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AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

DEPARTMENT OF CONSTRUCTION MANAGEMENT

DETERMINANTS OF PROJECT TEAM PERFORMANCE IN ROAD SECTOR PROJECTS IN GHANA: PERSPECTIVES OF ROAD CONSTRUCTION CONSULTANT

PRINCE MINTA-AFARI

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A PROJECT WORK PRESENTED TO THE DEPARTMENT OF CONSTRUCTION MANAGEMENT

AT THE AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR MPHIL. CONSTRUCTION MANAGEMENT.

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DECLARATION

STUDENT DECLARATION

I, PRINCE MINTA-AFARI, hereby declare that this submission is my work and that to the best of my knowledge, it contains no materials previously published by another person nor materials which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

Signature ……..……

Date ……..……..…….

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this dissertation were supervised under the guidelines on supervision of dissertation report laid down by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development (AAMUSTED).

Name of Supervisor: Dr. Nongiba Alkanam Kheni (PhD)

Signature ……...……

Date…….…….

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DEDICATION

I dedicated this work fir to Engr Elijah Kusi and Francis Gyimah.

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ABSTRACT

Increasingly, project teams in the road construction industry are usually established as soon as a new project start. This is done to meet today's competition and customer expectations. A project is said to be successful when it meets all the project objectives; time, cost, quality, environmental considerations, and health and safety. The study aimed to assess the determinants of road sector project teams performance in the Greater Accra and Ashanti Regions of Ghana. The study adopted a cross-sectional survey design and quantitative research methods using survey questionnaires. One hundred and fifteen (115) questionnaires were deployed to the construction consultants currently working on projects and recently finished projects and fifty–seven (57) valid questionnaires were retrieved and analysed. Relative Importance Index and factor analysis were used as tools to analyse the data. This study found that the effective execution of the six characteristics of project team performance (leadership style management, leader comfortability, effective planning, gender difference, project quality assurance, and final product satisfaction) has an impact on project performance. The study also obtained six strategies to improve road project team performance in Ghana, these were; the high motivation of team members, high-quality supervision, the firm establishment of member's roles at the initiation stage, team determination to accomplish a project on time, encouragement of high performance and quality work, and team/individual workload. The study concluded that every effective road project team must inherit all six project team performance characteristics. Implementation of the six important strategies in a road project team enhances effective team members' performance on current and future projects was also a conclusion of the study. For a successful road project, the project team must be characterised by 'effective leadership style management and comfortability, effective planning, gender difference management, project quality assurance, and final product satisfaction. Clients and consultants in the Road Sector and the Construction Industry must ensure that project team members are highly motivated and are supervised to enhance team performance.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The construction industry in Ghana is a significant segment of the economy contributing an average of 7.5% to the annual Gross Domestic Product (GDP) between 2013 and 2020 (Ghana Statistical Service (GSS), 2022). Following the economic slowdown resulting from the Covid-19 pandemic, the industry looks set to undergo sustained growth in the coming years. The construction industry in Ghana provide jobs to about 2.3% of Ghanaians (Ankomah et al., 2010). Schoonwinkel et al. (2016) clarified that one of the major ways for modern societies to generate worth is through projects such as factories, commercial building, hospitals, schools and highways, which can be used for social and economic gains. Due to the complexed nature of the construction industry, countless individuals are involved, for example, customers, temporary workers, consultants, contractors, and so forth (Navon, 2005). The exercises of the industry have incredible noteworthiness to the accomplishment of national financial objectives. According to Owusu-Sechere (2008), the industry is responsible for building clinics, schools, townships, workplaces, houses, and different structures; urban foundation (counting water flexibly, sewage, waste parkways, streets, ports, railroads, air terminals, power frameworks, water system and farming frameworks, media communications and so forth).

Construction teams are regularly initiated for pretty much every new project since each task is new all alone (Raiden et al., 2004). Tayeh et al. (2018) stated that teams are the basic component in any organization. A good project team is relied upon to make great working

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relations and potentially achieve better results (Demkin, 2008). Even though the importance of the industry can't be discounted, there have been steady criticisms of the presentation of the significant players, particularly project teams. The inability of project teams to work cooperatively is one of the reasons for some poor performance of the construction industry. Project Teams are frequently associated with issues that include, non-association, disarrays, poor correspondences, and deficient inclusion from colleagues, which, will in general influence the performance of the team (Choi, 2002; Ibrahim et al., 2013; D'Innocenzo et al., 2016; Yap et al., 2017). Therefore, project teams need to find a response to help their colleagues unite and cooperate effectively to accomplish road construction projects. The road construction sector is an important sector in the Ghanaian construction industry and economy of the country, which is responsible for the building of all roads (high ways, feeder roads, etc.) in the country. Economically, they are responsible for building roads to interconnect cities, towns, and villages.

1.2 Problem statement

Improving human resources in every organization through the utilization of performance measures has been perceived as one of the most basic components of effectiveness and competencies (Motowidlo, 2003). Increasingly, within the field of Human Resource Management (HRM), the distinguishing proof and improvement of proper performance measures are broadly held as the main possible alternative for criteria evaluation, against which performance can be assessed (Ford, 2004). Likewise, in construction, performance measures are progressively being certified as a practical alternative for inciting unrivalled performance levels of project groups (Dainty et al., 2003). To this effect, the contemporary

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view is that suitable practices speak to a possibly practicable choice for building up the appropriate measurements towards causing the proper expert advancement of the industry (Dainty et al., 2004).

While construction is probably the biggest industry in developing nations, it has stayed under-investigated and underdeveloped in relation to identifying and developing performance measures for HRM practices (Rwelamila, 2007). Generally, the construction industry has embraced a more passive (or, best case scenario impromptu) approach to manage the benchmarking of performance, bringing about the absence of a methodical system for the advancement of proper prescribed procedures (Rwelamila, 2007). Against the scenery that the advancement of suitable performance measures speaks to a conceivably critical alternative for inducing excellence, there is therefore the requirement for the construction industry in developing countries to embrace a proactive methodology towards performance estimation of the members of the organization. To this end; identifying, improving, and assessing members with appropriate performance measurement could be a significant advance towards the progression of improved performance in developing countries. Road construction comprises, if not the biggest then one of the biggest construction as far as work in most economies is concerned (Zawdie & Langford, 2000).

Subsequently, in many nations, these projects have all things considered risen as the biggest and most settled project-based area. In Ghana, several roads have been constructed or are under construction. President Akufo-Addo stated that “We are doing genuine roads on the grounds for all to see. They are 'fiili fiili' roads,” (Amoh & Adjei, 2020). Besides, the

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commitment of Performance Measures towards accomplishing powerful performance in these activities has likewise been underscored (Ahadzie et al., 2004). Recognition and advancement of appropriate performance measures could subsequently empower Performance Measurement in Ghana to have a clear understanding of the critical abilities they ought to secure towards improving their proficiency. Moreover, construction companies could be given the advantage of an organized system whereupon they can choose and select Performances that are fitting for their company. Improvement of Performance measurement and their Implication for PMs are essential incentives in Human Resource Management (Ling et al., 2018). This is because administrators specifically are continually in look for data that can assist them with settling on brief choices concerning the present and future administration of activities (in the same place). Accordingly, in attempting to distinguish the performances of project teams, specialists tend to fall on past performances (Gellatly & Irving, 2001).

Dainty et al. (2005), for instance, re-enforces the thought that the improvement of performance measures is of possible huge incentive in the distinguishing proof of powerful performances. Mirabile (1997), noted that performance measures are by a wide margin the most sensible methodology for creating position profiles and evaluating the competency of people in an organization. Consequently, the extent that performance measures can fill in as an establishment for the choice and advancement of the related measures focused on the future improvement of teams, and cannot be underestimated (Gellatly & Irving, 2001). This to a great extent clarifies why specialists in the HRM area have gotten progressively

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dedicated to distinguish the applicable performance measures by focusing on proper models across the industry and different classified levels (Dainty et al., 2005).

All the prior disussion proposes that performance measures are useful in supporting associations to evaluate their workers, but their potential hugeness is yet to be reflected in the construction industry of various developing countries (Wachira, 2000). In many developing countries, the construction industry has generally embraced an inactive methodology for fulfilling the professional needs of the key personnel in that area. Strangely, this inaction is shown against the scenery that the issues influencing the abilities of project teams are regularly and generally identified with their capabilities (Rwelamila, 2007). There is a requirement construction industry of developing industries to perceive the rewards to be picked up in building up the understanding of the human resource (HR) elements in various companies and the industry at large. With all this in place, ineffective road project team performance results in delays, shoddy works, abandoned projects and terminated contracts in the road sector (Amoatey & Ankrah, 2017). Therefore, the study seeks to assess the determinants of the road project team performance in the road construction sector from the perspectives of road consultants being the representative of the client with required professional knowledge in the construction industry.

From the background introduced, it is clear that the significance of the construction industry to the Ghanaian economy is enormous. A project team is a get-together of an expert who relies upon the co-usable quality, explicit aptitudes, and abilities of each associated cooperative person (Chow et al., 2005). Because of the essential role road

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construction industries play in various countries, increasing the performance of project teams should be the need of governments and industrial practitioners (Yimam, 2011). Cantu (2007) referenced that the successful measurement of project teams depends on the probability that the teams work viably. This can be accomplished by routinely surveying and assessing singular team members and even the client on what has not been going on well, what is working out in a good way, and what could be improved (Busseri et al., 2000).

In past decades, many researchers have become interested in project teams' performance (Azmy, 2012; Ibrahim, 2014; Kofie et al., 2015; Fobiri, 2015; Tabassi et al., 2017; Kofie et al., 2017; Hosseini et al 2018; Ellis et al., 2019; Kofie et al., 2020; Payne, 2021; Ellis et al., 2022; Hassan et al., 2022). Prior works reported a variety of factors or determinants of project team performance or effectiveness, including leadership style, leader comfortability, effective project planning, gender difference, quality assurance, project satisfaction, team size, cohesion, motivation, communication, proper goal and objective setting, trust, and quality supervision remain the factors of project team performance (Blendell et al., 2001; Essens et al., 2005; Ahadzie, 2007; Salas et al., 2009; Amoah et al., 2011; Azmy, 2012; Kwofie et al., 2015; Fobiri, 2015; Tabassi et al., 2017; Payne, 2021).

Examination of the literature on the project team performance indicated that many of the existing studies are concerned with the leadership style, effective project planning, cohesion, motivation, communication skills and decision-making abilities (Azmy, 2012; Kofie et al., 2015; Payne, 2021). leadership style, cohesion and motivation are the most widely used factors to determine project team performance (Azmy, 2012). However,

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previous studies have not proposed strategies to enhance project team performance from the perspectives of consultants in project-oriented organizations. In addition, the existing models of team performance have not considered the perspectives of the road consultants on the factors or determinants of project team performance as well as the road sector in the construction industry. Therefore, this study subsequently seeks to bridged that gap by examining the determinants of the Greater Accra and Ashanti Region of Ghanaian road construction projects team performance by investigating their characteristics and performance measurement variables from the perspective of road consultants.

1.3 Aim and Objectives of the study

The study sought to assess the determinants of road sector project teams' performance in the Greater Accra and Ashanti Region of Ghana. The specific objectives of the study are as follows:

- to assess the determinants of project teams' performance in road sector projects in Greater Accra and Ashanti Region of Ghana;
- to determine the criteria for assessing project team performance from the consultants' perspectives; and,
- to develop strategies for improving the performance of road construction project teams in Ghana.

1.4 Research questions

- What are the determinants of project team performance in road sector projects in Greater Accra and Ashanti Region of Ghana?

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- What are the criteria for assessing project team performance from consultants' perspectives?
- What are the strategies for improving the performance of road construction project teams in Ghana?

1.5 Significance of the Research

This study will improve knowledge of construction practitioners in planning, organising and managing project teams on strategies to enhance team performance and its subsequent effect on construction projects. It is additionally expected to help road construction team leaders and project managers to understand team qualities and external factors that affect team performance. From an administration stance, this study will help project supervisors to extend their understanding of team profiles and factors that add to team performance. Scholastically, this study will help balance the writing on road project team performance by evaluating the Ghanaian Road Construction project team profile and deciding factors that constituent project team performance. Also, this study is expected to inspire other scholars to carry on studies relating to team performance on construction project teams. Likewise, this study is expected to motivate different researchers to continue on studies that identify with project team performance in the road construction industry.

1.6 Limitations and Delimitations

The study was carried out in the Greater Accra and Ashanti Regions of Ghana focusing on ongoing and recently finished road projects. Respondents were road construction consultants who had worked in the road sector for at least five years and who were duly

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registered with the appropriate professional institution. Even though the research was successful, the accomplishment of this research was not without challenges. These constraints could influence the report or its generality. The limitations are as follows:

- Accessing consultants to answer some questionnaires and return as expected was difficult since they always had busy schedules.
- The limited time frame used in undertaking the project, which did not give room for the larger scope of respondents.
- Inadequate logistics and resources necessitated the use of small sample size, concerning the total population.

1.7 Scope

This research covers road construction project teams in ongoing and newly completed construction projects in the Greater Accra and Ashanti Regions of Ghana.

1.8 Organization of the study

The report comprised six chapters. Chapter One represents the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, limitations, and delimitations of the study. Chapter Two covers the review of literature relevant to the study. Chapter Three covers the methodology of the study, considering the study population, the research instruments, the administration of the questionnaires, and methods of analysing the data. In Chapter Four, the results of the study were presented and interpreted. Chapter Five covers the discussion of the results obtained

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by the study, while Chapter Six covers the summary of results, conclusions, and recommendations of the study. Suggestions for future study are also found in this chapter.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter outlines the literature found in previous studies. The chapter also cover the historical development of the road construction and road construction industry in Ghana and the importance of the industry to the economy of Ghana, the definition of teams, team characteristics, attitudes, and behaviour, and how they impact the effectiveness of teams. The chapter also cover at performance measurement in the road construction industry generally, performance measures, and performance indicators within the scope of the study. What constitutes a good performance measurement system and its importance is also highlighted.

2.2 History of the road network

Man's first trails were likely from their residence cavern to water and to the spots where the prey could be found. The most seasoned known tracks date from around 8000 BC (Before Christ) and are directed towards the springs of Elisha close to Jericho in the Middle East (Tate, 2006). As individuals turned out to be more enlightened and well-disposed pathways would be opened up, however, their location would in any case be represented by what was there beforehand, by the allure to stay away from denser patches of a hedge, or rough outcrops.

According to reported history, road construction started not long after the development of the wheel and has since been an image of economic success for countries over the globe.

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Civic establishments as crude as the Mesopotamian and Indus Valley human civilization will be known for their well-arranged streets. During the eighth century BC, the street organizes including around 1,00,000 km of streets worked by the Romans over their domain, and the 29 streets radiating from the city of Rome brought forth the maxim "All roads lead to Rome" (Manshu, 1943 cited in Steele, 2016).

Roads as such were just presented where the occupants had become further developed. The Chinese are rumoured to have fabricated wide and strong streets in 4000 BC (Tuma et al., 1979), and by 500 BC had a 2000-mile arrangement of Imperial streets of brilliant quality (Lotter,1978). The Egyptians have probably been knowledgeable. King Cheops in around 3000 BC had a five-furlong (one kilometre) stone-paved road, ten phantoms wide, worked to convey the immense limestone blocks for the Great Pyramid (Collins & Hart, 1936:1). Some believe the most seasoned cleared road to be the ten-kilometre straight road interfacing the basalt quarries to the Sakkara Necropolis, likewise in Egypt (Bown, 1994). The Persians, in the hour of Emperor Darius, fabricated a 2000-kilometer street from Susa to Sardis (Tuma et al., 1979), and around 2500 BC Crete, under its Minoan human progress, assembled the most established developed road in Europe from the capital Knossos to the harbours on the south coast. In India, around 500 BC roads surfaced by solidifying a combination of broken ceramics and mud and afterward getting fires going to prepare this into a hard-wearing course (Lotter, 1978).

Beginning in the first century A.D. (Anno Domini) the Incas in South America fostered a street framework extending from Ecuador to Chile, comprising a 3,600-kilometer beach

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front street and a 5,500-kilometer course along the Andes, with various cross-connections. (Britannica, 2003). In any case, the Romans were the traditional roadbuilders. In opposition to general conviction, their roads were normally worked after a nation had been attached, to aid its turn of events. Their primary object was organization, not success. Again as opposed to what is by and large acknowledged, the fundamental attribute of the Roman roads is their directiveness, not their straightness. For instance, the 290-kilometer Fosse Way among Axminster and Lincoln rolls out various improvements of bearing however is never more than eight kilometres from a straight line. The Romans are for the most part accepted to have decided their arrangement by utilizing smoke signals (Gregory, 1938).

The Romans characterized their streets as praetorian streets, utilized solely for military purposes, and consular streets, which were the interstates for use by the general population. There were additionally minor streets beginning these more significant streets (Hawks, 1931). They utilized different sorts of development, for the most part with a thickness of between 800 mm and a meter albeit various models have a more noteworthy built thickness. The earliest streets were soil (vie terrene), trailed by rock surfaces (vie glareatae), while later - likely around 300 BC - surfacing with polygonal or rectangular stone squares (vie munitae) became standard for significant courses. Albeit the broader width of Roman streets was 4,8 meters, which just permitted two sluggish vehicles to pass each other (Lay, 2006:73), the width of surfacing for these significant courses was fixed by a pronouncement of Emperor Augustus as twelve meters. The Romans were extremely mindful of the significance of giving appropriate seepage, and by and large, the streets were

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raised over the level of the contiguous ground to work with this and the surface (dorsum) had a camber or cross-incline to release the downpour. (Lotter, 1978)

Toward the start of the 20th-century roads received their next jolt forward. Speeds, and particularly volumes of street traffic developed and developed, and it was important to give appropriate roads to satisfy this need. The advances made in a machine, as well as vehicle configuration, presented another age of road building plant, making conceivable the creation of more noteworthy measures of a lot better quality highways.

These better and quality roads quickly opened up nation regions and further developed traffic development in towns and urban areas, turning into a fundamental component of the country's financial turn of events. Mining items (like copper from Okiep) could now be moved financially by street. Agrarian items could arrive at business sectors in a state fit to be sold. Cows and sheep cultivating in the remoter regions turned into a financial suggestion, as the beasts could be shipped rapidly by a street where beforehand they needed to travel for days, potentially weeks, losing weight and strength.

