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Study of change management involving physical infrastructure projects in the local government sector of Ghana, study of selected district assemblies in central region

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COLLEGE OF TECHNOLOGY EDUCATION, KUMASI

CHANGE MANAGEMENT INVOLVING PHYSICAL INFRASTRUCTURE PROJECTS IN THE LOCAL GOVERNMENT SECTOR OF GHANA: (STUDY OF SELECTED DISTRICT ASSEMBLIES IN CENTRAL REGION)

A Dissertation in the Department of CONSTRUCTION AND WOOD TECHNOLOGY EDUCATION, Faculty of TECHNICAL AND VOCATIONAL EDUCATION, submitted to the School of Graduate Studies, University of Education, Winneba in partial fulfillment of the requirements for the award of Master of Philosophy (Construction Technology) degree.

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DECLARATION

STUDENT'S DECLARATION

I, Danquah-Yeboah Isaac, declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or in whole, for another degree elsewhere.

SIGNATURE ……. DATE……..

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work were supervised in accordance with the guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: DR. NONGIBA ALKANAM KHANI

SIGNATURE ……. DATE……..

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May the Almighty God richly bless you all.

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DEDICATION

Due grace of almighty God and his abundant blessing upon my life. I dedicate this research work to my mother, siblings, wife, and children Nana Adjoa (Eno), Awura Adjoa and Ama for their prayers, moral support financial support and encouragement to the success of my education. I also dedicate it to all my loved ones and good friends and not forgetting my course mates especially my roommates.

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ABSTRACT

Change is an endemic issue in construction project environments and often involves engineering innovation to solve problems. The aim of the study was to examine the change management involving in the physical infrastructure projects in the local government section in Ghana and to make appropriate recommendations based on the findings of the study in relation to physical infrastructure projects. The study adopted a quantitative approach of enquired through questionnaires. The target population of the study was construction professionals employed by district assemblies in the Central Region. purposive sampling technique was used to select 12 out of 22 district assemblies in the Central Region. A total of 177 questionnaires were distributed to all 177 construction professionals employed by the 12 district assemblies and a response rate of 45% was achieved. The findings of the study revealed the most important causes to included; political influence, litigation/conflicts on land, new government regulation and natural disasters. Also, the study found challenges associated with change management involving physical infrastructure projects in the assemblies studied: change of government, failures to deal with problems in time, the poor performance of subcontractors, defective workmanship and lack of coordination between consultant and contractor.The study further found that the impact of change on the performance of physical infrastructure in the projects in the assemblies is not only limited to time and cost but includes quality. Based on the findings, the study has made recommendations for managing change during project execution and for investigating the negative effects of the causes of change.

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Generally, change management (CM) is a collective term for all approaches to prepare and support individuals' teams and organizations in making organizational change. It includes methods that redirect or redefine the use of resources, business, process, budget allocations, or other models of operations that significantly changes a company or organization. Organizational change management (OCM) consider the full organization and what needs to change while change management may be used solely to refer to how people and teams are affected such organizational transitions. It deals with many different disciplines from behavioral and social science information technology and business solution. (Ortenzion, 2012).

In a project management context, the term change management may be used as an alternative to change control process wherein changes to the scope of projects are formally introduced and approved. Globalization and constant innovations of technology result in a constantly evolving business environment. Phenomena such as social media and mobile adaptability have revolutionized and the effect of this is an ever-increasing need for change (Lewin, 1951). The growth in technology also has a secondary effect of increasing the availability and therefore accountability of knowledge easily accessible information has resulted in unprecedented scrutiny from stockholders and the media and the pressure on management with the business environment experiencing so much change, organizations must then learn to become comfortable with a change as well. Therefore, the ability to manage and adapt to

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organizational change is an essential ability required in the workplace (Ortenzion, 2012). Yet major and rapid organizational change is profoundly difficult because the structure, culture, and routines of organizations often reflect a persistent and difficult to remove the imprint of a past period which is resistant to radical change even as the current environment of the organization charges rapidly.

Due to the growth of technology modern organizational change is largely motivated by exterior innovations rather than internal factors when these developments occur; the organization that adapts quickest, create a competitive advantage for themselves while companies that refuse to change get left behind. This can result is a drastic profit and a market share loss (Lewin, 1951). Organization change directly affects all departments and employees. The entire company must learn how to handle changes to the organization. The effectiveness of management can have a strong positive or negative impact on the employees' morals. (James, 2016).

Projects changes and/or adjustments are inevitable as they are fact of life at all stages of design and constructions. In a EPSRC (Engineering and Physical Science Research UK) report (Sun et al., 2004), it states that "more than a third major clients are dissatisfied with contractor's performance in keeping to the quoted price and to time, resolving defects, and delivering a final product of the required quality" it may be inferred that the client's dissatisfaction is likely caused by change orders running through physical infrastructure projects. The efforts of managing change orders have imposed a huge burden on project management, and it is a nightmare that industry people wished they never have to face changes in construction, also cause serious ethical problems and disputes. According to an ethical survey done in 2004 by (Sun et

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al. 2004) 84% of respondents expressed that they had encountered situations that they considered unethical in their business dealings, whiles 61% of respondents stated that industry was “taunted by unethical acts” owners are blamed forbid shopping and for playing tricks in payments, contractors were accused of overbilling, front-end loading and playing change-order game. (Sun et al., 2004).

Change management is a pure application-oriented issue and requires engineering innovation to solve the problem based on our investigation of the construction change management area and a pressing need form industry versus the scarcity of literature and software tools in the domain, poses a promising opportunity for research and development in construction. (Annes, 2012).

Classification of changes in general terms applies to changes in the construction domain. Motawa et al. (2007) summarize that “based on time change could be anticipated or emergent proactive or reactive or pre-fixity or post-fixity based on need, the change could be elective or required, discretionary or non-discretionary of preferential a regulatory-based on effect. The change could be beneficial neutral or disruptive” however, since the construction industry in the project base, the best classification is to discuss changes in the context of typical stage/phases in a construction project.

1.2 Problem Statement

A significant change in local authorities in recent years has brought disruption to the organization and misalignment among staff at different levels. Whiles good progress has been made in delivering efficiency savings; there is still a considerable amount of

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work still left to do as the authority program continuous to hit home. Developing new and more efficient ways of working, whilst managing the change this involves will become essential factors over the coming years as local authorities continue to adapt to the challenges the future holds (Anaup, 2016).

According to CIBW78 (2008), international conference on information technology in construction, changes in construction projects are very common and likely to occur from a different source, by various causes at any stage of a project and may have considerable negative impacts on items such as cost and schedule delays. According to Annes (2012) a critical change may cause consecutive delays in project schedule, re-estimation of work statement, and extra demands of equipment, materials labor and overtime changes, if not resolved through a formalized change management process, can become the major source of contract disputes, which is a severe risk contributing to project failure.

Decisions are made every day in local government infrastructure projects in construction processes based on incomplete information assumptions and the personal experience of the construction professionals that might lead to change or work. Both change and rework are done in the form of adding, detecting or replacement. However, given the same problem, they have different behavioral patterns. (Annes, 2012) If changes are tackled well it can lead to a big number of claims and disputes. The industrial need for a change of effective construction change management in versus the scarcity of meaningful R&D work appears to be a fact in the construction industry. There is very limited research work addressing the change management issues

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specifically within the construction project management context as well as a study area. (Annes, 2012).

The primary causes of change orders are owner-initiated changes and designer's errors and omission (Isaac and Navon, 2008). The impact of changes to construction projects needs to be evaluated case by case in order to assist with the decision-making process. Though some changes may bring in "benefits" to stakeholders especially to the owner in the long run, most changes, if not managed properly, will result in "negative" impacts (Lu and Issa, 2005) believed that most frequent and costliest changes often related to design such as design changes and design errors. Apart from the project management domain, some other researchers have been trying to address change management issues in various ways. 4D or 5D integration which integrates time and cost models in addition to 3D geometry models. In this way, changes cannot only be controlled in the design and engineering stages in the whole construction process but also controlled in the built environment life-cycle. Although the study Change Management has been done in most of the advanced countries. The study is limited in African Especially in Ghana as well as study area Central Region. In the study area, some physical infrastructures are still uncompleted for so many years now, due to political and administrative changes. For the purpose of this study, the researcher covered the political and management Change and how it affected the physical infrastructure in local Government sector in the central region of Ghana.

1.3 The Aim and the Objectives of the Study

The aim of the study is to examine change management involving physical infrastructure projects in local government sector in Ghana and how the change would bring positive impact as change management involving physical infrastructure projects

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in the local government sector in the central region of Ghana. The objectives of the study are:

- To examine the most important causes of change in physical infrastructure projects in the local government sector in the Central Region in Ghana;
- To determine the impact of change on the performance on physical infrastructure projects in the local government sector in the Central Region in Ghana in relation to time and cost.
- To assess the challenges associated with the change management involving in the physical infrastructure projects in the Central Region in Ghana; and
- To develop a framework of recommendation for an effective change management process involving physical infrastructure projects in the local government sector in the Central Region in Ghana.

1.4 Research Questions

- What are the most important causes of change in physical infrastructure projects in the local government sector in the Central Region in Ghana?
- What is the impact of change on cost and time performance in physical infrastructure projects in the local government sector in the Central Region in Ghana?
- What are the challenges associated with change management in physical infrastructure projects in the local government sector in the Central Region in Ghana?
- How to develop a framework for an effective change management process involved in Physical infrastructure in local government?

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1.5 Significance of the Study

Change management is important for physical infrastructure projects in the local government sector in Ghana. Most of the projects undertaken in the local government sector undergo a series of variations that result in a change of the project. There are many people or team inside or outside of the construction industry that will benefit from this study. Among these people are owners, consultants, contractors, designer, and suppliers.

The study can help the stakeholders to determine the effects of change on physical infrastructures projects in the local government sector. The study also assists the team to identify the important causes of change management in physical infrastructure in the local government sector. The study will serve as reliable information to government and academia and stakeholders of such a field. It will assist the government in taking critical decision especially on physical infrastructures like buildings and roads.

This study will also serve as reference material for students (graduates and undergraduate) and the institution on change management of construction projects. Finally, the study will serve as a source of relevant information for further studies on related topics.

1.6 Limitation and Delimitations

The study covered a large geographical area in Ghana but due to time and finance constraints, it covered some selected districts Assemblies in Central region and in Ghana and professionals in the construction industries which includes engineers, quantity surveyor's architects, etc. the scope would have covered more than this professional but due to time constraints it was limited to these professionals. The challenges encountered in the course of this research greatly constrained the scope of

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the research. The respondents were busy with the sense that you always meet their absences and excuses due to their busy schedules. Some questionnaires were not able to receive due to the fact that respondents were not positioned to assess of fill. The quantitative data aspect of the questionnaire was effectively assessed by respondents and leaving the qualitative part that happened to be structured interview on the last aspect of the questionnaires, this made the researcher concentrated on only on the quantitative aspect to forgone the other aspect, due to the fact no respondent answers the structured interview.

The study wants to cover a large Geographical area but due to financial and time constraints, it will cover some selected Assemblies in the Central Region... Contextually the extent of the study was limited to Architects, Quantity Surveyors, Building Inspector, Work Engineers, and Directors in local Government. The study will consider that such a sample is better to position to provide relevant information on the projects.

1.7 Organization of the Study

The content of the chapters as following: Chapter 1 described the research overview, the problem of the study, as well as objectives. It indicated significant of the study, limitation, and organization of the study.

Chapter II: Is the literature review section of the thesis had tackled general information and ideas that relevant to the research area from articles journals and internets.

Chapter III: Outlined the research methodology which deals with study design data required and resource, data collection tools, and methods, data analysis and reporting.

Chapters IV: Covers the result and findings, this when the various results and findings were represented and enumerated.

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Chapter V: Discussion of the result from the various respondents are discussed and analyzed.

Chapter VI: Contain the conclusion of the study, findings, and recommendation.

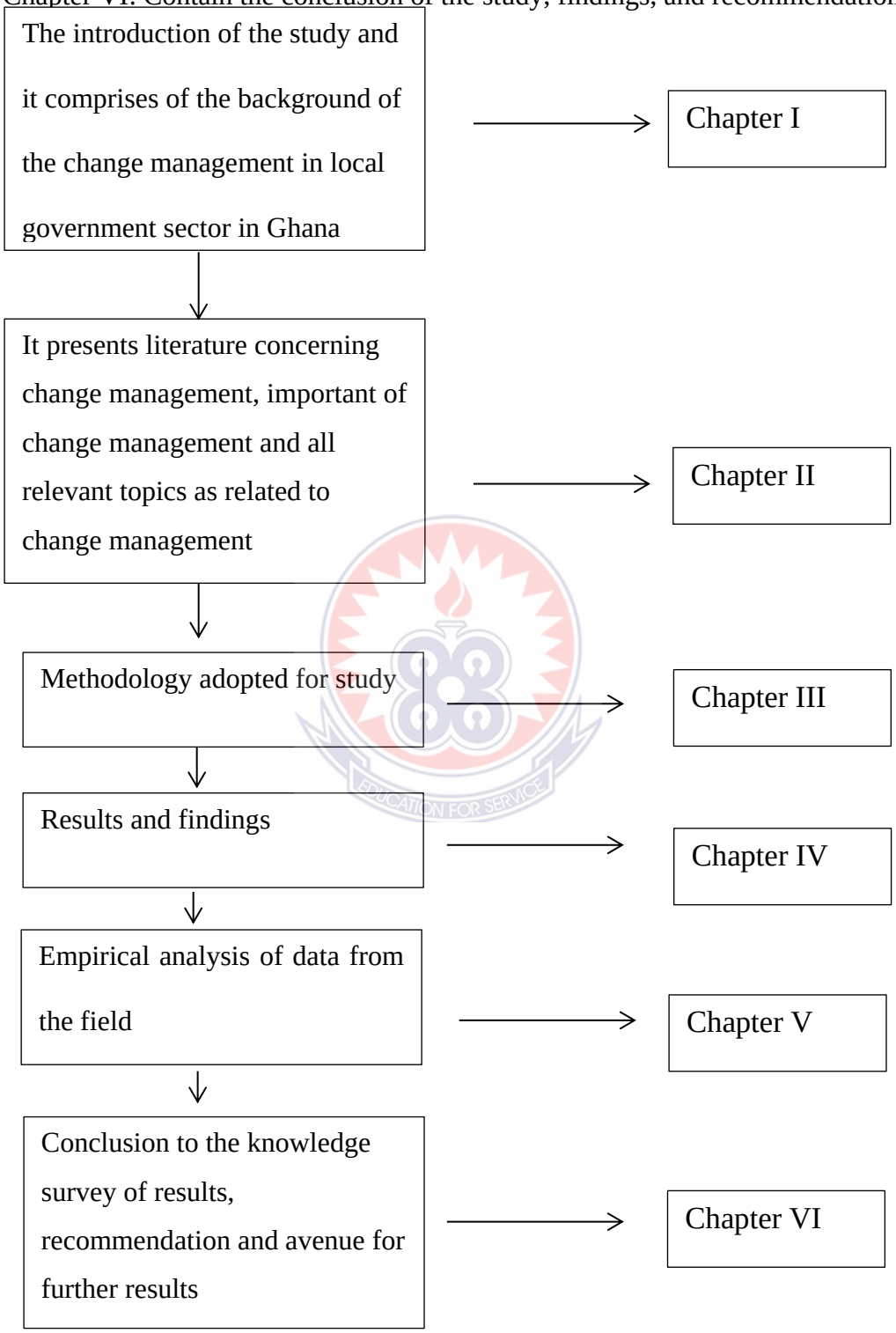

Figure 1.1 Flow diagram of the research process

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Change is an inescapable part of both social and organizational life. Today's business environment is changing so rapidly, so quick that if you do not accept the change and move with it, you will be left behind. Organizations no longer have a choice they must change in order to survive (Seddon & Akorsu 2005).

Organization change focuses on the way in which the organization is structured, the behavior of employees, or the technology that is used in getting the work done. Hence, change is an alternation of an organization's environment, structure, technology or people. In other words, organization change is any substantive modification to some part of the organization. if it were not for change, planning would be without problems because tomorrow would not be different from today. And since the environment will be free from uncertainty, there would be no need to adapt (Seddon & Akorsu 2005).

In order to survive in this "brave new world", says Baguley, (1994) both we, as individuals, and our organizations will need to be able to change ourselves. However, it is not enough to be reactive and to be driven by these winds and currents of change. We have to be able to sense the changing current and be able to read the volatility and turbulence of the technical, economic, social and political climates. This is consistent with Glass (1996) when he noted instead of rushing around changing everything to keep up, we need to take a balanced view of what changes will affect us and how we need to react to them. In telling us what all the "excellent" organizations are doing differently, the change mongers often omit to tell us what they have kept constant. Few

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organizations can cope with continuous change. Too much change makes them internally focussed and distracts them from their customers.

The industrial need for effective construction change management versus the scarcity of meaningful R& D work appears to be a fact in the construction industry. There is very limited research work addressing the change management issues specifically within the construction projects management context. Sun et al (2006) designed a change management toolkit for construction projects that includes a change dependency framework, a change prediction tool, a workflow tool, and knowledge manage guide – Ipek & Omer (2007) investigate requirement- design relationships and enable traceable requirement in architectural design. They developed a prototype system called design track and used LEED requirements as a case study.

The primary causes of change orders are owner-initiated changes and designer's errors and omission (Isaac & Navon 2008). The impact of changes to construction projects needs to be evaluated case by case in order to assist with the decision-making process. Though some changes may bring in "benefits" to the stakeholders especially to the owner in the long run, most changes, if not managed properly will result in "negative" impacts Lu & Issa (2005) believe that most frequent and most lastly changes are often related to design such as design changes and design errors. Apart from the project management domain, some other researchers have been trying to address change management issues in various ways. 4D or 5D integration which integrates time and cost models in addition to 3D geometry models. In this way, changes cannot only be controlled in the design and engineering stages in the whole construction process. But also, be controlled in the built environment life-cycle to some extent.

