other activities than road maintenance interventions. It is hardly mentioned in the reviewed legislations that the road funds should be responsible for the collection of funds revenues and rarely stated that the proceeds should be channeled directly to their bank accounts. There are countries where the requirement for regular technical and financial audits is not stated in the road fund legislation and cases where audits are a requirement but not budgeted for in the road fund expenditure (e.g. Benin and Madagascar).

2.6.1 Strong Oversight

It is recommended that road funds have a Road Fund Board, where road users are represented by the majority of members. The board should in the end have powers to set its own tariff within guidelines laid down by the Ministry of Finance to meet expenditure needs. Though there is yet no conclusive evidence to suggest what is generally the best size and composition for effectiveness, these boards should also have mixed representation of both the private and public sector to provide a fair representation of users.

2.6.2 Agency as a Purchaser Not a Provider of Road Maintenance Services

The separation between the purchaser (the Road Fund) and the service providers (Road Departments and Agencies) is fundamental when developing sound road sector reforms. This is to prevent road fund boards from cumulating too many conflicting responsibilities, which often include funding, planning and managing road works. In this occurrence, they tend to act both as the customer for the services provided, as well as the provider of those services. This creates an obvious conflict of interest, which weakens financial discipline and compromises efforts to control costs and maintain quality. Hence, it is required that institutional arrangements are made to separate the financing from the management and implementation of road works to improve efficiency.

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2.6.3 Sound Financial Management Systems, Lean Efficient Administrative Structure

It is required that chairman should be a person of good standing and the board should be supported by a small secretariat headed by a manager appointed by the board. This way, the secretariat would be responsible for the day-to-day management along commercial lines and the fund be managed in accordance to sound commercial principles. It should have clear disbursement procedures and funds disbursed should be subject to an independent financial audit and a selective technical audit.

2.7 Regular Financial and Technical Audits

Most road funds are audited by the auditor general's office or by local or international private auditors appointed or recommended by the auditor general to the minister of works or finance (Heggie and Vickers, 1998). These audits are however not always budgeted for internally and not undertaken regularly with little emphasis placed on the performance of the supervisory board with respect to their obligations under the legislation act. It is required that financial audits are made more transparent and void from parent Ministerial interferences especially in the day to day management of the fund.

In general, the conclusions of technical audits reports indicate that maintenance works are not mostly carried out in cost effective ways. This can be attributed to inadequate planning, technical specifications, procurement and execution, and deficient supervision and control of road maintenance works. It is therefore required that technical audit reports be implemented with clearly defined responsibilities.

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2.7.1 Revenues Incremental to the Budget and Coming from Road User Charges

Second generation road funds are in principle expected to depend on road user charges for their revenues and to be largely independent of direct treasury funding (general taxation).

Most road funds tend to generate revenues from three main sources which are;

i. Fuel levy (Japan, New Zealand and the United States), bridge and ferry tolls, and weigh bridge fees
ii. Vehicle license fees (Ghana)
iii. International transit fees and pay fines

However, the fuel levy is the most important charge and usually accounts for over 80 percent of road fund revenues (as in Sierra Leone and Tanzania) as it is equally good surrogate for a user charges due to its reasonably close relationship to the costs of road use (Richecour and Heggie, 1995).

2.7.2 Country based road fund experiences

Sierra Leone

In Sierra Leone, the road fund is a bank account managed by the Sierra Leone Roads Authority (SLRA). The board and Director General therefore manage the road fund and also manage the road network. SLRA decides, as an internal matter, how to divide the road fund revenues between main, urban and rural roads. In the longer term, SLRA may create a board sub-committee to manage the road fund to ensure that financial matters receive sufficient management attention.

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Canada

In Canada, several provinces share maintenance costs with local authorities. For example, Ontario province provides basic funding that can be used to finance maintenance. Urban municipalities account for 50 percent of the cost-sharing with local authorities. For rural municipalities it is based on ability to pay, with the province generally paying 60 percent of costs. For unincorporated areas, that is, roads managed under local road boards, the province meets two-thirds of basic maintenance costs (Heggie and Vickers, 1998).

New Zealand

The road fund finances part of the costs of maintaining local authority roads. The proportion financed is equal to $K_1 + K_2 \log (\frac{P}{LV})$.

- Where P is the current year allocation
- LV is the three-year average net equalized land value
- K_1 and K_2 are constants computed to ensure that the average national proportion is 50 percent.

If the calculation results in a proportion that is 50 percent. If the calculation results in a proportion that differs by more than 2 percent from the previous year's, the proportion is adjusted by half the difference to be within 2 percent of the indicator. If the calculation results in a difference of less than 2 percent, no change is made unless the trend continues for two consecutive years. The actual proportions in 1996-97 varied from 43 percent to 83 percent (Heggie and Vickers, 1998).

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Finland

Finland Road Agency (FinnRA) and local authorities provide funds for maintaining unclassified roads managed by road cooperatives. FinnRA finances the fund by using the allocation amount per km: 0.75 x L x $800 x (L - 0.l R) x C where;

- 0.75 is the maximum proportion of costs to be financed.
- L is the length of the road, $800 is the estimated average maintenance cost per km.
- R is the number of permanent residents living along the road.
- C is the maintenance class of the road (C = 1.50 for class 1 roads, 1.25 for class 2 roads, 1.00 for class 3 roads, and 0.75 for class 4 roads).

In 1990 FinnRA and the municipalities financed 25 percent and 33 percent, respectively, of the maintenance costs of these roads.

Table 2.1 Structural Indicators for Road Funds in Various African Countries

Indicators	Benin	Ethiopia	Kenya	Malawi	Tanzania	Zambia
Year Created	1996	1997	2000	1998	1999	1994
Legal Basis	Law	Law	Law	Law	Law	Ministerial order
Number of private sector members	5 of 9	4 of 15	8 of 13	9 of 12	5 of 9	7 of 11
Board chair	Minister of Work	Minister of Works	Private Actor	Private Actor	Minister Of Finance	Private Actor
Planning separate from execution?	Yes	Yes	Yes	No	Yes	Yes

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Does the board set the fuel levy?	No	No	No	No	No	No
Fuel levy proposed by Board?	Yes	No	Yes	Yes	No	Yes
Is management professional?	Partly	Yes	In process	Yes	Yes	Yes
Additional Board functions?	No	No	No	Yes	No	Yes
Establishment of semi or independent agencies?	No	No	No	Partly	Yes	No

Source: World Bank

The composition of the road fund boards differs significantly across countries. In Kenya, Malawi, and Zambia the boards are dominated by private sector representatives unlike in Benin and Ethiopia where the boards are dominated by the public sector. Benin and Ethiopia have the minister of works as the chairperson of the board whereas other countries such as Kenya and Malawi have chair appointed by the minister from the private sector. Zambia is somewhat similar; the chair is chosen by the board from among its private sector members. Tanzania's chair is appointed by the president from candidates outside the civil service. Interestingly none of these boards set the fuel levy, however the fuel levy is proposed by all countries except Tanzania and Ethiopia (Gwilliam and Kumar, 2003)

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2.8 Establishment of the Ghana road fund

A country's economic development and national integration depends on the level of development of its road infrastructure. In recognition of this, the government under the Provisional National Defense Council (PNDC) established the Ghana Road fund in 1985 to serve as the source of funding for the maintenance of all roads in the country. The Ministry of Finance, Ministry of Roads and Highways and the Controller and Accountant General jointly administered the Fund up until January 1997. Consequently, in September 1997, the Ghana Road Fund Act (Act 536) was signed by the President unto the statute books of the country. This Act, provides the basis for the establishment of the Road Fund Board, the Management and utilization of the Fund and the general financial provisions.