2.2.1 Historical Development of the Ghanaian Construction Industry

The construction industry can be dated back to the period before independence with complete strength by a couple of enormous foreign firms that executed all new infrastructural works in the public sector. The period following independence in 1957 saw gigantic interest in the foundation part of the economy, proposed to aid the financial condition for quick economic growth, development, and advancement. According to Integrated Marketing Corporations (IMC), this effort finished in the setting up of the Ghana

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National Road Construction Corporation (GNCC) in a joint endeavour with Messrs Sahrel of Israel with a capital portion of 60% for Sahrel and 40% for the Government. Their charge was to execute a portion of the public structures, streets, and lodging estates as revealed by Integrated Marketing Corporations (2002).

With the disintegration of GNCC after the government changed in 1966, the State Road Construction Corporation (SCC) was set up to assume control over the job initially performed by GNCC (IMC, 2002). With Independence came the yearning for government to grow the economy and guarantee quick advancement. It was thus fundamental for the Public Works Department (PWD) to be separated into specific practical regions like water provision, power, streets, and so on. These useful areas made the requirement for locally prepared experts including local project teams to perform works in the specified areas. The Government, understanding the requirement for prepared and gifted experts to deal with the organizations created out of PWD, saw the need to train and prepare such staff (IMC, 2002).

The construction industry is made up of around 22,500 local contracting firms and scarcely foreign firms (IMC, 2002). Notwithstanding their set number, the outside firms command the industry, taking care of practically all enormous development ventures financed with an external resource. Donor-financed works establish about 55% of all infrastructural works with the Government of Ghana (GOG) accounting for about 40%. The remaining 5% is represented by the private part (IMC, 2002)

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2.2.2 The Significance of the Ghanaian Road Construction Industry

Road construction activities and their yield is an indispensable piece of a nation's economy and industrial advancement. The industry can activate and successfully use adjoining and human material assets in the advancement and support of infrastructure and housing to improve efficiency in the economy as well as to promote employment (Anaman & Amponsah, 2007). Field and Ofori (1988) expressed that the road construction industry makes a recognizable commitment to the financial yield of a nation; it creates work and salaries for the individuals and along these lines impacts changes in the development of the economy at all levels and in essentially all parts of life. Consequently, the industry is viewed as a fundamental and exceptionally obvious supporter of the process of development.

Ahadzie, (2007) bolstered the above declaration when he referenced that in the mid-1990s, the industry's contribution to GDP dropped to a long haul low of about 2.7% however referenced again that, ongoing figures show that it has by and by appreciated to a critical degree of 4.2%. Right now, the industry's lot of GDP and economic growth are an average of 7.5% between 2013 and 2020 (Ghana Statistical Service (GSS) 2022)

2.3 Review of Road Infrastructure in Ghana

In Ghana Road construction is by all accounts a significant component of transport inside the nation. The Ministry of Roads and highways is answerable for the advancement and upkeep of all roads in Ghana. This ministry is additionally separated into three

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organizations to create oversee also, keep up the various classes of roads inside the framework of roads in Ghana. These agencies are:

2.3.1 The Ghana Highway Authority

This department was set up under Act 540 (December 1997) and is liable for the "advancement, organization and maintenance" of roadways and other comparative street networks inside the nation (Ministry of Roads and Highways, 2008). The department is responsible for the trunk roads, which generally connect the various regions to the national capital and the country to its neighbours. They also link areas of socio-economic activity and major production centres and markets.

2.3.2 The Department of Urban Roads

Under the ministry, this department is answerable for the "advancement, organization and upkeep" of urban streets and another comparable street organizes inside the nation for protected and productive movements to and fro of products and people (Ministry of Roads and Highways, 2008).

2.3.3 The Department of Feeder Roads

This division under the Ministry embarks to ensure feeder streets are built appropriately for the transportation of individuals, products, and enterprises. The office centres around the financial and agrarian improvement of the nation (Ministry of Roads and Highways, 2008).

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2.4 Concept of Project Teams

A team is comprised of autonomous experts officially sorted out to embrace a particular issue, unravel assignments, and meet objectives including quality, client support, and profitability in general (Guzzo & Dickson, 1996). Project teams are portrayed to be officially sorted out individual gatherings, working autonomously with a shared objective, and commonly responsible for the achievement of undertakings and objectives. The individuals establishing such teams associate and facilitate with each other to achieve the setup objectives, take authority turns where permitted, go to meetings and talk about the task at hand, and also share their duties. Colleagues adjust to conduct comparative with the group task requests. For example, if teams are somehow limited by time, there is the probability that the centre will be moved from social and intense subject matters to the group task that requires more prominent activity (Moreland & Levine, 1990).

Project teams work on non-repetitive jobs, pulling expertise from different backgrounds and units to such an extent that individual practice capacity could be valuable to the project (Cohen et al., 1996). A project group generally is comprised of permanent individuals who have helpful abilities (Samson & Daft, 2003). Groups can be classified into "individualized" and "systematized" groups. Systematized groups require inspiration, supervision, teaching, correspondence, and the nearness of " intellectual standardization " in the group. Individualized group type additionally includes single viewpoints that will have a generous impact on the structure because there isn't any institutionalized procedure or arrangement for the task groups (Woodcock & Francis, 1996).

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Project teams that are grown well rotate the position of leaders. This is seen to be a litmus test fundamental to high-achieving teams (Katzenbach, 1997). At the point when the leaders successfully execute strategies, there is a similar improvement in performance (Durham et al., 1997). At that point likewise, the absence of appropriate authority contrarily influences team administration (DeFleur, 2014). At the point when teams have extra independence and obligation regarding deciding on conclusions, dependence on casual authority is upgraded (Guzzo & Dickson, 1996). Influential positions are in a roundabout way connected by their consequences for setting up objectives for team performance (Durham et al., 1997). Leadership creating objectives improves sureness in the partners and influences the self-viability of teams on objective achievement (Kirkman & Shapiro, 2001).

2.4.1 Reasons for project teams

Two cardinal reasons start project teams: task accomplishment and personal development (Cohen et al., 1996). Personal development teams have the objective of building up the individuals' understanding and aptitudes in managing their circumstances. Additionally, task accomplishment teams have the motivation behind utilizing explicit assignments or issues to upgrade or actualize frameworks. These two fundamental group types will have various highlights. It has been anyway inspected in writing that there are practically zero contrasts between them.

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2.4.2 Construction Projects Financing and their Completion

Chiocha (2011) characterizes project financing as the raising of money to back a financially distinguishable capital project investment in which the funds provider looks principally to the income from the task as the wellspring of funds to support their loans. Matesehe (2013) likewise characterizes project financing as financing a specific monetary unit in which a moneylender is fulfilled to look at first to the income and profit of that financial unit as the source of funds from which a loan will be reimbursed and to the benefits of the financial unit as the insurance for the loan. Financing construction projects like streets, railroads, port harbours, and a lot more is hence expected to be an investment in the economy.

In an economy of a nation, the construction industry helps in increasing riches and business openings (Olatunji, 2010). It helps manufacture or potentially infrastructure that helps grow the economy. Thusly it can spike monetary development in all cases. Further in the advancement of any nation, the construction industry assumes crucial parts in changing the desires and the necessities of its kin into reality by executing different physical structures (Bundi, 2011). As such government organizations show interest in construction projects like streets and other projects not to spike financial advancement alone but to have more extensive related advantages for its citizens and residents.

A report by the world bank on the condition of redoing the major metropolitan streets in the Tennessee Valley United States of America (USA) after the savage Tsunamis demanded just two main considerations that will be focal in deciding the time a project will take to be effectively constructed. The two perspectives key to each construction contract

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are money and time (World Bank, 2012). As indicated by Kumaraswamy and Dissanayaka (2001), regarding time and money, the substance of a construction project can be characterized. For a predefined amount of money, a construction contractor for instance will be needed to perform inside the predetermined timeframe (Chism, & Armstrong, 2010). Any defer prompts cost overwhelms which raises the cost of the project.

Undoubtedly, Hussin and Omran (2011) state that 70% of the tasks deserted in Malaysian road construction projects were because of budgetary issues of contractors, developers, the local and national governments, stakeholders like donors, and many more. In a comparable report completed by Piper (2011) in Malaysia and Madagascar, he discovered that between 1999 to 2007 up to 71% of the road and other construction projects that in a manner fizzled or took longer than made arrangements for or changed the dates of initiation than the arranged dates were because of squeezed money related allocations and the legally binding time arrangements that were rarely reasonable. Referring to the major road connecting the significant global air terminal in Madagascar and the capital city's Conversion of Biological Diversity (CBD) took long by three (3) years somewhere in the range between 2008 and 2011 because of limited budgetary resources and the then political unrest because of coups.

An investigation that took a gander at the projects delayed or postponed in East Africa zeroed in on significant road projects that joins Kenya, Tanzania, Uganda, and the expansion of Burundi in 2011 and discovered that the governments of Kenya and Uganda influenced up to the tune of 45% road construction projects (GOK, 2012). Among the

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referenced hindrances incorporate poor monetary administration, corruption, restricted budgetary resources because of undertaking funds preoccupations, and so forth. Gaba (2013) contends that in government projects like those overseen by the Kenya Roads Board (KRB), Kenya Rural Roads Authority (KeRRA), KURA (Kenya Urban Roads Authority), KeNHA (Kenya National Highways Authority), and so forth they proceed with instalments that take longer time and this additionally influences the contract time allocation adversely. It isn't very easy to understand the whole construction industry from initiation to conclusion particularly when the finances given can never be sufficient to enlist qualified staff who have the most experience in these projects (Authority & Recycling, 2019). This is because in any event, for the most experienced professional hand, there will consistently be vulnerabilities presented by the environment, soil conditions, atmosphere, political circumstance, and even the monetary circumstance that need more than an individual master or a local expert; who the greater part of the occasions are favoured by local contractors since they are generally cheap labour. This vulnerability because of different components raises a component of risk in construction projects. Any risks should be relieved and risk relief calls for enormous financial investments. Good risk management at that point should be set up and appropriately actualized for timely implementation of the project (Authority, 2022).

The general absence of money to finish a project, or postponements in the instalment of the projects can prompt critical issues (Hussin & Omran, 2011). There are sufficient instances of the inability of projects to meet completion promptly in the construction industry. It has been established that the different and multifaceted qualities of construction projects make it "hard to plan, conjecture, oversee and control" (Ganiyu & Zubairu, 2010).

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The key to financing projects is sustainability. The conventional types of financing projects have been debt and equity. Anyway, in the ongoing past inventive methods of financing projects have come up and these incorporate uncommon venture capitals and so on. Construction projects are likewise supported by multilateral bodies and foreign aid.

Adding to the delay exuding from the government/owners of road projects can incorporate late release funds. On the off chance that the government/owners don't pay the services of the contractual worker in time, at that point the task usage may incredibly be influenced by the contractor's poor cash flow. This will influence the contractor's‟ capacity to guarantee continued flexibly of the construction materials. Obviously in this manner, the owner's monetary position will incredibly influence and will impact project finishing. Olatunji (2010) recognizes project finance as one of the limitations or conditions/circumstances which outside the quick control of parties to the contract arrangement yet influence the smooth progression of scheduled activities. Numerous onlookers concur that if payment is slow by project owners, the contractor/team may start to submit fewer resources to a project, and may even slow work if cash flow becomes an issue. Studies conducted by Chepkoech (2012), Desai (2013), and Wambugu (2013), have distinguished the significant areas where funds become important in road construction. While contemplating the multimillion Kericho Miruka-Chabera-Ahero-Kisumu street, Chepkoech (2012) contends that the street that should have been finished quite a while past somewhere in the range of 1999 and 2002 needed to take generally longer by two and half years (2½yrs) for it to be finished in mid-2005. This was because of the impacts that we felt from Moi's government when he pulled back the distributed assets for the undertaking on the political grounds

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2.4.3 Supervision of Work and Completion of Projects

The capability of the project manager during project execution will likewise influence the timely fruition of a task. The uplifting mentality of project managers, project teams, and project participants has developed to be the most significant success attribute for quality compliances at project sites (Kenig, 2012). Observing and analysis by the project manager, his technical abilities, leadership abilities, and viable checking of team members all contribute to the success of a project. As indicated by McMiniminee (2010), a lack of management and team experience could antagonistically influence the timely accomplishment of the projects. When there is no legitimate supervision, quality control is extraordinarily undermined. Chism and Armstrong (2010) concur by expressing that supervision and workmanship norms are very essential to accomplish quality. Fapohunda and Stephenson (2010) express that to accomplish the pre-decided objectives of the project, the site supervisor ought to have a noteworthy impact on cost, time, degree, and quality which makes it foremost for the manager to have a capacity of practicing definitive and outright control. Wambugu (2013) deduced in a study that lacking oversight and assessment of work in construction projects prompted led to, in some instances, poor workmanship and this prompted a delay in the timely completion of projects. This additionally leads to an increase in cost and may result in project relinquishment. Lacking site supervision is one of the components distinguished as causing project delays.

A study conducted by Omran et al., (2012) expressed that, in the events of reproaching delays in project works are mainly due to inadequate working experiences due to insufficient skills or too awkward managers due to absence of experience prompting

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insufficient knowledge on the project. The study underlined the effect of the board and oversight on the general accomplishment of the construction project. On the off chance that there is no legitimate management, labourers will in general enjoy reprieve at whatever point they want and work will in general slow. Timely inspection by the consultant is thus vital to guarantee the material quality, effective operation, and ideal advancement of the project plan. Chai and Yusof (2013) identify poor supervision and poor site management as the major causes of construction project delays. Studies have demonstrated that other than favouritism, corruption, and nepotism in granting contract awards, different variables like truant managers and supervisors have eaten into the fate of most projects.

2.4.4 Construction Project Planning and Completion

Road Construction projects like streets and railroad lines by and large take different stages. The main stage is typically project initiation where the task is identified and a feasibility or practicality study completed to set up the suitability and assemble a business case. The subsequent stage is the project planning stage and here that the project design is done, and finances and resources are allocated. The third phase includes implementing the designs within which the allocated resources are in the set span and set detail and quality (Mohammed, 2012). As indicated by Makone (2010) closure of a project includes giving over the last product to the client, giving over the as-is built drawings, giving the activity and support plan, ending the agreements, and educating all partners that the project is closed.

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Hussin and Omran (2011) contend that, when a project deferral can never again be consumed by the customer, the project is deserted. It encourages then to foresee and distinguish issues in the beginning phases of construction. The planning stage is in this way extremely key to the achievement of a construction project. “Delivery of materials on site will quite affect the project progress. If that supply does not ensure that quality materials are delivered on-site then it will cause delay of project completion” (Wambugu, 2013. pp. 550). This is because material not meeting the design quality will in all probability be dismissed and the way toward getting the correct material will be taken into consideration. At the point when materials are lacking, it implies that the employees won't have work to do. This is very unsettling and will influence the delivery of the project negatively. This is generally a result of a lack of foresight in the construction project. Material accessibility is the most regular issue that prompts delays in projects in larger parts of the nations as recognized by Olatunji (2010). While doing a study of postponements in road development in Nigeria, South Africa, and the Democratic Republic of Congo, he argued that governments have had a lack of common planning of road construction like in some other government construction projects. He keeps on saying this has left the projects postponed by 32% to 56% that the arranged periods because the implementers lacked essential things like required operational materials.

Another task deferring factor distinguished by Hamzah (2012) while doing his examination on the impact of postponed projects in India, Indonesia, Madagascar, and Mauritius comparable to arranging is insufficient planning methods and ineffectual coordination of resources. As per him, failure at the design stages and conceptual stages may prompt

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noteworthy issues in the progressive stages of the project. Fugar and Agyakwah-Baah (2010) in an examination conducted in Kuwaiti, Kenya, Ghana, and Gabon outline that project handlers or proprietors who completed the preplanning stage before the beginning of the planning stage experienced shorter time delays. Chilipunde, (2010) identifies contractor improper planning arranging as one of the reasons for a project delay. On the off chance that a contractual worker neglects to concoct a useful work program at the initial stages, this will influence proper timing and accomplishment. A comparable perception was made by Aibinu and Jagboro (2002) in Nigeria. Similarly, underlining the requirement for appropriate planning of construction projects was also done by Pakir et al. (2012) in a study in Sudan. McMinimee et al. (2009) expressed that, proper planning in construction projects and project development helped reap benefits.

Mojahed (2005) states that calculated and planned arrangements in all stages and segments of construction projects are important to dodge re-work or delays. Kabue (2011) contends that the accomplishment of the construction goals has exceptionally relied on the nature of planning in the earlier stage. Wambugu (2013) had it that, planning influenced the ideal culmination of projects. Tabishl and Jha (2011) in an examination completed in Singapore reason that a comprehensive site examination helps in sound planning which thusly helps in explaining the degree and building up a careful comprehension. This likewise limits change of scope during construction. Pakir et al. (2012) expressed that extensive construction planning is a key determinant in guaranteeing the project on time and inside the financial plan.

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2.4.5 Road construction project teams

The Ghanaian Road Construction Industry engages in both private and public projects. Any of such projects require various individuals following profession, information, and occupation ability, and requires them to cooperate with other people who are of different organizations. The road construction business handles the linkages between task, individual, team, and headship (Adair, 1983). It does the trick to remark that participation is of high strength in the social convention of development at the bases of fruitful projects. Teams works and road construction teams have been affected by extraordinary and different highlights in the industry, in business-wise terms. This is better observed when consolidated project delivery means are utilized, where different teams start filling in as a unit, improving the time of delivery, reducing expenses, and producing a decent working relationship all through the entire task. However, there are various impediments and difficulties to road construction teams, including insolence and mistrust among the team individuals and expert rivalry (Uher & Loosemore, 2004).

The need of road construction firms today is to cleave unto teamwork in a more extensive sense far above simply single work groups, because of the multifaceted nature of the road construction business. Parties associated with road construction project teams include the crew, the site superintendent, and the project manager (Levy, 2018). The project manager is regarded as the utmost significant participant. responsible for either project success or failure. The project manager of the client always works in collaboration with other participants, including project teams, architects, and structural engineers, and each of them is accountable for the designing and/or construction procedures. Getting a capable project

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manager is very important because he is the person in charge of the project at various phases, irrespective of the nature of the arrangements for project implementation (Gharouni & Noorzai, 2021).

The road construction project team is made up of different people with diverse cultural inclinations (Chong et al., 2016). Typical road construction project teams are portrayed to automatically include the project manager, who is the representative of the client, engineer, or architect for the design team, and also the project team. The other team members include the owner, designer, project manager, engineers, subproject groups, and primary project teams. The client of the task could either be of public or private origin. Commonly, the owner has a section to play on characterizing the scopes, targets, and prerequisites of activities, just as giving the fundamental funds to attempt the task. The design Team which includes the designers, architects, and different experts, produces the road construction documents for the owner. The project team for the most part develops the undertaking in a favourable setting and depends enormously on the subcontracted labour. Also, other backhanded individuals, for example, zoning specialists, city planners, safety authorities, government authorities, government engineers, health specialists, merchants, subproject groups, and so forth., who are alluded to as external stakeholders, do influence the projects some way or another (Azmy, 2012). The enrolment of team members may vary by type, extension, and multifaceted nature of the task. The manager of the project and the owner are part of the project team. Other critical individuals from the group, for example, planners, team members, designers and subproject groups, possibly join the group as and

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when their mastery is required by the project. They pull back from the project after finishing their necessary assignments.