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Jongeling & Olofsson (2007) suggests that location-based scheduling provides a promising alternative to activity-based planning approaches for the planning of workflow with 4D CAD. In this approach, work schedules are integrated with design models so that changes in design or during construction can be better coordinated. In the latest technologies of Graphisoft, automation extends beyond design changes. ArchiCAD also automates and coordinates the creation of documents, schedules, bill of materials and quantities estimates through its integrated "virtual building" model based on IFC's BIM Models.

- Data sharing and in term operation, Bakis et al. (2007) proposed an approach to model the complex interrelation of the different component in order to maintain consistency in architectural design. When changes happen, the interrelation models help notification/ propagation of version changes.
- Web-based integration and collaboration approach. Lottaz et al (1999) proposed using constraint satisfaction technique to express possible large families of acceptable solutions in order to facilitate and abbreviate the collaboration and negotiation process, ultimately to improve the change management and the productivity during the phase of design and construction.
- By combing web services and intelligent agents, collaborative workflow technologies can be used to handle the dynamic and complex business process on the web and can be applied to construction project management systems for effective and flexible change management.

The concept of Engineering change in manufacturing typically deals with any change or inconsistencies between product designs, engineering and manufacturing life-cycles. Engineering change management (ECM) is thus focused on the co-ordinance of product

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life-cycle model (PLM) and the enterprise management model in ERP since engineering change is not contractual, the impact of Engineering changes stays generally within an organization and "well controlled via the vast adoption of integrated system in manufacturing enterprises such as CAD/CAE/CAPP, PLM and ERP software tools. Construction changes, on the other hand, are harder to control because of the fragmented nature of the industry as well as low investment and limited adoption of IT technologies.

Changes are inevitable in construction projects. And during a construction project many, decisions have to be made, often based on incomplete information, assumptions and personal experience of the construction professionals. Change is a common denominator in all construction projects; though the size, scope, and complexity of the project may vary significantly from case to case. Change management is a critical problem faced by the construction industry. The effort of managing change orders has imposed a huge burden on project management. Changes are identified as the major cause of project delay, cost overruns, defects or even project failure. More seriously, playing games on changes cause serious ethical problems and disputes in the industry. Changes in construction projects are very common and likely to occur from different sources by various causes, at any stage of a project and may have considerable negative impacts. This paper addresses the types the changes, impacts, and correction actions in the context of typical stages/ phase in a construction project. Effectively managing change orders in construction processes is not oval because change orders are a part of the contract and they need to be strictly traced in terms of contracts, documents approval process payment (Dubasi, 2000).

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Based on a synthesis of several change process models reviewed, and the characteristics of computational environments, a generic change process model is proposed having five stages in a sequence: identify, evaluate & propose, approve, implement and review building an effective construction change management system is very challenging and one can hardly find a software tool on the market that deals with issues. Existing change management module that some software claimed to have is mostly a feature of the change information recording and document approval (Anne's, 2012) Change estimation impact analysis, post-change analysis, statistics and more importantly, change traceability are lacking in these solutions. A collaborative workflow, the system requires technical supports from different technologies, including collaborative workflow, system integration, and collaboration technologies and O. Modelling Web-Solution for construction change management yet. More work will have to be undertaken to develop innovative and practical solutions that are adaptable by the industry (Cipria, 1990).

The causes of the change orders and their effects on the project cost and scheduled are complex and influenced by numerous infer rated factors. Change management is a critical problem faced by the construction industry. It has been revealed that improving the administrative process of change orders beneficial in reducing the cost and risk for all the project participants and encourages a more trustful relationship (Kuala, 2016).

2.2 The Construction Industry

Construction industry growing year – on year as contributing to the economy, Ghana's constitution sector in increasingly dynamic and led by private sector participants. Construction activity contributed $38bn to GDP in 2014 at the current prices, according

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to the Ghana statistical service. This was equal to 12.7% of GDP and up 26.9% from $2.9bn in 2013. The sector has grown strongly over the past decade, up from $280.3m in 2006 and has become of increasing importance to the broader economy, more than doubling and a contributor to GDP from 5.7% in 2006. Government investment is a major driver of growth, with a substantial pipeline of projects in transport infrastructure in particular expected to be rolled out in the coming years, often using –public-private partnership models (construct ghana.n.d).

Construction in any country is a complex sector of the economy, which involves a broad range of stakeholders and has wide-ranging linkages with other areas of activity such as manufacturing and use of materials, energy, finance, labor, and equipment. The Ghana portfolio of World Bank comprises $2140 billion in 24 projects with a disbursed amount that has been increasing since FY09. In FY2015, $323million was disbursed and as ofMarch 2016 $1342 million, had been disbursed. In Ghana regional projects reflects the country's role as West Africa hub, with four projects of nearly $382 million in transport energy higher education, trade facilitation, and agriculture (Construct Ghana, n.d).

Construction is a key sector of the economy of every country. The construction industry is important because of the outputs and outcomes of its activities. It contributes to national socio-economic development by providing the building which is used in the production of all goods in the economy. Moreover, the physical infrastructure, built through construction activity, the nation's economic backbone as it forms the arteries for the facilitation of productive activity by enabling goods and services to be distributed with outside the country (Construct Ghana, n.d). The items built also offer

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social and welfare benefits. For example, housing fulfills one of the basic needs of people by providing shelter from the physical elements. Built items also offer people the opportunity to improve their living standards. The quality of the design and construction of these facilities has an impact on the efficiency with which the productive activities and the provision of services can be undertaken. Thus, the construction industry can influence the competitiveness of enterprises within the economy. Construction can also affect the ability of the nation to attract foreign investment (Hillebrandt, 2000).

In every country, the construction industry constitutes a large part of the economy. Studies show that construction contributes between 5 and 10 percent of gross domestic product (GDP) in all countries, employs to 10 percent of the working population, and is responsible or about half of the gross fixed capital formation (Construct Ghana, n.d). It is estimated that investments in housing alone account for 2 to 8 percent of GNP; between 10 and 30 percent of gross capital formation, between 20 and 50 percent of accumulated wealth; and between 10 and 40 percent of household expenditure. Owing to its large size, the construction industry has the potential to contribute directly to the growth of the national economy. At the same time, a period of low construction output can adversely affect the growth of the economy (Construct Ghana, n.d). Since construction projects have a long period of gestation, the industry only responds slowly to a stimulus acting on it, whether this is planned or not. Thus, a long period of low demand can significantly have impaired the ability of the industry to meet an increase in demand and possibly slow down the growth of the economy over the short term, and national development in the long run (Lopes, 2012).

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As governments are responsible for a large part of the investment in construction in any country (such as schools, hospital, airports and ports; roads, bridges, and irrigation system; and water and power infrastructure governments can vary the levels of their spending in construction to introduce defined charges in the economy. Thus, the industry is said to have the potential to be "an economic" regulator or the balance wheel of the economy. However, inadequate knowledge about the intricate relationship between construction and other sectors of the economy militates against the effective use of the construction for this purpose (Burns, 2001).

The construction industry has many complex linkages to the other sectors of the economy and can stimulate activities in these sectors. For example, construction uses materials and the components made by the manufacturing sector. These inputs are supplied by the commerce and services, as well as the legal, accountancy and other relevant professional services from this sector. It must also be noted that one time or another, enterprises in all sectors will require some construction. Thus, the linkage is two – way; constructions affect the other sectors and vice versa. The nation's stock of constructed items in a large proportion of its savings studies shows that Gross Domestic fixed capital formation in construction 45 – 60 percent of the total capital formation for this reason. It is essential to ensure that these built items, which represent national wealth are of high quality and durability and can resist all forms of obsolescence for as long as possible. Construction activity is relatively labor intensive. Thus, construction can generate employment (Lopes, 2012)

Moreover, a constructed item has the potential to generate incomes even in isolated communities, and hence alleviate poverty. This means that a relatively large country

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such as Ghana, it is essential reasonably strong construction industries in each region. (Ofori, 1990).

For a construction industry to play its due role in the economy and in socio-economic development, it should have the capacity and capability to meet the demand put to it and to perform well. The industry should also be able to take maximum advantage of the opportunities for its own growth. For these reasons, effort should be made to ensure the continuous development of the industry (Ofori, 1990). Apart from the economic reasons, the need for continued action to improve the construction industry is large, complex and geographically spread out. It is also diverse with many factors influencing its performance; well – being and prospects at many levels. The industry is typically fragmented in terms of the role of the participants as well as the distribution of the size of its components firm. (Annes, 2012) Finally, it is pertinent to note that many previous attempts to improve the industry in many countries have failed to success studies show that the construction industries of developing countries, including that in Ghana face many problems. There are three main reasons for these problems first; the economic weakness which these countries face means that there are inadequate resources to devote to efforts to improve the industry (Ofori, 1990).

The construction industry in Ghana is an important element of the national economy. One of the most important fundamentals bonding well for the sector's future is a demographic change. Ghana demographic change. Ghana population is growing quickly at around 2% per year. Some 38% population of the population is under the age of 15, according to the Population Reference Bureau, a Us based non-governmental organization. This suggests both sustained demand for residential property and a

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growing market more broadly (Construct Ghana, n.d). As there is a growing link between construction and economic activity projected economic growth in Ghana and the emerging oil industry suggests that demand for construction goods and services with an increase in coming years. Many multiwall firms are moving into developing countries where a lot of markets and emerging, there is a demand for construction work. Another reason the demand for construction is likely to increase is that developing country according to the United Nations human development report and they have a great need for the almost all types of constructions such as highways, roads, hospitals, power plant, dams housing maintenance on existing infrastructure (Construct Ghana, n.d), etc. With the current growth in various sectors of the country changes will be needed to be made in the infrastructure that is so crucial to bolstering the expansion of the region, like foreign companies, some local companies and investors are now competing for contracts. This only the beginning of opportunities for the companies to take advantage of the growth surge and begin to develop stature in the developmental of new property construction projects. International construction groups operating in Ghana include Taylor Woodrow the market leader Bilfinger Berger and Sean Satom (Construct Ghana, n.d).

Ghana offers its people the opportunity to achieve the dream of living a comfortable lifestyle with its new development projects and continued economic growth. The demand for upper –end commercial properties has increased because of the growth in GDP in Ghana. The increase in population and emerging middle class led to a greater demand for modern shopping centers and commercial emails. Modern office developments are springing up all across Ghana and expected to continue to increase 2020 (Construct Ghana, n.d).

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Moreover, the industry fails to receive the stimuli by way of job opportunities; and the market forces which support innovation are not present. Secondly, many of the government of these countries do not recognize the importance and needs of the construction industry, and hence do not formulate and implement programs for upgrading the industries. Finally, the inherent underdevelopment of the construction industries are these countries means that they are unable to deal with weakness; to make a strong case for help or to contribute to the efforts which the government make to develop the industries (Ofori, 1993). Owing to the problems, the performance of the construction industries on projects in developing countries, including Ghana, is poor productivity. On most construction projects undertaken in the developing countries, the results fall short of targets set by the participants themselves in terms of budgets. Schedules (time) and specifications (quality). The constructed items in these countries are also unsatisfactory in terms of their maintainability and durability. As constructed items involve huge investment are expected to last for several years, this has significant industries in these economic and social consequences (Ofori, 1993).

Moreover, the performance of the construction industries in these countries compares unfavorably when viewed against those of their counterparts in industrial nations.

Another area where the construction industries perform poorly is with regards to environmental consideration. Construction activities in developing countries may involve excessive resource. Consumption and cause land degradation, loss of habits and water pollution, and involve high energy (Construct Ghana, n.d).

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2.2.1 Construction projects

Construction projects have a very poor reputation in coping with its completion. According to Ogunsemi & Jagbboro (2006), Construction projects have been viewed as one of the yardsticks for measuring the performance of the projects and the effectiveness of the project organization. Construction projects not completed on time are a universal phenomenon. Completion of a construction Projects on time is one of the goals the employer as well as builder since each party tends to incur extra charges and lose potential profits when there is a delay in completion. (Chabota et al., 2008). Further, they stated that construction projects are viewed as positive if it is completed in time, within budget as well as to the level of the excellence standard stated by the employer at the commencement of the project. Though, severe disapprovals are created when the projects take far longer than scheduled. Thus, the majority of the construction projects fails to meet the planned deadline (Chan & Kumaraswamy, 1996).

There has been a profound change in construction projects and its practices over the years. The customers – focused marketplace and fierce competitive services positioning have demanded attention to performance improvement and value addition in delivery. One of the major methods in which contemporary societies produce new value is through projects construction which creates bodily assets that can then be used to facilitate the achievement of social and economic ends, (Winch, 2002). The creation of such asset which includes schools, hospitals, and roads in most of the time undertaken by the governments to be able to attain targets set towards the improvements of the conditions in various sections of their countries, (Ampadu-Asiamah, 2013).

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According to Armah (1999), Construction is considered unique in Ghana as it is a very country in the world, because of it stimulates the development of other sectors of the economy and contributes greatly to the overall of gross domestic product. The construction has been a key part of the administration's outlay since Ghana gained independence in 1957. The Government "s development plan, vision 2020, spell out plans of making Ghana a middle-income country by the year 2020. Provision of infrastructure in the public sectors is prominent in the government's plan towards achieving this aim. (Ampadu- Asiamah, 1999). This is particularly manifested in the education sector where the government through the Ghana Education Trust Fund (GETFUND) provides funding to improve education. In Ghana, the nature of the construction industry and the manner in which the projects are managed need to be check properly. There is, however, the need to identify the causes problems such as delays in order to reduce the occurrence (Armah, 1999).

A project is well-defined, (Elbeltagi, 2009), whether or not construction, by the succeeding features: A well-defined objectives, defined task to be done, a well- defined commencement and, completion, and resources being expended. According to Dikmen et al. (2004), the goals of building projects as follows:

- To accomplish the building within stated;
- To finish within the budget; and
- To complete in agreement with technical as well as administrative specification.

The aim of every building or infrastructure is to construct something. What distinguishes the building industries is that its schemes are large, constructed on-site, and usually distinctive. Time, money, labor, equipment, as well as materials, are

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examples of resources that are expended by the projects (Elbetagi, 2009). Projects according to Elbetagi (2009), begins with a specified objective recognized by the client and completed by the project team. As the team instigate to design, estimate, and plan out, the project, the members study more about the project that was recognized when the objectives were first known.

Client's budget in construction projects represents the maximum expenditure on the projects he is prepared, (Tech, 2010). The preliminary cost which is normally established before the commencement of the construction process is dependent on the amount of money the client has available for spending on the project and the agreed approximate estimate prepared by the design team. It has become a crucial issue which influences the client's choice to engage in the project because it establishes the probable financial commitment prior to final designs and documentation. It also provides the design team with early cost information which influences the design solutions in respect of construction, type of specification and finish. (Ibid). Unfortunately, this preliminary estimate is generally prepared on the scanty cost information through its accuracy to a large extent depends on the availability of reliable historical cost data. Tech (2010) has also stated that the importance of preliminary estimate cannot be overemphasized as the wrong estimate give the project a bad start which can lead to shoddy works and abandonment, hence loss of value of money for money by prospective clients. Most often than not client who wants a building erected would want to know his financial commitments upon which the feasibility of the projects depends. An initial price estimation which is too high may dismay the employer from continuing further with the project and so the possible interest is lost. The accuracy of the initial estimate is

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important because it serves as the budget limit for the client base on which planning and probably fund sourcing are done.

Projects preparation has been also well -defined as the procedure of choosing the one technique and order of work to be employed on a project from among all the numerous methods as well as orders in which it could be done, (Callahan et al., 1992). They also noted that this method supplies complete evidence adopted for time approximation as well as plan; also, a standard for the project control. Mubarack (2005) advocated that planning works numerous roles such as; cost estimating, planning, project control in addition to safety management

2.3 The Concepts of Change

The word "change" is often used to indicate a result. A very simplistic definition of change appears in the Samson and Reid Oxford children's Dictionary (1993) which defines the change as to make or become different. This definition is brilliantly illustrated by the change of the caterpillar into a butterfly. Note that there is a complete difference between one state and the next. Van der Merwe and Van der Merwe (1993) states that change derives from the Latin verb "to barter" one meaning of barter is to pass from one state to another. Cross, feather and lynch (1994) support this definition, stating that change is something that starts or ends and that it is external to a person. These definitions suggest that is an observable event.

The Oxford Reference online (2005) adds a new dimension in saying that change does not have a drastic intervention but may be something that occurs steadily. Norris, Hurley, Hartley, Dunleavy, and Balls (2000) take the above definitions a step further by lot ending that change generates more change, and that change follows its own laws. It is clear from the above definition that there can be no simplistic view of change.

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Change is pervasive (Vander Merwe & Van der Merwe 1993), fraught with uncertainty and ambiguity. The more complex the change (Norris et al., 2000), the more difficult It is to endure. It follows that there must be different ways in which to conceptualize change Tran field (1990) classify change into morph static change and morph genic change. While the general concept of "change" is defined as just "a new state of things, different from the old state of things" organizational change is more difficult to define. For a better understanding, the easiest approach is not trying to define it, but rather comparing it to other types of change. The name itself – organizational change- already explains that we are talking about a change in the organization activities, but this statement alone does not say much about the type of activities that are subject to change. By comparing operational change with organizational, change, the first thing that one will notice is the fact that the former refers exclusively to the individual, with their roles and values, whereas the latter covers a much large field, that is all operational process of serving customers, of production, of logistics. Besides these organizational changes also covers changes that appear in the work process (Salminen, 2000).