2.8.1 The Ghana road fund ACT 536

An ACT to establish a Fund to be known as the Ghana Road Fund to finance routine and periodic maintenance and rehabilitation of public roads; to provide for the management of the Fund and to provide for related matters. The Fund shall also be used to assist the Metropolitan, Municipal and District Assemblies in the exercise of their functions relevant to public roads under any enactment.

2.8.2 Charges on the road fund

Subject to section 2 of this Act the charges on the Fund shall be for

a. Routine and periodic maintenance of road and related facilities.
b. Upgrading and rehabilitation of roads.
c. Road safety activities.
d. Selected road safety projects.
e. Such other relevant matters as may be determined by the Board.

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2.8.3 Composition of the road fund board

There is hereby established a management board for the Fund which shall be known as the Road Fund Management Board referred to in this Act as "the Board". The Board shall be composed of the following persons appointed be the President;

a. the Minister for Roads and Transport or his representative who shall be the Chairman
b. the Minister for Finance or his representative
c. the Minister for Mines and Energy or his representative
d. the Accountant-General or his representative
e. the Minister for Local Government and Rural Development or his representative;
f. two persons nominated from outside the Ministry of Roads and Transport by the Minister; and
g. one representative from each of the following organizations nominated by the organization concerned
    i. The Association of Road Contractors.
    ii. The Ghana Private Road Transport Union.
    iii. The Ghana Private Enterprise Foundation.
    iv. The Ghana Road Haulage Association.
    v. The Ghana Institute of Engineers.
    vi. The Ghana National Association of Farmers and Fishermen (Crops).

2.9 Sources of revenue

The fund derives its revenue from 5 main sources. These are;

- Fuel levy on Diesel and Petrol.

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- Vehicle Registration Fees.
- Road Use Fees.
- Road, Bridge and Ferry Tolls.
- International Transit Fees.

The relative contribution from each source is as shown in Table 2.2

Table 2.2 Revenue sources and their contribution for 2015

SOURCE	BUDGET (GHC)	CONTRIBUTION (%)
Fuel Levy	254,812,899.63	72.46
Road Use Fees	19,492,220.98	5.54
Vehicle Registration Fees	10,203,349.99	2.90
Road Toll	51,499,399.50	14.64
Bridge Tolls	7,653,579.50	2.18
Ferry Tolls	5,592,914.90	1.59
International Transit Fees	2,446,456.52	0.70
Total	351,700,721.04	100.00

Source: Ghana Road Fund

How funds are disbursed

According to the Road Fund Law, the fund is applied primarily for Routine and Periodic Maintenance of roads. The Road Fund Board issues cheques for the payment for maintenance works through the Agencies who at the beginning of the year submit their detailed annual program to the Road Fund Board approval.

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Funds are released based upon a schedule of certificates and bills for work done by contractors and operational cost of Agencies' direct Labor units for routine and periodic maintenance programs. After payment for work done, Agencies submit payment report to the Road Fund Secretariat.

2.9.1 Road Infrastructure

A country's road network serves as the core foundation for the delivery of a wide range of social and economic benefits. Thus there is the need to adequately maintain the state of road infrastructure to ensure the continual economic benefits (Salih et al, 2016). In its study on road policy, the world bank estimates that $45 billion worth of road infrastructure had been lost to the absence of adequate maintenance in those 85 developing countries. Harral and Faiz in their study argued that this estimated cost could have been avoided by spending less than $12 billion on preventive road maintenance. It is noted that in Ghana, 35 percent of the infrastructure funding gap which includes road can be attributed to inefficiency in the existing spending, poor governance, poor planning of investments, under-investment in maintenance or lack of maintenance, under-charging for services and operating inefficiencies (Buertey & Asare, 2014).

In Ghana, roads serve as the dominant means of transportation. Hence the nation's road agencies have the core mandate to develop, maintain and manage the road infrastructure asset within the country. To aid in road development and improve specialization, roads are categorized into three namely trunk roads, urban roads and feeder roads. Trunk roads are roads that run through the country connecting the regions and linking Ghana to its neighbours which roads fall under the jurisdiction of the Ghana Highway Authority. Urban roads are the roads within the cities and major towns and these fall under the Department of Urban Roads. Feeder roads finally connect from the towns and villages into the main trunk roads and are under the supervision of the

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Department of Feeder Roads. The road network in Ghana currently over consists of about 71,063km of roads. This is made up of 42,190 km of feeder roads, 14,000km of urban roads and 14,873km of trunk roads. 13% of Trunk roads length has asphalt concrete surfacing, 35% has bituminous surface dressing and the remainder has gravel surfacing (Adams, 2016). The road network condition in 2006 was 40% Good, 22% Fair and 38% Poor and in 2014, the road condition mix was 39% in good condition, 32% fair condition and 29% in poor condition as tabulated below.

Table 2.3. Total road network as at December 2017

Class Road	Length	Condition			
		Good	Fair	Poor	Total
Trunk	14,873.70	57%	36%	7%	21%
Feeder	42,045.18	35%	34%	31%	58%
Urban	15,461.77	37%	17%	46%	21%
National Conditional Mix	72,380.65	39%	32%	29%	100%

Source: MRH 2018

The size of Ghana's road network has increased by about 35,059 Km since the year 2000 mainly due to urban sprawl and increased need for rural accessibility. This has invariably increased the need for improved accessibility for a large proportion of the population; the rural accessibility index is estimated around 67% (2014, MRH). Hence the Consolidated Fund and the Ghana Road Fund were established to serve as the main sources of local financing for roads. The Consolidated Fund serves as the financial source for developmental projects whereas the Ghana Road Fund funds road maintenance works. Unfortunately, these sources are woefully inadequate

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for the construction and maintenance of the road network. The road fund in particular is not in the position to finance the entire maintenance budget leading to consistent arrears from spill over from previous projects which distort the annual budget, affect project quality and eventually leading to poor roads. To meet its commitment to contractors the road fund occasionally borrows money. According to the sector plans, less than 35% of the needed funds are secured (Adams, 2016).

2.9.2 The Ghana highway authority

The Ghana Highway Authority, as an agency under the Ministry of Roads and Highway (MRH) is a semi-autonomous body with a responsibility for the provision and management of trunk road in the country. Originally established in 1974, it was an organization solely responsible for the development and administration of the entire road network of the country. However, since the GHA Act of December 1997, its function has been limited to administration, control development and maintenance of trunk roads and their related facilities subject to the policies of the Ministry of Road and Highways. Ghana Highway Authority has three main departments namely Administration, Development and Maintenance. The departments are also made up of divisions. Administration has Personnel, Training, Finance, MIS, Audit, Legal and Public Affairs as its divisions. Development is made up of Planning, Contracts, Survey & Design, Road Safety & Environment, Materials, Bridges and Quantity Surveying. Maintenance consists of Road maintenance, Plant & Equipment and Stores & Supplies. The organizational structure of the Ghana Highway Authority is shown in the flow chart below.

