

**KWAME NKRUAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
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Examining The Importance Of Project Team Integration In Construction Project Delivery  
A Case Study Of The Total Petroleum Ghana Limited

By

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A Thesis submitted to the Department of Construction Technology and Management,  
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**MASTER OF SCIENCE**

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## DECLARATION

I hereby declare that this submission is my own work toward the award of Master of Science Degree in Project Management and that, to the best of my knowledge it contains no material previous published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

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## ABSTRACT

The construction business has been generally censured for its divided way to deal with project conveyance and its inability to form powerful groups. This has brought about decreased project conveyance proficiency. The aim of the study is to examine the importance of construction project team integration in construction project delivery at Total Petroleum Ghana (TPGL). The study had four specific objectives which includes to; identify the significant benefits of construction project team integration in TPGL; identify the critical challenges associated with team integration in construction project management in TPGL; and proffer strategies to improve construction project team integration. TPGL's Engineering Department was used as a case study. Purposive sampling was used to select the respondents. SPSS software and descriptive statistics such mean, standard deviation and rank score used to analyse the data. It was found that the significant benefits of construction project team integration were; individuals bolster each other and accomplishments are shared all through the group (M=3.97), and operated in an atmosphere where relationships are equitable and members are respected (M=3.92). The critical challenges with team integration in construction project in TPG were; the brief length of construction project (M=3.97) and inappropriate correspondence, and absence of authority and the power war among the colleagues (M=3.90). The data revealed that the strategies to improve construction project team integration were; whole venture group must be consolidated with a specific end goal to accomplish the fruitful culmination of current construction venture (M=3.92), and building trust and regard among the colleagues (M=3.82). It is recommended that management should provide adequate team building training with much emphasis on self-administration of group and relational aptitudes to improve correspondence while upgrading teamwork and execution.

**Key Words:** Integration, Construction, Culture, construction project team integration, construction project delivery, Total Petroleum Ghana (TPG)

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## **DEDICATION**

To my lovely family, the Bhaktas.



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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND TO THE STUDY**

Team building is not just about assembling Human Resource and after that sending them on a project. It is the making of a successful and shared collective among colleagues, so they can work productively and in concordance with each other to accomplish project objectives. Team building process is presumably the most ignored part of project administration (Lewis, 2008). Team building is basic to effective project conveyance and long-haul reasonable project administration. A project group is a gathering of people with various necessities, foundations, and ability. Groups are cross-utilitarian, which is normal for grid and project administration associations (Bubshait and Farooq, 2009). The project colleagues resemble motor parts and when they work in congruity and close coordination, better outcomes are accomplished. This is so in light of the fact that each colleague can envision the 'master plan' of the project's vision and asset use turns out to be more productive and compelling.

Project team integration can be characterized as where diverse orders or organizations with various objectives, needs and societies converge into a solitary durable and commonly supporting unit (Baiden et al., 2006) with community arrangement of procedures and societies (Ochieng and Cost, 2009; Payne et al., 2013; Strategic Forum for Construction, 2003). In construction, integration regularly alludes to collective working practices, techniques and practices that advance a domain where data is uninhibitedly traded among the different gatherings. Inside an incorporated group condition different abilities and information are viewed as shared, and customary boundaries isolating the plan procedure

from construction exercises are evacuated or underestimated to enhance project conveyance (Austin et al., 2012; Baiden et al., 2003).

Project group can comprise of different people with various parts and duties relying upon the project i.e.: project director, project coach, specialized lead, merchant, client, business investigator, and so forth. (Zajac, 2003). Colleagues can be added to and expelled from the project group amid the project (Zajac, 2003). Project groups are framed to play out a particular assignment and disbanded when this errand is finished (Zajac, 2003). In this way, project group has an existence cycle that takes after the project improvement cycle, beginning with inception stage that is trailed by execution stage and closure with shutting exercises and disbanding of the colleagues. Furthermore, organization delegates, project groups can incorporate different specialists required for the project finish (Grucza and Ogonek, 2009). The project administrator is in charge of the group execution amid the project (Zajac, 2003).

As per Yang et al. (2014), making construction program progress necessitates that project chiefs must work with singular needs everything being equal, the network, and groups taking an interest in the execution of a program. Kelly et al. (2014) underline that for proficient and viable administration of activities where there are interdependencies and where many colleagues and project directors are cooperating, data symmetry is critical. In such situations, correspondence is vital for overseeing interdependencies to guarantee fruitful execution of construction programs. As per Mead and Gruneberg (2013), most projects are only sometimes led in disconnected settings, without interdependencies. Project supervisors or pertinent colleagues need to plan, interface and deal with all project interdependencies crosswise over various periods of construction, groups, important offices and accessible assets to guarantee achievement (Mead and Gruneberg, 2013).

## **1.2 PROBLEM STATEMENT**

The construction business has been generally censured for its divided way to deal with project conveyance and its inability to form powerful groups. This has brought about decreased project conveyance proficiency (Egan, 2008). Poor execution has been credited to the proceeded with utilization of obtainment rehearses that don't energize integration of the gatherings included (Love, and Gunasekaran, 2008). Past reports by Latham (1994), Bourn (2001) and Egan (2002) have all tested the business to move far from its customary usual way of doing things towards more cooperative and coordinated methodologies. The latest of these, Accelerating Change (2002), tested the UK construction industry to make a completely incorporated administration fit for conveying unsurprising outcomes to customers. The report proposed process and group mix as a key driver of progress vital for the business to end up more effective (Egan, 2002).