Furthermore, organization change may also be defined as "state of transition between the current state and a future one, towards which the organization is directed" (Cumming, et.al., 1985). Although this definition is closer to the definitions of change in general, a certain difference through subtle is indeed invisible. The origins of this definitions are found in thinking of Lewin (1947), who formulated the concepts of movement between two discrete and Shewhart permanent "states", related to organizational change, which means being in a state "I" at a moment J and in a state II, the suggested movement is linear and static as well as according to some authors (Kanter et al., 1992). Unfit for the dynamic concept of organizational change, because

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it oversimplifies a highly complex process, but it is for this very reason that it offers an extremely direct possibility of planning of the change actions.

In addition to the above mentioned process, organizational change includes the real content of the change that comes about within these process besides these two dimensions, the context in which organizational change arrives is equally important as "in order to formulate the content of strategy, one needs to control both contexts in which it happens, as well as the process through which it takes place". Thus, strategic change becomes an interaction between ideas about the context the process and the content of change, the analysis that disregards this fact and sees any organizational change as an individual fact, are in fact lacking an analysis of the form, the meaning and the substance of change (Ibiden 1985). Such a lack of results in the fact that the area covered by analyses that should be applied to change – ideally speaking (Pittigrew et al., 1992)

One other important element in the definition of change consists of the causes that determine the appearance of change, that mainly characterizes the radical and paradigmatic change named "change of the second degree" by Levy (1986) Tranfield (1990) classify change into morphostatic change and morphogenic change:

2.3.1 morphostatic change

Is a change which preserves and order by treating disturbance as external noise requiring minor adjustments to block out the change. Change in this morphostatic sense is therefore incremental (Transfield, 1986).

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2.3.2 Morphogenic change

A change which treats disturbance as information about internal conditions and suggests that the system should respond by altering orders. In this way, change is a morphogenic sense produces a logically different order than that which came before.

Tranfield, (1990) suggest these typical questions associated with morphogenic change

- What is our current situation?
- Where are we going?
- Which steps are needed to get there?

Various schools of thought are accepted about the nature of organizational change and how to most effectively achieve and sustain change. According to John P Kotter change process as more likely to result in being completed and Organization more likely to successfully adapt to continuous change. There are eight steps:

- Create a sense of urgency about the need for change

For successful engagement of management to support the change being essential, he recommends promoting a sense of urgency for change to occur through the use of strategic planning tools and testing the results with authoritative sources and stakeholders

- Form a guiding coalition

Kotter emphasizes strong and visible leadership creating the momentum for change rather than reliance on management alone. The leadership generates energy and sense of emotion of being part of the change

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- Develop a vision and strategy

The ending change has to be presented in shelf powerful statements in such a way that those impacted can see the future vision clearly and easily and leaders are fluent in these statements and developments to achieve the described end state.

- Communication the vision

Kotter's urges leaders to use all media and opportunities to communicate the new vision and key strategies to support the change but especially frequent and informal contact in person. Each is viewed as having a limited contribution other than where prior contact has occurred.

Leader availability and accessibility are stressed, particularly to communicate and address the emotional dimension of fears and concerns.

- Enable action and removal of obstacles Leaders in this stage support moves to act on the change, averting blockages to change and assisting those apparently resistive to undertake the needed adaption
- Generate short-term wins

Early evidence of the end stage change contracts negatives or resistant influences. Leaders need to include opportunities for short sins in plans and recognize those providing the early change. (Transfeild, 1987).

- Hold the gains and build on change

Consolidate early change signs by increasing activity and continuously reviewing the changes; removing potentially non-productive elements and bringing in new resources where appropriate to continue to build and refine the change process.

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- Anchor changes in the culture

Kotter observes change must become embedded in accepted local culture and practices to be sustained. He recommends leader providing progress reports and hulking these to successes as frequently and visibly as possible. (Lewins, 1951).

2.3.3 Overview of change management concepts

There are many reasons why people in an organization resist change. Every organization has its own culture that defined by processes, methods; habits produce and the perception that is engrained in the fabric of the business and its people. These traits are not easily altered as they are developed over the course of time and become the procedure and standard for the correct way things are done within an organization; consequently, expectations and belief systems are established which identity with social and economic factors within a company's working environment (Kwakweni, 2016). Because of these factors Luftman, quoting Edgar Shem, Identifies organizational culture as a significant force in resisting change.

Consequently, change management is focused on understanding the complexities these relationships and motivating people to change in order to support new organizational paradigms in the context of business transformation and process re-engineering efforts (Nobert & David, 1996) through their assertions that "overcoming resistance (to change) is about neutralizing negativity. Motivating is about lighting a fire. When people are burning enthusiasm, they will take risks, go the extra mile, and fully commit themselves to change" therefore, change management engages well-defined process and tactics for controlling and influencing the pace and acceptance of organizational change through effective communication, education and implementation of new

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organizational strategies in approach that allows to identify with the need for change and internalize new processes.

2.4 Theories of Change Management

A theory of change can be a helpful tool for developing solutions to complex social problems. At its most basic, a theory of change explains how a group of early and intermediate accomplishments sets the stage for producing long-range results. A more complete theory of change articulates the assumptions about through which change will occur, and specifies the ways in which all of the required early and intermediate outcomes related to achieving the desired long-term change will be brought about and documented as they occur to best realize the value of creating, a theory of change as part of planning and evaluating social interventions. Most of the organizational changes are planned, internal intentional change, introduced by management for different reasons. Organizational changes are easily noticed as they unfold in more orderly, a better structured and significantly smaller space than social changes (Ortenzion, 2012).

Moreover, a change that takes place at the organization level often evolves in a shorter time span than those taking place at organization level often evolve in a shorter time span than taking place at a macro level. (Kwakweni, 2016). One other difference is in identifying the operation of change that has to the features presented so far, it (or they) can be easily identified. Yet another significant difference is the fact that, in the case of organizational change, the systematic paradigm has a leading role for instance in OD the most frequently used means of measuring the effect of a change is measuring a lot of factors specific to the system both before as well as after the change. The variation thus representing the effect of the intervention (Ortenzion, 2016).

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The theoretical space of organizational change has a few more features, that are part of the metalizing first of all, most of the expert literature is written from a managerial point of view that is OD represents the point of the view of the management team, that is certainly interested in the most effective ways of introducing things in the organization they run. The second feature refers to the fact that there are two main ways of approaching the issues of organizational change. The one that is an explanation for the process that analyses change instead of offering norms for applying it. We will continue by presenting the two-model included in each approach. One of the most well-known analytical models belongs to Harold S. Leavitt. This American author believes that are a motivational system with at least 4 important variables; goals, structure, players, and technology.

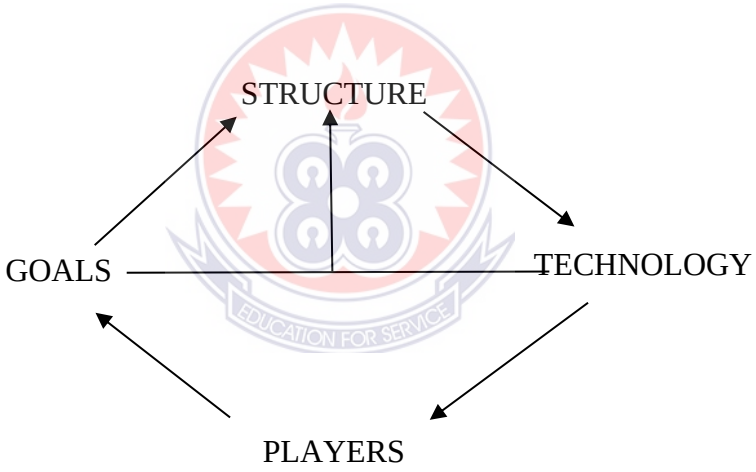

Figure. 2.1: Organizational model provided by H. Leavitt

2.4.1 Change plans and changing actions

Our theoretical assumptions build upon previous researcher's insights into the relationship between (change plans and the actions taken to implement them. Some thus work has taken place in the area of technology implementation, a particular kind of organizational change. Barley has shown that the meaning of the introduction of new technology depends on the actions taken to implement the technology (1986):

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Bartunek's work focus on the individual – level understanding of changes plans she develops a theory in which structured change in an organization (i.e its design rules, norms) result from an interaction with organizational members' perception or understanding.

For all these Lewis (1951) make similar claims and apply the metaphor of translation to describe how actions turn ideas into new instructional and technological realities. For all these scholars, the relationship between action and plans is dynamic and reciprocal stated another way, the interpretive schemes that give meaning to change plans influence what actions are taken and the actions are taken influence the way change plans are understood. Because the relationship is dynamic and reciprocal, it has the potential to be generative. These three features of the relationship define the practice-based view of changes as articulated by Kwakweni (2016) system theory views an organization as a complex system with boundaries allowing input and output. The organizational system exists within a larger external environment that is constantly exerting pressure on its boundaries, an environment with which the organization must interact. System theory recognizes that a change in part of the system creates change throughout the system. It one part of the system changes, other parts must change to accommodate this new system.

The organization system is defined by its boundaries and internal structures. It is typically considered stable. The external environment is assumed to be in a state of continual flux. Peter Senge, a leader in systems theory, present a simple example. If one person is taking a shower and someone else in the same house (system) flushes the toilet, the water turns cold in the shower. The person in the shower may try to adjust

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the temperature. However, by the time he has adjusted the shower, the toilet is filled, the water temperature goes back to normal and the person in the shower will need to adjust temperature again – this time making it cooler.

Theory E and theory O is change management theories. The names of these theories were coined by the Harvard Business School, Professors Michael Beer & Ntim Nohria to describe two goals drive change initiatives: near term economic improvement or improvement in organizational capabilities. Theory E (for economic value) aims for a dramatic and rapid increase in shareholder value. It is driven from the top of the organization and makes use of outside consultants. Theory E. relies heavily on cost-cutting, downsizing, and asset sales to meet its objectives. Conversely, Theory O (organizational capabilities) is a long-term approach that aims to create a higher performance by fostering a powerful culture and capable workforce. It is characterized by high levels of employees' participation and a flatter organizational structure. It attempts to build bridges that between the organization and its employees, partially on the assumption that the involved employees will bond with the organization they have helped to change chaos and complexity theory has its roots in the field of science. It is applied to an organization in an attempt to find order in the organizational environment. Purists would argue that combine the terms "chaos" and "complexity" is incorrect because each represents a distinct theory from different disciplines. (Edward, 1998).

In very simple terms chaos. The theory is the study of how a simple system can generate complicated behavior. It recognizes that behavior in systems appears random but in fact reveals orderly patterns as deeper levels. In a business sense, it describes random, inherently unpredictable sequences overtime (Kwakweni, 2016). Complexity theory is

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the study of how complicated systems generated systems generate simple behaviours the assumption is that system are interconnected or interwoven parts and that dynamic complexity exists in situation where cause and effects are subtle and effects over time are not obvious, in business, it admonishes us to not examine parts of the organizations system separately from the rest of the system(Ortenzion, 2012).

Finally, a theory of change would not be complete without an articulation of the assumptions that stakeholders use to explain the change process they have envisioned. Assumptions explain that both the connections between the preconditions for long-term change that occur in the early and intermediate stages of the changes process and expectations about how and why proposed intervention will bring them about (Ortenzion, 2012).

While assumptions are often the set of beliefs that guide a group (and often remain unstated until the theory of change process comes too soon; they may also be supported by research or "best practices which can strengthen the case to be made about plausibility theory and like a hood that stated goals will be accomplished. Assumptions answer some of the probing questions that come up when a theory of change being critiqued. For example, one group we worked with developed a theory largely based on the principles of resident control and empowerment. As they are reviewed their theory, we pushed them to answer two simples yet extremely important questions. They had not thought about dearly (Ortenzion, 2012).

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2.4.2 The elements of a theory of change

A pathway of change that illustrates the relationship between a variety of outcomes that each through of as preconditions of the long-term goal. Existing change management module that some software claimed to have is mostly a feature of change information recording and documents approval. Change estimation, impact analysis, statistics and more importantly, change traceability are more lacking in these solutions (Annes, 2012). A collaborative workflow, the system requires technical supports from different technologies, including collaborative workflows system integration and collaboration technologies and modeling web- solution for construction change management yet. More work will have to be undertaken to develop innovative and practical solutions that are adaptable by the industry. The causes of the change orders and their effects on the project's cost and scheduled are complex and influenced by numerous infer ratted factors. Change management is a critical problem faced by the construction industry. It has been revealed that improving the administrative process of change orders beneficial in reducing the cost and the risks for all the project participants and encourages a more trustful relationship. (Ortenzion, 2012)

2.4.3 Process of change

In modern organization, change rather than stability is the order of the day. Rapid changes in technology, the competitive environment, and customers' demands have increased the rate at which the companies have to alter their strategies in order to survive in the market place (Peter &Watermac, 1992) Organization encounter May different forces for change. These forces come from internal or external sources.

2.4.3.1 Internal forces

These come from inside the organization. These forces according to Kreitner & Kinick (1992), may be subtle, such as low morale, or can manifest in outward signs, such as

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low productivity and conflict. Internal forces for change come from both human resources problems and managerial behavior/decisions.

2.4.2.1a Humans Resources problem

These problems stem from employee perceptions about how they are treated at work and match between individual organization weeds and desires. Among these are;

- Unmet needs
- Job dissatisfaction
- Absenteeism's and turn over
- Productivity
- Participation/ suggestions

2.4.2.1b Managerial Behaviour Decisions

Excessive

interpersonal conflict between managers and their subordinates is a sign that changes are needed. Among the managerial issues are

- Conflict
- Leadership
- Reward the systems
- Structural i.e. organization

2.4.3.2 Internal forces

External forces for change originate outside the organization. Because these forces have global effects, they may cause the organization to questions it is in and the process by which products and services are produced. The key external forces changes are technology, demographic characteristics, including market change s, social and political pressures.

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2.5 Why Changes do Happen

Skinner et al. (2005) state that, explaining why change is needed, requires investing the time at the start of the change program to prepare and support workers and this the essential step to minimize reluctance to change. Furthermore, ibid state that important insights and guidance which the literature offers arc thus not being used to maximum effect. Smith (1992) claims that the organization cannot escape the need to change. He defines it as any alternation of activities in an organization due to external and/or internal forces. According to Smith (1992), on one hand, external forces may range from industry-related through technological developments, to population growth. On the other hand, internal forces interact with the external forces and mostly process and people – oriented.

Smith (1992) emphasizes the critical management role in driving planned or proactive change in order to address the likely emergence of resistance by observing a systematic process that goes as follows

- Be to any for change
- Recognize the primary need for change
- Diagnose the problem
- Identifying alternative organizational development methods
- Recognize limiting conditions
- Selecting a method for change
- Implementing an evaluation they chose change strategies (Smith, 1992).

The key question which organization asks is why should organization structure change? This key question arises in designing change programs. Traditional practice proposes that you should put in place your new organization structure and at the same time, or

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immediately after, the work with people change the way they operate so that it fits your structure. The approach fits quite close to the classic strategy model where structure follows strategy (Lewis, 1951). When you have decided your strategy, this will guide you as to what the structure you adopt.

However, you cannot know what structure you want to put in place until you have worked out in some detail how you want your key processes to operate. So, you start working on the keys processes redesign and implementation and from this, you draw out implications for the structure. Since the experience of implementing the redesign processes will guide the organization redesign. While this brief piece of the structure may look like a matter of semantics or slightly differing models, it is vitally important. Basically, instead of the top management deciding the appropriate structure and the program.

2.5.1 Lewin's model of change management

Similarly, Lewis (1951) early (change) model proposes the "how" in the form of 10 key steps that need to be followed, systematically. The steps do not replace the change process that is informed by legislation According to the first stage of this model, it is critical to engage in an unfreezing process. Stage two corresponds with the actual change or moving and the last stage may be seen to represent the refreezing process outlined by Lewin (1951) Lewin's steps are clarified and supported by Banham (2005) who cites Kotter's Eight-stage process, which starts with the creation of sense of urgency, relies on creation of short term wins and ends with anchoring the new approaches into organization culture or re-freezing in Lewin's 1951) early model Cummings & early model.

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Cummings & Worley (2001) maintain that planned change can be contrasted across situations on three key dimensions: the magnitude of organizational change, the degree to which the client system is organized and whether the setting is domestic or international. According to Cummings &Worley (2001), these steps need to be contextualized.

2.5.1.1 Lewis first stage-unfreezing

This stage is the first stage of change refers to the recognition by the organization of a need for change in the status quo (Iles & Sutherland, 2001) it takes effect when modus operandi is not pleasing to one or more key shareholders-for example, in relation to current management practices and organizational performance (Iles & Sutherland, 2001) subsequently, the ladder leads to inevitable change as forces that resist change are minimized on one hand factors that drive change are strengthened (Iles &Sutherland, 2001). The focus is to reduce those forces which maintain the behavior in its present form and recognizing the need for change and improvement to occur. In order words, employees need to become dissatisfied with the old way of doing things. Iles & Sutherland, (2001) proposed the following non-substitutable forces areas during the unfreezing stage.

- Explaining why change is needed.
- Creating readiness for change among employees by providing tools for effective communication and participation in decision marking: providing organizational resources
- Training and development in the new work practices and
- Managing uncertainty associated with change

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2.5.1.2 Lewin's second stage-moving

Moving or changing refers to the second stage of change in Lewin's (1951) model. This stage has to do with moving to a new position. This is often achieved through a technique that is used to address negatively. Skinner et al (2004). Skinner et al (2004), propose that the employee engagement that is done at this stage. Is critical to promoting buy-in to new practices and process. Iles & Sutherland (2000) propose approaches to assist the transition from old to new work practices and processes, which includes:

- Conducting of trial changes (Trial & Error)
- Engaging in on-going monitoring and evaluating
- Supporting of workers, overtime to change their behavior
- Furthermore, Iles & Sutherland (2001), advocate that changes that can be tested and evaluated on a trial basis are more likely to be accepted by workers.