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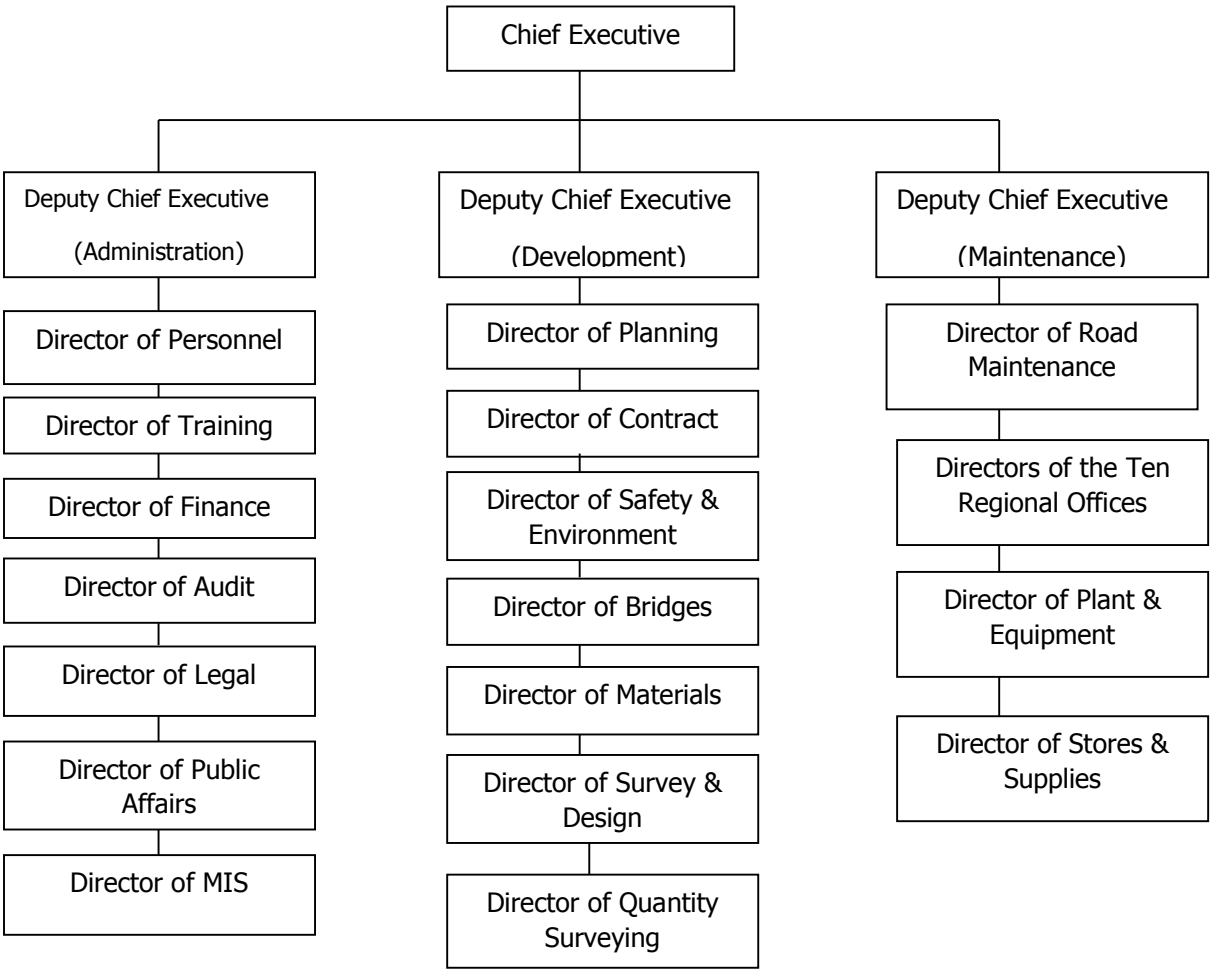

2.9.3 The Maintenance Division

Trunk roads in Ghana constitute the main highways, and they are developed, managed and maintained by the Ghana Highway Authority (GHA). The GHA Maintenance Department has responsibility for the maintenance of all National, Inter Regional and Regional roads in the network. Maintenance work can be divided up in different ways. However, the classifications used by the GHA are Routine maintenance and Periodic maintenance.

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2.9.4 Routine Maintenance

This is the work that is performed as needed throughout the year. It is the day to day maintenance of the road and is carried out on the road once or more times per year. It aims to prevent degradation of the road service level by maintaining the road surface condition, and ensuring that the pavement does not weaken. Routine maintenance is extremely important and must be given top priority annually. Annually, each road in the network must receive consideration in the budget for routine maintenance. If routine maintenance is neglected or not done properly, or money diverted to other maintenance categories, the condition of the road will quickly deteriorate. The rate of deterioration will get faster each year it is neglected. Stack

2.9.5 Periodic Maintenance

Periodic maintenance is the type of maintenance work that is only required over a long time interval, usually a number of years. Roads deteriorate due to the actions of weather and traffic. The rate of deterioration depends mainly on the type and quantity of traffic, the weather and the amount and effectiveness of routine maintenance given to the road. Periodic maintenance activities are expensive and the amount of periodic maintenance depends on the total length of the bituminous or concrete network in poor condition and the funds available in the maintenance budget.

2.9.6 Brief Empirical Literature

Scholars across the globe have investigated to some extent misappropriation of road funds. According to Manelele and Muya (2008) rehabilitation of road projects are mostly expensive than newly developed roads. Manelele and Muya (2008) also indicated that funding for rehabilitation is most often easier to come by compared with new projects.

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Odeyinka and Yusuf, (1997) cited that inflation rates and delay in monthly payment of vital projects are major causes of road fund misappropriation.

Frimpong et al. (2003) and Berko, (2007) as well as Agyakwa-Baah (2009) have indicated that Project disputes, schedule completion slippage and government interference are some major causes of road fund misappropriation.

Also, Enshassi, Al-Najjar, and Kumaraswamy (2009) within the Gaza strip underlined rehabilitation to be the pivot of rebuilding a new Gaza with very low financial muscle.

Kaming, Olomolaiye, Holt, and Harris, (1997) indicated that effect of government interference has heightened to the point of leading all road activities into corrupt acts. This point is further highlighted by Both Merewitz (1973) and Flyvberg, Skamris Holm, and Buhl (2003) where it was suggested that government be isolated from road construction.