2.5 Characteristics of Project Team

This bit of the literature expands the different characteristics of road construction project teams. Hongbo (2016) found out that, the factors influencing project team performance in Chinese construction industry include; communication skills, education, cultural backgrounds, race and religion, personal characteristics, skills and abilities, trust, openness, sincerity, generational and cultural backgrounds, among others. Team Leadership is the most important factor that influence project team (Azmy, 2012). Research shows that performance of project teams can be improved by introducing training programmes by using factors that influence project team as bases as shown in figure 2.1 to geared towards equipping members with cultural diversity skills and incorporate effective staffing methods, team-sharing, knowledge sharing, and work sharing. Moreover, offering leadership which supports flexibility, innovation and creativity at the workplace is another key element for boosting the performance of project teams in the construction industry (Hongbo, 2016). The different characteristics of road construction project teams which have been put under three unique gatherings, that is social, auxiliary and statistic attributes. These are additionally expounded beneath;

2.5.1 Social Characteristics

There is the connection existing between conduct of members of a team and by and large their performance. Likewise, past discoveries have demonstrated that there is a significant

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connection between group potentials and generally performance (Stevens & Campion, 1994). Social characteristics which includes administration course of action, versatility, communication, basic leadership and offers situational keenness builds up to the effectiveness of teamwork. Each member's highlights of capacities, competence and knowledge are significant for achievement of goals (Rosh, 2012). Behaviours of individual members of teams have critical relationship with profitability (Bruns, 1998)).

Characteristics of trust, accommodation, genuineness, strength and adaptability are seen to be alluring qualities of project teams (Rosh, 2012). Cooperation among team members improve the objective accomplishment process (Hartenian, 2003). The practices and frames of mind of individuals just as their concern for each other are identified with the performance of the groups (Metcalfe & Linstead, 2003). Further, the open important information sharing framework and appropriate coordination of group assignments advance effectiveness and efficiency among group members (Hoegl & Parboteeah, 2003). The perspective of how well a team is getting along, depends on the reviewers' perspectives for example the group head, members, clients and the company (Kozlowski, 2018). Group qualities (union and conflicts) have likewise been found to vacillate in different phases of teams, yet in later stages, social attachment expands (Yang & Tang, 2004). Teams progress into critical thinking instrument as the individuals acknowledge and handle jobs that effectively achieves team tasks. Teams become, functional and adaptable, and the group energy is slowly coordinated into group tasks. The individuals at that point experience attachment, accomplish new standards, involve in new obligations, and are satisfied in imparting their insights.

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2.5.1.1 Like for each other

The hypothesis of similarity-attraction represents that there is significant relationship between likenesses in singular demographic attributes and relational attraction (Byrne, 1971). liking is an individual allure which in this way motivates members to participate with the group (Cartwright & Zander, 2000). The more groups invest considerable energy n the underlying on relational connections, the more prominent the effectiveness of the group (Samson, 2003). The individuals from a project team are frequently cooperative and more open on the off chance that they feel that they are part since awareness upgrades certainty (Ensley et al., 2002).

Past exploration presents that likeness, particularly ague similitudes, and preference for one another are emphatically related (Webber & Donahue, 2001), and furthermore the more prominent the individual's magnetism to teams, the more the enjoying rating is idealistic (Koomen, 1988). On the other hand, cohesiveness is assessed as the enjoying that individuals have for each other (Carless & Paola, 2000). It accordingly proposes, that individuals preferring each other leads a more helpful and open group's cooperation leading to greater team performance.

2.5.1.2 Clarity of Roles

Project teams that are all around have member roles and common desires which are clearly characterized which helps in balancing out inside heading (Choi, 2002). Role clarity is seen to be a central uneasiness in project teams and as members execute utilitarian obligations well, more exceptional performance of the team would be accomplished (Pfeiffer, 1994).

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It has been presented that clarifying individual member's role is a critical element of team performance (DeFleur, 2014). The team members truly value their obligations and jobs and supplement one another, colleagues are frequently more firm and steady which seriously bring about more prominent group effectiveness (Woodcock & Francis, 1996). On the off chance that team role independence is incredible, the members utilize the chance to advance more roles and furthermore structure singular errand which thus show how well the group is getting along (Molleman et al., 2004).

On the other hand, ambiguous roles break connections/relationships prompting work being disregarded as another person is required to do it (Kaye, 1994). Uncertainties in roles produces pressure and creates struggles in member roles, duplicates rigidity and decreases output and furthermore in this manner impacts the performances of project teams (Salas et al., 1999). Clarifying roles reduces the direness of inside coordination, collaboration and cohesiveness. Hence, clearness of member roles is required to relate emphatically with project performance.

2.5.1.3 Openness to change

It has been presented that changes happen when individuals in the group concede the need to change and are driven by characteristic and extraneous motivations to change their way of conduct. Project members that acknowledge change regularly connect with each other transparently (Molleman et al., 2004). Considering the way that they trust, they centre around each other and coordinate well with each other, achieving uncommonly usable work (Woodcock & Francis, 1996). Members that are introduced to changes do value testing

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new methods for basic reasoning and new insights (Molleman et al., 2004). Project team members are additional functioning at tasks on the off chance that they are open to changes and value embarking on new plans, strategies and thoughts of critical thinking. In this manner, capacity to open to get change is required to relate totally how well the project group is performing.

2.5.1.4 Division of works into sub-teams

Sub-groups are made to help individuals in getting new and broadened skills and also share information. The sub-team members are then conveyed once more into the bigger team to improve correspondence inside the team (Hare, 2003). The simplicity of tasks obviously characterizes the aptitude, authority and obligation and advances best performance of project teams and the viable administration of specialization and endeavours redounds to increased efficiency of teams (DeFleur, 2014). It has been presented that discovering individuals who can successfully cooperate produces group achievement (Moreland & Levine, 1990). Project teams are frequently started with like individuals (Moreland & Levine, 1990) as well as skill that yields more viable job with comparative effort contributed (Samson & Daft, 2003).

Groups with various participation have likewise a broader range of abilities and when these heterogeneous capacities are coordinating, the project team will conceivable achieve more excelling performances (Stevens & Campion, 1994). Then again, when sub-groups are not ready to compromise it could adversely influence performance (Wheelan, 1999). The sharing of work with unadulterated meaning of mastery, power and obligations advances

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real performance. In this manner, the creation of sub-groups with task details is required to emphatically relate with project team performance.

2.5.1.5 Goal motivation

At the point when members of a team commonly share duties regarding assignments, they may confront difficulties which along these lines, spurs them to acknowledge how well the group is performing. Exploration has presented that goals empowered individuals from groups frequently to achieve objectives and targets, and therefore make the team better (Beal et al., 2003). In any case, each member should be acknowledged for singular contributions if not the individuals will be demotivated to contribute truly to the performance of the team (Weingart & Weldom, 1991). Goals propelled teams to accomplish more prominent achievements (Beal et al., 2003). Accordingly, goal motivation of teams is probably going to emphatically relate positively with performance.

2.5.1.6 Cliques

Cliques produce insufficient correspondence and communications in large teams about members detaching from the group (Bass, 1980; Bass & Tyterband, 1978). Alliances and cliques is antagonistically impacted if individuals are not willing to (Wheelan, 1999). Sub-grouping is possibly risky and furthermore mostly impacts the efficiency of teams. Subgroups lead generally leads to perceived win/loose circumstances and unproductivity. Despite the fact that subgroups are effortlessly distinguished, portraying the causal inspiration of the individuals is risky. It is a nervousness when subgroups grow habitually (Robson, 1995). Subgrouping is believed to be related with inter-team fight yet that may

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consistently not be the circumstance as social assortment redounds on how well the team perform (Hogg et al., 2004).

On the off chance that groups see contest as a standard requiring collective solutions, the dealings of subgroup, assorted viewpoints and thoughts are found in the positive, reducing clashes between the team (Alper et al., 2000). In the event that the sub groups coordinate well with whole project team, it is viewed as productive enterprise (Wheelan, 1999). Alternately, cliques are a worry if subgroups see themselves differently and not as subsets of the whole project team (Robson, 1995). The production of inner circles does impact members'' conduct and qualities. Hence, subgrouping may negatively affect team performance.

2.5.1.7 Intra-team conflict

There is always the need to effectively and proficiently control intra-team conflicts (Ilgen, 1999; Sims, 1995). Intra-team clashes are seen to be an imperative measure variable that fills in as an intermediary between past conduct of members and penalties (Jehn, 1997). There is a connection between intra-team clashes and decent variety/diversity and if groups appropriately oversee such clashes, they probably work all the more gainfully (Alper et al., 2000). Least clash levels is related positively with more prominent team performance (Devine et al., 1999). Imbalance among group members firmly connects with intra-team clashes, and is in a general sense managed utilizing the shirking strategies (Bettenhausen, 1991). Evasion of conflict has social worth and is significant inside collectivist circles (Boisot & Child, 1996). In collectivist circles, evasion of conflicts is significant in

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producing positive relationship which is of high worth (Tjosvold & Sun, 2002). All the more likewise, higher conflict levels sway the norm of work and thusly influence performance adversely (Jehn, 1995). Intra-team clashes affect negatively time and unity, it brings about bitterness (Ensley et al., 2002). consequently, intra-team conflicts are expectedly to relate negatively to general performance of the project.

2.5.1.8 Participative Leadership style

Participative leadership has been portrayed as when the leader looks for the recommendations, sentiments and furthermore supports part cooperation in making decisions. In the event that all team members are engaged in making decisions, the differed viewpoints guarantee more exactness in different analysis (Moreland & Levine, 1990). In the event that independence in duty is high among group members, it their performance which empowers individuals to shape their endeavours and efforts (Molleman et al., 2004). A headship approach that embraces participation supplies the members with power and furthermore binds the group together, supports and creates cooperation (Osterloh, & Frey, 2000). When members are involved in decision making, it increases responsibility which will in general improve the performance of the team (Jackson et al., 2003). Meta-analysis discoveries uncover the positive connection between participative initiative style and team performance (Cohen & Bailey, 1997). Group members' dynamic partaking increases their devotion to the team in general and in this manner bring about more noteworthy performance. Hence, participative leadership style is required to emphatically correlate positively with the general performance of the team.

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2.5.1.8 Openness to differences

Member variances in perspectives, convictions as well as esteems can be diminished by improved genuineness to feelings, willingness to accept other people's ideas and varieties (Stevens & Campion, 1994). In the event that the project team members are exposed to the changes among each other, they will frequently effectively partake in team objectives and furthermore open to reliable reaction, bringing about more noteworthy performances (Wheelan, 1999). Being opened to differences energizes acknowledging of mutual objectives and goals, limits clashes and upgrades more viable and effective answer to circumstances and dangers (Woodcock & Francis, 1996). Honesty of members to each other, and wiliness to accept diverse views help promote team performance.

2.5.1.9 Role satisfaction

Roles are portrayed to be the arrangement of various behaviour predicted of individual group members (Samson & Daft, 2003). At the point when project team members achieve an intricate assignment there is the experience of a sentiment of accomplishment, which is an innate prize perceived to be. The satisfaction acquired over the span of undertaking the assignment is alluded to as satisfying the role. These signs the acknowledgment of the need that will in general impact the individuals on their status to remain in group (Molleman et al., 2004). At the point when group team members show the capacity to attempt different roles, they regularly indicate group productivity and quality (Pfeiffer, 1994). Individuals achieve intrusive rewards in the event that they capably achieve a monotonous task or take care of an undertaking issue to the advantage of others. Hence, role satisfaction is required to relate decidedly with project team performance.

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2.5.1.10 Cohesiveness

Cohesiveness has been portrayed as the need of having a place among family or in light of the fact that there is a like for different individuals (Festinger et al., 1950). The need to have a place was likewise increased that it is basic for individuals to be very much related to the groups in any case the individual will self-classify themselves into groups and expand on all the more reassuring attitudes, and furthermore liking for different individuals like themselves (Turner, 1987). Individuals from teams with similar attitudes, values and who are bound together are very high achieving (Samson & Daft, 2003). Other studies define cohesiveness as the extent to which teams ably complete the set goals and also enhance higher productivity (Gibbard, & Mann, 1974). Cohesiveness is establish as a result in higher performance levels in various firms (Hirokawa, 1983). Members of teams with high cohesiveness often attend meetings, are committed to the activities of teams and very joyous when teams achieve success (Samson & Daft, 2003), whereas teams with poor cohesiveness are more independent and are less concerned about other members of the teams (Shaw, 1976).

Team cohesiveness is respected as an essential issue that influences team performance (Carless & DePaola, 2000) and an intense pointer of direct connected to how well the group is getting along (Bettenhausen, 1991). It oftentimes urges individuals to participate and better perform (Cartwright & Zander, 1998). Higher social solidarity team's performed very well on mental and physical jobs, and furthermore getting higher group performance scores (Jordon et al., 2002). Colleagues with higher solidarity (cohesion) were proposed to be additionally willing and resolved to achieve work better for the team, which brings about

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more prominent performance (Hackman, 1987). Also "loosely knit" teams are lacking of inspiration to cooperate, however cohesive teams improve group performance (Man & Lam, 2003). Past exploration has summarized team cohesion to be unquestionably associated with the general performance (Yang & Tang, 2004). Besides, group cohesiveness is relied upon to decidedly influence team efficiency.

2.5.2 Demographic Characteristics

It has been illustrated that there is a connection between team demography and performance (Eisenhardt & Schoonhoven, 1990). Members of a team are recognized one from another as per their demographic attributes including, ethnicity, age, sex and financial beginnings. Demography influences the connection among colleagues (Tsui et al., 1992) An individual's training, sex and race do influence discernments, status, social experience and mentalities (Pfeiffer, 1994). Performing group members who have indistinguishable demographic characteristics do treat well one another and furthermore advance social character, while individuals with divergent statistic profiles treat each other with less support (Tsui et al., 1992).

Gender composition has additionally been found to advance and impact passionate conflicts, and furthermore impact project team performance (Pelled et al., 1999). Scholars concerned basically with social character have presented that individuals separate themselves dependent on a feeling of having a place with various or same social gatherings. Individuals see colleagues of a similar social background to be increasingly agreeable and appealing because of the similitudes in their statistic profiles (Tsui et al., 1992). As the

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individuals from the group stay together for long spans when working, they will undoubtedly turn out to be comfortable with each other, recognize the likenesses among, and are extra steady (McGrath, 1991).

2.5.3 Age distribution

Age Industries, for example, construction, that do rely intensely upon technological advancements and improvements do utilize youngsters who are more taught and with high aptitude (Tsui et al., 2002). Individuals from comparative ages more probable have indistinguishable work mentality, and have higher enthusiastic group conflicts. (Pelled et al., 1999). Teams consisting of grown-ups who are more than or equivalent to 36 years are happier with colleague team members (Tsui et al., 1992). A Malaysian exploration showed that the capacity to manage conflicts and conduct are influenced by age of individuals (Lim & Wafa, 1997). Newer members of teams in Malaysia are needed to give due regard to the older members confronting older team members or "the force figures" is not allowed (Kirkman & Shapiro, 2001). Age distinction affects greatly the relationship among members (Tsui et al., 2002). Grown-up members are regarded and respected for their age. Thus, older individuals are foreseen to lesser participate in team conflicts.

2.5.3.1 Educational levels

Team members do get aptitudes and ability to adequately and productively perform errands, and as such become viable individuals for the team (Allen & West, 2017). Education impacts the mentality and perceptions of team members (Pfeffer, 1983). Team members with higher educational backgrounds have extensive range of viewpoints which

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adds to vital critical thinking, support one another, and have social aptitudes (Cohen & Bailey, 1997; Tsui et al., 2002). Education is a ceaseless cycle and accordingly the constant expert advancement programs offered by the related proficient bodies do add to the viewpoints and performance of project team members.

2.5.3.2 Ethnic diversity

Culture is frequently depicted as the believes, significant ethics, personality and conduct of a group (Hofstede, 1980). During childhood culture values start depicting. Contrasts in culture do impact the communication of individuals, work direction, the manner in which work is completed and team participation (Ayoko et al., 2002). Dedication, gratification is attributed to cultural standards of team members (Dorfman & Howell, 1988, referred to in Kirkman & Shapiro, 2001). Implementation in cultural differential teams are very high in certain task areas since there are evident changes in perspectives while dissecting challenges, bringing about serious extent of precision in making conclusions. Teams that are multi-cultural gives assorted variety techniques, for example, variety in values (Hofstede, 1984; McCarrey, 1988). Diversity in culture impacts the conduct of individuals and by and large performance of the group at large (Kirkman & Shapiro, 2001; Thomas, 1999). Differing backgrounds and sentiments ought to be controlled and incorporated adequately into groups so to improve more noteworthy level of vulnerability tolerance (Hofstede, 1980; Jehn et al., 1999).

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2.5.3.3 Previous team experience

Individual with Previous team knowledge will in general have better aptitudes in compromise and critical thinking which brings about better performance (Hartenian, 2003). They additionally acquire the important ability to reach team objectives successfully, and the group experience impacts objective setting and performance (Hoegl & Parboteach, 2003). Past group experience guarantees that the individuals take a shot at a drawn-out premise agreeably. Individuals' skill and capability could be helped, sparing time, as there will be no compelling reason to set down working rules (Pescosolido, 2003). At that point likewise, individuals without comparable experience do have negative mentalities towards the related groups (Bushe, 1987). Past experience improves the ability and aptitude of individuals in problem settling and managing clashes all the more adequately.

2.5.3.4 Gender

Gender orientation in project teams do upset the consciousness of quality and performance (Karakowsky et al., 2004). teams with expanding feminine participation face difficulties in cooperating, experience more prominent degrees of strain and rivalry; have worse cooperation and proficiency levels (Gist et al., 1987) project teams with gender arrangements of 30% or more guys performed lesser while teams with 30% or more females showed better (Knouse & Dansby, 1999). It has been declared that there is next to zero writing associating team effectiveness and conduct to female susceptibilities or contend the process of gender distribution of talent dynamics of teams (Metcalfe & Linstead, 2003).