2.5.1.3 Creating readiness for change among employees

Skinner et al. (2005) suggest approaches that can be employed to engender readiness, support, glued and motivate workers during an organizational change. The stage entails providing employees with new information, new behavioral models or a new way of looking at things. The objectives are to help employees learn new concepts or points of view. Mentors role models experts, benchmarking results and training are a useful mechanism to facilitate change

Amongst others, the other includes the following

- Participation in decision making
- Gaining support
- Effective communication strategies

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2.5.1.4 Lewis third stage-refreezing

2.5.4.1 Embedding in systems and procedures

Refreezing or confirmation is the final stage in Lewins (1951) mode of change. The focus is to make the change stick (Cummings & Worley 2001) coaching training and appropriate reward systems are used to do so (Iles & Sutherland) 2001).

2.5.4.2 Aligning new approaches into organizational culture

Iles and Sutherland, (2001) assert that the alignment of the organization's culture, policies and practices is key to ensuring employees, support of the change. According to author proper alignment encourages the deepening of new behaviors that are meant to become standard work practices.

The common thread in Lewin (1951) model is communication. In the last stage, communication is mainly on the following:

- Celebration of success
- Continued clarification of changes to roles
- Regular support and communication with supervisors
- Continued expressions of support from senior management Lewin's 1951).

2.5.4.3 Benchmarking

Is a technique that can be used to help unfreeze an organization Benchmark describes business/ company compares its performance with that of the other companies, then learns how the strongest performing companies achieve results. What is learned through benchmarking is used to unfreeze employees' attitudes and motivate people to change the organization internal processes in order to remain competitive (Lewins, 1951)?

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2.5.4.4 Building competitive advantage of the change

What are the most important lessons for managers and organizations to learn if they are to reach and remain at the top of the competitive environment of business? The answer relates to the use of organization resources to build a competitive advantage. Competitive advantage is the ability of one organization to outperform other organizations because it produces desired goods or services more efficiently and effectively than its competitors. The four building blocks of competitive advantage are superior efficiency, quality, speed flexibility and innovation and responsiveness to customers (Lewins, 1951). Organizations increase their efficiency when they reduce the number of resources (such as people and raw materials). They use to produce goods or services. In today's competitive environment's, organizations continually search for new ways to use their resources to improve efficiency (Lewins, 1951). According to Lewins (1948), many organizations are training their workforces in the new skills and techniques needed to operate heavily computerized assembly plants. Similarly, cross-training gives the range of skills they need to perform many different tasks and organizing employees in ways, such as self- managed teams. Let's make good uses of their skills. these are important steps in the effort to improve productivity

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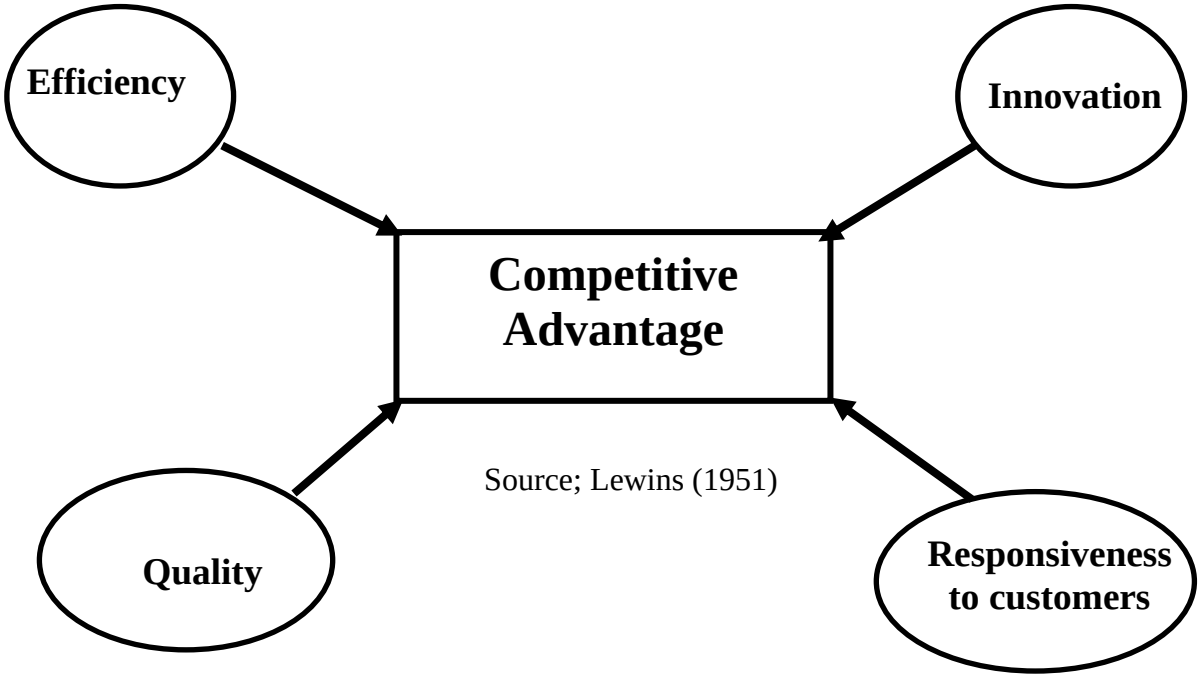

Source; Lewins (1951)

Figure 2.2. The building block of competitive advantage

2.5.5 Reactions to change

Resistance to change is an emotional/behavioral response to real or imagined threats to an established work routine (Kneitner & Kinicki, 1992) resistance can take many form Reeler (1989) provides a list which read reveals that resistance ranges from vocal opposition to foot-dragging and lane of cooperation

- An individual attracts new ideas or suggestions
- An individual quickly asks a lot of questions some of which may be irrelevant to the change
- An individual quickly asks a lot of questions
- An individual plays a silent role and says nothing
- An individual appears troubled and unable to decide about the proposed change

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- An individual quickly intellectualizes the discussion and then analyses why the current approach is the best way to go
- -An individual insists that change is not fair to everyone
- An individual rum up past negative results from proposed changes even if they aren't relevant
- An individual minimizes the need for change
- An individual is very agreeable but expressed regrettable criticism "what a great ideal, however
- An individual suggests a "quick-fix solution that really does not amount to any real change Kotter and Schlesmger (1979) tell us that people resist change for the following reasons
- -They fear the loss of something which they value. This need not be physical but can be related to status, power, prestige, etc.
- They have not understood the change and its implication. This often occurs when the trust level is low and communication is poor
- They don't think that change makes sense people often have different value systems and can also reach different conclusions from the same facts. They are not able to cope with the level or pace of change. The change may be too demanding or fast in terms of the new skills and behavior needed.

According to Baguley (1994) this resistance to change can also be based upon the presence of a real or perceived threat to economic security our need for food, shelters, clothing, and warmth is basic in its influence on the ways in we behave. A threat to any one of these will be met by resistance which is fierce, resolute and immediate

Whatever our initial reaction to change is there are few of us who are able to cope with a high level of uncertainty for extended periods of time change creates new situations

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in which uncertainty abounds. However, the reality of life is that we all have experienced at one level or another, change in our lives, and have survived the process. Indeed, we often embrace change willingly and with enthusiasm since we believe that what is to come is more attractive and interesting than what we have whether this turns out to be true or not is beside the point; it is the existence of that incentive which triggers our proactively towards charge when we see it as being to our advantage. (Baguley, 1994)

Managing the change process According to Glass (1996) the real problem with many organizations may not be that managers have failed to understand the need to change it is more likely to be that many management groups have been unable to transform their knowledge of what needs to be done into effective action. The "What" of change is often not that difficult to ascertain. He notes further that most change programs produce disappointing results. The different organization obviously fails for quite different reasons, Nevertheless, one common theme which seems to run through most less than satisfactory change programs is the organization put too much time and effort into intellectualizing about what they want to change and far little on the most difficult part. How they are going to carry out the change. It is over the implementation that moss organization stumble.

2.5.5.1 Causes of change in Road construction projects

According to articles receive 30th September 2013 and Accepted October 20th By Halwatura & Ranaisnghe, (2013) one of the most important problems in the construction industry is variations or change order. They occur in every construction project and the magnitude of these variations varies considerably from project to project hence; the variations orders bear great importance night from the inception to

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completion in the construction industry. Most of the road construction in Sn. Lanka has experienced a large number of variation orders. The client had to spend more than what was initially estimated in most cases. Sometimes, disputes and unnecessary delays occur due to variations. Or changes. This study attempted to reveal the possible cause of variation orders in the road (Halwatura & Ranaisnghe, 2013). Construction projects in Sri Lanka. According to questionnaires survey, poor estimation was the most significant cause of variation orders. Unforeseen site conditions, political pressure during the construction stage, poor investigations, and client-initiated variations occupy the 2nd to 5th places, respectively, in the ranking. This ranking was further proven in the case study analysis. The cost of a construction project is one of the important factors in the construction industry. Due to many reasons, the total cost of a project can significantly vary from the initial cost. The reasons could be changes in the scope of work, specifications or any other contract documents. In the construction industry, variations orders are created when changes occur (Halwatura & Ranaisnghe, 2013).

It is an official document that states the change made into the original agreement between the client and the contractor. The study discussed in this paper was aimed at investigating possible causes of variations orders in the road construction projects in Sri Lanka. The data for the analysis were collected using three methods. The causes of variation orders in general in the road construction industry and their ranking were identified based on the literature review. Variations are inevitable in any construction projects. Variations are any deviation from an agreed well-defined scope and scheduled stated differently, this a change in modification or any contractual guidance provide to the contractor by the owners' representatives. This includes changes to plans, specifications, or any other contract documents (Halwatura & Ranaisnghe, 2013).

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Cleary, in construction terms variability, is referred to as variation orders. A variation order is the formal documents that are used to modify the original contractual agreement provided to the contractor by the client or client representative and become part of the project's documents. Arguably, variations orders may be seen as the counter to the principle of waste reduction. The more the variations orders are on the projects, the greater the likelihood that they become time-consuming and costly elements in the construction project (Halwatura & Ranaisnghe, 2013). When a variation order occurred, the contractor tends to charge, high rates for variation items the clients are affected in terms of cost. Success in managing variation order results in uninterrupted construction operations and agreed on projects as well as duration. However, this is not always practically achievable. A variation order has managed carefully. Otherwise, disputes between a client and a contractor related to the cost and time off work might occur. Variations orders often involve additional cost disruptions to work; already underway leading to cost and time overruns, quality degradation, and loss in productivity on a construction project (Halwatura & Ranaisnghe, 2013).

A Study of delays and cost increases in the construction of private residents in Kuwait revealed that a number of variations orders issued during the construction phased to both delays and cost increases. The projects that experienced variations order in incurred more than 58%-time delay and cost increases when compared to those no variations orders. Factors including the nature of work, the complexity of the project, and the procurement method. Though it is likely that variation orders cannot be avoided completely, they can be minimized or prevented it their origin and causes were clearly known. The successful execution of the construction projects and keeping them within

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the estimated cost and prescribed schedules depend on a methodology that requires sound engineering judgment (Annes, 2012).

One of the most important problems in the road construction industry in Sri Lanka seems to be managed variations orders. Ranasinghe & Halwatura have found in their study that one of the causes of projects delay is variations or change. Moreover, Nowfal & Gunawardana stated that the variation order is a key factor which is contributing to the price overrun in his industry. This present study attempted to reveal the possible causes of variation orders in construction projects in Sri Lanka. This study identified that poor estimation is the main causes of variation orders in construction in Sri Lanka. For example, the consultants do not carry out adequate investigations at the initial investigation and design stage, therefore, several site conditions rise in the construction stage. Professionals do not seem to consider that an extension of the allocated time is critical factor variations. However, according to the case studies, it is a critical factor. Base on the findings it is possible to conclude that Sri Lanka context should pay attention to several factors to minimize the occurrence of variation orders. The investigating must be carried out properly by the qualified professional staff at initial (In the pretender period) and adequate planning in advance is required by all involved parties start sites. The estimates have to prepare properly by experienced professionals and client should provide a clear brief the scope of the work. Further consultants and should ensure that the design/specifications fall within the approved budget and budget team should be appointed early and they should be participating (Halwatura & Ranaisnghe, 2013).

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Resistance to change is an emotional/behavioral response to real or imagined threats on an established work outlined (Kreitnerd, 1992). Resistance can take many forms Kwakweni, (2016) provides a list which reveals that resistance ranges from vocal opposition to foot-dragging and lack of cooperation. An individual directly attacks the new suggestion. An individual quickly asks a lot of questions and some of it may be irrelevant to the change. For the change program to be successful, need such things as;

- Top management commitment
- Employee involvement at all levels
- Constant, consistent communication
- A shared vision of the future
- Understanding the need to change
- Management of political networks.

To manage change in a way that is effective the following factors will be considered;

Communications

One of the very problems in managing change is reliable communication of the change to those involved. A host of psychological factors can affect the level of individual perception of communications. For example, the level of the existing trust will affect willingness to accept and believe. People are selective listeners and tend to hear what they want to hear (Youker, 1975).

According to Baguley (1994), until a manager has healthily communicated with the people to be affected by a change, he cannot presume that he has the support and help and that the manager needs both of these to achieve his change. He, therefore, suggests that a manager needs to plan his change program in such a way that it contains the time

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for listening and talking. The need for the communications is continuous and ongoing one communication is the one-off exercise but is a worthwhile investment.

Involvement

Involvement is recommended a strategy for successful implementation of change. This the process by which those involved in or affected by the change influenced its content and its process. It does not involve management in abdicating their responsibility for taking decisions nor its consensus management. What it does mean is that it creates a culture in which people feel free to ask about what is happening and management feel free to ask what do you think? Without feeling bound to accept the answer unconditionally. If encouraged and allowed to grow, this involvement will lead to commitment rather than compliance and commitment will get people in the process of creating something new (Baguley, 1994).

Table 2.1: six strategies for Overcoming Resistance to Change

Approach	Commonly used in a situation	Advantage	Drawbacks
Education& Communication	Where there is a lack of information or inaccurate information and analysis	Once persuaded, people will often help with the implementation of the change.	Can be very time consuming if lots of people are involved
Participation& Involvement	Where the initiators' do not have information, they need to design the change, and where others have considerable power to resist	People who participate will be committed to implementing change, and any relevant information they will be integrated into the change plan	Can be very time consuming if the participators design an inappropriate change.

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Facilitation & Support	Where people are resisting because of adjustment problems	No other approach works as well with adjustment problems	Can be time-consuming, expensive and still falls
Negotiations & Agreement	Where someone or some group will clearly lose out in a change, and where that the group has considerable power to resist	Sometimes is a relatively easy way to avoid major resistance.	Can be too expensive in many cases if it alerts others to negotiate for compliance
Manipulation & Co-optation	Where other tactics will not work or are too expensive.	It can be a relatively quick and inexpensive solution to resistance problems	Can lead to future problems, if they people feel manipulated
Explicit& Implicit coercion	Where Special is essential, and change initiators possesses considerable power	It is Speedy and can overcome any kind of resistance.	Can be risky if it leaves people mad at initiators

Source: Harvard Business Review. An exhibit from Choosing strategies for change by John P. Kotter and Leonard. A. Schlessinger (March/April 979).

2.5.2 Organizational change management

Dawson (2003) defines organizational change as a new way of organizing and working "according to him, it is triggered by shifts in external factors such as the following (Ibid 2003).

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External Factors	Internal factors
• Government laws and regulations	Technology
• Globalization	primary task
• Political and social events	People
• Technological advances	Administration structure
• Fluctuations in business cycles	
• Organizational growth expansion	

2.5.3 Change management challenges

Houghton Mifflin Harcourt (2014) asserts that planning and managing change can be most challenging elements of a manager's job and that more a manager plans ahead of a change, the better for the subordinates and organization. He continues to claim that "managers need to be aware that the organizations change in a number of dimensions that often relate to one another. "These dimensions include:

- **The extent of planning:** that is focused at the experts who differ about how much change can be planned, hence managers still needs to take steps to set up conditions that permit and even encourage change to occur
- **Degree of change:** ranging from incremental changes that tend to be relatively small, involving fine-tuning processes and behaviors within just one system or level of the organization to quantum changes that are significant in nature to the point of altering how a company operates.
- **Degree of learning:** which relates to the degree to which organizational member is actively involved in learning how to plan and implement change while helping solve an existing problem

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- **The target of change:** which can be a top management team aimed at assisting it in becoming stronger leaders or lower levels employees basic learning, such as customers services techniques.
- **Organization's structure:** with reference to hierarchy or bureaucracy that may be counterproductive and/or emphasis on policies, procedures, and rules that are necessary to provide a clear structure that is lacking.

Moorthouse (2011) relates to a number of factors to be cognizant of while planning and implementing a change. He believes in people engagement even in the case of a change that is due to external factors. The benefit of that "the more impacted stakeholders are involved and buy-in to the change the easier will be to implement and achieves benefits. Change management Team Structure.

The team is a powerful weapon in the process of improving performance and that of managing change. Many organizations set up part-time cross-functional groups which meet weekly or Monthly to drive their change effort. The main advantage of this approach is that the team remains close to the reality of the business or firm through also performing their regular jobs, and that cannot be portrayed by the opponents of change as a group of theorists with smart but impractical ideals, etc. The problem with method noted (Glass 1996) is that a part-time group, however talented, can really develop the speed and critical mass which most major programs require a better to set up a full-time cross-functional change team led change manager. This team should work between three main groups of people, Top management functional/process/ product managers, and staff and expect resources. The sizes of the change team can be from fives to twenty people, depending on the complexity of the task and the sizes of the

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organization, in the fast-moving and trying environment of the change program team, larger than fifteen to twenty people start being unmanageable.