Abobakir and Khoiry (2018) investigated the effects of delays in Road construction projects in Lybia. Construction delays have become endemic in Libya. It is imperative to create awareness of the extent to which such delays can adversely affect project delivery, especially with regard to road construction projects. It is clear that the Libyan road construction industry also faces the issue of not being able to complete projects within the allocated time. This paper identifies the effects of road construction delays, evaluates these through a questionnaire, and assesses them using an empirical method. A detailed review of related literature produced the secondary data, while the primary data was obtained via structured questionnaire which targeted the road construction projects owners, consultants and contractors. A 71% response rate was achieved; 256 out of the 360 questionnaires sent out were returned. Descriptive statistics were used to analyze the data received from the questionnaires. The findings of the study reveal that the major outcomes of road construction project schedule overruns in Tripoli, Libya include cost

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overruns, time extensions, disputes, loss of profit, breaches of contract, poor quality of work and company's bad reputation. The study makes a contribution to knowledge of the subject of the outcomes of road construction project schedule overruns in Tripoli. Computation of the means and standard deviations, together with a structural equation model, have been used for the data analysis and inference. It is found that delays in road construction projects widely lead to cost overrun, time overrun, litigation and disputes. The findings of the study also provide significant insights into the construction industry, which will help it formulate strategies in order to avoid delays and their consequences. The most important effects identified were time overrun, cost overrun and obstruction of economic and country development. The recommendations and limitations are discussed in the concluding part of the study.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methods and procedures employed in the study. It includes the type of research, the population and sampling technique, data-gathering procedure and statistical analysis of data.

3.1 Research Design

The researcher used quantitative (descriptive) form of research to investigate "financial effects of Ghana Road Fund misappropriation". A descriptive study defines a subject by constructing a profile of people, groups or events through tabulation and the collection of data on the frequencies on study variables (Cooper & Schindler, 2007). A descriptive design ensures absolute explanation of the state of affairs and makes sure that there is no bias in data collection, and enables data collection from a significant target population at a cost effective manner. Therefore, a descriptive design helped to establish the financial effects of Ghana road misappropriations.

3.2 Population of the Study

Population refers to all people or items with the similar characteristics that one wishes to study (Zikmund et al., 2011). Population is a set of people or items with similar characteristics that a researcher intends to study and to draw statistical inferences or conclusions (Gall et al., 2006). Population of this study comprised of all officials of the Ghana Highway Authority, contractors and consultants.

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3.3 Sampling Technique

The persons selected in this study meet a set criterion. The criteria include any licensed person (contractors, staff and consultants) under the Ghana Highway Authority who are well informed about financial issues regarding the Ghana Highway Authority. Therefore 20 staff, 5 contractors and 10 consultants were available for information gathering. The convenience sampling technique was used to draw out this set sample.

3.4 Data Collection

Primary and Secondary data was obtained from persons and published documents respectively. Primary data helped to gather information from contractors, staff and consultants. Secondary data was gathered from annual published financial statements of Departments of Urban Roads. The data was for a period of 5 years from 2015 to 2018. Data from annual reports were considered reliable since financial reports are prepared based on standardized accounting principles in every industry.

3.5 Data Analysis

Data analysis entails examining the data collected and making deductions and inferences. The data collected was edited, sorted for completeness and then analyzed using the statistical package for social sciences.

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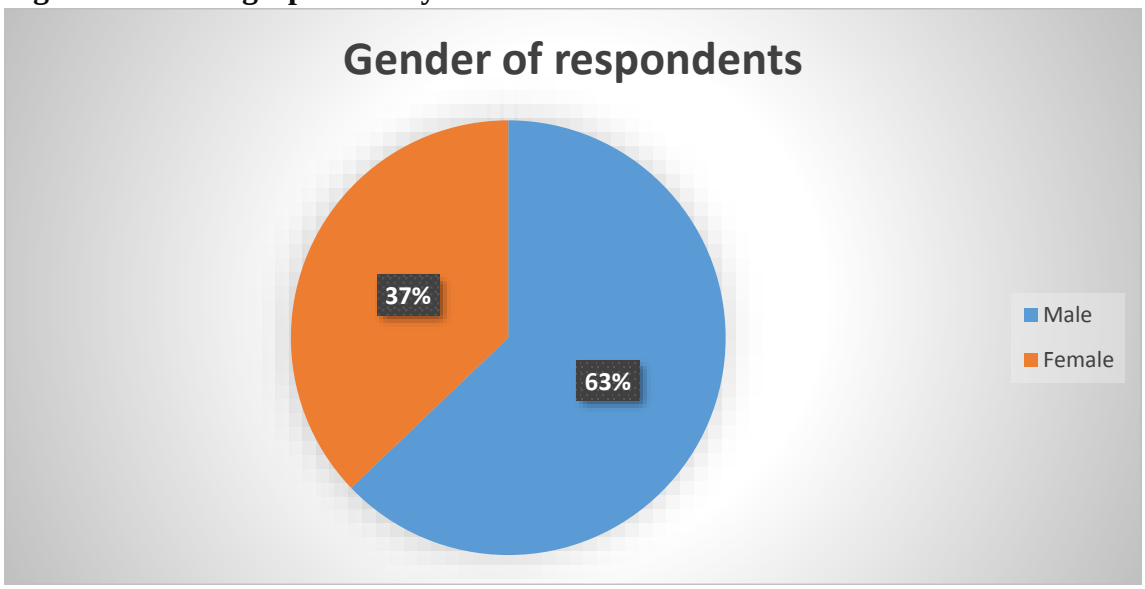
CHAPTER FOUR

DATA ANALYSIS AND CONCLUSION

4.0 Introduction

This chapter provides a thorough analysis on aspects of the survey instrument used. This chapter commence with a demographic analysis of respondents and followed by a descriptive statistics on the causes of road funds misappropriation, the effects of these misappropriations as well as development and rehabilitation funding surveys were analyzed. The findings of these study were discussed to reflect the findings of other scholars.

Figure: 4.1 Demographic Analysis



Source: Field Survey, 2019

Figure 4.1 demonstrates the gender category of respondents. Out of 35 experts on road funding in Ghana, 63% represent Males while 37% represent females. From the data gathered it is shown that males are dominant in the Ghana roads industry.

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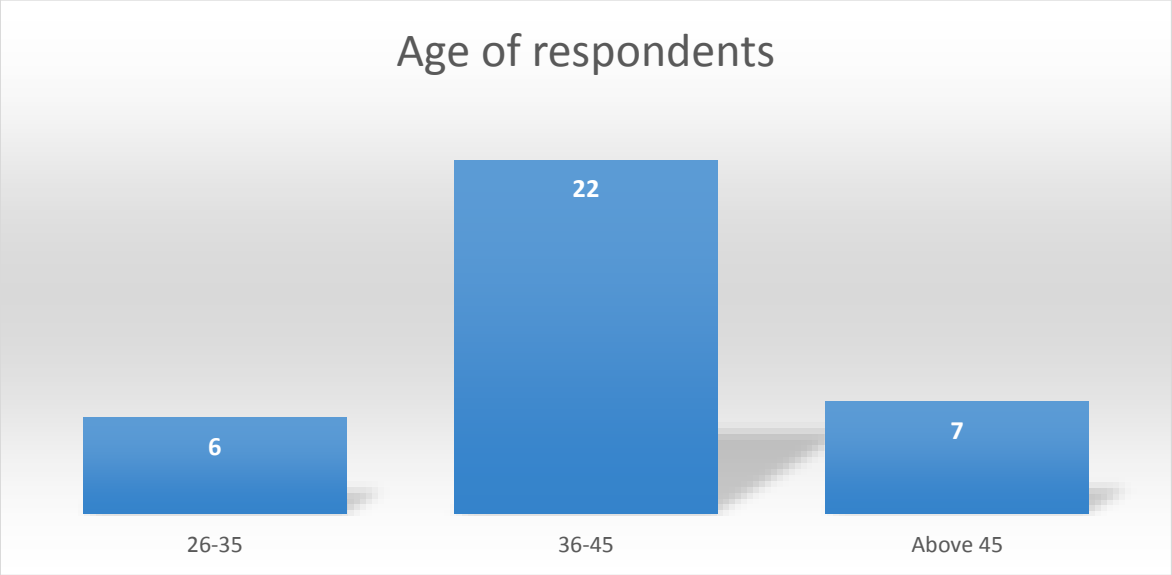
Figure 4.2: Age of respondents



Source: Field Survey, 2019

Figure 4.2 represents the age of respondents. The respondents include contractors, consultants and staff of the Ghana Highway Authority. Out of 35 respondents, 22 of the respondents are between the ages of 36-45years. The most dominant age group was 36-45years among other age groups such as 26-35years and above 45years.