Group working models demonstrate how groups can function and perform better as a rule (Rippin, 2012; Belkin, 2004). Be that as it may, in the building construction industry, expanded specialization over the previous century or somewhere in the vicinity, has prompted divided project groups. All the more as of late, this has been lamented as useless (Latham, 2014), on the grounds that the benefits of specialization have been overpowered by the troubles of organizing information sources and incorporating yields.

In Africa, poor execution has been halfway credited to the failure of project members to cooperate successfully (Evbuomwan and Anumba, 2008). The plan period of most construction has customarily been dealt with as a different movement to the construction stage (Anumba et al., 2012) subsequently, a considerable lot of the groups included work towards exclusively characterized targets that are regularly in strife with each other.

Subsequently, the construction business has not completely profit by the expanded profitability and item quality that can result from cooperation (Glassop, 2012; Hayes., 2012).

Collaboration in construction has been generally examined by various analysts (Baiden, 2006; Cheng et al., 2016; Chervier, 2003; Ochieng, 2008), and the discoveries have obviously delineated that best construction project execution is accomplished when the entire project group is completely incorporated and lined up with project goals. Weatherley (2006) concur that project achievement is sufficiently troublesome to achieve where the project group is found near the construction project condition, and the circumstance is made much complex for multicultural expert groups, that are generally isolated geologically and that have different hierarchical and territorial societies. Ely and Thomas (2001) showed that decent variety builds the quantity of alternate points of view, styles, information and bits of knowledge that the group convey to complex issues.

A zone that benefits consideration is the significance of construction project group coordination in construction project conveyance. This appears to have gotten little consideration in writing. In the event that consistent change in project conveyance is to be accomplished using groups in the construction, the harmonization of the diverse callings is basic for the fruitful finishing of construction project conveyance. Despite the rigorous standards applied to the projects delivery of fuel service stations in Total Petroleum Ghana Limited, the following lapses were identified in the construction project delivery process of Total Petroleum: failed projects marked by seemingly delayed completion; time and cost overruns; tight projects schedule; budget constraints; insolences of the team members in the direction of the project goals and improper communication, and the power confrontation amongst the team members.

It is for this reason that this thesis is being undertaken to examine the importance of construction project team integration in construction project delivery at Total Petroleum Ghana Limited. The project management team of Total Petroleum Ghana Limited in the face of its success and challenges need to evaluate how the team works, most especially towards productivity. Any organization that fails to evaluate its practices and operations stand a great chance of failing. Hence it is important that a research is conducted into how the project management team in Total Petroleum Ghana Limited operates. The study will however enable the team to identify its shortfalls for productivity and how the team impact on the company's productivity.

### **1.3 RESEARCH QUESTIONS**

This study used the following research questions as a guide during the process of carrying out the research activities:

1. What are the significant benefits of construction project team integration in TPGL?
2. What are the critical challenges associated with team integration in construction project management in TPGL?
3. What strategies can help improve construction project team integration in TPGL in a sustainable way?

### **1.4 AIM**

The aim of the study is to examine the importance of construction project team integration in construction project delivery at Total Petroleum Ghana Limited (TPGL)

### **1.5 RESEARCH OBJECTIVES**

In particular the study seeks to achieve the following objectives:

1. Identify the significant benefits of construction project team integration in TPGL.
2. To identify the critical challenges associated with team integration in construction project management in TPGL.
3. To propose strategies to improve construction project team integration in TPGL.

## **1.6 SIGNIFICANCE OF THE STUDY**

Many project managers, project mentors, technical leads, vendors, customers, business analyst, etc. in the construction industry disparage the significance of group working in their project conveyance and trust that on the off chance that they can control time, cost, and quality in a project, at that point the achievement of the project is ensured. On occasion, project directors and different partners disregard project group combination and this at last affects time, cost and quality imperatives of their projects fundamentally. The consequences of this investigation will enlighten management of Total Petroleum Ghana Limited on how project team integration leads to effective implementation of construction projects delivery. From a managerial perspective, this investigation, this will reassure top organization and project administrators to improve their understanding of the connections among group viability. Along these lines, they will know how to develop a reasonable a viable project group by focusing on particular group adequacy factors and spur their associates to cooperate to wind up an exceptionally compelling group. This will enable further discussions and recommendations on how the industry can move towards the realization of integration, which has been suggested as a means of improving project team performance. This will empower facilitate discourses and proposals on how the business can move towards the

acknowledgment of coordination, which has been recommended as a method for enhancing project group execution.

## **1.7 SCOPE OF THE STUDY**

There are many multinational oil marketing companies in Ghana and the available areas of study were large, but this study is limited to the Engineering Department of Total Petroleum Ghana Limited, such as project managers, project supervisors, TPG contractors and TPG suppliers. Total Petroleum Ghana Limited which is a world known multinational Company by examining its best practices. The combination of work and school also limited the scope of the research.

## **1.8 RESEARCH METHOD**

In this study, a case study strategy was adopted. This approach is described as a comprehensive approach applied to a specific group or participants. The study population was the key and relevant officials of Total Ghana's Engineering Department such as project managers, project supervisors, project team members and other important individuals deemed to possess information were relevant for the study. A non-probability sampling technique was employed in the study. Under this sampling technique, purposive sampling was used. The study used data from both primary and secondary sources. The study basically was a descriptive survey research; hence the study relied mainly on questionnaire in ensuring that the objectives of the research are covered in order to make it effective. To test the validity and the reliability of the data, pilot-testing of the instrument was conducted by the researcher. To prove the validity and reliability of the instruments, the questionnaire was subjected to experts review. Statistical package for social scientists (SPSS) software and descriptive statistics technique such as mean, standard deviation and rank core, as used to analyse the data.