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Stereotypes in gender roles, particularly in the construction business that is generally overwhelmed by males, do upset the temperaments, recognitions and conduct of such team members and thusly end up in subjective perception (Karakowsky et al., 2004). It was expressed that writing on human resource estimates firms as masculine and accordingly with muscular behaviour of teams (Metcalfe & Lindstead, 2003). Men frequently perform task jobs that propose, offer assessments and shape connections, and are additionally very undertaking focused (Taylor & Strassberty, 1986; Bettenhausen, 1991). Females upgrade participation and communication (Rosener, 1990). Project teams with more members being females probably behave quite differently from the vice versa.

2.5.4 Structural characteristics

The auxiliary characteristics epitomize the means in which the teams are dynamically organized to function appropriately. Team size has been viewed as an "input" that impacts group conduct and performance (Gist et al., 1987). Some different examinations likewise presented that team size affects project team performance (Bettenhausen, 1991). Team road construction is perceived to be an “input” into team behaviour (Gist et al., 1987). Team structure is defined in relation to team type, size, goal setting, organizational size and management support. Thus, team structure is characterized in connection to team type, size, objective setting, size of management and the executives support.

2.5.4.1 Team types

The requirement for team groupings has duly been recognized in academia to help the discussion of team conclusion and the organization (Guzzo & Shea, 1992). Teams are mostly grouped into four classes, viz; continuing project teams, ad hoc production teams,

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continuing production teams and, ad hoc project teams. Team task on data handling such as selecting, producing, scheduling, and determining, whilst production task attentive teams comprises psychomotor ability practical and and/or coordinated as well as sequenced activities. Ad hoc groups exit for a single job, current teams are continually allotted renewed tasks or they perform like job in a repeated manner (Wilkinson & Marchington, 2012).

A Small Group Activity (SGA) includes a broader range of jobs, with a cross functional team cooperation in the plan of the product (Hackman & Wageman, 1995). Ad hoc construction groups are additionally compelled in their time frame and are disbanded on the achieving of work (Guzzo & Dickson, 1996). Project team assignments are not monotonous by character and furthermore includes considerable utilization of data, skill and judgment; unite individuals from various disciplines, particular aptitude and helpful units (Cohen & Bailey, 1997). Ad hoc project groups do resolve troubles of greatness, articulate vital expert plans and furthermore progress new outcomes (Devine et al., 1999). Past examination has demonstrated that innovative projects are certainly identified with performance as far as quality is concerned (Keller, 1986 referred to in Bettenhausen, 1991).

Project teams are extra adaptable, with less mechanical, specialized, and working environment interdependencies, being least firmly connected to associations and potentially tending to boundless range of proficient positions (Devine et al., 1999). Departmental teams are normally useful groups, with bunch individuals bringing on board diverse knowledge (Samson & Daft, 2003). Departmental teams are "individualized"

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groups because of the member points of view which have generous impact on the general performance of the group (Woodcock & Francis, 1996). It has likewise been recommended that the type of team really directs its performance (Devine et al., 1999). Progressing team which are rooted in the structure of the organization are viewed as expensive to keep up with respect to arranging, synchronization, training and selection. Matters that are seen as basic for this kind of groups incorporate fulfilment of individuals, mentality, inspiration, esteem similarities, cohesion, socialization, compromise and conflict resolution (Devine et al., 1999). It is seen from existing literature that the different team types deal with contrasting challenges and are thusly estimated as long- or short-term teams. Consequently, various kinds of project teams are foreseen to accentuation on assorted parts of the criteria for performance.

2.5.4.2 Goal/objective setting

Goal setting improves commitment to objectives/goals, and exciting goals could deliver high team performance and greatness (Brown & Latham, 2000). Goals do control part conduct and explicit objectives bring about more prominent performance (Brown & Latham, 2000). Building up an objective is additionally observed as a motivational factor (Locke et al., 1981). Objectives/goals do fit into the structure of the organization with the end goal that key objectives are respected to be top administration duty and the operational objectives are respected by administrators, workers and labourers. Operational objectives underline the accomplishment of strategic goals/objectives that outcomes in the accomplishment of objectives for the project team. The goal/objective setting procedure

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gives the team an ability to know its course and furthermore coordinates the efforts of team members towards vital outcomes.

Members of a team do perform well when goals/objectives and team tasks seem challenging, expressive and intriguing. Goal/objective endorsement by the group is exceptionally critical since the absence of solidarity in objectives and goals of groups as well as clearness hoses the team performance (Stevens & Campion, 1994). Members of the team who do set explicit objectives that are more challenging and whiles receiving feedback will regularly build up a more appropriate method for accomplishing the assignment objectives (Buller & Bell, 1986). Building up a goal/objective isn't the solitary obligation of bosses but instead requires the collaboration and participation of the entire team all through the cycle as supervisors and managers can't control the goal/objective development system and quality of teamwork (Hoegl & Parboteeah, 2003). Teams with high participation levels between managements and team members are more probable to achieve goals. Goal/objective setting emphatically relate with team performance regarding quality, efficiency and effectiveness (Ilgen & Klein, 1988). Goal/Objective setting turns out to be additionally operative on the off chance that it was done at the group stage (Hoegl & Parboteeah, 2003).

Team members' knowledge improve the team performance if it's engaged with objective setting (Latham et al., 1978). Goal developing is associated with performance, and along these lines, goal/objective setting is required to decidedly relate with efficiency and effectiveness of the team. Desire for standard by customers are infused in team objectives

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to maintain the power of the client. Teams should have adaptability and flexibility whiles quickly reacting to the desires for clients. Key Performance Indicators (KPI) of quality, product/service to the client (customers) are regularly associated with the working goals/objectives. Teams that perform composite undertakings should consistently to seek after input from the customers so to direct the stated goals in accordance with the customers' qualities (Choi, 2002). Teams should be versatile and adaptable while answering to customers' desire for quality and norms when all is said in done; subsequently, objective impact by the clients (customers) to in general is foreseen to emphatically impact performance.

2.5.4.3 Training

Critical training of team skills will totally and positively influence the team performance (Hartenian, 2003). Training will upgrade abilities (O'Reilly, 1992). Training encourages individuals to interrelate in a more viable and productive manner, collaborate and organize with each other in team critical thinking, manage clashes and propel team performance (Stevens & Campion, 1994). Individuals' imagination and information frequently guarantees open correspondence which thusly brings about more performance and fulfilment (Molleman et al., 2004). Poor capacities of the team will create strife (Ayoko et al., 2002). Training exercise helps colleagues improve performance. Subsequently, training is required to emphatically relate positively with group performance.

2.5.4.4 Management support

Past exploration demonstrates that the administration of large organizations should give unadulterated course and adequate material resources to help teams accomplish their aims

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(Goodman, 1986; Hackman & Walton, 1986). Project teams will in general be exceptionally beneficial if individuals recognize that the management of the organization are backing them. The positive connection existing among the management and the team tend to increase team performance and in their assessment of findings stated that teams in general will be more profitable if members sense the board and the management support them and thus impact performance positively (Minichilli et al., 2010).

2.5.4.5 Organizational size

Organizational sizes influence corporate strategy and performance (Fernandez & Nieto, 2006). Big organizations do prepare members on management and have counsellors, which encourages members to examine capacities or even "simple capacities". Groups that has worked together for extensive stretch and inside large can possibly excellence and experience (Hartenian, 2003). Small organizations are frequently family owned and are along these lines very adaptable, fairly quick in settling on choice and furthermore have prevalence in the family. However, individual goals and business are typically joined together, which will in general influence business purposes (Davis & Tagiuri, 1991; Fernandez & Nieto, 2006). Minor construction companies do lack system plan and the management in such organizations (Tan, 1990). For example, minor organizations regularly give less consideration to the team's activity since they will in general be costly in planning and actualizing, also small organizations don't have high technology like the bigger firms. In this manner, Team individuals in bigger associations are prepared well on team abilities.

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2.5.4.6 Team size

There is no universally consistent meaning for the setting up an effective and proficient team size in research. For example, a "small team" has been considered as from to 1 to 5 members, while a "bigger team" is from 8 to 12 individuals (Hare, 2003). According to (Bass, 1980), the best size of a project team for solving problems is from 5 to 6. The ideal size of project team is reliant on the connection between the number of available knowledge domains required for the success of the task at hand, the information needed as well as the complexity of the task (Valacich et al., 1995). It was additionally presented that a group with members from 8 to 10 is related with best effectiveness. The size of the team impacts how well its perform, number of the team upgrades effectiveness and impacts the interactions within the group on the grounds that larger teams forms more cliques which causes inconvenience in interrelating with each other (Lincoln & Miller, 1979; Mayhew & Levinger, 1976). The size of team controls the quality and nature of team conversations (DeFleur, 2014).

On the other hand, group size adversely influences the proficiency and viability of sub-teams. This has been ascribed to "social loafing" and "free riding" (Gist et al., 1987). The size of the team depends on the main job at hand for example the complexity of the task determines what number of engineers/specialists, managers needed, quantity surveyors etc. (Hrae, 2003). It was examined that the ideal team size fluctuates over the kind of team setting since it relies on the goals and obligations of team (Steward, 2006). Of course, bigger team sizes are seen to be dysfunctional on the grounds that the size could block appropriate communication and coordination, limits involvements of members in making

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decisions and diminishes union among members prompting the upsurge of (Wheelan, 1999). Colleagues should be negligible to have the option to play out the undertaking (Campion et al., 1993). Lesser teams are entirely ideal for higher productivity, which brings about greater efficiency in team members (Stevens & Campion, 1994). Ideal size of group depends on information fields, drive, task unpredictability and obligations.

2.6 Project Team Effectiveness

Project team effectiveness is evident in terms of employee quality of work life and high performance. This idea rose up out of socio-specialized hypothesis that shows specialized and social structures ought to be optimized for effective teamwork (Cohen & Bailey, 1997). The expressed above and such others makes team performance a huge component. As a rule, the terms team performance and team effectiveness are unmistakably recognized nor characterized well. Normally, when the teams achieve their objectives, they are regarded as effective. It is anyway not generally excellent to just base team effectiveness on the accomplishment of group objectives while disregarding other encompassing elements. For a decent case, it has been recommended that accomplishing task's objectives and goals could be beguiling and in this manner not a decent measurement of how effective project teams are (Essens et al., 2005).

The literature also revealed several common team criteria to assess team effectiveness or performance: team member satisfaction, shared values, goals and culture, commitment and responsibility, communication and information sharing, and trust and respect (Kwofie et al., 2015; Payne, 2021). Furthermore, team criteria conditions are the most influential

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factors which influence team performance in the construction industry (Payne, 2021). Thus, construction stakeholders must value cohesion, trust, respect and personality, especially agreeableness, to access and maintain cohesion, trust and respect levels during the project's construction phase. Criteria for assessing project team performance set as bases as shown in figure 2.1 for improving project team performance.

2.6.1 Effectiveness Characteristics

The mind behind the effectiveness of every group is a set of individuals who cooperate in a planned way to achieve more than if a person works on his/her own. A research conducted indicated that efficiency of a team is indispensable to the fulfilment of milestones, project objectives and purposes that has been delineated by the owner's project necessities; while performance is firmly identified with the adequacy with which the task and teamwork are implemented (Henderson & Walkinshaw, 2002). Performance of a team is seen with respect to intra-team and inter-team efficiencies. Other examination demonstrated that the fundamental components that produces team performance achievement includes the accompanying (Kezsbom et al., 1989)

- Dedicated to gather benefits through noting issues and making team decisions
- Accountability as an important working unit
- The mission for working corporately
- Commitment, a knowledge of proprietorship and relationship of every member

At the point when teams apply these four fundamentals demonstrated above, high-performing teams will be achieved which will add up towards an efficient team. Moreover, a few examinations have been attempted to decide the basic organization of fruitful and

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effective team. The attributes of compelling team incorporate union, focus, trust, interdependency and team communication (Cleland, 1996). To achieve fruitful project, each group needs to be focused, have a structure, and possess recognition, empowerment and recognition (Katzenbach & Smith, 2003) An unobtrusive methodical arrangement of procedures expected to accomplish synergy of team and successful collaboration is appeared beneath as indicated by (Covey, 1989):

RESPECT + TRUST + OPENNESS + SYNERGY = TEAMWORK

At the point when individuals expand on their respect for each other, trust will start to grow rapidly. Open communications are because of trust and will, and consequently, prompts fair collaboration.

2.6.2 Team Effectiveness Models

Various researchers have uncovered variable sets that are utilized to assess the efficiency of construction teams (Guzzo & Dickson, 1996). This examination subsequently centres around the factors showed in the above investigations to create to help determine the efficiency of teams. The normative team effectiveness model developed during the last part of the 1980s and hammers on leverage points that experts and researchers can draw in to influence construction team's effectiveness (Hackman, 1987). The input-process-output (IPO) theory predicts the factors of inputs, including individual and group qualities, working through arbitrators to influence outputs, performance included and fulfilment of the entire team (Salas et al., 1999). This models structure part of an aggregate of group effectiveness models created in different investigations to increase the correct appraisal of group's viability.

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2.7 Project Team Performance

Team performance is the implementation of an act, accomplishing something actually, or what is ensuing within the team; whilst effectiveness is attained upon achieving desired result, especially as seen after facts (Azmy, 2012). Effective groups are accepted to accomplish extraordinary end results of projects that matches or surpasses benchmarks, and subsequently, improves by and large profitability (Henderson & Walkinshaw, 2002). Prior to defining team performance, here are some definitions found in the literature review:

- "Team performance usually refers to group effectiveness, which can be evaluated in terms of three criteria: productive output, personal need satisfaction and capacity for future cooperation" (Li et al., 2015).
- "Team output refers to team outcomes associated with productivity, performance, as well as capability of team members to continue the work cooperatively" (Juhász, 2010). It is also important, at this point, to define team performance.

Team performance in this study was defined using multiple sources and adapted to include influencing factors, team criteria and performance strategies. The combination resulted in the following team performance definition: Measures associated with team members such as influencing factors (personality characteristics) and team criteria that leads directly or indirectly to team performance strategies for the success of the construction project (Buvik & Rolfsen, 2015; Che Ibrahim et al., 2015; Juhász, 2010; Korkmaz & Singh, 2012; Li et al., 2015; Scotter et al., 2011). The definition used by the study portrays a conceptual framework that networked the concepts to offer a comprehensive understanding of project team performance, as shown in figure 2.1.

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2.7.1 Performance Measurement in The Road Construction Industry Generally

In the road construction industries present situation, the precise methods for performance, evaluation has influenced numerous firms in the industry, government sectors, private and public clients and other stakeholders. Performance measurements has been utilized in gathering and revealing data about inputs, proficiency and effectiveness of team performances. Once more, road construction firms use performance evaluations to pass judgment on their project performances, both as far as the monetary and nonfinancial viewpoints and to look into the presentation with others so as to improve program productivity and adequacy in their organizations (Kagioglou et al., 2001).

Moreover, as indicated by (Stevens & Campion, 1994), performance measures are expected to tract, conjecture and at last control those factors that are imperative to the achievement of an undertaking, and this has been concurred by numerous analysts and professionals such as (Chan, 2001). Ahadzie et al., (2008) has referenced that in surveying project team performance, a typical approach is to assess performance on the degree to which customer targets like cost, time and quality will be accomplished. On the global scene, particularly in the advance nations, for example, the UK, USA and Japan those are viewed as the three conventional indicators of performance. These customary measures have gotten so prevalent and dug in because of the objectivity and straightforwardness encompassing their estimation.

Once more, in the present road construction environment, convenient finish inside budgetary distributions are featured as basic to customer prerequisite so as to achieve 'first

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in the market' advantage over contenders (Kog et al., 1999). In any case, the 'three measures' give a sign with regards to the achievement or disappointment of a task, yet not in isolation, give a decent perspective on the exhibition estimation. Azmy (2012) has recommended that thinking back on the conduct of a project task, what sticks in the brain is regularly less budgetary achievement or early fruition, however recollections of others included and standing impressions of concordance, generosity and trust or, then again, of contention, doubt and strife'.

Kagioglou et al., (2001) argues that the strategies used to gauge performance in the road construction industry fall into three primary classifications:

- Financial Perspectives: That is, the way the financial stakeholders view the project. For instance, utilization of cost benefit and cash flow analysis.
- The internal business process perspective: That is, the means by which are we performing in our key procedure exercises? For instance, utilization of critical path analysis.
- The customer perspective: That is, how do our existing and potential customers see it? That is, the manner by which our current and potential clients see it?

Moreover, Kagioglou et al., (2001) recognized a few constraints in the three fundamental categories above in that the categories lack approval from broad experimental proof to shape the reason for effective measurement of performance for firms. During the 1990's there were some enthusiasm in emerging methods and ways of thinking to quantify and measure performance, for example, total quality management (TQM), benchmarking, business process re-engineering (BPR) and business process management, that have moved

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the concentration from 'slacking' towards 'driving' pointers of performance. Most of these ideas have been brought into road construction from the production or manufacturing industry (Kagiogloun et al., 2001). These techniques in general focus on development of profitability and those elements that impact it, with the point of accomplishing ceaseless improvement through the 'main' indicators of performance.

Another model is the Quality Assessment System in Road constructions (QLASSIC) model created by the construction Industry Development Board of Malaysia to evaluate the project team performance as far as the quality of the finished task is concerned (Malaysia CIDB, 2001) The UK Road Construction Best Practice Program (RCBPP) propelled the 'key performance indicators' (KPIs) for road construction industry. This will be to make an industry-wide performance estimation framework to empower great organizations to show their capacities and enable customers to choose project teams and advisors based on dependable information (BPRC, 1999). These KPI's give data on the scope of performance being accomplished in all road construction activities and they incorporate the following

- Safety
- Road construction Cost
- Road construction Time.
- Client satisfaction – product
- Client satisfaction – service
- Predictability – cost
- Predictability – time
- Profitability

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- Productivity
- Defects.

These KPIs are proposed for use as benchmarking pointers for the entire industry, whereby a firm can benchmark itself against the national performance of the industry and recognize regions for development, that is, the place they perform poorly.

2.7.1.1 Defining Performance Measurement

Max Moullin characterized performance measurement as assessing how well organizations are overseen and the worth they value for clients and different partners". On the other hand, (Adams et al., 2003) characterized performance measurement as the way toward evaluating the proficiency and adequacy of past activity. Once more, (Hatry, 2006) characterized performance measurement as the "normal estimation of the outcome (results) and productivity of administrations or projects.

While these definitions give a comprehension of the performance measurement concept, every last one of the definitions above additionally has its own confinements. For instance, Moulin's definition is fine on the off chance that we need to characterize what performance assessment is yet not proper if our motivation is to performance measurement. The explanation is that, as it occurs with different procedures, the motivation behind performance measurement is ordinary appraisal, which proposes that on the off chance that we need to oversee for results through overseeing measures, at that point, we ought to think

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about performance measurement not similarly as a back view mirror to assess our past performance but as an instrument to help everyday basic decision making.