2.6 Mitigating the Effects of Change

It is a well-established fact that insiders and employees can be the largest threat to organization information security. Management and organizational change and decisions can be exacerbating these inside risks due to the poor management introduces new unanticipated threats as well. Organizational change can take in any form such as mergers, relocations or closing of facilities.

During these change risk profiles increase and technical staff who are responsible for managing these risks are often not as focused as they would be during more normal items. This is a situation that management has to recognize and plan for before contemplating a change to the organizational. Management is not well known for listening to technical staff on this topic (Kwakweni, 2016). Movement of a portion of a company when poorly planned and recognized can lead to loss of key staff, additional poor planning, and loss of if institutional knowledge and ultimately loss of revenue related to loss of confidence by customers or damage customer's relations.

The primary element to organizational redesign are:

- Tie
- Key Roles
- Project plan and millstones

Having a realistic time is the best place to start knowing what facilities are required and when they are required and making sure they are in place when needed with smooth out any change. While not directly related to information security, planning for office

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moves which involving constructions, have to include time. Lines for getting permits and constructions delay. Mitigation plans for facilities that are not ready are part of the up from planning as well. When people are relocating this cause delays as well as a different attention level firm staff as they make their own living preparations (Lewins, 1951).

People will who up expecting to do their jobs. The way they did properly to a move presumably people is either living in a new place or new to the company. In either case, certain processes will take longer due to the newness of locations, office space, or integration of new employees. Identifying key staff roles in advance is critical, this is task best performed at lower levels, high levels managers and owners do not have the visibility of what roles are really critical ensuring that continuity of key roles is preserved either the role is filled with either someone relocating or new a new staff member with time to time to onboard and team the organization before major change take place reduces the risk of significant changes particularly when that changes with the new staff members department(Ortenzion, 2012). This entire process should really start by exampling the steps and milestones that need to take place and ensure the amount of time needed for each step is clearly prior to embracing the change path. The old adage that too much change at one time is poor engineering applies to many companies across the board (Corrie, 1990).

To mitigate risk, produce and documentation need to be maintained all times rather than in the midst of change. This includes knowing who key architects for information systems are ensuring that those roles are spread across multiple individuals planning for change needs to include to make it successful. Additionally, involving staff may

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even increase the number of staff members who make the transition as an added benefit (Annes, 2012)

2.6.1 The best ways to mitigate change resistance

According to Kotter and Schlesinger organizations must deal with new government regulations, new product growth, increased competition, technological developments, and a changing workforce, which all force change is pervasive and inevitable to the growth and survival of an organization. Unfortunately, the greater the change (and the larger the organization) the greater the resistance to change. The 6 change approaches developed by John Rotter and Leonard Schlesinger is a model to prevent decrease or minimize resistance to change in organizations. The 6 approach

- Education and Communication
- Participation and involvement
- Facilitation and support
- Negotiation and agreement
- Manipulating and co-operative
- Explicit and implicit co-operative

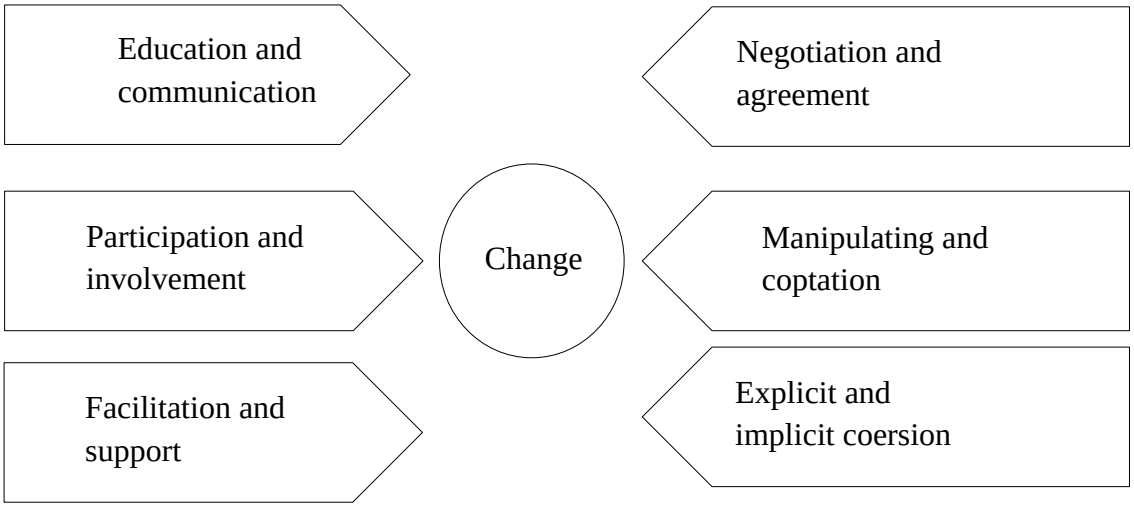

Figure 2:3 Kotter and Schlesinger Model

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2.7 Local Government System

Local governments in Ghana play very important roles in administration and development in local areas. The 1992 constitution of the Republic of Ghana provides for "Decentralisation and Local Government" that creates a framework for citizens participation in decision making and local governance. The decentralization policy of Ghana devolves power, functions, and responsibility as well as human and financial resources from the central government to the district level. (Friedrich, 2010). It also established major areas of the relationship between the local and central government. Local Government in Ghana has a long history, which predates colonialism. During the colonial era, the native authorities were used to facilitate communication and decision making in their areas of jurisdiction. After independence, successive governments implement various forms of the decentralization policy was initiated in 1988 (Friedrrich, 2010).

Ghana's decentralization process as enshrined in the constitution designates District Assemblies as the highest political, legislating, budgeting and planning authority at the local level. The Local Government Act. (Act 462) of 1993 reinforces the constitutional provisions. To facilitate a holistic approach to the decentralization process, various structures have been created at the sub-national level with the regional coordinating council (RCC) as a coordinating body. Below rccs are the Metropolitan or municipal or District Assemblies (MMDA) and sub-district structure (Friedrrich, 2010). Notwithstanding the idea behind the decentralization policy, practitioners and -makers at the local level do not have adequate information and knowledge on the functions and responsibilities of the MMDA. The various law in the local on Government system is not in simple language. It is the government to have access to various local government

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laws. And they responsible for provides all physical infrastructure in various regions in Ghana (Ahwoi, 2010).

2.7.1 Challenges for local government and associated strategies

Managing Budgetary Demands: Realties of Revenue Decreases, Increased Service Demand Costs of unfunded state. Local revenue decreases in caused by in sales, income and real estate tax revenue have strained local government budgets. In turn, local governments have been forced to closely examine how they spend money on programs and services in order to best meet constituent needs and interest (Schlachter et al., 2001).

In addition to a decrease in revenue and increases in service demands, the local government must adhere to numerous state and federal requirements that are not necessarily accompanied by funds from the state or the federal government. Examples include mandates by Pennsy Ivanias Department of Environmental Protection and the U.S Environmental protection Agency related to water and sewage issues, provisions in the Prevailing Wage Act and state requirements to advertise open government position s in a newspaper. Numerous local governmental entities have argued for regulatory flexibility and a re-evaluation of funding formulas regarding these mandates (Schlarchter et al., 2001).

2.7.2 Key Policy Tools for Managing Budgetary Demands

2.7.2.1 Joint purchasing programs

Joint purchasing programs allow two or more local governmental entities to purchase equipment or supplies, which in turn can result in increased cost savings due to the creation of economies of scale. An example of joint purchasing is the acquisition of

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plant (bulldozers); an expensive capital investment that each municipality would use only on a limited basis. However, when shared between municipalities this vehicle becomes a more affordable investment (Schlarchter et al., 2001). This concept can also be applied to the acquisition of fire trucks police cruisers, buildings or to the use of shared personnel. An example of shared personnel is demonstrated in inter-COG agreement that exists between. The Turtle Creek Valley COG (TCVCOG) and steel valley the SVG, who in turn offer their vector program to municipalities in the TCVCOG. This sharing of services includes not only equipment's but also the staff responsible for operating the equipment. Joint acquisitions are sometimes challenging due to the political and cultural barrier between municipalities. The acquisition of more common items like pool clericals also be achieved through a shared service agreement; in some instances, those items can be purchased more cheaply through PA's Department of General Service (Malalgoda, 2016).

2.7.2.2 Participate in joint contract agreement

Joints contract agreements often provide municipalities with cost savings through bargaining power and economies of scale. The Franchising Authority Areas, a cable television rate service provision contract administered by the South-Hills Area COG (SHACOG), is an example of such a contract agreement. This program currently grosses more than eighty-two (82) million per year which is, in turn, redistributed to the participating municipal governments (Schlacher, 2017).

Participate in grant programs that encourage cooperation many COGS manage and administer grants that provide incentives for regional co-operation. An example includes the North Park composition site a multi-municipal leaf composting site funded by an Allegheny country grant and established by the North Hills COG. The utilization

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of this regional site results in cost savings for participating municipalizes and promotes regional cooperation and communication (Schlacter, 2017).

Participate in cooperative emergency responses programs (fire and police) cooperative emergency response programs allow neighboring municipalities to combine resources for a more efficient and cost-effective emergency response system unique example of a successful cooperative agreement is the North Hills Regional police department which serves Pine Marshall, Bradford Wood, and Richland Township. The success of this department could be attributed to the similarities that exist in the geographic size demographics and level of affluence of the governmental entities engaged in the agreement.

2.7.2.3 Appropriately employ human resource strategies

Human resources strategies include combing reduced employee work hours with subsequent reductions in pay avoiding across- the – board cuts that could harm productive programs, utilizing volunteers, freezing employee pay, providing incentives for early retirement and implementing a hiring freeze. The implementation of appropriate human resources strategies can result in cost savings, which may help local governments to more effectively balance budgets (Schlacter, 2017).

2.7.2.4 Avoid excessive commitments to fixed expenses such as debt services and unfunded post-employment:

The avoidance of excessive commitment to fixed expenses is a long-term strategy that helps local governments to maintain fiscal discipline. A suggested debt service rate is 10 percent or lower (Malalgoda, 2016).

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2.7.2.5 Implement energy-efferent programs to produce cost saving

Examples of energy-efficient programs include retrofitting and upgrading street lighting in municipalizing utilizing green vehicles installing solar panels and constructing building with energy efficient materials. An example of a cost-saving energy program, which resulted in the firm a grant from the Pennsylvania Energy Development Authority was the installation of extensity LED lighting in 10 Pittsburgh public school locations. The new lighting is expected to result in an annual saving of $40,881. However, the extent of savings varies from program to program (Schalcter, 2016).

2.7.2.6 Institute property tax assessment reform that utilizes technology to assessment more accurate and cost-effective

A uniform property tax assessment system that utilizes modern technology will allow an assessment to be more accurate and cost-effective as many municipalities do not utilize advanced technologies like GIS. There is also demand for a property tax assessment that occurs every one to three years as many municipalities have not recently performed tax assessment. This reform many produce assessed values that more closely match the free market (Schalcter, 2017).

2.7.2.7 Modify the prevailing wage act

The Prevailing Wage Act mandates a certain wage for any public works construction contract over $25,000. These wages, however, often exceed the comparable wages that are paid in the locality for the same type of work, resulting in additional costs for infrastructure/public works projects. A modification of the prevailing wage Act may enable municipalities to pay wages that are comparable to what other entities in the area pay for the same type of work (Schalcter, 2017).

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2.7.2.8 Modify rules pertaining to legal advertisement

Local governments in the state currently are required to print legal notices, such as bid offered job openings and public meeting enouncement in local newspapers. An expansion of adverting opportunities, including the ability to post on the web, may advertise costs for local governments. Utilize alternative financing medians such as grants, user fees or public-private (Schalacher, 2017).

2.7.2.9 Partnership to expand or accelerate local capital projects

The identification of costs related to specialized services and equation of fees to these costs can help to finance capital project contribute should to a local government long-term operating costs contribute to economic recovery and should be given particular consideration. In addition to specialized fees, successful financing of public facilities through lease arrangements, the selling of public facility naming rights, joint developments between local governments and for-profit entities and developer financed infrastructure, have historically provided relief (Schalacher, 2017).

2.7.2 Mandate multi-year budgets and rainy-day funds

A multi-year budget, as opposed to the annual budget, requires policymakers to more efficiently assess future revenues and expenditure and the stability or instability related to expenditure increase. The use of rainy-day funds also addresses future budget dilemmas through the development of a fiscal cushion. An example of a mandated rainy- day fund is to require. The allotment of five percent of the total preceding fiscal years revenues to the stabilization fund.

Increase incentives for economic development programs that attract, residents and business: - The use of economic development incentives on a local level which can include subsidies, can generate jobs and tax revenues during a recession more

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efficiently than on a statewide level. These incentives can also influence a developer to move to a particular region, which in turn may create a suitable industry within the municipality (Shclachter, 2017).

2.7.2.10 Expand local governmental taxing power

An expansion of taxing power that allows local governments to decide how and how much to tax provided local governments with greater ability to best match their community's demographics, budget, and political realities. An example of an enhanced revenue option is to allow the township to levy a hotel occupancy tax (Schlachter, 2017).

2.7.3 Meeting the Demands of Infrastructures and Its Associate Costs

As revenues decrease at the state and local levels, the quality and sustainably of infrastructures such as roads, bridges, water, and sewage system are at stake. Within the ten (10) countries of South Western PA, there are approximately 300 miles of interest 8,000 miles of Penn DOT maintained bridges to sustain. Due to the depletion of ARRA funding and the federal governments focus on the national deficit future for highway and bridge infrastructure maintenance. On a micro level, the ability to maintain local roads may be drastically impacted due to a decrease in local revenues. Local public works maintenances initiatives could be impacted include, but are not limited to paving, resurfacing and snow removal (Malagoda, 2016).

2.7.4 Balancing Economic opportunities with environmental risks

Economics opportunity is often accompanied by potential environmental cost and balancing the two can be difficult. Of instance, some concerns that have surface Marcellus shale drilling include potential pollution of the water table supply, the

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drainages of local water suppliers and storage of water after it is removed. The high-volume industry trucks have led to concerns about damage to local roads since many of the roads were not initially designed for that level of use. Rules relating to local and use and eminent domain have also become challenges for local government. More specifically, drilling leases are an issue at both national and state levels, yet municipalities are left to address the majority of infrastructure surface damages and emergencies. The current gas leases can also limit surface activities in desired on the land after or during the drilling of the natural gas. All of the challenges must be balanced with benefits from economic development, such as increased employment and collaboration between industries (Schlachter, 2017).

2.8 Change Management in Local Government Involving Local Government Project

As the first sub-Saharan African country to attain political independence since 1957 from Great Britain, the Ghanaian proclivity for experimentation to issues including social, economic and political initiatives, according to pillow and Chazen (1956) has turned the country "into a veritable laboratory for the investigation of different approaches to endemic African problems" (Pellow and Chazan 1986). One of these problems is local participation in political decision making in the country's democratic process (Antwi-Bosiako & Bonna, 2009). Local accountability becomes effective where local leaders are elected by their own people hence the importance of decentralization. Ghana's decentralization policy from 1988 to date combines elements of political administrative and fiscal decentralization among another thing that seeks to promote effective governance at the level (Ayee, 2005).

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Underlying the argument for an argument for decentralization followed by a brief history of Ghana political system, it then addresses the issues of the effective public administrator (leaders) and decentralization. It concludes by making a case for local government election in the various electoral constituencies, districts, and regions.

2.8.1 Overview

significant change in local authorities in recent years has brought disruption to organizations and misalignment among staff at different levels whilst good progress has made in delivering efficiency saving, there is still a considerable amount of work left to do as the austerity program continues to hit home – developing new and more efficient ways of working, whilst managing the change this involves, will become essential factors over the coming years s local authorities continue to adapt to the challenges the future holds (Locks, 2000).

Resistance to change is high – but this is not unusual in comparison intellectually vision and leadership are key to help staff understand the reasons for change and aligned focused and capable leadership team is fundamental to the success of any program engaging with staff and unions at an early stage is essential. It is important to remember that the best ideas often come from the people delivering services and staff at all levels should be involved in designing the future and drilling change throughout an organization so that they have a series of ownership and an incentive to succeed whilst the future of local government holds many challenges, there is also a wealth of opportunities – effective change management is the key making the most of them (Martha, 2001).

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2.8.2 Potential issue

There are barriers to change, some involve people and some involve the processes needed to achieve your vision. Your organization may be encountering some of the challenges below.

- You have more change initiative than your organization has the capacity to deliver
- Your organization has a history of change initiatives that sit on the shelf
- Staffs are reluctant to engage with change initiatives.
- The need for change is clear but you are unsure how to map the key objectives and articulate the future vision
- Staff are focused on operational rather than change strategic change
- Your organization structures are not fit – for purpose

2.9 Managing Change Involving Local Government Projects

The roots of change management can be found in the science of psychology. Many of the techniques helping people to deal with traumatic emotional issues have been applied to "help stakeholders deal with dramatic changes in how they earn their live hoods" (Annes, 1996). The nature of change has been described by the corner (2007) Walton (201) suggests that there are different types of change that required different management strategies, approaches, and methods.

In a business context, therefore, the scope of change management ranger from planned evolutions and reforms to business transformation. Traditionally the changes process was described as moving from a stable state through the unstable state of changing to the desired state, stated by Lewin (1951). As the 1992 constitution of Ghana required local government to under project which would be supervised by the central

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government. These projects need to be managed properly if changes occur. According to Glass (1996), the real problem with many organizations is that management groups have been unable to transform their knowledge of what needs to be done into effective action.

The "what" of change is often not that difficult to ascertain – it is over the "how" the implementation that most organizations stumble (Martha, 2001). He notes further that; most change programs produce disappointing results. The different organization obviously fail for quite different reasons nevertheless one common theme which seems to run through most less than satisfactory change programs is that organizations put too much time and effort into intellectualizing about what they want to change and far too little on the most difficult part. How they are going to carry out that change (Martha, 2001).