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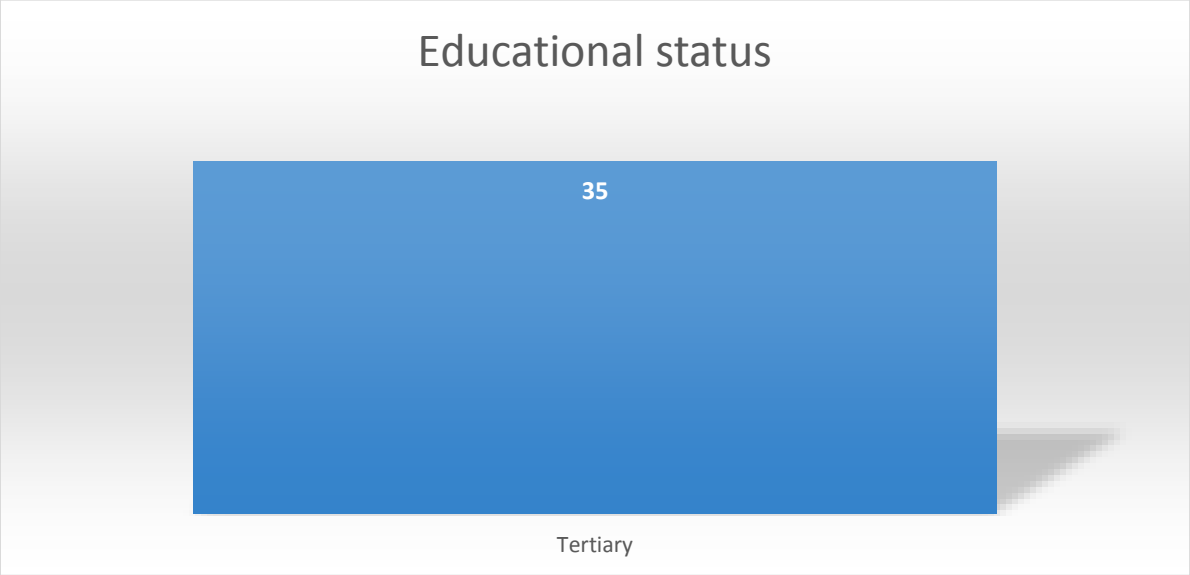
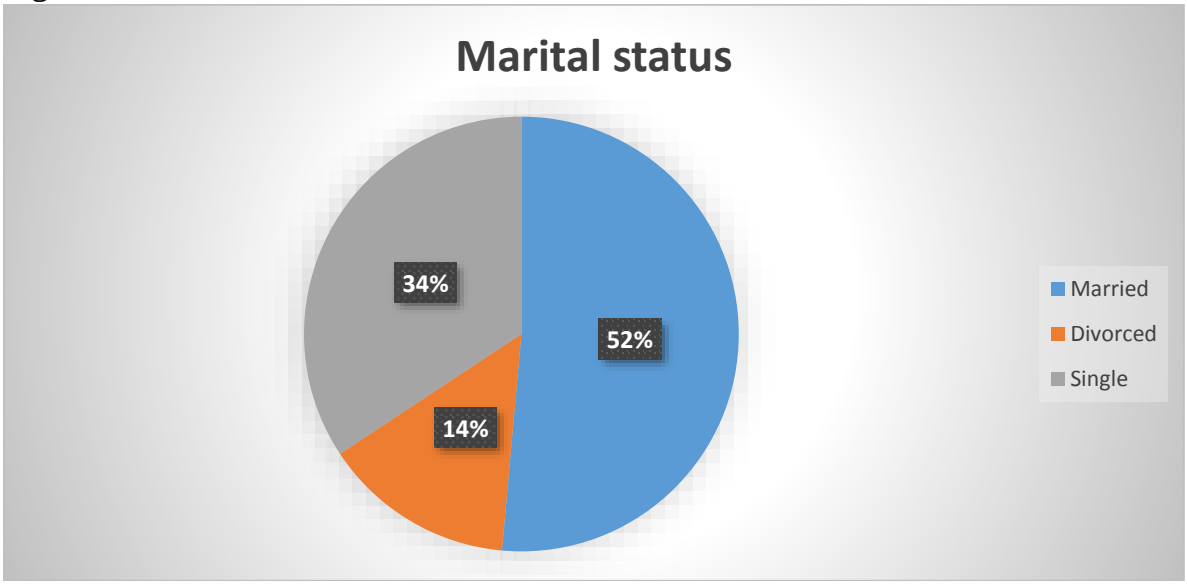
Figure 4.3: Educational status



Source: Field Survey, 2019

Figure 4.3 demonstrates the educational status of respondents. All 35 respondents indicated a tertiary level of education. This showed that respondents are largely knowledgeable on their area of expertise.

Figure 4.4: Marital Status



Source: Field Survey, 2019

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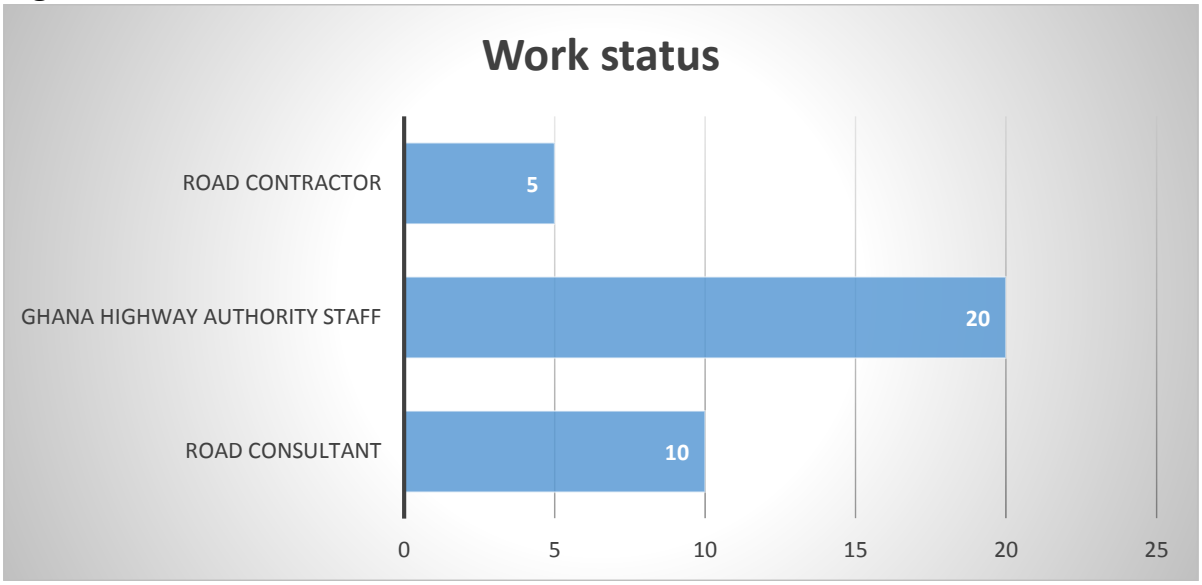
Figure 4 demonstrates the marital status of respondents. Out of 35 respondents, 52% are married while 34% are single. From the data married persons are more dominant compared to single and divorced persons.