Takim et al., (2003) characterized performance measurement as the "regular collecting and reporting of information about the inputs, efficiency and effectiveness of road construction projects". The definition gives the chance to an everyday choice to be taken concerning the productivity and viability of the information sources applied which is an indispensable part of any effort at managing for results.

2.7.1.2 Performance Measures and Performance Indicators

Before any effective performance measurement can be attempted there is the need to build up a target and reliable or consistent measurable criteria. Past investigations have arranged these quantifiable criteria into performance indicators and measures. This section looks to depict both. As per (Mbugua et al., 1999) performance indicators depicts the quantifiable proof important to demonstrate that a planned performance has accomplished the ideal outcome. As it will be, when indicators can be estimated with some level of accuracy and without vagueness they are called measures. Notwithstanding, when it is preposterous to expect to acquire an exact estimation they are normally alluded to as performance indicators. In light of calls for persistent improvement in performance numerous performance estimation measures have developed in writing. A few models incorporate the monetary measures as recommended by Kangari et al., (1992), customer fulfilment measures by Kometa (1994), Employee measures by Bititchi et al., (2000), Industry

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measures by Egan (1998). Cordero (1990) additionally characterizes performance measurements as dependent on the technique for estimation and areas of estimation.

The techniques for performance measurement can be in terms of the technical performance, the commercial performance and the overall performance. Besides, he proposes a model of performance measurement regarding output and assets to be estimated at various levels. outputs are estimated to decide if they help to achieve objectives and assets are estimated to decide if a base measure of assets is utilized in the creation of output. Be that as it may, in his model, Cordero neglected to mirror the enthusiasm of partners, their needs and desire. That is, if road construction organisations are to stay focused over the long haul, they have to create and better comprehend their relations with their clients, providers, workers, loan specialists and the more extensive network. (Loushine et al., 2007). Hence, performance measurement has to incorporate the interest of the stakeholders. In addition, Loushine et al., (2007) proposed a model known as Stakeholders Perspective Measurement (SPM) that satisfactorily thinks about relations with clients, providers, representatives, lenders and the more extensive network.

2.7.1.3 What Constitutes a Good Performance Measurement System?

In the event that the correct things are not estimated or estimated precisely, those utilizing the information will be misdirected and awful choices are probably going to be made. As the well-known adage puts it: trash in, trash out. Flint (2005) tinted on the subsequent as some of the characteristics of a good performance measurement system.

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Characteristics of a Good Performance Measurement System include:

- It ought to be oriented towards results for example concentrated principally on wanted results, less on outputs
- It ought to be reliable for example precise, reliable data after some time;
- It should give helpful data that is significant to both strategy and program, decision makers and furthermore provide performance feedback.
- The measures ought to be quantitative for example communicated as far as numbers or rates are concerned;
- The measures ought to be anything but difficult to translate for example try not us difficult statistics in insights to utilize and comprehend;
- The measures ought to be tenable for example clients believe in the legitimacy of the information;
- It should be practically identical with the end goal that it tends to be utilized to benchmark against other associations external and internal;
- It ought to be reasonable with the end goal that the measures set can be determined.

2.7.1.4 Importance of Performance Measurement

Bruns (1998) referenced that, inability to quantify results implies that a differentiation can't be made among failures and success, and if achievement isn't valued, it can't be remunerated. This implies, in the event that achievement isn't remunerated, at that point, most likely disappointment is being compensated and the powerlessness to perceive disappointment implies it can't be remedied. Be that as it may, in the event that outcomes can be measure, at that improvement can be accomplished. A significant utilization of

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performance measurement is to set up responsibility so partners in the road construction industry can evaluate what projects have been accomplished with the assets given (Neely, 2002). Another significant use is to assist partners with creating and afterward legitimize budget proposals for example underpins planning of strategy and objective setting. Performance measurement likewise aides or helps partners in deciding successful utilization of assets (Neely, 2002). Managers need performance measurement to upgrade their basic leadership process as how to build their capacity to take care of with whatever assets they have.

Performance measures likewise aids the improvement of client services (Hatry, 2006). Once more, as indicated by Chan (2001), performance estimation gives a reason for rating the results and competences of projects or activities. The significance of performance measurement within the road construction industry is accepted to accumulate much importance to various stakeholders in the industry, that is, the customer, contractor and consultant (Nassar, 2009). To the customer, Nassar referenced that it is the best value for money since the projects has the possibility of being conveyed on time scheduled to and to quality principles as spelt out in the specifications. Additionally, performance measurements furnish the customer with a goal and predictable methods for actualizing pre-capability process since performance data of various contractors would be accessible for examination and choice.

To the consultant, Nassar (2009) referenced that it will assist the him/her with knowing explicit areas of the contractual performance to centre during development supervision to

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guarantee a smooth execution of the project. Likewise, it will furnish the consultant with solid, precise and predictable means to measure the performance of the contractor. To the contractor, Nassar again mentioned that performance measurement will provide the contractor with an objective assessment of performance with strength and weaknesses pointed out. Contractor wise, Nassar again referenced that performance measurement will furnish the contractual worker with a target evaluation of performance with quality and shortcomings called to attention. Additionally, the contractor will know which areas need fortifying so as to improve performance. Furthermore, performance estimation will assist the contractual worker with instituting improvement estimates which will prompt an expansion in nature of work, cost viability and proficiency of activities. Execution estimation has likewise aided profitability estimation and benchmarking (Alfeld, 1988).

2.7.2 Existing Performance Measurement Frameworks

In the mid twentieth Century, most organizations applied structures in attempting to characterize a lot of measures that they could use in evaluating their performance. An average model is the DuPont pyramid of financial ratios which introduced an assortment of monetary proportions to return on investment. Once more, the pyramid of money introduced an unambiguous various levelled structure relating measures at various organization levels (Neely et al., 1996). Consequent to their survey of the advancement of the management accounting systems, Thomas Johnson and Robert Kaplan featured a large number of the deficiency in the manner by which management accounting data is utilized to oversee organizations (Johnson & Kaplan, 1987). They featured the disappointment of performance management measures to reflect changes in the focused conditions and

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methodologies of present day organizations. These inadequacies show weaknesses in the DuPont pyramid. Its focus on cost gives an authentic view, giving little sign of future performance and empowering short termism (Bruns, 1998)). This made organizations to actualize non-monetary estimates that properly mirror their goals just as budgetary estimates that show the reality result. In spite of the fact that, General Electric originally actualized a balanced set of performance measurements during the 1950s (Bruns, 1998), it will be the colossal development in enthusiasm for performance in the 1980s and 1990s that brought the wide spread acknowledgment of the requirement for associations to take a balanced approach to deal with measurement.

The most mainstream of the performance measurement system has been the balanced scorecard (Kaplan & Norton, 1996). The balanced scorecard exhibited four unique perspectives on (financial, customer, internal business and innovation and learning perspectives). The writers recognize the need to guarantee that financial performance, its drivers (internal operational performance and customers), and the drivers of on-going improvement in future performance are given equivalent weighting. The balance scorecard reflects a significant number of the property of other measurement systems yet more unequivocally interfaces measurement to the strategy of the organization. The authors guarantee that it ought to be conceivable to derive an association's procedure by inspecting the measures on its balanced scorecard. Kaplan and Norton contended that the maximum capacity of the balanced scorecard may be acknowledged when the firm interfaces its measures very clearly, distinguishing the drivers of performance (Kaplan & Norton, 1996). Adroitly, this utilization of the scorecard is like the utilization of the Tableau de Bord

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(Epstein & Manzori, 1997). Created in France in the mid twentieth century, the Tableau de Bord sets up a chain of importance of interrelated measures and falling measures to various hierarchical levels, compelling capacities and divisions of an association to situate them with regards to the organization's general procedure.

Regardless of it across the board utilization, various authors have recognized deficiencies of the balanced scorecard. It doesn't consider various highlights of prior structures that could be utilized to improve the system. The non-appearance of a competiveness dimension, as encompassed for (Fitzgrerald et al., 1991) results and determinants system, is noted by Neely et al. (1996). Others accentuated the significance of estimation of the HR point of view/workers fulfilment, performance of supplier, quality of service or product and perspective of the community/environment (Maisel, 1992). The balanced scorecard failed to consider these measurements constrains its extensiveness, on the grounds that not all measures can be incorporated, as in the case with the presentation estimation network for instance. In the territory of the road construction industry, a few research endeavours have managed to deal with performance measurement.

For example, Shen et al. (2011) explored the Contractor Key Competitive Indicators. They utilized the Analytical Hierarchy Process (AHP) way to decide the key intensity markers of contractors in the Chinese Development Market (Yang & Tang, 2004), created a contractor forecast model for the United Kingdom Road Construction Contractors. The analysts utilized the Logistic Regression way to deal with anticipate contractual worker viability in the UK market. Another examination in this area is contractor selection for

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Design/Build Projects (Palaneeswaran & Kumaraswamy, 2000). The examination concentrated on building up a model for pre-qualification of contractors and offer assessment in contractor selection process in design. Additionally, Singh and Tiong (2006) considered the contractual worker determination criteria for the Singapore development Industry. They led a local examination that intended to build up a PC – intuitive multi criteria choice framework for contractual worker determination including selection criteria choice for consideration in a contractual performance framework.

Alarcon and Mourgues (2002) proposed a contractor selection framework that consolidates the contractual worker's performance forecast. In this exploration, a modelling structure created in past researches will be utilized to build up a theoretical model of a project that portrays an easy-going structure of the factors, hazard/risks and collaborations that influences a contractor's presentation for specific from the owners' perspective.

2.7.2.1 Key Features of the Major Performance Measurement Models

During the last decade, there has been an expanding familiarity with the necessities of improved performance and quality inside the all road construction industry, which has hurried the advancement and consequent selection of value assurance in road construction works. The road construction industry seems, by all accounts, to be inadequate with regards to a reasonable and uniform assessment standard for in quality when contrasted with other industries like the service or manufacturing industry (Longman, 1997). The quality of road construction projects has generally been evaluated by the use of subjective measures (Longman, 1997). To overcome this difficulty, various performance models for contractor

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performance have been developed. The quality of the road construction industry has for the most part been assessed by the utilization of measures which are subjective (Longman, 1997). Ahadzie et al. (2008) among others have featured the inception, composition of the major Performance Measurement Models, which have been synthesized and incorporated below.

2.7.2.2 Benchmarking

Benchmarking through the application of performance measurement systems has in recent times become a total issue in the road construction industry (Ahadzie et al., 2008). The Construction Industry Institute (CII), (2003) citing from the European Benchmarking Code of Conduct characterizes benchmarking as: " Supply making comparisons within other organizations and then learning the lessons that those comparisons throw up".

Benchmarking has produced another way of thinking and in philosophy and utilizing of parameters for surveying success of projects and furthermore improving performance and managing performance in the future (Kagioglou et al., 2001). Costa and Formoso (2004) has ascribed this new way of thinking that benchmarking has become a fundamental piece of the ongoing review process as well as planning procedure to guarantee an emphasis on the external environment and to reinforce the utilization of real data in developing plans. Therefore, work has been accounted for on the presentation of Key Performance Indicators (KPIs) and the advancement of Performance Measurement Systems (PMS) for benchmarking in various nations, for example, India, Brazil, UK, USA, Malaysia, Chile and Hong Kong (Costa & Formoso, 2004). Without a doubt the utilization of KPIs and the setting of benchmarks have been portrayed as the system for executing the Egan (1998)

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agenda for an extreme improvement in the UK Road Construction Industry (Katzenbach, 1997).

Likewise, the activity created by both industry agents and construction Industry Institute (CII) staff is planned for helping road construction firms to quantify and upgrade their performance in the US (Ahadzie et al., 2008; CII, 2003). In Malaysia, the activity has been driven by the Road Construction Industry Development Board (CIRB) to improve the performance of contractual workers. (Costa & Formoso, 2004) reported that, benchmarking inceptions in Australia and Denmark. The handy implication of benchmarking is that, it gives a method for looking at and estimating the firm's performance against other comparable firms in key business activities, and afterward utilizing lessons gained from the best to make target enhancements (KPI, 2000). In this manner, PMS for benchmarking is generally perceived as the way to road construction industry development at organization, national and global levels.

2.8 Conceptual Framework for the study

Jabareen (2009) defined conceptual framework as a network or a "plane" of linked concepts. Jabareen again stated that; conceptual framework is a network of interlinked concepts that together offer a comprehensive understanding of a phenomenon. The conceptual framework analysis in figure 2.1 offers a procedure for building an enhanced project team performance.

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Figure 2.1 represents a conceptual relationship between factors that influence project team performance, criteria for assessing project team performance and strategies for improving project team performance to enhanced project team performance.

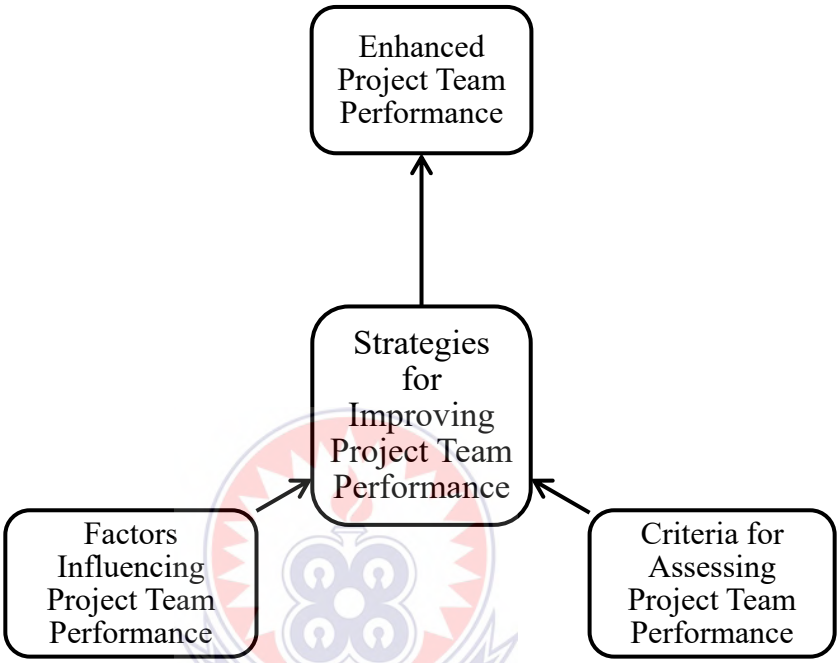

Figure 2.1: Conceptual Framework

2.9 Summary of Literature Review and Conceptual Framework

The chapter covers the historical development of the road construction and road construction industry in Ghana and the importance of the industry to the economy of Ghana, definition of teams, team characteristics, attitude and behaviour, and how they impact the effectiveness of teams, the chapter also assessed the performance measurement in the road construction industry generally, performance measures and performance indicators within the scope of the research. What constitutes a good performance

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measurement system and its importance is also highlighted. This hence makes ready for the following section which outlines precisely how the targets will be accomplished.

By a clear critical synthesis of the project team performance models discussed above, it can be stated that leadership style, leader comfortability, effective project planning, gender difference, quality assurance, project satisfaction, team size, cohesion, motivation, communication, proper goal and objective setting, trust, and quality supervision remain the factors of project team performance (Blendell et al., 2001; Essens et al., 2005; Ahadzie, 2007; Salas et al., 2009; Amoah et al., 2011; Azmy, 2012; Kwofie et al., 2015; Fobiri, 2015; Tabassi et al., 2017; Payne, 2021) and thus makes Parker's (2008) 12-item assessment indicators relevant factors in evaluation of project team performance in the construction industry today. That is, ensuring project team performance factors will be more likely to result in performing teams.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology adopted for the study. The research methodology comprises the systemic rules and procedures upon which this research is based and against which the data collected is interpreted and the findings evaluated. In the ensuing discussion, the terms epistemology, methodology, and methods as applied in research are first defined. Thereafter, the paradigm adopted is described. This is then followed by a commentary on the choice of the method including the research instrument design.

The data collection procedure is also described in this chapter. Subsequently, the relevant information on the potential respondents, the sampling frame, the sample size, and the data analysis plan are presented. The chapter concludes with a commentary on how the data collected was edited and analysed

3.2 Research Philosophy

In conducting research, it is important to consider the philosophical assumptions or paradigms that underpin the study. A paradigm may be considered as a "set of beliefs, values, and techniques which is shared by members of a scientific community, and which acts as a guide or map, dictating the kinds of problems scientists should address and the types of explanations that are acceptable to them" (Kuhn, 1970). The positivists believe in empiricism, the idea that observation and measurement are at the core of scientific

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endeavour. Thus, the positivists assume an objective reality that is single and concrete. Positivist researchers are independent of what is being researched. This is because of distance or objective separateness between the researcher and object of study and therefore knowledge is discovered and verified through direct observations or measurements of reality. Positivists believe that the unique way to conduct research is through quantitative means and this is equated with truth (Dainty, 2008).

In the present study, the researcher's stance is positivism because it is usually supported by investigating or studying an observable social reality and the final product could be a law-like generalization similar to those produced by a physical and natural scientist (Saunders et al., 2009).

3.3 Research Approach

The research approach chosen for this research is the deductive approach which falls in line with the positivist perspective. Gill and Johnson (2002) and Pathirage et al., (2007) argued that the deductive approach has become similar to positivism while the inductive approach with social constructionism. The deductive approach starts with the social theory that they find compelling and then tests its implications with data (King et al., 2009). According to Dudovskiy (2011) deductive approach offers the following advantages:

- Possibility to explain causal relationships between concepts and variables.
- Possibility to measure concepts quantitatively.
- Possibility to generalize research findings.

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3.4 Research Strategy

A Research Strategy is a bit-by-bit game plan that guides your contemplations and endeavours, empowering you to conduct research methodically and on time to deliver quality outcomes and itemized detailing (Wedawatta et al., 2011). This empowers one to remain centred, diminish disappointment, upgrade the quality, and in particular, spare time and assets. The Research Strategy is the stray piece of application, portraying the reasoning for the research and the examinations to do to achieve objectives (Wedawatta et al., 2011). There are three primary sorts of research strategies: quantitative, qualitative, and mixed methods. The study adopted a quantitative research strategy based on the nature of information required to find insightful answers to the pertinent research questions as shown in section 1.5 of chapter one.

3.5 Research Design

The study employed a descriptive survey design. Given the time frame of the research, therefore, a cross-sectional survey approach was adopted. This design was used because of the nature of the information required to provide insightful answers to the research questions posed in chapter one of the study.