2.9.1.an Infrastructure

According to Kenton, (2018) infrastructure is the term for the basic physical system of a business or nation -transportation, communication, sewage, water, and electrical systems are examples of infrastructure. These tend to be high -cost investments related to infrastructure improvements may be funded publicly, privately or through -public-private partnership.

Infrastructure can be put into several different types including;

- Soft Infrastructure: These types of infrastructure make up that help maintain the economy. These usually require human capital and help deliver certain services to the populations' examples include healthcare system, financial

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institution government system, law enforcement and education systems (Kenton, 2018).

- Hard infrastructure: These makeup physical systems that make it necessary to run a modern, industrialized nation. Examples include roads highway, bridges, as well as the capital/assets needed to make them operational (transit buses, vehicles) (Kenton, 2018).
- Critical infrastructure: These are assets defined by a government as being essential to the functioning of a society and economy such as facilities for shelter and heating, telecommunications, public's health, agriculture, etc. In the United State, their agencies responsible for these critical infrastructures, such as homeland security (for the Government and energy services). The department of energy and department of transportation.

2.9.1. b Physical infrastructure

Physical infrastructure refers to the basic physical structures required for an economy to function and survive, such as transportation networks, a power grid, and sewage and waste disposal system (IGI Global, n.d).

Types of physical infrastructure include:

- Social infrastructure; which is a subset of the infrastructure sector and typically includes assets that accommodate social services example are schools' buildings affordable housing, hospitals, and community housing.
- Economic infrastructure; which includes roads communication, sewage, water airports and power (IGI Global, n.d).

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According to Law wiki (2010). A national physical infrastructure consists of a broad array of systems and facilities that house and transport people and goods and provides services. Among other things, this infrastructure includes transportation networks such as roads, airport and mass transit, housing, federal buildings and facilities, postal and telecommunications services. These systems and facilities do not exist in isolation: decisions about housing and vice versa and decisions affect the need for and location of public facilities and communications and energy service (Wiki, 2010).

Historically, in the united states, the federal government has supported the construction of much of this infrastructure and helped to ensure the safety of the services it provides. It builds, owns, operates, and maintain federal buildings, dams, and waterways; financially assists state and local governments to build, own operate, and maintain facilities such as roads, transit system, and local governments and private sector also play significant roles in planning, developing and maintaining this infrastructure (Wiki, 2010).

2.9.1c Importance of physical infrastructure in the local government system

Cities, states and metropolitan areas through American face an unprecedented economic, demographic, fiscal and environmental changes and make it imperative for the public and private sectors to rethink the way they do business the new forces are incredibly diverse but they share an underlying need for modern, efficient and reliable infrastructure. (Puents, 2015). Concrete, steel fiber-optic cable are essential buildings blocks of the economy infrastructure enables trade, power business, connects work on their job, creates an opportunity for struggling communities and product, the nation from an increasingly unpredictable natural environment. From private investment in a

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telecommunication system, broadband networks, freight railroads, energy projects, and pipelines, public spending on transportation, water, building and parks, infrastructure is the lack of a healthy economy.

It also supports workers, providing millions of jobs each year in building and maintenance. A brooking institution analysis Bureau of labor statistics data reveals that 14 million people have jobs in fields directly related to infrastructure. From Locomotive engineers and electrical power lines installers to truck drivers and airlines pilots, to constructions laborers and meter readers, infrastructure jobs account for nearly 11 percent of nations workforce, offering employment opportunities that have a low barrier of entry and projected growth over the next decade (Puents, 2015). The economy needs a reliable infrastructure to connect supply chains and efficiently moves goods and services across borders. Infrastructure connects households across metropolitans' areas to high-quality opportunities for employment, healthcare, and education. (Puents, 2015).

2.9.1 Local government infrastructure

According to Kenton's, (2018). infrastructure compress the assets needed to provide people with access to economic and social facilities and service in general infrastructure facilities have high capital cost are time-consuming to plan and build, are durable and have low operating costs and often networks under control by local government employees. They often have environmental and social benefits that are fully recovered by User changes. Infrastructure can be classified as hard and soft. The hard infrastructure consists of physical systems that are needed to operate a country, such as transportation, telecommunication, energy, sanitation, and water supply. Soft

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infrastructure refers to the institution that maintains health, economic and social standard of a country, such as education, financial government emergency, and health care systems. Soft infrastructure has a secondary impact on its importance as well. Different companies have different requirement for what is needed for their own critical infrastructure, just as the name implies critical infrastructure is a structure, which is critical to the business or organization, Local government Authorities including professional as are responsible for some of these infrastructure (Kenton, 2018).

2.9.2 Local government infrastructure responsibility

Local government develops and maintain key infrastructure for its communities. It provides and maintains infrastructure such as road, bridges, footballs, hospital, schools, regional aero drones (Malalgoda, 2016).

2.10 Conceptual Framework

A conceptual framework is an analytical tool with several variations and contexts. It can be applied in different categories of work where an overall picture needed. It is used to make conceptual distinctions and organize ideas. The conceptual framework represents the researcher's synthesis of the literature on how to explain a phenomenon. It maps out the actions required in the course of the study given his previous knowledge of other researcher's point of view and observation on the subjects. In other words, the conceptual framework is the understanding of how the particular variables in his study connect with each other. Thus, it identifies the variables required in the research investigation. It is the researcher's "map" in pursuing the investigation. (McGaghie, 2001). According to AS McGaghie et al. (2001): Conceptual framework "sets the stage" for the representation of the particular research questions that drives the investigation being reported based on the problem statement. The problem statement of

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the thesis presents the context and the issues that caused the researcher to conduct the study. The conceptual framework lies within a much broader framework called theoretical framework. The latter's draws support from time- tested theories that embody the findings of many researchers on why how a particular phenomenon occurs. (McGaghie, 2001).

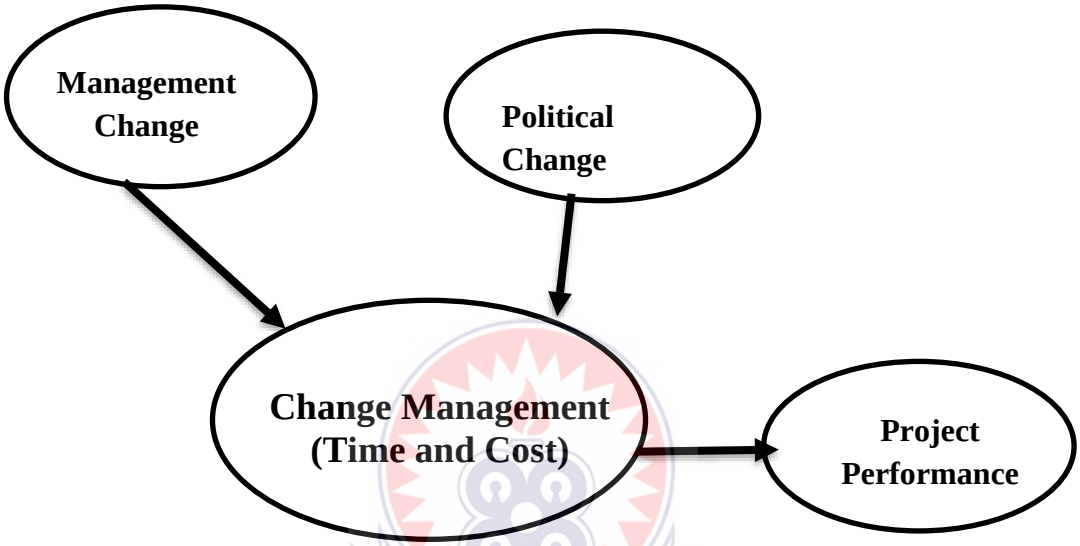

Figure. 2.4: Conceptual Framework

Source: Author's construct

2.11 Summary of chapter

Change is by nature not easy to receive unless there is a clear and immediate benefit. In the public sector context, an understanding of change management principles becomes necessary to juxtapose with legislation to prepare for the change to be received, effective and stick. Focus on the people in this paramount because they get impacted by the change and can influence the change to a very large extent. The chapter deal with the introduction of change management, construction industry, the concept of change, theories of change, why change does happen, mitigating of change effects, local government system, change management in local government projects, managing

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change involving local government projects. Change management is broad to look into, the researcher plays more emphasis on how political change would affect the performance of physical infrastructure on the local government sector in Central Region of Ghana and also deal with management staff change and its effect of project performance in the local government sector.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter relevant literature has been extensively conducted in order to make meaning of the subject of this study and to substantiate any claim that may arise as a result of carrying it out. The research methodology presented in this chapter gives a detailed outline of the methods employed to find answers to the research questions posed in chapter one as well as achieve the objectives of the study. The entire process of the methodology is a unified effort as well as an appreciation of the component parts of the entire research.

Furthermore, the research comprises processes that are not only linear or cyclic. They can be iterative, interactive processes of moving from problem statement through rational to objectives to operationalizing construct to design to data gathering an analysis; to reporting funding and to implementation in a flexible manner. However, in some instances, researchers argue more for the use of fixed rather than flexible research designs. Thus, irrespective of the chosen research design, researchers need a good theoretical understanding of the aims of their research, and knowledge of the appropriated fit between data type, research design, and method tools and data analysis techniques. The chapter is organized into seven (7) sections comprising; introduction, philosophical underpinning, research design, population sampling, sampling Technique, and samples size, Data collection and Data analysis.

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3.2 Philosophical Underpinnings

Appreciation of the range of research traditions, methods and procedures is necessary to produce quality research. To achieve the ability to contrive research as an argument rather than a search for absolute truth is required. Thus it is necessary that any research should include the theoretical epistemological, ontological, social and value under underpinnings, which can be said to characterize the chosen paradigm. We must also understand the relationship between these philosophical underpinnings and other aspects of the research design.

From the literature point of view, the philosophical questions of actuality, understanding, as well as value, have major effects on the research design (Chrisoou, et al., 2008). Thus, philosophical matters of epistemology, ontology axiology and, the methodology give necessitates being advocated openly as they form the prime of the study instruments (Chritoon et al., 2008) Epistemology is the division of philosophy on how individual control what is right, positivism and interpretivism (Streubert & Carpenter 1999). This study trawls the positivist method of understanding and the ontological level the location accepted for this study objectivism.

3.3 Research Design

A research design is a conceptual structure within which research was and its constitution was the blueprint for the collection, measurement, and analysis of data. It's the specification of methods and procedures for acquiring the information needed for solving the problem. Decisions regarding what, where, when, how much, by what means concerning an inquiring or a research study will constitute this research design.

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According to Adams and Schvaneveldt (1985), this study employed quantitative research methods, more especially on the data presentation and interpretation.

3.4 Population Sampling

According to Welman (2005), "a population is the study object and consists of individuals, groups, organization, human products, events or the conditions to which they are exposed" Bless (1995) defines a target population as "a set of elements that the researcher focuses upon and to which results obtained by testing the sample should be generalized. "Therefore, it can be said that a population relates to accurate conclusions about the topic of interest. The research covered a target population of one hundred and seventy-seven (177), construction professionals employed by the District Assemblies to undertake projects for them.

The construction professionals normally working for a Districts Assemblies include: engineers, architect, quantity surveyors, buildings inspector and Directors. The study selected twelve (12) assemblies from twenty-two (22) in study region (Central region). The table below gives the profile of the 12 selected districts in terms employment statistics of constructions professionals

Table: 3.1 Constructional Professional

Position	Frequency	Percentage
Director	12	6.7
Building Inspector	29	16.4
Architect	54	30.5.
Quantity Surveyor	60	33.9
Work Engineer	22	12.5
Summation	**177**	**100**

Source; field survey, (2018)

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3.5.a Determination of Samples Sizes

In order to obtain a sample, the Kish formula was used to determine the sample sizes. From the statistics gained from the local government the selected District Assemblies from Central region, there were one hundred and seventy-seven (177) constructional professional. To determine the sample sizes, the Kish formula was used.

$n=n'/(1+n'/N)$

$n'=s^2/v^2$

where

v=the standard error of sampling distribution= 0,05

s^2= the maximum standard deviation of the population

total error=,01 at a confidence level of 96%

$s^2=p(1-p)$ where p=,0.5

= 0.25

p = the proportion of the population elements that belong to the defined region

n'= (0,25/ 0.042)=156

N= 177

n=100/(1+100/177)=80.3254

This samples sizes formula provided the minimum of questionnaires that were used for discussion. The sample sizes were found to be eighty construction professional out of the one hundred seventy-seven (177)

3.5 Sampling Technique and Samples Size

According to De Voss (2005), "a sample comprises elements of the population considered for actual inclusion in the study; or it can be viewed as a subset of measurement drawn from a population in which we are interested.

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A sample is a portion of the total set of objects, events or individual which together compresses the subject of our study. This study used purposive sampling as sample technique. According to Ashley Crossman, (2001) a purposive sample is non – probability sample that is selected based on the characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective or subjective samplings. This type of samplings can very useful in situations when you need to reach a targeted sample quickly, and where sampling for the proportionality is not the main (Crossman, 2018). There are seven types of purposive samples, each appropriate to a different research objective. The researcher used the total number of the questionnaires received from the respondents as sample sizes of the study since the purposive sample was used. The sample size was found to be eighty- (80), professionals out of one hundred and seventy-seven (177) targeted.

3.5.1 Maximum variations/heterogeneous

A maximum variation/ heterogeneous purposive sample is one which is selected to a provided a diverse range of cases relevant to a particular phenomenon or event. The purpose of this kind of sample design is to provide as much insight as possible into event or phenomenon. Under examination. For example, when conducting a street poll about an issue, a researcher would want to ensure that he or she speaks with as many as possible in order to construct a robust view of the issues from the public perspective (Crossman, 2018).

3.5.2 Homogeneous

A homogeneous purposive sample is a sample that is selected for having a shared characteristic or set of characteristics. For examples, a team of researchers wanted to understand what the significance of white skin-whiteness- means to white people, so

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they asked white people about this. This is a homogenous sample created on the basis of the race (Crossman, 2018).

3.5.3 Typical Case Sample

Typical case sampling is a type of purposive sampling useful when a researcher wants a study a phenomenon or trend as it relates to what is considered "typical" or "average" members of the affected population. If a researcher wants to study how the type of educational curriculum affects the average students, he or she chooses to focus on the average number (Crossman, 2018).

3.5.4 Extreme/ Deviant Case Sampling

Conversely, extreme /deviant case sampling is used when a researcher wants to study the outliers that diverge from the norm as regards a particular phenomenon, issue or trend. By studying deviant cases, researchers can often gain a better understanding of more regular patterns of behavior. If a researcher wanted to understand the relationship between study habits and high academic achievement, he or she should purposively sample students considered high achievers (Crossman, 2018).

3.5.5 Critical Case sampling

Critical case sampling is a type of purposive sampling in which just one is chosen for study because the researcher expects that studying it will reveal insights that can be applied to other like case (Crossman, 2018).

3.5.6 Total population sampling

With total population sampling, a researcher chooses to examine the entire population that has one or more shared characteristics. This kind of purposive samplings technique

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is the commonly used to generate reviews of events or experiences, which is to say, is the common to studies for particular groups within larger populations (Crossman, 2018).

3.5.7 Expert sampling

Expert sampling is a form of purposive sampling used when the researcher requires one to capture knowledge rooted in a particular form of purposive sampling technique in the early stages of a research process when the researcher is seeking to become better informed about the topic at hand before embarking on the study. Doing this kind of early-stage expert-based researcher can shape research questions and design in important ways (Crossman, 2018).

3.6 Data Collection

A total of one hundred and seventy-seven (177) questionnaires were distributed to the administrative staff of local government preferable the district Engineers or relevant staff and from the selected district assemblies in Central Regional. Out of these numbers of questionnaires the researcher was able to receive eighty-seven and seven (7) were not properly filled. The remaining eighty (80) were used for discussion. The findings of the research were shared with the respondents. This was for the purpose of testing their reaction to the research findings and the contraction, therefore.

The request for the completion of the questionnaires was forwarded to the identified respondents through physical delivering by the researcher. Accompanying this physical request is a formal request later drafted and signed by the researcher, and the letter from the university confirming that a student indeed registered for the subject being researched upon.

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3.6.1 Research instrument

Research questionnaires were used for this research and it was distributed to all respondents as per the selected sample size. All the respondents were given two weeks to respond to the questionnaire, to give them enough time to apply their minds in the questions and give honest responses. The questionnaire was accompanied by the letter from the University confirming that the researcher was indeed a registered student of the university and conducting the research for academic purposes only. According to Lincoln (1994), there are characteristics for questionnaires as research instruments. They are as follows:

- Each participant enters his/her own response on the questionnaires saving the researcher, huge amount of tune as compared to the time required to conduct a research interview
- It is cost effective than conducting personal interviews
- Data on a broad range of topics may be collected within a limited time and period
- The format is standard for all subjects and is independent of the interviewer's mood
- Respondents feel they can remain anonymous and can express themselves in their own words without fear of identification. In view of the study being conducted some of the respondents may not wish that their colleague know they feel about the system of managing change in physical infrastructure in local Government in Ghana

3.6.2 Validity and reliability of the research instrument

Although Pitney & Parker (2009) and Ezemenari et al., (1999) contend that data validity and reliability is more easily determined in the quantitative than qualitative research, it

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is clear that the arguments ignore the premise of qualities research as primarily 'focused on people and meanings' (Blalock, 1979) rather than on numbers.

In order to ensure validity and reliability, therefore, the respondents involved in the research were selected based on the relevance of their professional background to the research area and valid and reliable reference from the literature. Consequently, as a framework, this research was executed on one-representative sample institutions active in the field of construction. The advantage of this approach is embedded in the aspiration for eliciting responses from researchers and practicing members of the construction industry and who are remonstrative of theory and practice (Creswell, 1994).