## **1.9 ORGANIZATION OF THE STUDY**

This study is organized in five chapters. The present chapter introduces the study, problem statement, the study aims and objectives, significance of the study, scope of the study, limitation of the study, outline of the research methodology and organization of the study objectives. Chapter two is devoted to review of relevant theoretical and empirical literature. Chapter three highlights the research and methodology. Empirical results are presented and discussed in chapter four, while chapter five concludes the study. Bibliography and appendices are presented after chapter five.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This section presents both the theoretical and empirical review whereupon the thoughts and opinions created in this investigation are developed. Further, the chapter contains considerations and thoughts shared by different writers and authors on the topic under investigation with a specific end goal to put the examination in a proper theoretical and observational points of interest.

#### **2.2 THEORETICAL FRAMEWORK**

##### **2.2.1 THEORIES OF TEAMS**

This investigation is based on the Tuckman's model which has five phases of group working (i.e. shaping, raging, norming, executing and also the last phase of deferring). Belbin (2004) takes a peek at the requirements for a group and matches to individuals with the required attributes and experience.

##### **2.2.1.1 Tuckman's model**

Tuckman's model declares that as the groups makes construction and limits, associations develop, as well as the pioneer changes movement style. Starting with an organizing style, experiencing education, by then taking an energy, finishing naming and generally isolated. Currently the group might make a successor leader and the past pioneer can proceed forward to build up another group. The building up of team conduct and organization style can be viewed clearly in the Tannenbaum and Schmidt Continuum - the expert and opportunity connected by team leader increases while the control of the leader lessens (Tuckman, 1977).

### **2.2.1.2 Belbin's Team Roles Theory**

Belbin (2004) made a few tests that comprised of the basics of her theory. The consequences of her investigations constituted a model of administering groups considering the parts required for the achievement of that group. Belbin depicted group parts as a hireling member, who encouraged the advance of the group overall with his execution, structure of group in general with his execution, structure of others. She posited that colleagues have two kinds of parts. The first, as depicted in part hypothesis, run of the mill utilitarian part. The second kind is the group role(s). Group part portrays how appropriate the part is for the group, not the capacities. In this model the part is portrayed with six variables, to be specific, identity, mental capacities, inspiration, values, field limitations and experience and part learning. In any case, Belbin (2004) did not exhibit how the vast majority of the progressions could be clarified by each factor. Rather, she safeguarded the assessment that elite groups required an adjusted dissemination of the considerable number of parts inside the group. Belbin (2004) additionally suspected that group part idea ought to be recognized from the idea of utilitarian part that focuses out occupation related operational and strategy learning. Subsequently, a few individuals may have the same useful part yet at the same time have distinctive group role(s).

Belbin (2004) draws in the thoughtfulness regarding the association between the requirements for various group parts winning at various phases of the advancement procedure of the group. The said six phases are as per the following; 1) Deciding the requirements. 2) Thinking of thoughts. 3) Detailing the plans, 4) Acknowledgment of the thoughts, 5) Framing the group and 6) finish of the activity. As the principal organizes the Shaper and Organizer will be required for the most part while the Completer-Finishers and Executed will come in the later stages. Toward the starting, she marked some portion of the group as; Executive,

Shaper, Plant, Asset Examiner, Screen Evaluator, Group Labourer, institution Specialist and Completer. She later renamed the Administrator as "Co-ordinator" and the Organization Labourer as "Implementer" and he included a ninth part as "Expert". Portion of the group were partitioned into three gatherings; activity parts (Shaper, Executed and Completer Finisher), social parts (Co-ordinator, Group labourer and Asset Examiner) and thinking parts (Plant, Screen Evaluator and Pro). Belbin Group Part Hypothesis is relevant in this investigation since it will help in recognizing reasonable character of the colleague.

### **2.3 Project Teams**

The experts work together inter-connectedly in groups on a number of occasions. They do not and most often have no prior knowledge of one another. Such group of experts can be considered impactful and effective if their performance leads to a progressive project which both maintains its individual membership while satisfying their individual requirement. The achievement of the project is estimated by the fulfilment of the customer while that of the individuals by articulation of their satisfaction and need to keep cooperating (Stewart et al., 2009). For the groups to be viable they should have the capacity to build up their project by setting destinations, choosing plans and characterizing parts and obligations. Be that as it may, to assist the group with working together gainfully there is a need to make transparent correspondence channels, build up group esteems and create standard procedures. Inability to deliver these issues prompts infighting and no assignment to achieve (Nash, 2011). Right off the bat in the teambuilding procedure, colleagues should express their obligations, duties and specialist levels to alternate individuals.