According to Kumar (2011), a research design is the plan of conditions for the collection and analysis of data in a way that aims to combine relevance to the research purpose with budget and procedure. Creswell (2012) asserts that in this procedure, survey researchers collect quantitative numbered data using questionnaires and statistically analyse the data to describe trends in responses to questions and to test research questions. Kumar (2011)

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stated that data collection can be done using primary sources which include; Observation, interviews, and questionnaires. The study employs a questionnaire to collect the needed data since primary data is needed for a study of this kind. The questionnaire was used because, it provides a true and current picture of a group, profession, organization, etc. (Janes, 1999 as cited by Twumasi, 2015). Additionally, Ayyash et al., (2011) stated that questionnaire requires less resources as compared to other research designs.

3.6 Description of the Study Area

Ghana is one of the seventeen administrative countries among West Africa nations (United Nations Refugee Agency, 2013). The country is situated in the southern part of the West Africa nations. Ghana which lies in the centre of the West African coast shares borders with three French-speaking nations, La Cote d'Ivoire to the west, Togo to the east, and Burkina Faso to the north. To the south, the country shares the Gulf of Guinea and the Atlantic Ocean. Ghana has more than seventy ethnic groups. Major Ethnic Groups in Ghana includes the Akan at 47.5% of the population, Dagbani at 17%, the Ewe at 14%, the Ga-Dangme at 7%, Gurma at 6%, Guan at 4%, Gurunsi at 2.5%, and Bisa at 1% according to Population & Housing Census, 2021 data (Ghana Statistical Service, 2021).

According to the Ministry of Roads and Highways, Ghana has about 71,419km of the road network. Of this, 14,874km are trunk roads, 42,045km are feeder roads and 14,500km are urban roads (National Development Planning Commission, 2017). The road network provides increasable access for other sectors to improve economically. The tourism industry is of developing significance because of the alluring sea shores and authentic

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sights (Ghana Statistical Service, 2021) through an effective contribution of the Road Sector. Ghana is predominately an agrarian economy (Amu, 2005). The population density of Ghana is 30.8 million (Ghana Statistical Service, 2021). According to GSS (Ghana Statistical Service, 2021) report, Greater Accra Region is the most populous region in Ghana with a population of 5,446,237. Closely followed by Ashanti Region as the second most populous region with a population size of 5,432,485. According to National Development Planning Commission (NDPC) (2017), reported that Ashanti Region has about 9,901 km total length of roads with 479 km accessible, and Greater Accra Region also has 8,650 km total length of roads with 452 km being accessible. The two regions as the capitals of the two main divisions of Ghana, Ashanti Region (Kumasi) for the northern sector/zone and Greater Accra Region (Accra) is for the southern sector/zone. The population was denoted from the two Regions in the country as shown in figure 3.1.

The study was conducted in the Greater Accra and Ashanti Regions of Ghana since these two regions:

- Having a high number of road construction consultants in the country, as the capital for the northern sector (Ashanti Region) and southern sector (Greater Accra) for Ghanaian engineering professional institutions,

- Having a high number of ongoing and newly completed road construction projects.

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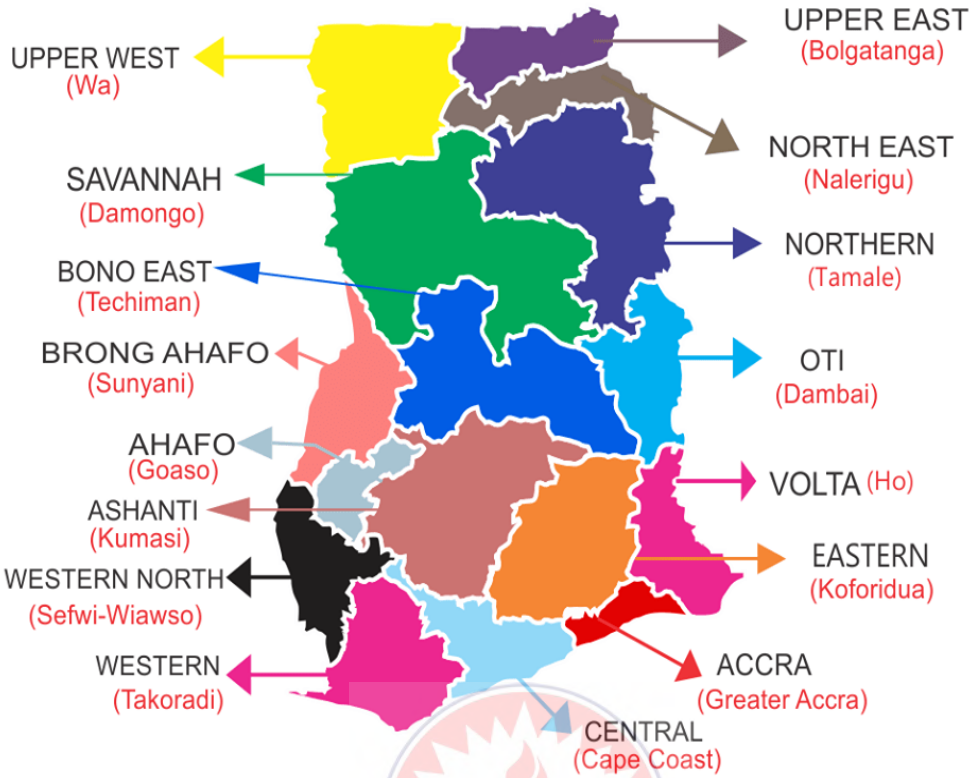

Figure 3.1 Regions of Ghana. Source: (easytrackghana.com)

3.7 Population

The target population of the study comprised road consultants rendering consultancy services to the road construction companies in Greater Accra and Ashanti Region of Ghana. Thus, the consultants in the Road Construction Sector in Greater Accra and Ashanti Region of Ghana (Project Managers, Project Engineers, and Quantity Surveyors). Road consultants are mostly represented in the majority of the road construction in the country since the Government of Ghana (GoG) is the leading client in the construction industry (Yirenkyi-Fianko & Chileshe, 2015).

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3.8 Sample and Sampling Techniques

The concept of sample arises as a result of the inability of the researcher to test all individuals in a given population and must be representative of the population from which it is drawn. The study adopted a purposive sampling technique (Tunji-Olayeni et al. 2018) to select construction consultants who had worked in the road sector for at least five years and who were duly registered with the appropriate professional institution, thus the study sought to find respondents who could and were willing to provide information by virtue of their experience and knowledge. Also, the snowball sampling technique was used by the researcher to enable access to consultants who would have been otherwise not covered by the study. A total of one hundred and fifteen (115) consultants were covered by the study. Fifty-Seven (57) questionnaires were recovered and considered fit for analysis. Therefore, the response rate achieved was 50%.

The purposive sampling technique was adopted to select 115 respondents for the study. Purposive sampling technique being a non-randomized technique that does not need underlying theories or set of sample size (Boateng et al., 2020), thus, the study set out to find respondents who could and were willing to provide information by virtue of their experience and knowledge. Subsequently, the actual sample size was established from the field study (Bernard 2002; Saunders et al. 2009).

3.9 Data Collection and Instrumentation

The researcher relied on primary data by considering the nature and objectives of the study. Hence, the appropriate instrument was a questionnaire. A questionnaire was used because

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it provided a clear thought of what the researcher desires to obtain from the respondents. This questionnaire consisted of three sections.

Section (A): - Organization's details/details of respondents (for example work title, sort of project they are involved in, working experience in the industry, number of tasks completed inside the most recent 5 years).

Section (B): - This section focuses on the expert opinions of consultants on determinants or factors that influence project team performance in road construction projects and criteria for assessing project team performance for road construction projects (respondents will be approached to tick the crates that match with the group attributes experienced the most recent team(s) work with, using parameters characterized as; 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree).

Section (C): - This section focuses on the perspective of consultants on what could be done to develop and improve road construction project teams in Ghana using parameters characterized as; 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. Sarantakos (1999) asserted that the Likert scale provides single scores, and it is easy to construct, hence its usage.

3.9.1 Validity of the Instrument

The instrument was validated using both face and content validity. The face validity was done by looking at the layout and the structure of the instrument. On the other hand, content

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validity was determined by experts in the field of consultancy who examined whether the items cover all the possible research questions and the extent to which the items measured the specific construct. The instrument was vetted by the supervisor for his comments and views to establish fair validity.

3.9.2 Ethical Consideration

Ethical considerations form a major element in research. The researcher needs to adhere to promote the aims of the research by imparting authentic knowledge, truth, and prevention of error (Chetty, 2016). Furthermore, following ethics enables scholars to deal collaborative approach to their study with the assistance of their peers, mentors, and other contributors to the study. Chetty (2016) further explained that this requires values like accountability, trust, mutual respect, and fairness among all the parties involved in the study. This, in turn, depends on the protection of intellectual property rights of all contributors established through the implementation of ethical considerations.

In this study before the data collection, ethical clearance was obtained from the Department of Construction and Wood of the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, who offered an ethical permit for the research. The researcher also obtains an introductory letter from the Department of Construction and Wood. This introductory letter helped the researcher to get the needed assistance and co-operation from the respondents. Participants were well informed about the objectives of the study. Informed consent as asserted by Silverman (2011) is a process of negotiation "between the researcher and the study subjects, and not a one-off action". Participants will

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be informed of the right to withdraw from the study. Confidentiality will also be guaranteed to the respondents by making sure that, the study they were not represented by their names (anonymity).

3.10 Data Analysis

The software used for the data analysis was a statistical package for social sciences version 21 (SPSS). The data were first examined for missing values and coding was done. The data was first read into SPSS. Descriptive statistical analysis such as counts frequency, mean, standard deviation, and ranking was carried out. The results were then summarized in tables and charts to facilitate easy interpretation of the results. Inferential analysis (Regression Analysis) was done. Factor analysis was carried out to reduce the number of variables to a meaningful size.

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CHAPTER FOUR

ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

This chapter portrays the analysis of the information gathered and talks about the outcomes to obtain the objectives fixed to accomplish in this project. The objectives set to achieve were to access expert opinion on project team performance in the road sector and determine the Performance criteria and finally on strategies for improving project team performance. The research further expounds on the profile of the respondents, and the response rate identified the typical Ghanaian road construction project team characteristics and the factors that influence or determine the constituents for measuring project team performance. The data obtained from the survey were analysed using descriptive statistics.

4.2 Response Rate

One hundred and fifteen (115) questionnaires were deployed to the construction consultants of continuous and recently finished projects in the Greater Accra and Ashanti Regions of Ghana. Fifty-Seven (57) questionnaires were recovered and considered fit for analysis. Therefore, the response rate achieved was 50%.

4.3 Demographic Characteristics of Respondents

This part of the questionnaire included questions requesting individual data to give definite respondent attributes. This was expected to comprehend the foundation of the respondents, so respondents' views can be placed on a typical stage for a discussion. Information in this segment included: Number of people on average in the project management team, Job title,

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gender, years of project experience in the industry, and several major individual projects undertaken in the last 5 years.

4.3.1 Respondents Gender

From Table 4.1 below, the all-out number of questionnaires retrieved were Fifty-seven (57), 54 (i.e., 94.7%) of the respondents were male, and 3 (i.e., 5.3 %), were females. This likewise confirms that, there are a ton of men in the road construction business than females (Kheni & Ackon, 2015). Jerie (2012) linked the low female participation in the construction business to the need to move heavy objects and the tiresome nature of the professions. This result also in agreement to the findings of Kheni and Ackon (2015) that the construction industry in Ghana is male-dominated.

Table 4.1: Respondents' Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	54	94.7	94.7	94.7
Female	3	5.3	5.3	100.0
Total	57	100.0	100.0	

Source: Survey data (2022)

4.3.2 Years of Experience

Table 4.1 below shows the total number of years' respondents have been practicing in the construction industry. Seven (7) respondents constituting 12.3% of the total responses have been in construction industries for less than 5 years, 10 (i.e., 17.5%) of the respondents have been practicing in the construction industry from 5 – 10 years, 20 (35.1%) have also

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been practicing with project teams for 11 – 15 years, and 20 constituting 35.1% has practiced in the Greater Accra and Ashanti Region of the Ghanaian construction industry for more than 15 years. The data is presented in the figure below. Bello (2010) conducted a study and concluded that the number of years a participant has had on a job could help to acquire more skills and knowledge. Thus, the study set out to find respondents who could and were willing to provide information by virtue of their experience and knowledge.

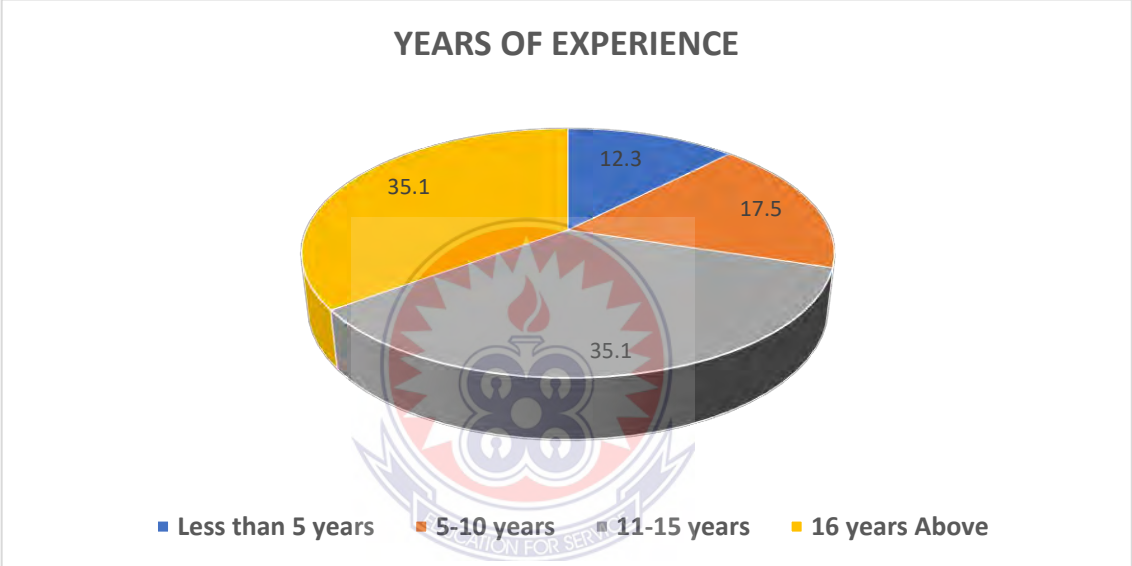

Figure 4.1 Years of Experience

4.3.3 Individual Projects undertaken within the last 5 years

From Table 4.2, the number of professionals who had undertaken projects between 1 to 10 was 6 (i.e., 10.5%). 52.6% of the respondents had undertaken projects between 11 to 20. And the number of professionals who have undertaken projects above 20 was 36.8%. The majority (more than half) of the respondents were with teams who had undertaken projects between 11 and 20 and will be able to give an adequate perception of the team characteristics and the effectiveness of the teams based on project performance measures.

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Table 4.2: Projects undertaken within the last five years

Projects	Frequency	Percent	Valid Percent	Cumulative Percent
1-10	6	10.5	10.5	10.5
11-20	30	52.6	52.6	63.2
Above 20	21	36.8	36.8	100.0
Total	57	100.0	100.0	

Source: Survey data (2022)

4.3.4 Number of Project Team Members

From Table 4.3 table below, 14.0% of the consultants were in project teams constituting 5-10 members, 11-15 were 26.3%, 16-20 were 21.1%, 21-25 were 3.5% and 35.1% of the respondents had project team members of less than 5. The majority of the respondents were with teams of less than five. Shown in Table 4.3: Number of members in a team below.

Table 4.3: Number of project team members

Number	Frequency	Percent	Valid Percent	Cumulative Percent
Less Than 5	20	35.1	35.1	35.1
5-10	8	14.0	14.0	49.1
11-15	15	26.3	26.3	75.4
16-20	12	21.1	21.1	96.5
21-25	2	3.5	3.5	100.0
Total	57	100.0	100.0	

Source: Survey data (2022)

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4.4 Determinants of Project Team Performance

Thirty-one project indicators were used as measures of project team performance. Thirty-one (31) constructs are considerably large for meaningful interpretation and an appropriate data reduction technique is necessary. It is in this manner important to embrace a data reduction method, specifically Factor analysis. Factor analysis is perfect for detecting lots of correlated variables and is suitable for decreasing a large number of variables into a good framework. Again, factor analysis is a factual technique that shows an approach to shortening information that is in unique factors into a lesser arrangement of aspects (factors) with the least loss of information (Hair et al., 1992).

4.4.2 Initial Considerations

Factor analysis is dependent on the relationship matrix of the factors in it and the affiliations regularly need a major sample before they balance out. Subsequently, the reliability of the factor analysis is likewise subject to the size of the sample. As a guideline, an exposed least 10 comments for every variable is fundamental to dodging computational issues (DeCoster, 1998). In SPSS, a convenient choice was introduced to see whether the sample is to a great extent sufficient: thus, the Kaiser-Meyer-Olkin quantity of specimen sufficiency (KMO-test). Literature suggests that the mean of the KMO value should be more than 0.5 (Field, 2005; Child 1990), in this manner the sample is adequate if KMO is more than 0.5. Concerning the information presented in Table 4.4, the information is satisfactory for these tests.

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Table 4.4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.817**
Bartlett's Test of Sphericity	Approx. Chi-Square	1859.354
	Df	465
	Sig.	.000

Source: Survey data (2022)

4.4.3 Data Screening/Preliminary Analysis

In Factor analysis, it is normal to look at the entomb relationship among the factors first and foremost. Concerning the correlation matrix, two issues are fundamental: the variables ought to be inter-correlated, but not extremely related (extreme multi-collinearity and individuality) as this would make challenges in figuring out the remarkable impact of the variable on a factor (Field, 2005). In SPSS the Inter-correlation is checked by utilizing the KMO test and Bartlett's trial of spherite, while multi-collinearity is identified using the reason for the correlation matrix.

KMO measurement varies somewhere in the range of 0 and 1. A value of 0 highlights that the total fractional correlation is big compared to the sum of the correlation, showing dispersion in the design of correlations (thus, factor analysis is probably going to be unstable/unsatisfactory). A value near 1 shows that the design of correlations is relatively dense/thick thus factor analysis ought to yield distinct and reliable factors. As per Hutcheson and Sofroniou (1999), referred to in Field (2005), values going from 0.8 and 0.9 are perfect.