Figure 4.5: Work status



Source: Field Survey, 2019

Figure 5 showed the employment or work status of respondents. Out of 35 respondents, 20 are staff of Ghana Highway Authority while 10 respondents are road consultants. The least dominated respondents are road contractors with 5 representatives.

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Table 4.1: Descriptive Statistics of Causes of Misappropriation of funds

	N	Mean	Std. Deviation
Underestimating cost of project materials	35	3.37	1.285
Delays in monthly payment of other vital projects	35	3.69	.530
Inflation rates	35	3.89	.530
Project Disputes/ Project litigations	35	3.83	.453
Schedule completion slippage	35	3.53	.382
Technical complexity/size of project	35	2.26	.561
Government interference	35	3.80	.406
Valid N (listwise)	35		

Source: Field Survey, 2019 Mean scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree Std. Deviation scale: <0.5= closely spread data

Table 4.1 provides information on the survey regarding the causes of misappropriation of funds. The mean value of 3.37 showed a neutral perspective regarding whether underestimating cost of project is a cause of misappropriation of road funds. The mean value of 3.69 and 3.89 showed that respondents agree that Delays in monthly payment of other vital projects and inflation rates are some causes of road fund misappropriation in Ghana. The mean value of 3.83 also showed that respondents agree Project Disputes/ Project litigations are causes of misappropriation of road funds. Meanwhile the mean value of 3.53 showed that respondents agree Schedule completion slippages is a cause of misappropriation of road fund. Lastly the mean value of 2.26 showed that respondents disagree Technical complexity/size of project is a cause of road fund misappropriation and the mean of 3.80 showed that respondents agree Government interference is a cause of road fund misappropriation. The standard deviation values below o.5 showed that responses are closely spread across the mean.

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Table 4.2: Descriptive Statistics of Effects of Misappropriation of fund

	N	Mean	Std. Deviation
Underestimating cost of project materials for a certain project has led to payment of other projects instead	**35**	**3.09**	**.323**
Delays in monthly payment for a specific projects has led to the non-completion of other projects	35	3.97	.382
Inflation rates has led to payment for other less expensive projects than the intended project	35	3.89	.323
Disputes/litigations over projects led to channeling resources of intended projects to other projects	35	3.77	.426
Schedule slippage has led to financial loss to the state	**35**	**3.14**	**.443**
Technical complexity/size of project after completion often leads to mistrust among project partners	**35**	**2.71**	**.458**
Government interference has led to more corruption within the construction industry	35	3.63	.731
Valid N (listwise)	35		

Source: Field Survey, 2019 Mean scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree Std. Deviation scale: <0.5= closely spread data

Table 4.2 provides results of the survey on the effects of the misappropriation of road funds. The mean value of 3.09 showed that respondents are neutral on whether underestimating cost or project materials for a certain project has led to payment of other projects instead. The mean value of 3.97 showed that respondents agree Delays in monthly payment for a specific projects has led to the non-completion of other projects. The mean value of 3.89 and 3.77 showed that respondents agree Inflation rates has led to payment for other less expensive projects than the intended project and that delays in monthly payment for a specific projects has led to the non-completion of other projects. The mean scores of 3.14 and 2.71 showed that respondents are neutral on whether Schedule slippage has led to financial loss to the state or whether Technical complexity/size of project after completion often leads to mistrust among project partners. The mean value of 3.63 showed that respondents agree Government interference has led to more

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corruption within the construction industry. The standard deviations below 0.5 showed that corresponding responses are closely spread across the mean.

Table 4.3: Descriptive Statistics of Road Developmental Projects

	N	Mean	Std. Deviation
Most developmental road projects are funded by external bodies	35	3.94	.482
Often road projects are developed through public-private partnership	35	2.17	.382
It is more financially expensive developing new road projects	35	4.57	.502
More time is required to develop road projects	35	3.74	.443
Comparatively funding for new road projects is easier to come by	35	2.54	.505
Valid N (listwise)	35		

Source: Field Survey, 2019 Mean scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree Std. Deviation scale: <0.5= closely spread data

Table 4.3 represents the responses on the road developmental project. The mean value of 3.94 showed that respondents agree most developmental road projects are funded by external bodies. The mean value of 2.17 indicated that respondents disagree road projects are often developed through public-private partnerships. The mean values of 4.57 and 3.74 showed that respondents agree it is more financially expensive developing new road projects and that more time is required to develop road projects. The mean value of 2.54 showed that respondents were neutral on the funding for new road projects is easier to come by. The standard deviations below 0.5 showed that corresponding responses are closely spread across the mean.

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Table 4.4: Descriptive Statistics of Rehabilitation Projects

	N	Mean	Std. Deviation
Most rehabilitation project is funded by domestic entities	35	3.74	.443
After developing a road project, rehabilitation is done through public-private partnerships	35	3.91	.284
It is more financially expensive rehabilitating road projects	35	2.23	.426
More time is needed to rehabilitate road projects	35	2.80	.833
Comparatively funding for road rehabilitation projects is easier to come by	35	3.86	.494
Valid N (listwise)	35		

Source: Field Survey, 2019 Mean scale: 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree Std. Deviation scale: <0.5= closely spread data

Table 4.4 indicates the responses on rehabilitation projects. The mean values of 3.74 and 3.91 showed that respondents agree most rehabilitation project is funded by domestic entities and that after developing a road project, rehabilitation is done through public-private partnerships. The mean value of 2.23 showed that respondents disagree that it is more financially expensive rehabilitating road projects. This means according to the experts it is less expensive rehabilitating a project. The mean value of 2.80 indicates that respondents are neutral on whether more time is needed to rehabilitate road projects. The mean value of 3.86 showed that respondents agree comparatively funding for road rehabilitation projects is easier to come by. The standard deviations below 0.5 showed that corresponding responses are closely spread across the mean.