This activity furnishes other colleagues with first-hand learning of who they have to work with to understand a specific issue. Members need to clarify why they have specific obligations and duties. For instance, the plan build is not required to make field visits just to

be a master for contract consistence however to confirm the outline they are at risk for is being done. Colleagues cannot talk responsibility and social contribution except if they have the essential information, aptitudes and capacity. Individuals' ability to give alluring sources of contributions can be gotten either through viable colleague determination or through tutoring and advancement. Team building is essential for the fruitful achievement of any project. The goal of the group is to convey a project that finishes on time, is on or under spending plan, is productive to all colleagues, bereft of cases, and results in a fulfilled proprietor. Contentions, documentation fights, doing hurtful activities out of disdain, and other diverting activities may result in no less than a disagreeable workplace and more probable an unsuccessful project (Cheng et al., 2010).

## **2.4 Fragmentation Within the Construction Industry**

The Reconsidering Construction Report (Egan, 2008) as well as the Accelerating Change Report (Egan, 2012) featured that execution of item conveyance by the construction business is flexible. Time and cost attacks are typical likewise unreasonably numerous assets are utilized to redress surrenders. This poor execution has been somewhat ascribed to the powerlessness of project members to cooperate successfully (Evbuomwan and Anumba, 2008). The plan stage has customarily been dealt with as a different movement to the construction stage (Anumba et al., 2012). Therefore, a large number of the groups included work towards separately characterized targets that are regularly in struggle with each other. Achievement is regularly characterized regarding the accomplishment of individual authoritative measurements as opposed to the aggregate project results (Cornick and Mather, 2009). Accordingly, the construction business has not completely profit by the expanded efficiency and item quality that can result from cooperation (Glassop, 2002; Hayes, 2012).

A classical construction project is a collective undertaking that includes various diverse organizations united to create "the construction project group". This group is in charge of the outline and construction of the project (Alshaw and Faraj, 2012). Thus, the construction business is composed around particular exchanges and capacities, with the project colleagues being chosen based on the specialized and money related soundness of outline and the intensity of the delicate whole (Cornick and Mather, 2009). Choice procedures have along these lines concentrated on organizations singular professional ability as against the total abilities to integrate and collaborate appropriately. This has brought about the fracture of the distinctive members in the construction project and therefore the division of plan and construction information. Unreasonable outline variations and superfluous risk assertions possess along these lines expanded making genuine project life-cycle examination hard to accomplish (Loo, 2003).

This divided way to deal with project obtainment and item conveyance forms every now and again prompt project groups being described by ill-disposed connections, an absence of straightforwardness and question. This, thusly, regularly results in an accuse culture whereby the different colleagues try to limit their level of introduction to poor execution, instead of cooperating in a collective of trust, participation and coordinated effort. As most construction project groups involve members from various organizations that meet up to shape transitory organizations went for accomplishing the regular goal of conveying a project (Jefferies et al., 2009) the way toward incorporating previous organization centred individuals' workgroups stays basic if the different groups in a construction project stand to cooperate viably. Whichever technique or formwork which unites the different project parties, drawing upon the aggregate quality of the considerable number of groups, can possibly add to the

accomplishment of the item that the group conveys (Akintoye, McIntosh, 2010; Howell, 2009; Payne, 2003).

## **2.5 Benefits of Construction Project Team Integration**

According to Baiden et al. (2006), the integration can be portrayed as the introduction of "working practice, strategies as well as practices that make a philosophy of proficient likewise powerful coordinated effort by people and organizations. They likewise characterized the expression "incorporated construction project group" to portray an exceptionally viable and productive collective group in charge of the plan and projects construction. Rahman and Kumaraswamy (2008) mentioned that genuine "integration" in construction projects suggests activation of collective endeavours from project colleagues likewise coherence of amicable connections leading to disposing of any erosion between them in the midst of task execution to ensure a motivation for money and upgraded project conveyance.

Integration can be regarded as the converging of various controls or organizations with various objectives, needs and societies into a durable and commonly supporting unit (Austin et al., 2012; Jaafari, 2009). Coordinated methodologies request that people from different organizations cooperate to accomplish normal achievable project objectives through the sharing of data. This implies distinctive organization forms and hierarchical societies must be adjusted in a shared way. Mix is regularly perceived as a ceaseless procedure with the goal of enhancing group culture and expert demeanours (Howell, 2009; Dainty et al., 2011).

In construction, incorporation is utilized to portray the presentation of practices in working, techniques as well as practices that make a philosophy of proficient likewise compelling joint effort via people and organizations (Strategic Forum for Construction, 2003; Vyse, 2011; Lennard et al., 2012). It advances a workplace where data is unreservedly traded between the

diverse members. The term "incorporated construction project group" has been utilized in this examination to describe an exceedingly successful and effective community-oriented group in charge of the plan and construction of a project. The group unites different abilities and learning and evacuates the customary hindrances between those with duty regarding plan and construction in a manner enhancing the viable likewise productive conveyance of the project (Achieving Excellence in Construction, 2003; Akintoye and McIntosh, 2010; Fleming and Koppelman, 2010).