Bartlett quantifies the null hypothesis and tests that, the unique correlation matrix is an identity matrix. Thus, for factor analysis to perform, relations among factors are required

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and if the R-Matrix were an identity matrix, all correlation coefficients would be zero. Thus, the desire is for this test to be important (i.e. under 0.05). A significant test lets us know that the R-Matrix isn't an identity matrix; in this way, there are a few relations among the variables we desire to include in the analysis (Field, 2005). From Table 4.4, Bartlett's test is exceptionally significant ($p < 0.8$), and therefore factor analysis is suitable.

As per Field (2005), mild multi-collinearity is certainly not problematic for factor analysis, and thus the information is suitable for factor analysis. After fulfilling all the essential tests of dependability of survey instrument, sample size adequately, and population matrix, the data collected were exposed to factor analysis utilizing principal component analysis (PCA), with Varimax rotation. Going before principal component analysis (PCA), the commonalities included were initially determined (Table 4.5). The communalities show the quantity of the distinction in the variables being represented by the extracted factors and are entirely important in choosing which factors to remove at long last. As demonstrated in Table 4.5, the mean of the commonalities of the factors after withdrawals was above 0.8. Out of the Thirty (31) factors, 17 were viewed as above 0.8 and 14 were beneath.

Table 4.5: Communalities

Factors	Initial	Extraction
Clarity of goals and responsibilities in the team	1.000	.797
Project team cohesiveness	1.000	.866
The budget allocated for the project	1.000	.869
Efficient team size	1.000	.767
Project team roles	1.000	.894
Leadership style management	1.000	.905
Members' trust and reliability	1.000	.789
Professionals hired for the project	1.000	.834
Project team experience	1.000	.742
Team communication quality	1.000	.774
Team members openness	1.000	.825

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Level of supervision	1.000	.751
Project period	1.000	.830
Leader comfortability in assigning duties	1.000	.852
Conflict management	1.000	.860
Team members motivation	1.000	.778
Change control management systems	1.000	.761
Division of work among team members	1.000	.887
Gender difference	1.000	.872
Ethical diversity management	1.000	.859
Discussion and brainstorming of team goals.	1.000	.853
Effective Project planning	1.000	.844
Project construction was completed correctly.	1.000	.844
Quality Project designs and Time for design delivery	1.000	.794
Timely project inspection	1.000	.650
Project Quality assurance	1.000	.858
Demonstration of good technical ability	1.000	.798
Communication among team members and with the	1.000	.761
Friendly atmosphere and trust	1.000	.633
Satisfaction with the final product of the project.	1.000	.841
Professional consultations	1.000	.702

Source: Survey data (2022)

Table 4.6 presents the extracted components with initial Eigen values. A total of six factors are significantly based on a cut Eigen value of 1.

Table 4.6: Total Variance Explained

Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	16.995	54.822	54.822	16.995	54.822	54.822
2	2.453	7.914	62.736	2.453	7.914	62.736
3	2.007	6.473	69.210	2.007	6.473	69.210
4	1.402	4.521	73.731	1.402	4.521	73.731
5	1.224	3.948	77.679	1.224	3.948	77.679
6	1.009	3.256	80.935	1.009	3.256	80.935
7	.825	2.662	83.597			
8	.687	2.216	85.814			
9	.568	1.833	87.647			
10	.476	1.536	89.183			

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11	.438	1.412	90.596
12	.372	1.201	91.797
13	.326	1.051	92.848
14	.297	.959	93.807
15	.279	.899	94.706
16	.256	.826	95.532
17	.231	.747	96.279
18	.192	.621	96.900
19	.158	.510	97.410
20	.155	.499	97.908
21	.112	.362	98.271
22	.104	.336	98.607
23	.099	.319	98.926
24	.078	.253	99.179
25	.074	.238	99.417
26	.052	.168	99.586
27	.047	.150	99.736
28	.034	.110	99.846
29	.024	.078	99.924
30	.014	.045	99.968
31	.010	.032	100.000

Source: Survey data (2022)

Both the Guttman-Kaiser rule and the Cattell scree test were embraced in deciding the number of elements to take out. Guttman-Kaiser's decision suggests that those variables with an Eigen value greater than 1 ought to be retained, while the Cattell scree test recommends that any remaining parts after the one starting from the elbow ought not to be involved. Applying these rules to Table 4.7: the number of principal components to be removed recommends that six (6) components ought to be extracted for the characteristics of road construction team members.

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Table 4.7: Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Clarity of goals and responsibilities in the team	.761	.201		.290	.108	.283
Project team cohesiveness	.734	.243	.295	.333		.258
The budget allocated for the project	.785	.240	.224	.267		.271
Efficient team size	.762	.300	.220		.218	
Project team roles	.762	.325	.235	.165	.292	.202
Leadership style management	.816	.240	.243		.336	
Members' trust and reliability	.780	.305	.214		.199	
Professionals hired for the project	.712	.436	.145	.207	.268	
Project team experience	.474	.574	.193	.205	.225	.241
Team communication quality	.417	.605	.165	.240	.385	
Team members openness	.452	.694	.134	.212	.274	
Level of supervision	.299	.739	.142	.157	.228	.138
Project period	.407	.746	.231			
Leader comfortability in assigning duties	.209	.773	.449			.207
Conflict management	.194	.725	.363	.260	.154	.270
Team members motivation	.247	.633	.475	.244		.166
Change control management systems	.357	.487	.327	.505	.153	.107
Division of work among team members	.249	.483	.179	.665	.336	
Gender difference	.261	.371	.238	.711	.314	
Ethical diversity management	.275	.211	.556	.620	.162	.137
Discussion and brainstorming of team goals.	.286	.153	.774	.384		
Effective Project planning	.232	.121	.830	.123	.131	.170
Project construction was completed correctly.	.185	.394	.761		.228	.120
Quality Project designs and Time for design delivery		.255	.815		.235	.148
Timely project inspection	.175	.417	.620	.109	.221	
Project Quality assurance	.194	.213	.314	.207	.770	.184
Demonstration of good technical ability	.237		.243	.185	.735	.336
Communication among team members and with the owner/client	.262	.145	.229	.349	.482	.514
Friendly atmosphere and trust	.386		.219	.330	.302	.485
Satisfaction with the final product of the project.		.280	.189		.128	.843
Professional consultations	.471	.115			.258	.631

Source: Survey data (2022). **Extraction Method: Principal Component Analysis.**

Rotation Method: Varimax with Kaiser Normalization.

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4.4.4 Component 1

All the components but for Satisfaction with the final product of the project, Quality Project designs and time for design delivery happened to conveniently fall out of this component. All the above factors seem to talk about relating with team members effectively by knowing and understanding all members very well to achieve success. The common name for component one (1) is Leadership Style Management.

4.4.5 Component 2

Under this component, only two factors were absent (Demonstration of good technical ability, and Friendly atmosphere and trust) Leader comfortability in assigning duties is of the utmost concern. The factors under component two (2) can be commonly called Leader Comfortability.

4.4.6 Component 3

The utmost concern under component three is Effective Project planning. All but two factors did not fell under this component (i.e. Professional consultations, and Clarity of goals and responsibilities in the team). Therefore, the common name for component three (3) is Effective Planning.

4.4.7 Component 4

Professional consultations, Satisfaction with the final product of the project, Quality Project designs and Time for design delivery, Project construction was completed correctly, Leader comfortability in assigning duties, Project period, Members' trust and reliability, Leadership style management and Efficient team size did not fall under this

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component. with Gender difference being the utmost priority under this component, the common name is Gender Difference.

4.4.8 Component 5

Factors that fell under this component included Efficient team size, Project team roles, leadership style management, Member's trust, and reliability, Professionals hired for the project, Project team experience, Team communication quality, Team member's openness, Level of supervision, change control management systems, Division of work among team members, Gender difference, Ethical diversity management, Effective Project planning, Project construction was completed correctly, Quality Project designs and Time for design delivery, Timely project inspection, Project Quality assurance, Demonstration good technical ability, Communication among team members and with the owner/client, Friendly atmosphere and trust, Satisfaction with the final product of the project and Professional consultations. The common name for this component is Project Quality Assurance.

4.4.9 Component 6

Factors such as efficient team size, Leadership style management, Member's trust, and reliability, Professionals hired for the project, Team communication quality, Team members' openness, Project period, Division of work among team members, Gender difference, Discussions and brainstorming of team goals and Timely project inspection did not fall under this component. The common name of this component is Final Product Satisfaction.

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4.4.10 Component Label concerning Characteristics of Team Members

Table 4.8 presents a summary of the descriptive labels of the various characteristics of the six (6) components.

Table 4.8

Component	Name
Component 1	Leadership Style Management
Component 2	Leader Comfortability
Component 3	Effective Planning
Component 4	Gender Difference
Component 5	Project Quality Assurance
Component 6	Final Product Satisfaction

Source: Survey data (2022).

4.5 Expert Opinion on Performance Criteria of Project Team Performance in the Road Construction Sector

Table 4.9 shows various performance criteria of project team performance in the road sector. Utilizing the Likert scale, which ranked "Strongly disagree" as 1, "disagree" as 2, "neutral" as 3, "agree" as 4, and "strongly agree" as 5. From the 4.9 a few variables were distinguished as performance criteria for project team performance. Any ranking that has an indicator having a mean of 2.5 or below is identified as not agreed to and a mean of 3.5 or above agreed to (Callistus & Clinton, 2016). Ranked in descending order, twelve criteria of performance of project team members were agreed upon namely; Strong team cohesion ($\bar{X} = 4.42, \sigma = .755$), The quality level of supervision ($\bar{X} = 4.18, \sigma = .984$), Project team success in achieving project objectives ($\bar{X} = 4.11, \sigma = .817$), Ability to take initiative without depending on the leader for instructions ($\bar{X} = 4.11, \sigma = .920$), Team member's

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motivation level ($\bar{X} = 4.04, \sigma = .944$), A wiliness to work with the team again on future projects ($\bar{X} = 4.00, \sigma = 1.102$), ; Gender difference in management style ($\bar{X} = 3.79, \sigma = .959$), Project team flexibility to accommodate changes ($\bar{X} = 3.74, \sigma = .992$), Team member satisfaction, likeness, and respect for each other ($\bar{X} = 3.63, \sigma = .938$), Experience with the project team on similar projects ($\bar{X} = 3.60, \sigma = .961$), the Project team quickly responds to needs and emergencies with professional service. ($\bar{X} = 3.58, \sigma = .999$) and Encouragement of high performance and quality work ($\bar{X} = 3.51, \sigma = .909$).

Table 4.9: Descriptive Statistics

Performance Criterion	N	$\bar{X}$	σ
Strong team cohesion	57	4.42	1.102
The quality level of supervision	57	4.18	0.999
Project team success in achieving project objectives	57	4.11	0.992
Ability to take initiative without depending on the leader for structions	57	4.11	0.984
Team member's motivation level	57	4.04	0.973
A wiliness to work with the team again on future projects	57	4.00	0.971
Gender difference in management style	57	3.79	0.966
Project team flexibility to accommodate changes.	57	3.74	0.964
Team member satisfaction, likeness and respect for each other	57	3.63	0.961
Experience of the project team on similar projects	57	3.60	0.959
Project team quick responds to needs and emergencies with professional service.	57	3.58	0.955
Encouragement of high performance and quality work	57	3.51	0.951
The team accomplished project on-time	57	3.49	0.947
Conflict management style	57	3.49	0.944
The quality standard of the completed project	57	3.49	0.938
The conflict between different cliques and factions in the team	57	3.47	0.92
Striving high performance	57	3.44	0.915
The contentment of members' roles in the team	57	3.42	0.909
Project completion	57	3.39	0.901
Conflict due to differences in value	57	3.37	0.896
Members' acceptance of roles and status	57	3.35	0.889

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Most work is done by only some team members	57	3.35	0.869
Ethical diversity management	57	3.33	0.855
Demonstration of sense of urgency	57	3.26	0.844
Willingness to be part of the team	57	3.26	0.818
The technical proficiency of the project team members.	57	3.21	0.817
Regular preparation of Reports and documentation	57	3.05	0.816
Team members frequently take on leadership roles	57	2.95	0.755

Note: Mean = $\bar{X}$ and Standard Deviation = σ

4.6 Strategies for Improving Project Team Performance

Table 4.10. shows various strategies for improving project team performance in the road construction sector. Utilizing the Likert scale, which ranked "Strongly disagree" as 1, disagree as 2, "neutral" as 3, "agree" as 4, and "strongly agree" as 5. Any ranking that has an indicator having a mean of 2.5 or below is identified as not agreed to and a mean of 3.5 or above agreed to. From table 4.10, six variables were agreed upon as strategies for improving project team performance. The first six distinguished factors were; Highly motivation of team members with ($\bar{X} = 4.6, \sigma = 0.563$), which shows that motivation is a very important tool in determining project team performance. Followed by; High-quality supervision with ($\bar{X} = 4.05, \sigma = 0.718$)**,** The firm establishment of member's roles at the initiation stage ($\bar{X} = 4.02, \sigma = 0.855$)**,** Team determination to accomplish the project on time ($\bar{X} = 3.86, \sigma = 0.895$)**,** Encouragement of high performance and quality work ($\bar{X} = 3.63, \sigma = 0.957$), and Team/individual workload(overload/underload) ($\bar{X} = 3.58, \sigma = 0.885$). The relative Important Index was then used to rank the relative importance of the strategies presented. The results were presented in descending order in table 4.10 below. Of the twenty-nine variables ranked as strategies for improving project team performance. Highly motivation of team members was ranked as the first factor with a Relative Important

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Index(RII) score of 0.919298, which shows that motivation of team members is a very important tool in determining project team performance, followed by High-quality supervision with an RII score of 0.842105.

Table 4.10 Strategies for Improving Project Team Performance.

Strategy	N	$\bar{X}$	σ	RII	RANK
Highly motivation of team members	57	4.60	1.196	0.9193	1
High quality supervision	57	4.05	1.083	0.84211	2
The firm establishment of member's roles at the initiation stage	57	4.02	1.068	0.8	3
Team determination to accomplish project on-time	57	3.86	1.054	0.7579	4
Encouragement of high performance and quality work	57	3.63	1.052	0.72632	5
Team/individual workload (overload/underload)	57	3.58	1.044	0.71579	6
Regular preparation of reports and documentation	57	3.49	1.002	0.712	7
Tolerance of constructive criticism	57	3.33	0.996	0.69825	8
Team determined to complete project on-budget	57	3.30	0.994	0.695	9
Well-established team's objectives and purpose	57	3.30	0.987	0.66667	10
The team seek alternative solutions for reducing cost	57	3.30	0.981	0.65965	11
Lots of team drive	57	3.26	0.963	0.65965	12
A well-managed change control system by the project	57	3.23	0.957	0.65965	13
Efficient ethical diversity management	57	3.21	0.941	0.64561	14
Members' trust and reliability	57	3.19	0.932	0.64211	15
Cohesion and commitment to the team	57	3.18	0.928	0.6386	16
The team has been together so long that it needs a "shake-up"	57	3.18	0.926	0.63509	17
Experience of the project team on similar completed projects	57	3.16	0.915	0.63509	18
The project site was kept clean and well organized.	57	3.16	0.907	0.63158	19
Continuously monitored overall project costs	57	3.12	0.906	0.63158	20
Strong implementation of team decisions	57	3.04	0.895	0.62456	21
Effective gender difference management style	57	3.04	0.885	0.53	22
Consideration of unforeseen physical and weather in the project schedule	57	3.00	0.881	0.519	23
Manage conflict skilfully	57	2.98	0.855	0.519	24
Sustainable group structure and organization	57	2.96	0.823	0.51228	25
Efficient use of subgroups of the team	57	2.93	0.813	0.512	26

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The flexibility of the Project team to accommodate the changes requested at any time	57	2.91	0.783	0.498	27
The project team exercise effective documentation system	57	2.89	0.718	0.495	28
The openness of discussion of issues in the team	57	2.68	0.563	0.46	29

Note: Mean = $\bar{X}$, Standard Deviation = σ and Relative Importance Index = RII

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CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This chapter presents a detailed discussion of the results of the study. The study sought to assess the performance of road sector project teams in Ghana. The specific objectives of the study were to assess the determinants of project teams' performance in road sector projects in Greater Accra and Ashanti Region of Ghana, to determine the criteria for assessing project team performance from the consultants' perspectives, to develop strategies for improving the performance of road construction project teams in Ghana and to assess the measures for enhancing the performance of project teams in road construction projects in Ghana. The chapter is organised into four main sections namely; an introduction, determinants of project team performance in road projects, criteria for assessing project team performance in road projects, and strategies for improving project team performance in road projects.

5.1 Determinants of Project Team Performance

From Table 4.7 and 4.8, the results indicate that, the six (6) common characteristics that emerged during the analysis (Leadership style management, Leader comfortability, Effective planning, Gender difference, Project Quality assurance, Final product satisfaction) determine project team performance and are thus considered as critical determinants for project team performance in the Ghanaian road construction industry. Ammeter and Dukerich, (2002) stated that project team characteristics form a significant determinants of project team performance. Project team members must possess such team-

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related characteristics to perform effectively (Cannon-Bowers & Salas, 1998). Hence, it is essential for project team to demonstrate sound leadership traits, offer effective planning and reduce gender indifference, project quality assurance and final product satisfaction to significantly influence and drive the team towards project success and performance. Theoretically, the project team, is considered responsible for the success or failure of the project and thus provides the clear planning, quality and project quality conditions to realize project goals and thus must show desirable final product satisfaction characters for project success. This finding is in support of Okoronkwo, (2017) and Redlein et al., (2020), who found that, project team characteristics yields desirable team effectiveness for project success. Again, Damoah and Kumi, (2018) found that, leadership and management are the most major failure factors among project teams.

The findings of this study harmonies with that of Azmy, (2012), who found that, team leadership style and management are the most important factor of team effectiveness in construction projects. The six (6) common characteristics that emerged during the analysis were; Under component one all the factors but for: satisfaction with the final product of the project, quality project designs and time for design delivery happened to conveniently fall out of this component. All the factors seem to talk about relating with team members effectively by knowing and understanding all members very well to achieve success thus the component was named Leadership Style Management since it had the highest value of the component matrix this means that in determining project team performance, the most important factor is the leadership style employed. Under component two, only two factors were absent (Demonstration of good technical ability, and a friendly atmosphere and trust). Leader comfortability in assigning duties is of the utmost concern. This component was

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named Leader Comfortability. Thus, leader comfortability is the second most important factor in determining project team performance. Thus after employing a good leadership style what follows should be the comfortability of the leader in assigning duties. The utmost concern under component three was: Effective Project Planning even though under this component all but two factors did not fell under this component (i.e. Professional consultations, and clarity of goals and responsibilities in the team). Under component four, professional consultations, satisfaction with the final product of the project, quality project designs and time for design delivery, project construction was completed correctly, leader comfortability in assigning duties, project period, members' trust and reliability, leadership style management and efficient team size did not fall under this component, with gender difference being the utmost priority under this component, the common name is Gender Difference. Under component five, factors that fell under this component included: efficient team size, project team roles, leadership style management, member's trust, and reliability, professionals hired for the project, project team experience, team communication quality, team member's openness, level of supervision, change control management systems, division of work among team members, gender difference, ethical diversity management, effective project planning, project construction was completed correctly, quality project designs and time for design delivery, timely project inspection, project quality assurance, demonstration good technical ability, communication among team members and with the owner/client, friendly atmosphere and trust, satisfaction with the final product of the project and professional consultations. The common name for this component is Project Quality Assurance since it was the utmost concern under this component. Under component six, factors such as: efficient team size, leadership style

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management, member's trust, and reliability, professionals hired for the project, team communication quality, team members' openness, project period, division of work among team members, gender difference, discussions and brainstorming of team goals and timely project inspection did not fall under this component. The common name of this component is Final Product Satisfaction as it was the utmost concern under this component.