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Table 4.5: Selected Ghana Highway Authority road Projects as at December 2018

Start Date	Completion Date	Funding sources (RF-Road Funds)	Physical Progress (%)	Funds Diversion rate (%)
Jan 2014	February 2015	RF	15.0	70.0
April 2014	July 2015	RF	50.0	22.0
May 2015	August 2016	RF	0.00	100.0
March 2016	June 2017	RF	72.0	56.0
September 2016	December 2017	RF	5.0	89.0
May 2017	October 2017	RF	85.0	10.0
August 2017	June 2018	RF	2.0	47.0

Source: Status Report Ghana Highway Authority, 2018

From the source information it is clear that large amounts of road funds are being misappropriated or diverted into other projects. This may follow from the physical progress of the project in question. This table exonerates the high propensity of Governments both past and present to misappropriate road funds for one reason or another. The graph below provides a pictorial view of a comparative analysis of the physical progression of road projects and their rate of diversion or misappropriation.

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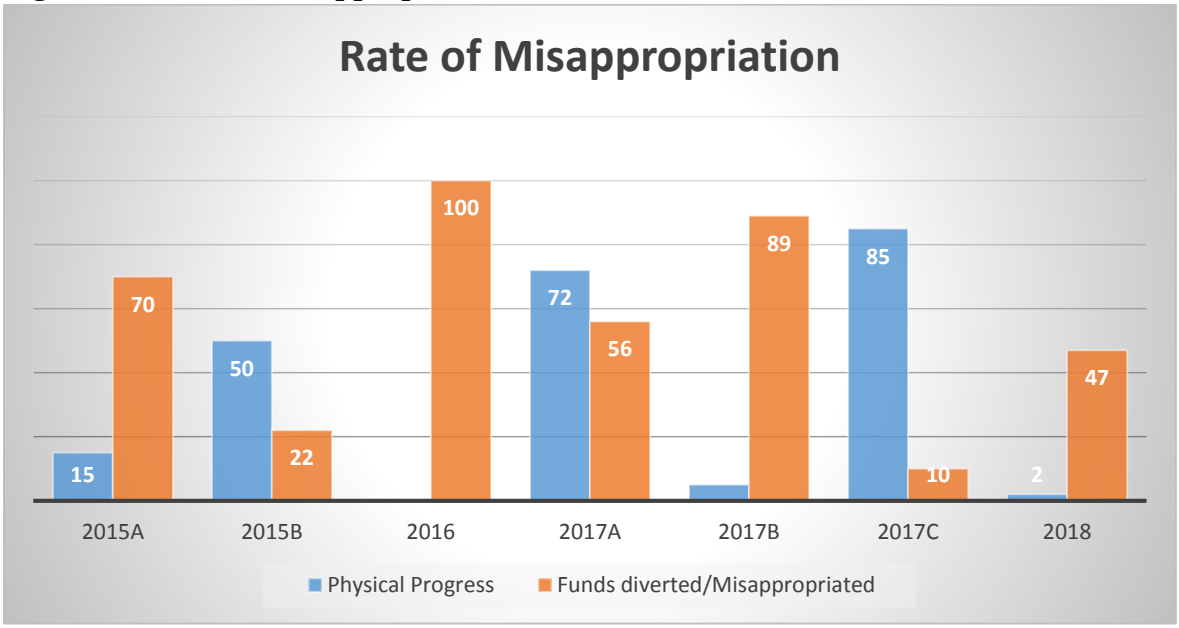
Figure 4.6: Rate of Misappropriation



Source: Status Report Ghana Highway Authority, 2018

This figure depicts the rate of misappropriation of road funds within a certain selected period against the physical progression of such projects whose funds were being misappropriated. The alphabets attached to the years indicate the 1st part= A, Second part= B and Third part= C of the year. The figures are represented in percentages. In 2015A for instance the physical progress of a road project awarded to a contractor was 15% at the time of completion. Meanwhile about 70% of the road funds for that particular project was diverted into other projects. The same applies in 2018. Here only 2% of the road project had seen some amount of progression yet about 47% of its funds had been diverted into other things. It is largely concluded from the trends that the lower the physical progression of the road project the higher the misappropriation of funds. Therefore, one reason that can result in the misappropriation of funds can be as a result of project completion rates. This is further affirmed by the respondents when they indicated that the misappropriation of funds occurs because of Schedule completion slippages.

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4.1 Discussion of Main Findings

4.1.1 Causes of the misappropriation of road funds by the road agencies

From the survey conducted respondents have provided the causes of misappropriation of funds. The causes of the misappropriation of road funds include the delays in monthly payment of vital projects, Inflation rates, Project disputes/project litigation, schedule completion slippage and government interference. From the secondary data sampled it showed also that schedule completion slippage is a root cause of misappropriation of road funds. Some scholars have indicated similar causes of the misappropriation of funds. For instance, Odeyinka and Yusuf, (1997) cited that inflation rates and delay in monthly payment of vital projects are major causes of road fund misappropriation. In Ghana scholars have added to the array of literature on the causes of the misappropriation of road funds. For instance, Frimpong et al. (2003) and Berko, (2007) as well as Agyakwa-Baah (2009) have indicated that Project disputes, schedule completion slippage and government interference are some major causes of road fund misappropriation. This current study re-establishes these factors as the root cause of road fund misappropriation in Ghana.

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4.2 Comparative analyses of funding road developmental projects as against road rehabilitation projects

A survey was conducted on comparing road developmental projects and road rehabilitation projects. Respondents indicated that most developmental projects are funded by external bodies while it is more financially expensive developing road projects and the fact that excessive time is required to develop a road project. In comparison to rehabilitation projects respondents indicated on the contrary that most rehabilitation project is funded by domestic entities and that, rehabilitation is done through public-private partnerships. Comparing the expensive nature of development road projects, experts indicated rehabilitation project to be less expensive and that funding for rehabilitation is easier to come by compared with developing a new road project. According to Manelele and Muya (2008) similar findings is shared. Manelele and Muya (2008) indicated that rehabilitation of road projects are mostly expensive than newly developed roads. Manelele and Muya (2008) also indicated that funding for rehabilitation is most often easier to come by compared with new projects. Also Enshassi, Al-Najjar, and Kumaraswamy (2009) within the Gaza strip underlined rehabilitation to be the pivot of rebuilding a new Gaza with very low financial muscle. This expression by these scholars concludes and reemphasizes the findings of the current study.

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4.3 Comparative analyses of funding road developmental projects as against road rehabilitation projects

Table 4.6: Selected Government funded road projects across all regions

YEAR	REGION OF PROJECT	AMOUNT SPENT ON DEVELOPMENT	AMOUNT SPENT ON REHABILITATION
2015	Eastern	----	5, 652, 163.73
2016	Upper East	----	56,000,166.63
2017	Western	----	17,890,285.30
2017	Western	-----	14,126,799.28
2018	Volta	-----	2,005,430.28
2019	Northern	-----	140, 894,170.55
2020	Northern	-----	146,041, 188.81
Total			**GHS 90,022,681.49**
2015	Brong Ahafo	4,576,376.38	-----
2016	Upper West	136,085,967.64	-----
2017	Greater Accra	37,517,232.53	------
2017	Upper West	1,607,098.41	------
2018	Greater Accra	4,976,294.00	------
2019	Central	2,901,258.80	------
2020	Eastern	1,493,571.00	------
Total		**GHS 189,157,798.76**	-----
Difference			**GHS 99135117.27**