The conveyance group in a construction project depicting as completely incorporated when it:

- Has a solitary concentration and goals for the project (Love and Gunasekaran, 2008; Strategic Forum for Construction, 2003; Anumba, et al., 2012);
- Operates without limits among the different association individuals (Vyse, 2001; Bromley et al., 2003);
- Works towards commonly gainful results by guaranteeing that every one of the individuals bolster each other and accomplishments are shared all through the group (Love and Gunasekaran, 2008; Strategic Forum for Construction, 2003; Anumba, et al., 2012);
- Is ready to foresee all the more precisely, time and cost evaluates by completely using the aggregate abilities and aptitude of all gatherings [Love and Gunasekaran, 2008; Strategic Forum for Construction, 2003; Anumba, et al., 2012);
- Shares data unreservedly among its individuals to such an extent that entrance isn't limited to particular callings and hierarchical units inside the group (Cornick, Mather, 2009; Strategic Forum for Construction, 2003; Anumba, et al., 2012);
- Has an adaptable part synthesis and along these lines ready to react to change throughout the project period (Evbuomwan and Anumba, 2008; Baiden et al., 2013);



- Has another character and is co-found, as a rule in a given normal space (Strategic Forum for Construction, 2003; Bromley et al., 2003).
- Offers its individuals measure up to chances to add to the conveyance procedure (Evbuomwan and Anumba, 2008; Baiden et al., 2013);
- Operates in a climate where connections are fair and individuals are regarded and has a "no fault" culture (Evbuomwan and Anumba, 2008; Baiden et al., 2003);

From the construction point of view, integration regularly insinuates network arranged working practices, strategies and practices that propel a circumstance whereas data is unreservedly traded amongst the parties involved in the construction (Baiden, and Price, 2011). Incorporation additionally has been referred to as a method for enhancing the project conveyance group execution as well as subsequently impacts projects execution (Egan, 2012; Constructing Excellence, 2004; Strategic Forum for Construction, 2003). Baiden et al. (2011); Forques and Koskela (2009) expressed that the construction industry comprised of a limited category of organizations and meetings of people from different background, different cultures and administration style though per integral capabilities and mastery necessary for the conveyance of projects.

Alsha wi and Faraj (2012) included that normal construction projects include coordinated attempt of several institutions combined within the projects terms to make 'project groups'. The notion of aggressive circumstances within construction industries has stimulated the intensifying requirements for the incorporation of every participant in the construction project in a multi-disciplinary group at both administration and plan usage stages of the project (Evbuomwana, and Anumbab, 2008).

**Table 2. 1 Summary of Potential Benefits of Construction Project Team Integration**

<b>No.</b>	<b>Benefits of Construction projects</b>	<b>Source</b>
1	Build efficient and effective collaboration of culture	Baiden et al. (2006)
2	Mobilization of collaborative efforts	Rahman and Kumaraswamy (2008)
3	Needs and cultures into a cohesive and mutually supporting unit	Austin et al. (2002); Jaafari, (2009).
4	Improving team culture and professional attitudes	Howell (1996); Dainty et al. (2001).
5	Build efficient and effective collaboration of culture	Vyse (2011); Lennard et al. (2012).
6	Team conveys different skills and knowledge together	Fleming and Koppelman (1996), Akintoye and McIntosh (2010)
7	Improving the project delivery team performance and hence influences project performance	Egan (2002); Strategic Forum for Construction (2003). Baiden et al. (2011)
8	Complementary skills and expertise needed for the delivery of a project	Forques and Koskela (2009).
9	Has a solitary focus and objectives for the project	Love and Gunasekaran (1998); Anumba, et al., 2012)
10	Guaranteeing that every member helps each other and achievements are shared throughout the team	Love and Gunasekaran (1998); Anumba, et al., 2012)
11	Shares information freely among its members	Cornick and Mather (1999); Anumba, et al., 2012);
12	Operates in an atmosphere where relationships are equitable, and members are respected.	Evbuomwan and Anumba (1998); Baiden et al. (2003);

Source: Field Study (2018)

## **2.6 Key Practice Indicators of Project Team Integration**

A survey on pointers of team incorporation carried out in construction projects recognized six main practices markers for estimating team incorporation. The accompanying areas quickly talk about these training markers for fruitful team incorporation in projects pertaining construction.

### **2.6.1 Focusing on goals and objectives**

Moore and Dainty (2009) and Baiden et al. (2006) concurred that concentrating on objectives as well as goals are key markers of team incorporation practices in construction projects. The production of a solitary centred projects cultures has beforehand been proposed by Moore and Dainty (2009) as a method for uniting different experts. Love et al. (2008) expressed that general projects viability likewise proficiency will rely upon the coordinated endeavours of the capacity of the team of the construction to centre and cooperate towards shared objectives inside the authoritative formwork of the projects. The objectives and goals might be accomplished if the colleagues cooperate in a develop situation for the advantage of everyone engaged with the procedure, supporting each other, distributing data and skills (Strategic Forum for Construction, 2003).

Forques and Koskela (2009) included that focusing on objectives and goals entails the full participation of every member come out with a common perspective of the project reason; concur the most ideal approach to accomplish it, and the way to remain on target. Ochieng and Price (2009) recommended that projects supervisors ought to be able to comprehend and plainly confirm and explain the project objectives and destinations to the team as it can impact on the viability of team execution on project. It is likewise important that the project conveyance team, notwithstanding comprehending what is determined as "esteem", comprehends the hidden elements and prerequisites of individual partner esteem,

requirements, interests, and so forth with a specific end goal to accomplish the objectives and destinations of the project (Jørgensen and Emmitt, 2009).