In summary, this indicates that for a project team member to work effectively to achieve success, the above six characteristics that must be considered in descending order are Leadership Style Management, Leader Comfortability, Effective Planning, Gender Difference Management, Project Quality Assurance and Final Product Satisfaction. Thus, these factors are project team performance factors when applied among the Ghanaian construction road project team to improve efficient project team performance.

5.2 Criteria for Assessing Project Team Performance in Road Projects

The result from table 4.9 shows various performance criteria of project team performance in the Ghanaian road sector. Utilizing the Likert scale from the perspectives of road construction consultants, a few variables were distinguished as performance criteria for road project team performance. Ranked in descending order, twelve (12) road project team performance criteria were agreed upon, namely;

Strong team cohesion with a mean($\bar{X}$) of 4.42 and a standard deviation(σ) of .755. which shows that strong team cohesion is the most important criterion in determining project team performance in the Ghanaian road construction project team. This finding supports the same findings of Fung, (2013) who found that, team cohesion promotes team satisfaction

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which increases team productivity and eventually improve team performance and project success.

The quality level of supervision with a mean($\bar{X}$) of 4.18 and a standard deviation(σ) of .984, which implies that application of quality supervision in current or ongoing project has a positive influence on the project team performance. The improved level of quality supervision can ensure the realization of the quality objectives of the project (Lei Chen. 2016).

Project team success in achieving project objectives with a mean($\bar{X}$) of 4.11 and a standard deviation(σ) of .817, shows that to attain project team success the team has to achieve the project objectives. Essens et al. (2005) proposed that an effective project team success is as a result of achieving project objectives.

Ability to take initiative without depending on the leader for instructions with a mean($\bar{X}$) of 4.11 and a standard deviation(σ) of .920. This result established that when team members demonstrate shared leadership deeds with one another result to enhance team productivity through project objective achievement (Carson et al., 2007).

Team member's motivation level with a mean($\bar{X}$) of 4.04 and a standard deviation(σ) of .944, which implies that the level motivation level of project team members determines their performances. Park et al., (2004) suggested that motivation level of project team explains team members behaviour dimension depending upon project success.

A wiliness to work with the team again on future projects with a mean($\bar{X}$) of 4.00 and a standard deviation(σ) of 1.102, also shows that a wiliness of a team member to work with the team again on future projects can determine project team performance.

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Gender difference in management style with a mean($\bar{X}$) of 3.79 and a standard deviation(σ) of .959. Klimoski and Jones (1995) said that gender difference factors influence team performance. This clearly shows that when gender differences are not well managed within a project team could have negative impact on project team performance.

Project team flexibility to accommodate changes with a mean($\bar{X}$) of 3.74 and a standard deviation(σ) of .992. Efficient project team performance is driven by the ability of the team to accommodate changes (Kwofie et al., 2015). Changes in construction are inevitable, therefore the ability of a project team to accommodate changes on ongoing project have positive impact on the team performance.

Team member satisfaction, likeness, and respect for each other with a mean($\bar{X}$) of 3.63 and a standard deviation(σ) of .938. Project team performance improves when satisfaction, likeness and respect for each other are seen among project team members. This indicates that team members likeness and respect for each other inculcate team satisfaction influence positive team performance (Srivastava & Singh, 2015).

Experience with the project team on similar projects with a mean($\bar{X}$) of 3.60 and a standard deviation(σ) of .961. Experience of the project team on similar projects has a significant influence on project team performance. Kleiner and Roth (1997) testified that experience of project team on similar projects is an important element of project success.

Project team quickly responds to needs and emergencies with professional service with a mean($\bar{X}$) of 3.58 and a standard deviation(σ) of .999, indicates that quick responds to needs and emergencies with professional service by the project team shows effective project team performance to attain project success.

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Encouragement of high performance and quality work with a mean($\bar{X}$) of 3.51 and a standard deviation(σ) of .909. The emergence of this variables cemented the importance of team performances among the road construction project teams in the construction industry which increases project team satisfaction to enhance project success (Fung, 2013). These results indicate that the above Criteria when well implemented among the Ghanaian Construction Road project team influence project team members to work effectively to achieve project objectives for project success through efficient team performance. Kwofie et al., (2015) suggested that criteria for project team performance are useful in the recruitment, selection and composition of project teams on construction projects. Project consultants or client can make use of these factors to make informed decisions in selecting project professionals with the attributes that are necessary for effective team performance

5.3 Strategies for Improving Project Team Performance in Road Projects

Du et al., (2019) stated that project team members are hampered to some extent, thereby leading to an overall performance debility. thus, a successful strategy requires effective cooperative relationships among project team members to improve team performance. For project teams to performed effectively adequate strategies must be put in place to overcome the factors that can cause team and project failure (Du et al., 2019). Table 4.10. shows various strategies for improving project team performance in the road construction sector from the expert opinion of road construction consultants. The first six distinguished factors were:

Highly motivation of team members with a mean($\bar{X}$) of 4.6, a standard deviation(σ) of 0.563 and a relative important index (RII) score of 0.919298 was ranked first by the road

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construction consultants. This means that, as always the case, motivation level of project team members is a very important tool in determining project team performance from the expert opinion of road construction consultants. This statement agrees with Larsson et al., (2018) claim that, neglecting project team motivation significantly ruin their performance. The result clearly indicates that, to consultants, project team performance enhances when highly motivated. Fordjour et al., (2021) and Ogunbayo, (2013) affirm that, demotivation predictably affects every feature of any project management organization, resulting in project time delay, project cost overrun, low quality project and stakeholders' dissatisfaction.

Followed by; High-quality supervision with a mean($\bar{X}$) of 4.05, and standard deviation(σ) of 0.718, which was ranked second with a RII score of 0.842105. This is secondly extreme important to the consultants, and it is not surprising because consultants are to supervise projects on behalf of their client (Zuo & Ma, 2007). This is agreed by Tillman, (1984) that, high-quality supervision enhance project team performance to attain project success through quality work assurance.

The firm establishment of member's roles at the initiation stage with a mean($\bar{X}$) of 4.02, standard deviation(σ) of 0.855 and was ranked third with a RII score of 0.8. This result confirms the suggestion made by Azmy (2012) that a team with firm established members' roles and responsibilities is more likely to attain project success. This helps to eliminate role conflict that often splits teams (Kwofie et al., 2015). Parker (2008) also suggested that selecting project team members based on their roles enhance team performance and is vital to project success.

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Team determination to accomplish the project on time with a mean($\bar{X}$) of 3.86, and standard deviation(σ) of 0.895, which was ranked forth with a RII score of 0.757895. Therefore, when teams are somehow limited by time, there is the probability that the centre will be moved from social and intense subject matters to the group task that requires more prominent activity (Moreland & Levine, 1990). Meaning time is very essential in determining project team performance. As indicated by Kumaraswamy and Dissanayaka (2001), the substance of a construction project can be characterized by time, when the project team is not determined enough to work within time effectively.

Encouragement of high performance and quality work with a mean($\bar{X}$) of 3.63, standard deviation(σ) of 0.957 and a relative important index (RII) score of 0.726316 was ranked fifth. In support of this result, Cohen et al. (1996) stated that, team effectiveness is determined by high performance and quality of work of the project team. This shows that, encouragement of high performance and quality work within project team could avoid project time delay, project cost overrun, low quality project and stakeholders' dissatisfaction (Moradi et al., 2021).

Team/individual workload(overload/underload) with a mean($\bar{X}$) of 3.58, and standard deviation(σ) of 0.885 which was ranked sixth with a RII score of 0.715789. Individuals in construction teams typically face the challenge of heavy workloads (Fong and Chu, 2006). Team or individual workload (overload/underload) involved in a project, with work overload causing stress and anxiety because of intensive work carried out in stringent timeframes whiles work underload also causes boredom and apathy due to the insufficient tasks in the surplus period (Leung, 2007).

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The results of this study from the expert opinion of road construction consultants, it is therefore clear that for enhancement of road construction project teams in the Ghanaian construction industry need to factor the above strategies in place in order to attain project success.

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CHAPTER SIX

SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATION

6.0 Introduction

This chapter presents the key findings which emanated from the analysed data based on set objectives expected to be achieved. Also, the conclusion drawn from the findings to establish meaningful recommendations on project team performance in Ghana as well as the implications of the study for future research is considered.

6.1 Summary of Findings

The findings of this study are summarised below.

6.1.1 The determinants of project team performance

The study established that project team characteristics have been generated, disseminated, and adopted, and are tapped and applied when executing recent or future team projects. From the study, it came to light that, the six (6) common characteristics; leadership style management, leader comfortability, effective planning, gender difference, project quality assurance, and final product satisfaction, determine road sector project team performance in Ghana.

This study found that the effective execution of the six characteristics has an impact on the performances of the project team in which those characteristics were utilised. Project team performance is enhanced as those six characteristics are exploited as the team was capable of producing a quality project as compared to previous projects

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6.1.2 The criteria for assessing project team performance

This study established that, for road project team members to work effectively to achieve success, the criteria below need to be found among the road construction project team:

- Strong team cohesion,
- The quality level of supervision,
- Project team success in achieving project objectives,
- Ability to take initiative without depending on the leader for instructions,
- Team member's motivation level,
- A wiliness to work with the team again on future projects,
- Gender differences in management style,
- Project team flexibility to accommodate changes,
- Team member satisfaction, likeness, and respect for each,
- Experience with the project team on similar projects,
- Project team quick responds to needs and emergencies with professional service, and
- Encouragement of high performance and quality work.

6.1.3 Strategies for improving the project team performance

On the strategies to improve road project team performance in Ghana, the study established that road project teams should have the following six important relative strategies in place:

- Highly motivation of team members,
- High-quality supervision,
- The firm establishment of member's roles at the initiation stage,
- Team determination to accomplish a project on time,

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- Encouragement of high performance and quality work, and
- Team/individual workload (overload/underload).

6.2 Conclusion

- The study made some conclusions based on the findings. The following are the conclusions of the study. Every effective road project team must inherit the Six (6) common characteristics as indicated.
- The twelve (12) criteria, when applied and developed within the road project team, help team members to work effectively to achieve success.
- Implementation of the six (6) important related strategies in a road project team, helps enhance effective team members' performance on current and future projects.

6.3 Recommendations

In light of the findings of this research, the researcher would like to make the following recommendations:

- Professionals in the road project teams and other construction project teams in Ghana must also be characterised by 'effective leadership style management and comfortability, effective planning, gender difference management, project quality assurance, and final product satisfaction' to achieve effective project success.
- Project team professionals in the Road Sector and the Construction Industry must pay much attention to 'strong team cohesion, the quality level of supervision, project team success in achieving project objectives, the ability to take initiative without depending on the leader for instructions, team member's motivation level, member wiliness to

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work with the team again on future projects, gender differences in management style, project team flexibility to accommodate changes, team member satisfaction, likeness and respect for each, the experience of project team on similar projects, project team quick responds to needs and emergencies with professional service, and encouragement of high performance and quality work' which improve project team performance to work within the project's allocated time, budget, and assured quality to attain project success.

- Clients and consultants in the Road Sector and the Construction Industry must ensure that project team members are highly motivated and are supervised to enhance team performance. Project team member's roles are firmly established at the initiation stage, the team are determined to accomplish a project on time, high performance and quality work are encouraged, and team/individual workload are well stipulated.

6.4 Further Research

Several investigations can be looked into in the future and therefore recommend for further research:

- Forecasting project team performance in road construction project team.
- Investigation into character traits of road construction project team members and their effect on team performance regularly.
- Development of a framework for measuring road project team performance.

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APPENDIX

APPENDIX 1: QUESTIONNAIRE FOR CONSTRUCTION CONSULTANTS IN THE ROAD SECTOR

AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT (AAMUSTED)

DEPARTMENT OF CONSTRUCTION MANAGEMENT

QUESTIONNAIRE FOR GHANAIAN CONSTRUCTION CONSULTANTS IN THE ROAD CONSTRUCTION INDUSTRY IN GHANA

TOPIC: DETERMINANTS OF PROJECT TEAM PERFORMANCE IN ROAD SECTOR PROJECTS IN GHANA: PERSPECTIVES OF CONSTRUCTION CONSULTANT

INVITATION TO PARTICIPATE IN SURVEY

The road construction industry is an important sector in the Ghanaian economy which is responsible for the building of all roads (high ways, feeder roads etc.) in the country. Economically, they are responsible for building roads to interconnect cities, towns and villages. Improving human resource in every organization through the utilization of performance measures has been perceived as one of the most basic components for effectiveness and competencies. Proper measurement of team performance is required to help in efficiency, quality, wellbeing and security, and group disposition improvement over the entire road construction process (Kheni, 2010). This exploration subsequently is to

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examine the performance of Greater Accra and Ashanti Region of Ghanaian road construction projects team by investigating their characteristics and performance measurement variables from the perspective of consultants. We will be grateful if you can spare a few minutes to answer frankly and honestly the questions set out below. All information will be used solely for academic purposes.

If there are any questions about this research kindly contact

Prince Minta-Afara,

Email: mintaafaris@gmail.com,

Phone: +233(0)206197408.

Thank you very much.

Please in answering the questions, tick [√] where appropriate and state where necessary

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SECTION A:

DEMOGRAPHICS OF RESPONDENTS

(Personal Particulars)

Please tick [√] the appropriate option

1. Please indicate your gender.

   ☐ Male ☐ Female

2. What is your highest educational qualification?

   ☐ Diploma ☐ Degree Masters' ☐ PhD ☐

   Other, ☐ Specify ……...

3. How many years' experience do you have as a consultant?

   ☐ 5 to 10 years ☐ 11 to 15 years ☐ Above 15 years

4. How many major projects have you undertaken in the last 5 years?

   ☐ 1 to 10 ☐ 11 to 20 ☐ Above 20

5. About how many people are averagely in a typical project team?

   ☐ Less than 5 ☐ 5 to 10 ☐ 11 to 15

   ☐ 16 to 20 ☐ 21 to 25 ☐ Above 25

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SECTION B

EXPERT OPINION ON PROJECT TEAM PERFORMANCE IN THE ROAD SECTOR

6. To what extent do you agree on the following determinants or factors that influence project team performance in road projects? Please rate using a scale of 1 to 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

Influencing factors	**Rating**				
	1	**2**	**3**	**4**	**5**
Clarity of goals and responsibilities in the team					
Project team cohesiveness					
The budget allocated for the project					
Efficient team size					
Project team roles					
Leadership style management					
Members' trust and reliability					
Professionals hired for the project					
Project team experience					
Team communication quality					
Team members openness					
Level of supervision					
Project period					
Leader comfortability in assigning duties					
Conflict management					
Team members motivation					
Change control management systems					
Division of work among team members					
Gender difference					
Ethical diversity management					
Discussion and brainstorming of team goals.					
Effective Project planning					
Project construction was completed correctly.					
Quality Project designs and Time for design delivery					
Timely project inspection					
Project Quality assurance					
Demonstration of good technical ability					
Communication among team members and with the owner/client					
Friendly atmosphere and trust					
Satisfaction with the final product of the project.					
Professional consultations					

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7. To what extent do you agree on the following criteria for assessing project team performance for road construction projects in Ghana? Please rate using a scale of 1 to 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

Criteria for assessing project team performance	**Rating**				
	1	**2**	**3**	**4**	**5**
Gender differences in management style					
Project team success in achieving project objectives					
The quality level of supervision					
Strong team cohesion					
Project team flexibility to accommodate changes					
Willingness to be part of the team					
Team member's motivation level					
Regular preparation of Reports and documentation					
Experience of the project team on similar projects					
The contentment of members' roles in the team					
Ability to take initiative without depending on the leader for instructions					
The team accomplished project on-time					
A wiliness to work with the team again on future projects.					
Most work is done by only some team members					
Encouragement of high performance and quality work					
Demonstration of sense of urgency					
Project team quick responds to needs and emergencies with professional					
Team members frequently take on leadership roles					
Striving high performance					
The technical proficiency of the project team members.					
Conflict due to differences in value					
Members' acceptance of roles and status					
The quality standard of the completed project					
The conflict between different cliques and factions in the team					
Project completion					
Ethical diversity management					
Conflict management style					
Team member satisfaction, likeness and respect for each other					

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SECTION C

STRATEGIES FOR IMPROVING PROJECT TEAM PERFORMANCE

This section focuses on the perspective of a consultants on what could be done to develop and improve road construction project teams in Ghana.

8. To what extent do you agree on the following strategies for improving project team performance in the road sector in Ghana? Please rate using a scale of 1 to 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

Strategy for improving project team performance	Rating				
	1	2	3	4	5
Well-established team's objectives and purpose					
Encouragement of high performance and quality work					
A well-managed change control system by the project team					
The firm establishment of member's roles at the initiation stage					
Regular preparation of reports and documentation					
Team determination to accomplish project on-time					
Team determined to complete project on-budget					
Experience of the project team on similar completed projects					
The team seek alternative solutions for reducing cost					
Continuously monitored overall project costs					
The project team exercise effective documentation system					
The flexibility of the Project team to accommodate the changes requested at any time					
Strong implementation of team decisions					
The team has been together so long that it needs a "shake-up"					
Cohesion and commitment to the team					
Sustainable group structure and organization					
The openness of discussion of issues in the team					
Efficient use of subgroups of the team					
Tolerance of constructive criticism					
Team/individual workload (overload/underload)					
Members' trust and reliability					
Lots of team drive					
Consideration of unforeseen physical and weather in the project schedule					
The project site was kept clean and well organized.					
Highly motivation of team members					
Manage conflict skilfully					
Efficient ethical diversity management					
High quality supervision					
Effective gender difference management style					

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Other Strategies Please specify

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Closing

remark:……

End of questions.

Thank you for your participation.

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