Source: Annual/Status Report of Ghana Highway Authority

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From the table above it is clear that Government spent and or intends to spend about GHS 189,157,798.76 on developmental road projects while half of the amount spent on developing roads is spent on rehabilitating such roads. From the records gathered government intends to spend and or spent about GHS 90,022,681.49 on road projects. This analysis confirms what scholars have indicated about the expensive nature of road developments compared to rehabilitating road projects. It is concluded that developing road projects are more expensive than rehabilitating road projects**.**

4.4 Effect of funds misappropriation within the road construction sector of Ghana

The survey also outlined with the help of experts the effect that road funds misappropriation can have in the Ghanaian economy. According to the findings respondents indicated that Delays in monthly payment for a specific projects has led to the non-completion of other projects and that Inflation rates has led to payment for other less expensive projects than the intended project. Also it was realized that Disputes/litigations over projects led to channeling resources of intended projects to other projects and that Government interference has led to more corruption within the construction industry. All these responses summarize the effect that misappropriation of road funds can have on Ghana's progress within the Highway sector. Some scholars have however not shy away from this point. Kaming, Olomolaiye, Holt, and Harris, (1997) indicated that effect of government interference has heightened to the point of leading all road activities into corrupt acts. This point is further highlighted by Both Merewitz (1973) and Flyvberg, Skamris Holm, and Buhl (2003) where it was suggested that government be isolated from road construction. In Ghana, Frimpong et al. (2003) indicated that project litigations often lead

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government to divert funds into other sectors, sometimes these funds may be hard to be traced or accounted for.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The current study investigated financial effects of Ghana road fund misappropriation. The study was focused in the Ghana highway cycles. Key staff, consultants and contractors were given the opportunity to assess their take on financial effect of Ghana road fund misappropriation. The views were however supported with a periodic annual report spanning a period of 3-4years. The key variable under investigation in this current study is financial misappropriation of road funds in Ghana. The study was conducted mainly to fill the knowledge gap on this subject that have been left out of Ghanaian literature for some time. The study set up some specific objectives. The specific objectives include; to help identify the causes of the misappropriation funds to projects by the road agencies, to run a comparative analyses of funding road developmental projects as against road rehabilitation projects, to assess the effect of funds misappropriation within the road construction sector of Ghana.

The study elaborated on the theoretical and empirical literature in order to discuss the key variables in the study. The empirical study provided some information on previous studies which is later compared to the findings of the current study. The study adopted the quantitative approach to research. The study used descriptive and cross sectional designs. The data was sampled from staff, consultants and contractors from the Ghana Highway Authority. The instrument used for data gathering is well-structured questionnaire as well as an annual report spanning 2015-2018. The questionnaire was mainly closed ended and it helped for easier coding and analysis. A regression analysis was conducted to test expert responses on the key objectives outlined in the study. Results were mainly presented in tables and charts. Interpretations were

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given to each finding. The discussion of the study was done in line with the literature of the study. Conclusions and recommendations of the study are outlined based on the findings of the study.

5.2 Conclusion of the study

The study concludes based on the key objectives outlined in this study. The study therefore concludes that;

The causes of the misappropriation of road funds include the delays in monthly payment of vital projects, Inflation rates, Project disputes/project litigation, schedule completion slippage and government interference. From the secondary data sampled it showed also that schedule completion slippage is a root cause of misappropriation of road funds.

Most developmental projects are funded by external bodies while it is more financially expensive developing road projects and the fact that excessive time is required to develop a road projects. In comparison to rehabilitation projects respondents indicated on the contrary that most rehabilitation project is funded by domestic entities and that, rehabilitation is done through public-private partnerships.

Delays in monthly payment for a specific projects has led to the non-completion of other projects and that Inflation rates has led to payment for other less expensive projects than the intended project. Also it was realized that Disputes/litigations over projects led to channeling resources of intended projects to other projects and that Government interference has led to more corruption within the construction industry.

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Lastly the study showed that predominantly there are more males than females in the Highway sector. Also most experts in this sector are above the age of 35years.

5.3 Recommendation

The study's recommendation is based on the findings that have been outlined earlier in this study. Therefore, the following represent the recommendations;

The study recommends that enforcement of the contract terms to ensure that contractors meet timelines should be ensured since it was clear from the findings that it when projects are not completed that government and fund managers tend to divert or misappropriate funds.

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APPENDIX

UNIVERSITY OF GHANA

QUESTIONNAIRE FOR STAFF, CONTRACTORS AND CONSULTANTS OF GHANA HIGHWAY AUTHORITY

TOPIC: FINANCIAL EFFECTS OF GHANA ROAD FUND MISAPPROPRIATION: A CASE STUDY ON THE GHANA HIGHWAY AUTHORITY

I would be most grateful if you could answer the following questions on causes of misappropriation of funds for projects, funding road developmental projects and rehabilitation projects as well as effects of misappropriation of funds to Ghana's road construction sector. You are assured that any information you provide will be used for academic purposes only.

Please, tick the correct answer where applicable.

SECTION A: **PERSONAL DETAILS OF RESPONDENTS**

1) Gender:
   a) Male b) Female

2) Age:
   a) 18- 25 b) 26- 35 c) 36- 45 d) above 45

3) Educational status: a) Primary b) Secondary c) Tertiary

4) Marital Status: a) Married b) Divorced c) Single

5) Work status….?

a) Road Consultant b) Ghana Highway Authority staff c) Road contractors

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SECTION B: CAUSES OF MISAPPROPRIATION OF FUNDS

Answer by ticking where applicable, where 1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

Causes	**1**	**2**	**3**	**4**	**5**
6) Underestimating cost of project materials					
7) Delays in monthly payment of other vital projects					
8) Inflation rates					
9) Project Disputes/ Project litigations					
10) Schedule completion slippage					
11) Technical complexity/size of project					
12) Government interference					

SECTION C: EFFECTS OF FINANCIAL MISAPPROPRIATION

EFFECTS	**1**	**2**	**3**	**4**	**5**
13) Underestimating cost of project materials for a certain project has led to payment of other projects instead					
14) Delays in monthly payment for a specific projects has led to the non-completion of other projects					
15) Inflation rates has led to payment for other less expensive projects than the intended project					
16) Disputes/litigations over projects led to channeling resources of intended projects to other projects					

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17) Schedule slippage has led to financial loss to the state					
18) Technical complexity/size of project after completion often leads to mistrust among project partners					
19) Government interference has led to more corruption within the construction industry					

SECTION D: ROAD DEVELOPMENTAL PROJECTS AND REHABILITATION PROJECTS

Developmental Road Projects	**1**	**2**	**3**	**4**	**5**
20) Most developmental road projects are funded by external bodies					
21) Often road projects are developed through public-private partnership					
22) It is more financially expensive developing new road projects					
23) More time is required to develop road projects					
24) Comparatively funding for new road projects is easier to come by					
Rehabilitation of Road Projects	**1**	**2**	**3**	**4**	**5**
25) Every rehabilitation project is funded by domestic entities					
26) After developing a road project, rehabilitation is done through public-private partnerships					
27) It is more financially expensive rehabilitating road projects					
28) More time is needed to rehabilitate road projects					
29) Comparatively funding for road rehabilitation projects is easier to come by					

Thank You