### **2.6.2 Seamless operation with no organizational defined boundaries**

The motivation behind a coordinated project team (IPT) is to unite differing gatherings of individuals and consolidate them into a consistent team for the quest for shared objectives (Strategic Forum for Construction, 2003). Forques and Koskela (2009) clarified that the IPT comprises of a partnership of agents from various hierarchical and corporate societies, and that all parts of the project are to be examined with the different trains inside the team, keeping in mind the end goal to defeat operational contrasts out in the open and private segment organizations (Moore and Antill, 2001). To fill in as member of a team effectively as well as cooperatively, it is basic to have certain level of attachment of team culture (Ochieng and Price, 2009). The Office of Government Commence (2003) additionally included that it is fundamental for coordinated project teams to compose and incorporate their parts likewise obligations to act cooperatively among multi-disciplinary teams. Cicmil and Marshall (2005) said that shared connection in multi-party coalitions is the way to coordinating the project team and understanding the multifaceted nature of construction projects.

### **2.6.3 Trust and Respect**

Additional imperative key pointer of team incorporation exercise is building trust and regard among the colleagues (Forques and Koskela, 2009). At the point when trust lacks as well as the diligence of the 'old' methods for exploiting win, states of mind and doubts seen by the members of the project team results in pressures and issues between colleagues (Cicmil and Marshall, 2005). Absence of trust and responsibility are critical variables that can dissuade the advancement of coordinated teams (Rahman and Kumaraswamy, 2018). A standout

amongst the most principal contrasts in the synergistic approach is the prerequisite to confide in other colleagues and perceive that they are attempting to accomplish the plain best aftereffects of which they are proficient (Strategic Forum for Construction, 2003). Dainty et al. (2001) additionally expressed that it is indispensable for construction organizations to create trust and comprehension with their workings accomplices as it can require some social changes or attitudinal move inside organizations in the long haul. Common comprehension and regard for the whole project team must be consolidated keeping in mind the end goal to accomplish the fruitful culmination of present-day construction projects (Moore and Dainty, 2001).

Baiden et al. (2006) included that the early arrangement of the project team and ceaseless shared data can contribute altogether to measure up to regard for every one of the teams engaged with the project. Sharing of data and incorporation of formworks inside the project team involves trust and coordination (Cheng, et al., 2010). Briscoe and Dainty (2005) clarified that one of the principle reasons why data stream between project teams falls flat was because of an absence of want to cause trust between the gatherings associated with the construction procedure.

#### **2.6.4 Communication**

Numerous writers, Cheng, et al. (2010); El-Gohary and El-Diraby (2010); Briscoe and Dainty (2005) recognized communication as one of the centre markers in upgrading the act of team incorporation in projects concerning construction. As portrayed by Love et al. (1998), communication is connected to team adequacy, coordination of work divisions crosswise over authoritative stages, attributes of successful supervision, work fulfilment, and in general hierarchical viability. By building up communication streams, association designs and other

social reactions to unforeseen change occasions, the nature of any expert and social interfaces can be set up (Moore and Dainty, 2011).

Evbuomwan and Anumba (2008) established that absence of communication between every single key player in any construction project in a multi-disciplinary team has prompted trouble in the advancement procedure for both project administration and plan usage stages. Keeping in mind the end goal to decrease the multifaceted nature of the outline execution process, brilliant communication between the primary project workplaces and on location must be built up (Ochieng and Price, 2009). Moore and Dainty (2011) included that communication obstructions between project teams had left the construction team relatively fringe to the plan advancement, regardless of the significance of their duties in dealing with the usage of configuration changes. They additionally included that with a multi-disciplinary project team, communication formworks could be enhanced as they will urge eye to eye connections likewise collaboration amongst colleagues. Creating viable communication formworks all through the construction store network will guarantee great and solid streams of data; building up components for issue goals and for producing included an incentive into projects (Briscoe and Dainty, 2005).

This can be executed by utilizing various systems and devices that could help the project team to empower open communication and limit the boundaries to data stream. El-Gohary and El Diraby (2010) said that utilizing ICT formworks, for example, a gateway-based formwork, will advance upgraded communication, coordination, and joint effort among different controls and partners. Jorgenson and Emmitt (2009) additionally included that assistance and initiative had all the earmarks of being a crucial method for accomplishing viable communication between the construction experts and different partners.

### **2.6.5 Sharing Data**

Sharing data is likewise observed as a major marker of team incorporation practice (Alshawhi and Faraj, 2004; Kajewski et al., 2008). As per Baiden et al. (2006), projects data ought to be accessible, open as well available to extend colleagues as a contribution for productive basic leadership and keeping in mind the end goal to make compelling incorporated project team. The test aims to guarantee that the correct data gets to the fitting individual at the perfect period (Baiden and Price, 2011). The absence of data/reaction from project partners winds up basic for advancing with projects choices (Jørgensen and Emmitt, 2009). The incorporated project team ought to be a situation for transparency, where shared data is basic for common regard and compelling joint effort (Strategic Forum for Construction, 2003). Each colleague should meet routinely to share data, talk about the project designs, any issues brought and produce thoughts up keeping in mind the end goal to accomplish the destinations of the project. Incorporation among all the key players in construction is fruitful if there is a similarity of administration and data formworks that could upgrade data stream among project team (Dulaimi, 2002).

For example, web-based business and other electronic formworks for trade of data over the store network ought to be embraced to improve integration. Data can be transmitted to all extend parties by the brought together formwork by means of a halfway available area built up to save electronic data, or systems for exchanging the electronic data to every group (Karlsson et al., 2008). Such techniques to create IT apparatuses to help multi-disciplinary team communication would add to easy and powerful data and sharing of information (Dulaimi et al., 2012). The quickness of interchanges, institutionalization, as well as availability of data combined with particular procedures could lead to critical changes in institutions and within a short time period form (Alshawhi and Faraj, 2012). It appears to be

clear as Evbuomwan and Anumba (2008) specified that it is necessary to add up to data concerning projects incorporated in a regular arrangement as well as condition. This will guarantee that the data pertaining to the project is predictable, with every member in the project approaching a similar data.