3.6.2.1 Quantitative research

Quantitative research is defined as an inquiry into the social or human problem, based on testing a hypothesis or theory composed of available, measurement with numbers and analyzed with statistical procedures in orders to determine whether the hypothesis or theory holds the true (Creswell, 1994). Quantitative data is therefore not abstract; they are hard and reliable, they are measurements of tangible comfortable, sensate features of the word (Bouma & Atkumson, 1995).

For quantitative data, a precise sample number can be calculated according to the level of accuracy and the level of probability that the researcher requires in her work. She can then report in her study the rationale and basis of her research decision (Blalock, 1979). Quantitative research deals in numbers, logic and on objectives stance. Quantitative research focuses on numeric and unchanging data and detailed, convergent

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reasoning rather than divergent (i.e. the generation of a verity of deals about a research problem in a spontaneous, free-flowing manner).

3.6.2.2 Characteristics of quantitative research

- The data is usually gathered using structured research instruments
- The results are based on larger samples sizes that are representative of the population
- The researcher study can usually, be replicated or repeated, given its high reliability.
- The researcher has a clearly defined research question to which objective answers are sought.
- All aspect of the study is carefully designed before data is collected.
- Data are in the form of numbers and statistics, often arranged in a table, charts figures or other non-textual forms
- Projects can be used to generate concepts more widely predict future results or investigates the causal relationship.
- A researcher uses tools such as questionnaires or computers software, to collect numerical data.

3.6.3. Pilot testing of a research instrument

Before the commencement of data collection, it was very important to carry out a pre-test in order to address any challenges that may occur during the actual research. Pretesting was carried out of administrative staff on Adansi South District in New Edubiase at Ashanti Region. This was done to determine the clarity of questions and to note ambiguity. From this, some of the questions were modified. To ensure the validity

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and reliability of the tool for the study, the questionnaires were continued by the study supervisor after which the questionnaires were modified. Also, pilot testing is carried out as a test to see if an idea or product would be successful.

3.6.4 Ethical considerations

According to Babbie (2008), anyone involved in scientific research needs to be aware of the general agreement shared by the researchers about is proper and improper in the conduct of scientific inquiry. Therefore, the respondents will be assured of their anonymity and confidentiality of the information provided. The respondents of the research will under no circumstance be revealed to anyone. The researcher will assure the respondents during the process that, their identity will always remain anonymous. The ethical considerations that apply to this case study incorporate some of the processes undertaken in the recruitment of participants because these processes are underpinned by a number of ethical principles central to the conduct of research.

Research is a two-way practice between researchers and participants and fairness between the parties. It is important that participation be voluntary without fear of consequences that mighty answer from not agreeing to participate. Researchers can resolve this matter by explaining the nature of the research to participants, including the purposes and procedures of research, making it clear how the results will be used Burns (1997 asserted that participants must understand the nature and purpose of the research and must consent to participate without coercion.

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3.7 Data Analysis

An in-depth description was provided, emphasizing on contextual factors which cause the leadership to behave in a particular way. According to Lofland et al. (2006), there are six ways of looking for patterns in particular research, namely frequencies, magnitude structures processes, causes, and consequences. The data were analyzed through SPSS and represented through tables and used regressions analysis and ANOVA. The approach was to present the holistic view of data rather than a condensed view. The analysis seeks to describe the picture of "what is order to best respond to the objectives of the research.

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CHAPTER FOUR

PRESENTATION AND ANALYSIS RESULTS OF THE STUDY

4.1 Introduction

This chapter looks at the presentation and analysis of data gathered from the data collected. This section presents data in the areas of the background analysis of the data and also the results of the study based on the data collected according to the objectives of the study. Out of one hundred and seventy-seven (177) questionnaires distributed 12 out 22 District Assemblies in the central region, eighty-seven, and (87) were received. Out of these numbers, seven (7) were uncompleted filled and remaining eighty (80) represent 45.19% targeted population was used discussion. The results were presented in tables and included regression and correlations.

4.2 Background Data

The background data concentrates on certain subjects such as the gender of the respondents, the age range of respondents, the educational level of the respondents and the employment status of the respondents. Below is the table that shows the results of the data collected.

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Table 4.1: Background data of the respondents

Gender	**Response**	**Frequency**	**Percentage**
	Male	74	92.5
	Female	6	7.5
Age of respondents	**Response**	**Frequency**	**Percentage**
	18 to 28 years	6	7.5
	29 to 39 years	45	56.2
	40 to 49 years	27	33.8
	50 years and above	2	2.5
Position held	**Response**	**Frequency**	**Percentage**
	Director	4	5.0
	Building Inspector	6	7.5
	Architect	25	31.2
	Quantity surveyor	39	48.8.
	Work engineer	6	7.5
Educational background	**Response**	**Frequency**	**Percentage**
	Diploma / HND	6	7.5
	Bachelor's degree	42	52.5
	Master's Degree	32	40.0
Length of years in service	**Response**	**Frequency**	**Percentage**
	5 years or less	6	7.5
	6 to 10 years	30	37.5
	11 to 15 years	38	47.5
	16 and above	6	7.5

Source: Researchers fieldwork (2018)

In Table 4.1, with respects to gender, the table shows that there were seventy-four (74) males and six (6) females in the study, representing 92.5% and 7.5% respectively. This indicates that in the field of construction, there are more men as compared to women in the profession. With respects to the age range of the respondents, six (6) respondents were between the ages of 18 to 28 years representing 7.5%, forty-five (45) respondents

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were between the ages of 29 to 39 years representing 56.2%, twenty-seven (27) respondents representing 33.8% were between the ages of 40 to 49 years and finally two (2) respondents were 50 years and above representing 2.5%. This clear indication that 29 to 39 years were respondents participating in the study were dominated, followed by the 40 to 49 years and 18 to 28 years respectively and less dominated was above 50 years.

Data on the position held by the respondents showed that four (4) respondents representing 5% were directors, six (6) respondents representing 7.5 % were building inspectors, twenty- five (25) representing 31.2% were architects, thirty-nine respondents representing 48.8% were quantity surveyors and finally six (6) respondents were work engineers representing 7.5%. As it can be seen in the table below, the majority of the respondents employed by District Assemblies who showed interest were Quantity surveyors, followed by Architect followed by building inspectors and work engineer. Directors were few to shown interested in the study. this study is Educational background of the respondents showed that six (6) respondents had a diploma representing 7.5%, forty-two (42) respondents representing 52.5% had a bachelor's degree and thirty-two (32) respondents representing 40% had master's degrees. We can see the education qualifications of the respondents, it clearly is seen from Table 4.1 that most of the respondent were first degree holders followed by master degree holders and few diploma holders. CTC and others were zero, which we can conclude there more competent professionals are working at Assemblies who handle Governments construction projects Finally, on the background of the respondents, six (6) respondents representing 7.5% had been in service for 5 years or less, thirty (30) respondents representing 37.5% had been in service for 6 to 10 years, thirty-eight (38) respondents

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had been in service for 11 to 15 years representing 47.5% and six (6) respondents representing 7.5% had been in service for 16 years and above. In the job experience, those who had for 6 to 10 years is dominated, followed by 11 to 15 years and 16 years above & less than 5 years respectively. This clear indication that the more experienced construction professional in the Assemblies to handle construction projects (ie. Physical infrastructure projects).

4.3 Presentation of Results on Research Questions

In this section of the study, the researcher presents the results of the study according to their respective research questions or objectives. The study was divided into four different research questions. Statistical tools such as means, standard deviations, correlations, and regressions were used in the presentation of the results.

4.3.1 Causes of Change Management of Physical Infrastructures

The first objective of the study was to examine the causes of change in the management of physical infrastructures in the local government sector of Ghana. A 5-point scale was employed, measuring "1=strongly disagree" through to "3=neutral" to "5=strongly agree". The results obtained from this evaluation are shown in Table 4.2. In Table 4. 2, the respondents indicated the extent to which they agree or otherwise with the causes of change in the management of physical infrastructures in the local government sector of Ghana. From Table 4. 2, the respondents were in agreement with political influence, litigation/conflicts on land, new government regulations/change in economics in conditions and natural disasters as the causes of change in management of physical infrastructures in the local government sector of Ghana.

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The respondents were neutral with regard to weather condition, ground condition, and lack of available material, inadequate planning, error and omissions in design, unrealistic contractors' durations and safety consideration as the causes of change in management of physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with technological change as a cause of change in the management of physical infrastructures in the local government sector of Ghana.

Table 4.2: Causes of change in management of physical infrastructure in the local government sector

Factor	Min	Max	Mean	Std. Dev
Political influence	2.00	5.00	3.888	.91394
Litigation/ conflicts on land	1.00	5.00	3.825	1.1776
Natural disasters	1.00	5.00	3.763	1.1052
New government regulations/ change in economics in conditions	2.00	5.00	3.500	.7631
Unrealistic contractors' durations imposed by client	1.00	5.00	3.463	.9406
Lack of available material	2.00	5.00	3.450	.7614
Inadequate planning	1.00	5.00	3.338	.8851
Ground condition	1.00	5.00	3.238	.8750
Error and omissions in design	1.00	5.00	2.975	.7459
Safety consideration	1.00	5.00	2.938	.8167
Weather condition	1.00	5.00	2.825	1.0160
Technological change	1.00	5.00	2.463	.9270

Source: Field Study 2018

4.3.2 Challenges Associated with Change Management

The second objective of the study was to assess the challenges associated with change management involving physical infrastructures in the local government sector of Ghana. A 5-point scale was employed, measuring "1=strongly disagree" through to "3=neutral" to "5=strongly agree". The results obtained from this evaluation are shown in Table 4. 3.

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In Table 4. 3, the respondents outlined the extent to which they agree or otherwise with the challenges associated with change management involving physical infrastructure projects in the local government sector in Ghana. From Table 4. 3, the respondents were in agreement with the change of government, failure to deal with problems immediately, the poor performance of sub-contractors, defective workmanship and lack of coordination between consultant and contractor as the main challenges associated with change in management involving physical infrastructures in the local government sector of Ghana.

The respondents were neutral with regard to employee development and attention to site welfare and safety as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with site management practical effective quality control on site, standard of workmanship and financial strength and bonding capacity as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana.

Table 4. 3: Challenges associated with change management involving physical infrastructure in the local government sector in Ghana

Factor	Min	Max	Mean	Std. Dev
Change of government	2.00	5.00	4.1625	.8335
Poor performance of sub-contractors	1.00	5.00	3.7500	.8494
Defective workmanship	2.00	5.00	3.7125	.8297
Lack of coordination between consultant and contractor	1.00	5.00	3.5250	.9933
Employee development	2.00	5.00	3.4000	.7222
Attention to site welfare and safety	1.00	5.00	2.6875	1.0861
Site management practical effective quality control on site	1.00	5.00	2.4750	1.2010
Standard of workmanship	1.00	5.00	2.3750	1.0110
Financial strength and bonding capacity	1.00	5.00	2.200	1.3350
Failure to deal with problems immediately	1.00	5.00	3.9625	.7538

Source: Field Study 2018

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4.3.3 Impacts of Change on the Quality Performance of Physical Infrastructure Projects in terms of time and cost

The third objective of the study was to determine the impacts of change on the quality performance of physical infrastructure projects in local government in relation to time and cost. From the model summary, the total measure of fit (R^2) is 0.418 which indicate that about 41.8% of the total variation in the response can be explained by the time factor. Also, the adjusted R square is 0.352 which indicate that about 35.2% of the total variation in the response can be explained by other factors not considered.

Table 4. 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	.646[a]	.418	.352	.41422

a. Predictors: (Constant), Time

The analysis of variance (Anova) is used to check the validity of the regression model. It evident from the ANOVA table that the model is significant since the p-value of 0.000 is less than the α-value of 0.05.

Table 4. 5: ANOVA[a]

Model		Sum of Square	df	Mean Square	F	Sig
1	Regression	8.746	8	1.093	6.372	.000[b]
	Residual	12.182	71	.172		
	Total	20.928	79			

a. Dependent Variable: Cost

b. Predictors: (Constant), Time

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From the Coefficients table, it can be seen that time is not significantly related to cost (b = 0.0295, p = 0.2691). This suggests that an increment in time is only associated, on the average, to a 0.0295-point increment in cost. Therefore, the effects of change on the quality performance of physical infrastructure projects in the local government sector is not only related to time and cost.

Table 4.6: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.717	0.489		5.550	.000
Time	0.0295	0.0736	0.0398	0.4093	0.2691

a. Dependent Variable: Cost

4.3.4 Developing a Framework for Change Management

The fourth objective of the study was to develop a framework for change management involving physical infrastructure projects. A 5-point scale was employed, measuring "1=strongly disagree" through to "3 = neutral" to "5 = strongly agree". The results obtained from this evaluation are shown in Table 4. 7.

In Table 4.7, the respondents indicated the extent to which they agree or otherwise with the factors to be considered in the development of a framework for change management involving physical infrastructure projects. From Table 4. 7, the respondents were in agreement with participation and involvement, effective communications, enabling and promoting a conflict-free, managing relationship, education and negotiation, and agreement a to the factors to be considered in developing a framework for change

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management involving physical infrastructure projects. However, the respondent was neutral in relation to manipulation and project team coherence as factors to be considered in developing a framework for change management involving physical infrastructure projects.

Table 4. 7: Framework for change management involving physical infrastructural projects

Factor	Min	Max	Mean	Std. Dev
Participation and involvement	2.00	5.00	3.9000	.8509
Effective communications	2.00	5.00	3.8500	.8434
Enabling and promoting a conflict- free	1.00	5.00	3.7875	.8958
Managing relationship	2.00	5.00	3.6875	.6482
Education	2.00	5.00	3.6500	.6183
Negotiation and agreement	3.00	5.00	3.5500	.6732
Manipulation	1.00	5.00	3.2875	1.1273
Project team coherence	1.00	5.00	3.1000	1.0138

Source: Field Study 2018

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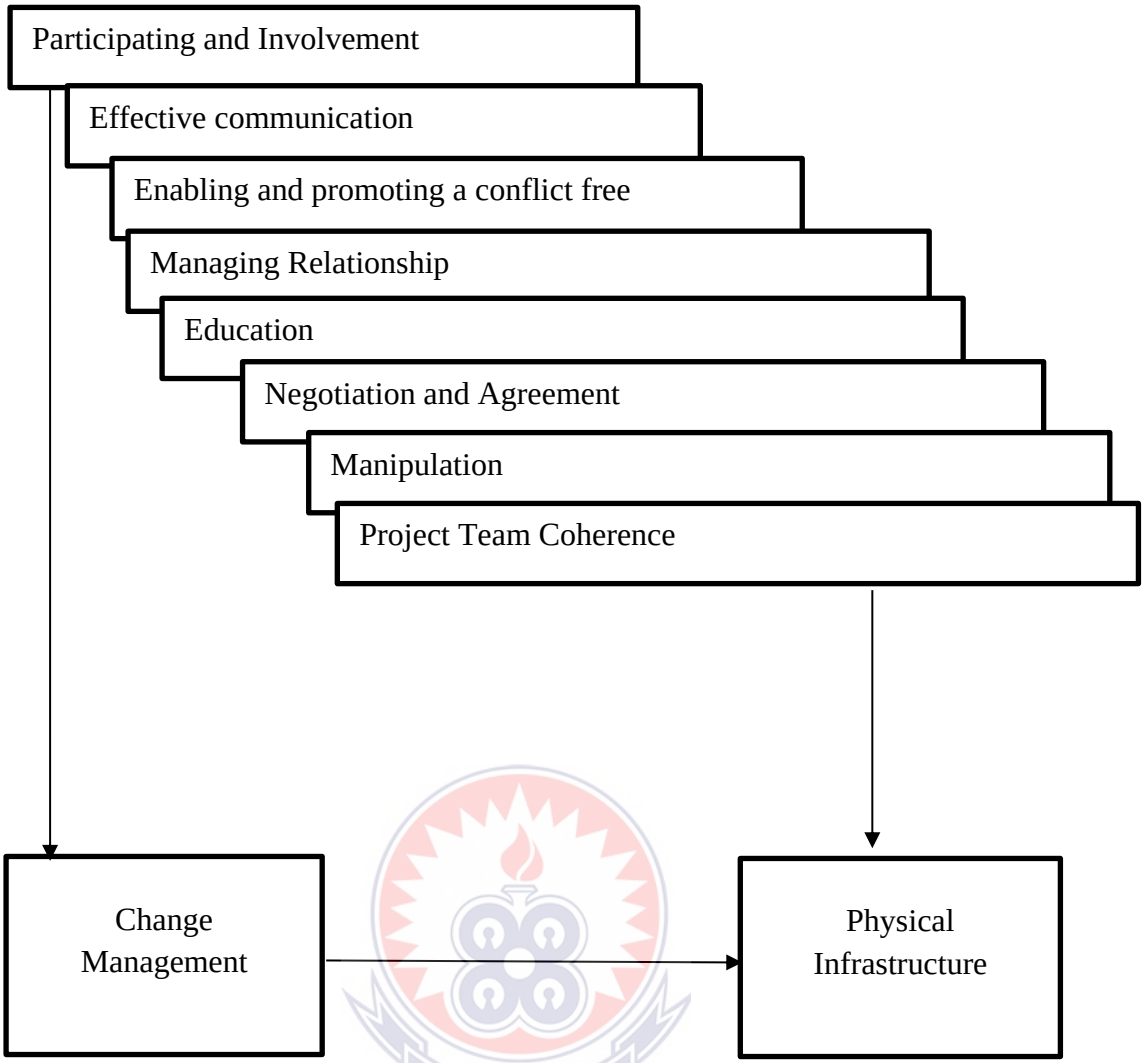

Figure 4.1: Framework for effective change management

Source: Author Construct

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CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

In this chapter, the researcher sought to present the discussions of results uncovered from the data collected. The discussions were done according to the objectives or research questions and literature in the field of change management was used to back the results attained in the study.