#### **2.6.6 Integrated ICT systems**

Love et al. (2008) saw one of the key pointers of incorporation of team practices, as the capacity of the projects teams to use ICT formworks in upgrading conveyance procedure and to lead the project to accomplish adjusted objectives. Essentially, the ICT incorporation formworks would go about as a typical formwork and open data channels to give enhanced comprehension of customer's prerequisites likewise in addition enhance correspondence amid projects teams (Strategic Forum for Construction, 2003). Use of ICT formworks as an apparatus in construction projects is viewed as an imperative component in creating incorporated construction conditions among construction teams (Alshawi and Faraj, 2012). As expressed by Karlsson et al. (2008), the utilization of the web, email, and different advancements has been relentlessly separating into the way toward making a simultaneous building (CE) condition and empowering more coordinated and community-oriented endeavours between project teams.

Moore and Antill (2011) quickly clarified that it is conceivable to beat the absence of communication and data stream because of geographic partition. This can be accomplished through the capacity to unite all partners inside a typical electronic system. For example, it should be possible by holding on the web meetings utilizing the web as a medium of trading data. Cheng et al. (2010) included that organizations can make virtual channels where individuals can convey and team up with each other. The use of the web as a communication arrange has risen as an approach to coordinate project teams by appropriating data in an



adaptable, versatile, and reusable way. Kajewski et al. (2008) additionally explained that ICT could be viewed as a method in enhancing the idea of project team execution by decreasing all the more every day errands (e.g. record-continuing, enhancing communication, and so forth.) to permit colleagues to focus energies on being more inventive and imaginative.

## **2.7 Challenges of Team Integration in Construction Project**

The key difficulties to team building are: tight project plan, spending requirements, diverse viewpoint or states of mind of the colleagues all along the research objectives, inappropriate communication, and absence of authority and the tag of war among the colleagues (Dainty et al., 2013). Each project administration design entails the parts of period, cost and quality yet the human asset is quite often immaculate in these plans/reports. It is vital to gauge the team's too singular colleague's proficiency and inspiration levels occasionally amid the whole life cycle of the project with the goal that viable team building measures can be embraced to enhance execution if the outcomes demonstrate a brought down effectiveness and inspiration levels (Dainty et al., 2013). Construction project teams endeavouring to coordinate face significant difficulties. The conventional project achievement criteria are cost, time and quality, which are fairly rough and excessively short-sighted measures of execution (Dainty et al., 2013). In any case, the construction business has kept on harping on these outturn measures, despite the fact that the business that draws on the commitment of a scope of experts meeting up to supplement each other's endeavours and abilities.

All together for the business to completely profit by the differing mastery display among project groups. Such customary drivers must be supplanted with different measures of execution. The conduct of individuals should be changed with a specific end goal to make a fitting project culture for effective project conveyance. A key test, consequently, is to supplant conventional project drivers with results identified with social and social change.

Along these lines, the social changes required to create more appropriate project societies will help project teams to meet a projects quality prerequisite at the correct cost and on time (Dainty et al., 2013). The moderately brief term of most construction projects and the impermanent idea of many project teams form noteworthy obstructions to the acknowledgment of such a reasonable project culture. Another key factor that intensifies this issue is the changing arrangement of project teams over the project life. Banding together hence offers an atmosphere where the fitting society can be sustained over various projects. On the off chance that some time is permitted before the beginning of the project to empower the members to cooperate on the underlying outline period of the project, people will have the chance to become acquainted with each other and form commonly concurred objectives previously work really starts nearby (Dainty et al., 2013).

The appeal of work with no extent of control for groups and basic leadership on how the popularity can be met can prompt representatives encountering abnormal amounts of pressure and work weight (Askenazy, 2001). The authorities are isolated into two gatherings with the main gathering upholding for cooperation for positive effects in organization on representatives, for example, diminishing the rate of work wounds, less nonattendances from work and expanded work efficiency. The other gathering instructs against the utilization with respect to construction project group joining in organization contending that they may effectively affect groups by expanding business related medical issues and the danger of word related risks' (Askenazy, 2001; Brenner, Fairris and Ruser, 2004).

The pace of work in the office can be expanded however work revolution and more noteworthy duty of workers for nature of the administrations advertised. The revolution of project groups to their occupations and fast hierarchical changes that are encouraged by generation forms that are adaptable can diminish the odds of specialists to enhance their

wellbeing along work schedules as well as learning at work. As indicated by Kaye and Jordan-Evans (1999), the presentation of new types of work association, including collaboration, prompted an expanded outstanding burden and an expansion in time weight caused by a staff deficiency and specialized issues. The examination additionally noticed that the presentation construction venture group reconciliation in organization is trailed by escalated work. The high power of work can make issues the construction venture group joining if the augmented activity isn't joined by an incredible plausibility for authority on an individual's work.

As indicated by Ketchum and Trist (1992), there are disagreements with regards to practices in firms that prompt superior of workers and work life adjust arrangements. Filling in as a group in bunches assumes a bigger part in high work requests. Individuals who work in groups consider their work in their spare time regularly than those not working in gatherings. In this manner, collaboration isn't useful for workers' social life. Basing on these discoveries, it is vital that the construction venture group coordination to investigations the impacts of cooperation to the individual undertaking colleagues before embracing venture group combination as a system for accomplishing hierarchical objectives.