5.1 Causes of Change Management of Physical Infrastructures

The results of the study in this section showed that with respects to Table 4. 2, the respondents indicated the extent to which they agree or otherwise with the causes of change in management of physical infrastructures in the local government sector of Ghana. The respondents were in agreement with political influence, litigation/conflicts on land, new government regulations/change in economics in conditions and natural disasters as the causes of change in management of physical infrastructures in the local government sector of Ghana. The respondents were neutral with regard to weather condition, ground condition, lack of available material, inadequate planning, error and omissions in design, unrealistic contractors' durations and safety consideration as the causes of change in management of physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with technological change as a cause of change in the management of physical infrastructures in the local government sector of Ghana.

A study by Issac & Navon (2008) shows that normally change in infrastructural projects is primarily caused by owner-initiated changes and probably designer's errors and

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omissions (Issac & Navon, 2008). They all posit that the impact of changes to a construction project needs to be evaluated case by case in order to assist with the decision-making process. Changes could bring in "benefits" to the stakeholders especially to the owner, in the long run, most changes, if not managed properly, will result in "negative" impacts, most likely resulting in time and cost overruns. In general, upper-stream changes have larger impacts.

Another study by Lu & Issa (2005) pointed out that the most frequent and most costly changes are often related to design, such as design changes and design errors. They also pointed out that, scope changes from the owner, design / technological changes from the architect, and cost and/or time changes caused by supplier problems, design errors, material, and operational failures, or by unsatisfactory site conditions. Change orders are common to most projects and very common with large projects. One of the most influential causes that were detailed in the study was the change caused by political influence and a study by Damoh, et al. (2015) pointed out the importance or the strength of political change and influence in terms of project management. They pointed out that political influence was one of the top three causes of management change in terms of infrastructure.

Smithh (1999) points out that change management in projects may originate from originating from either external or internal pressures that are being applied to a project. External causes may be due to technological changes, changes in customers‟ expectations and tastes, changes in competitors‟ activities, changes in government policies, and changes in macro as well as microeconomic conditions. Internal causes

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may result from changes in company management policy, changes in organizational objectives and changes in the long-term survival strategy of the organizations involved.

5.2 Challenges Associated with Change Management

The respondents outlined their views on the challenges associated with change management involving physical infrastructure projects in the local government sector in Ghana. The respondents were in agreement with the change of government, failure to deal with problems immediately, the poor performance of sub-contractors, defective workmanship and lack of coordination between consultant and contractor as the main challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana. The respondents were neutral with regard to employee development and attention to site welfare and safety as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with site management practical effective quality control on site, standard of workmanship and financial strength and bonding capacity as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana.

Aleksandrova (2017) pointed out some challenges that are associated with a change in management. Some of these challenges were in tandem with the challenges agreed upon by the respondents in the study. These challenges were lack of flow of funding, delays in implementation of intended activities, communication disorders due to change and discrepancies in communication. He pointed out that these problems could follow exactly after the change and could completely destroy the projector could take a while to set in. Nelson and Baker (2016) also pointed out three challenges that come with

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change management. They pointed out that the most recurrent challenges to be sorted out in times of change were the delay in schedules, cost overrun and construction claims. These problems are said to occur when there are differing site conditions, project delays errors and omissions and deleted or added scopes and all these issues come up due to the occurrence of the change.

Project changes can also result in some indirect effects, which will ultimately have a negative impact on project cost and schedule. Indirect effects include disputes and blames amongst project partners; loss of productivity due to reprogramming; loss of rhythm, unbalanced gangs and resource allocations; changes in cash flow, financial costs, loss of earnings; increased risks of coordination failures and errors; lower morale of the workforce; loss of float, therefore increased sensitivity to further delays; and so on (Josephson, 2002).

5.3 Impacts of Change on the Quality Performance of Physical Infrastructure Projects in terms of time and cost

In this section, the researcher sought to find out the impacts of change management on the quality performance of physical infrastructure in terms of time and cost. The researcher restricted the study to only time and cost thus with respects to the variables, the total measure of fit was 41% which showed that time and cost predicted only 41% of the impact of change on the quality performance on physical infrastructure.

Also, from the Coefficients table, it can be seen that time is not significantly related to cost ($b = 0.0295$, $p = 0.2691$). This suggests that an increment in time is only associated, on the average, to a 0.0295-point increment in cost. Therefore, the impacts of change

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on the quality performance of physical infrastructure projects in the local government sector is not only related to time and cost. In another, the respondents for the study agreed that cost and time do not affect the quality of work performance delivered.

Studies outside of the country or mostly the continent have most gone contrary to the results of the study. Thus, postulating that time and cost are variables that strongly affect the quality performance of construction projects. Therefore, a study by Akintoye et al (1997) showed that Risk elements associated with construction projects are influenced by time and cost of the project. Risk management, therefore, becomes a continuing activity in project development, from inception and throughout the life of the project. Also, Oladapo (2014) points out that project cost and time accounted for about 79 and 68 percent of problems, respectively, construction projects. Project type and size were found to have no significant effect on the contribution of variations to cost and time overruns. The results also showed that changes in specifications and scope, initiated mostly by project owners and their consultants, were the most prevalent sources of variation.

However, in the African context, studies have shown that cost and time are not as important a variable as the technical know-how of the supervisor or construction company involved. Thus, in times of change management, time and cost do not impact the quality of the project so much. Manavazhia and Adhikarib (2002) conducted a study on the impact of cost and time on quality performance and it was found that the actual impact of these delays on project costs was found to be on average, only about 0.5% of the total budgeted cost of the projects. Among materials, delays in the supply of aggregates and equipment were found to occur most frequently.

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5.4 Developing a Framework for Change Management

In this section of the study, discussions were shown on the extent to which the respondents agreed or otherwise with the factors to be considered in the development of a framework for change management involving physical infrastructure projects. The respondents were in agreement with participation and involvement, effective communications, enabling and promoting a conflict-free, managing relationship, education and negotiation and agreement as to the factors to be considered in developing a framework for change management involving physical infrastructure projects. However, the respondent was neutral in relation to manipulation and project team coherence as factors to be considered in developing a framework for change management involving physical infrastructure projects.

Although the factors proposed and agreed upon by the respondents may not be the same as the ones in any other frameworks in change management that have been proposed, they have some similarities. One of the frameworks that have been proposed in the literature is one proposed by Motawa (2005). This model had four stages which were the start-up, identification, and evaluation, approval and implementation and review. The factors that were proposed by the researcher can be embedded in the stages that were mentioned above. For instance, the stage of approval and implementation can have some factors such as project team coherence and effective communication and a factor like managing relationships can be put into the factor of start-up (Neelamkavil et al., 2008).

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CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

In this chapter, the researcher presents the summary of the study based on the research questions, the conclusions of the study and the implications and recommendations of the study. This chapter was divided based on the various sections

6.1 Summary of the Study

6.1.1 Summary of Study

The main purpose of the study was to examine change management involving physical infrastructure projects in the local government sector in Ghana and was primarily based on selected districts in the central region. The study was guided by four objectives which were, to examine most important causes of change in management of physical infrastructures in local government sector of Ghana, to assess the challenges associated with change management involving physical infrastructure in local government sector in Ghana, to determine the impacts of change on the quality performance of physical infrastructure projects in local government in relation to time and cost and the final objective was to develop a framework for change management involving physical infrastructure projects. The target population of this study is construction professionals employed by the District Assemblies. A total of one hundred seventy-seven (177) questionnaires were distributed to the administrative staff of local government preferable the district Engineers or relevant staff and from the selected district assemblies in Central Regional.

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6.1.2 Summary of Findings

Below are the results and finding of the study based on the objectives of the study:

Research objective one: to examine the causes of change in the management of physical infrastructures in the local government sector of Ghana.

The respondents were in agreement with political influence, litigation/conflicts on land, new government regulations/change in economics in conditions and natural disasters as the causes of change in management of physical infrastructures in the local government sector of Ghana. The respondents were neutral with regard to weather condition, ground condition, lack of available material, inadequate planning, error and omissions in design, unrealistic contractors' durations and safety consideration as the causes of change in management of physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with technological change as a cause of change in the management of physical infrastructures in the local government sector of Ghana.

Research objective two: to assess the challenges associated with change management involving physical infrastructure in the local government sector in Ghana.

The respondents were in agreement with the change of government, failure to deal with problems immediately, the poor performance of sub-contractors, defective workmanship and lack of coordination between consultant and contractor as the main challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana. The respondents were neutral with regard to employee development and attention to site welfare and safety as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana. However, the respondent disagreed with site management

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practical effective quality control on site, standard of workmanship and financial strength and bonding capacity as challenges associated with a change in management involving physical infrastructures in the local government sector of Ghana.

Research objective three: to determine the impact of change on the performance of physical infrastructure projects in local government in relation to time and cost

The impacts of change on the quality performance of physical infrastructure projects in the local government sector is not only related to time and cost. Also, the respondents for the study agreed that cost and time do not affect the quality of work performance delivered.

Research objective four: to develop a framework of recommendation for effective change management involving physical infrastructure projects.

The respondents were in agreement with participation and involvement, effective communications, enabling and promoting a conflict-free, managing relationship, education and negotiation and agreement as to the factors to be considered in developing a framework for change management involving physical infrastructure projects. However, the respondent was neutral in relation to manipulation and project team coherence as factors to be considered in developing a framework for change management involving physical infrastructure projects.

6.2 Conclusions of the Study

In conclusion, the subject of change management is quite relevant in the African context and should receive more attention. The purpose of the study was to examine change management involving physical infrastructure projects in the local government sector in Ghana and was primarily based on selected districts in the central region. The study

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concludes that time and cost are not the only parameters that can be studied in relation to change management with respects to quality performance. Time and cost were also seen not to have an impact on the quality performance of construction projects even when a change occurs. Thus, future research should consider other factors that can be affected when change occurs in infrastructure projects.

6.3 Implications and Recommendations of the Study

- The findings of the study add up to literature in the field of change management with respects to infrastructure projects by providing a deeper study into the impacts of change management on the quality performance of physical infrastructure projects. The study presents empirical evidence showing that political influence has a high effect on change management and thus more information may even be needed in this field.
- Players in the field of construction are presented with empirical evidence that shows that cost and time do not affect the quality performance of physical infrastructure. Therefore, it gives constructors and construction organizations the chance to concentrate on other factors to minimize whenever there is a need to minimize the impacts of change.
- It is recommended that players in the field of construction should apply the framework of change developed in this study to the management of change on projects. The study found that participation and involvement, effective communications, enabling and promoting a conflict-free, managing relationship, education and negotiation and agreement as to the factors to be considered in developing a framework for change management involving physical infrastructure

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projects. Therefore, the players in the construction field can use such factors in helping the change management process.

- Policymakers can have a better understanding on the impacts of change management on the quality performance of physical infrastructure in the Ghanaian market and can use this information to establish policies on the change in management of physical infrastructure and establish other policies to ease the burden of change management on projects.

6.4 Suggestions for Further Research

The study mainly assessed and analyzed the impacts of change management on physical infrastructure and mainly concentrates on time and cost. Thus, other factors such as risk and loss of trust can be studied in further research. A structured questionnaire was used in a survey and was strictly quantitative. The researcher recommends a similar area of research but the use of the different methodology. For example, a longitudinal study or a more qualitative approach can be used. Also, future researchers can conduct a comparative study using respondents in different geographic areas or with different income levels.

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APPENDIX I

UNIVERSITY OF EDUCATION WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION KUMASI

DEPARTMENT OF WOOD AND CONSTRUCTION TECHNOLOGY EDUCATION

I am DanquahYeboah Isaac MPhil Construction Technology student from the Department of Construction and Wood Technology at the University of Education Winneba, Kumasi.

As a requirement of the degree, I am researching on the topic" A study of change management involving physical infrastructure projects in the local Government sector of Ghana: A study of selected District Assemblies in Central Region in Ghana. This research questionnaire has been designed to solicit views from professionals, based other experience on works undertaken within MMDA level. The objective of the research is to:

i. To examine the most important causes of change in physical infrastructures in the local government sector in the Central Region in Ghana;

ii. To determine the impact of change on the performance on physical infrastructure projects in the local government sector in the Central Region in Ghana in relation to time and cost;

iii. To assess the challenges associated with change management involving in physical infrastructure in the local government sector in the Central Region in Ghana; and

iv. To develop a framework of recommendations for effective change management process involving physical infrastructures project in the local government sector in the Central region in Ghana;

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Change management is defining as corporate strategies, structures, procedures and technologies to deal with change in external conditions and business environment. Or change management is the collective's term for approaches, tools, techniques to prepare and support an individual's team and organizations in making organizational change.

Ethical issues will be strictly adhering to, for example, the aim of the research, focus on a topic, matters concerning confidentiality, secretly and respondents will not be mentioned by names on the research report

I would like to convey my appreciating for your cooperation in completing these questions. If you have any questions and contributions about this research, please make it through isaacdanquahyeboah@gmail com. or call on 0243-879415. The questionnaires are in four sections namely background, factors affect impacts of change, cause of change,

Challenges associated with change management and ways of managing change management process involving physical infrastructure in the project in Ghana.

Yours faithfully,

Danquah-Yeboah Isaac

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APPENDIX II

SECTION: 1 BACKGROUND INFORMATION

Please tick(√) the appropriate answer

1. Please indicate your gender.

   a. male [ ]

   b. female [ ]

2. What is your age?

   a. 18years-28years [ ]

   b .29years-39year [ ]

   c. 40years-49years [ ]

   d. 50years above [ ]

3. Please indicate your position in your organization?

   a. Director [ ]

   b. Architect [ ]

   c. Quantity surveyor [ ]

   d. Work Engineer [ ]

   e. Building inspector [ ]

   f. Planner [ ]

4. What is your highest educational qualification?

   a. Technician (CTC I, II III) [ ]

   b. Diploma/HND [ ]

   c. 1st Degree [ ]

   d. Master [ ]

   e. Others [ ], please state ……

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5. For how long have you been in professional practice?

a. Less than 5 years [ ]

b. 6-10years [ ]

c. 11-15years [ ]

d. 16 and above [ ]

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6. EXPERT OPINION ON CHANGE MANAGEMENT

In your view what is the level of impact of the following factors affects the quality performance of changed management on physical infrastructure projects in the local government sector in relation to time and cost in Metropolitan, Municipal or District Assemblies? Please rate using a scale of 1-5 where.

1=Lowest 2= low 3=high 4=higher 5=highest

		Degree of impact				
no	**Factors (TIME)**		2	3	4	5
1	Design error and omissions					
2	Contractors financial background					
3	Government interference					
4	Delays in payment of work due					
5	Delay of materials delivery on site					
6	Poor quality communication on changes					
7	Ineffective monitoring and inspection of change					
8	Conflicts on the project site					
	Factors (COST)					
9	Variations					
10	When the specification of work is not well defined					
11	Side accidents					
12	Unavailability of required labor or workforce					
13	Lack of coordination between consultant and contractor					
14	Change of designs or scope					
15	Unreliable sources of materials on the local market					

If others, please specify:

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7. To what extent do you agree on the following challenges is used to manage change in physical infrastructure projects in local government in metropolitan, municipality or District Assemblies? Please use a scale of 1-5 where

1=strongly disagree 2= disagree 3=sure 4=agree 5=strongly agree

		Responses				
NO	Factors	1	2	3	4	5
1	Financial strength and bonding capacity					
2	Standard of workmanship					
3	Site management practical effective quality control on site					
4	Attention to site welfare and safety					
5	Employee development					
6	Change of government					
7	Lack of coordination between consultant and contractor					
8	The poor performance of sub-contractors					
9	Defective workmanship					
10	Failure to deal with problems immediately					

If others please specify

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8. To what extent do you agree on the following factors are causes of change management on a physical infrastructure project on local government sectors under your Assemblies. Please rate using a scale of 1-5 indicating the level of occurrence of each factor

1= strongly disagree 2= disagree 3= sure 4=agree 5=strongly agree

		Responses				
NO	Causes	1	2	3	4	5
1	Weather condition					
2	Political influence					
3	Ground condition					
4	Lack of available materials					
5	Litigation /conflicts on land					
6	New government regulations/change in economics in condition					
7	Inadequate planning					
8	Natural disasters					
9	Errors and omissions in design					
10	Unrealistic contractors durations imposed by the client					
11	Safety consideration					
12	Technological change					

If others please specify

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9. To what extent do you agree of the following are ways of managing change, please rate using a scale of 1-5 where.

1=strongly disagree 2= disagree 3=sure 4=agree 5=strongly agree

		Degree of impact				
no	Ways to manage change	1	2	3	4	5
1	Project team coherence					
2	Effective communications					
3	Managing relationship					
4	Enabling and promoting a conflict-free					
5	Education					
6	Participation and involvement					
7	Negotiation and agreement					
8	Manipulation					
9	Please state others ways of managing change					

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LISTS OF ABBREVIATION

ANOVA	…….	Analysis of variance
BIM	……	Building Information Model
CAD	……	Computer-Aided Design
CAE	…….	Computer Aid Engineering
CM	……	Change Management
D	……	Dimensional
E	……	Economics
ECM	……	Engineering Change Management
EPSRC	……	Engineering and Physical Science Research
ERP	……	Enterprise Management Model
FY09	……	For the year 2009
FY15	……	For year 2015
GDP	……	Gross Domestic Product
GNP	……	Gross National Product
IT	……	Information Technology
MMDA	……	Metropolitan Municipal District Assembly
O	……	Organization
OCM	……	Organizational Change Management
PLM	……	Project Life –cycles Models
RCC	……	Regional Coordinating Council
R&D	……	Redesigns the Drawings.
SPSS	……	Statistical Package for the Social Science