**Table 2. 2 Summary of Challenges of Team Integration in Construction Project**

<b>No.</b>	<b>Challenges of Team Integration</b>	<b>Source</b>
1	Improper communication, lack of leadership and the power war among the team members	Dainty et al. (2001)
2	Lowered efficiency and motivation levels	Dainty et al. (2001)
3	Cost, time and quality,	Dainty et al. (2001)
4	Relatively short duration of most construction projects	Dainty et al. (2001)

5	The temporary nature of many project teams	Dainty et al. (2001)
6	Changing composition of project teams over the project life	Dainty et al. (2001)
7	Replace traditional project drivers	Dainty et al. (2001)
8	High demand of work with no scope of control	Askenazy (2001)
9	Detrimental effects on teams by increasing work-related health problems	Askenazy (2001); Brenner, Fairris and Ruser (2004)
10	Led to an increased workload and an increase in time pressure	Kaye and Jordan-Evans (1999)
11	There is a conflict between the practices in organizations	Ketchum and Trist (1992)

Source: Field Study (2018)

## 2.8 Suggestion of Team Integration in Construction Project

Moore and Dainty (2002) recommend that experts need to consider themselves to be an individual from a project team instead of as individuals from their individual controls. Appropriately, the different gatherings that meet up to convey a project are supposed to readjust their activities by regarding every part as an equivalent partner and an essential player in the project team. These are noteworthy manners by which singular commitments both at the individual and hierarchical level can be misused. In the event that persistent change in project conveyance is to be accomplished using teams in the construction, at that point there should be a formwork or methods for estimating how very much coordinated a team is and imperatively, how this progression after some time. The test for the construction project team is to build up an estimation formwork that gives a solid appraisal of how well colleagues are cooperating. By consistently estimating team integration against such a device,

execution would then be able to be overseen proactively, as opposed to rectifying poor execution after it has happened (Dainty et al., 2013).

**Table 2. 3 Summary of Suggestion of Team Integration in Construction Project**

No.	Challenges of Team Integration	Source
1	Professionals need to see themselves as a member of a project team rather than as members of their individual disciplines	Moore and Dainty (2001)
2	Establish a measurement system that provides a reliable assessment of how well team members are working together	Dainty et al. (2001)
3	Needs to be a system or means of measuring how well integrated a team is and importantly, how this change over time	Dainty et al. (2001)
4	Treating each member as an equal stakeholder and an important player in the project team	Dainty et al. (2001)

Source: Field Study (2018)

## 2.9 Empirical Review

Webber (2008) studied the impact of collaborating with the customer through mixed administration on accomplishing better customer relationship, and in this manner better undertaking execution. The examination demonstrated that customer's trust prompt better group trust, group union, and group execution (Webber, 2008) which was in conformance with Karlsen et al. (2008) consider ends. Pinto et al. (1991) additionally examined the effect of trust between task proprietors and contractual workers, demonstrating trust significance in better undertaking execution (Pinto et al., 1991). Trust, among different elements, was additionally recognized as a key pointer for store network connections in development and was tried for its effect on task execution. The examination reasoned that the store network coordinated effort and banding together is enter in taking care of execution issues (Meng,

2012). Cheung et al. (2013) built up a model that exhibited how trust influences correspondence which as needs be impacts venture execution (Cheung et al. 2013).

## **2.10 Conclusion**

A viable team is the fundamental key factor for project achievement. Teams in the construction business are constituted of various experts from various firms and in some cases obscure to each other. This makes team administration a noteworthy test. Viable team pioneer who is both in fact and socially-enabled, very much adjusted team, with supplementing parts, and a domain helpful for working and project methodologies are factors that add to accomplishment of a project. The real test confronting the construction experts is poor relational abilities because of their distinctive expert foundation. Absence of project administration abilities prompts lack of common sense and asset designation making coordination of the team troublesome as individuals don't know about their parts at various stages. Tuckman's shaping; raging, Norming, performing model and Belbin's Team Parts Hypothesis will help in understanding the stages a team experiences and adjusting of colleagues to have a compelling team. A valuable team atmosphere would rouse the colleagues and a similar will consider the general team execution. Great administration assumes an essential part in making a positive team atmosphere. The next chapter will explain how the research was actually carried out.

## **CHAPTER THREE**

### **RESEARCH METHOD**

#### **3.1 Introduction**

This chapter presents a background against which data was gathered. It introduces the reader to various methodological aspects of study which are necessary for the completion of the study. More importantly, this chapter discussed the approaches and techniques the researcher used when collecting data, analysing the data and presenting the findings.

#### **3.2 Research Design**

Saunders, Lewis and Thornhill (2009) characterizes a research design as the game plan of conditions for gathering and investigation of information in a way that intends to consolidate significance to the exploration reason with economy in system. Research design can either be descriptive, exploratory, or explanatory (Saunders et al., 2012). This research adopted the descriptive research design. A descriptive research design can be characterised as a method of assembling data so as to answer questions regarding the present position in the study. It importantly encompasses collecting information that describes happenings and subsequently establishes, arranges, represents and accordingly describe the data.

#### **3.3 Research Strategy**

In this study, a case study was adopted. This strategy is described as a comprehensive approach applied to a specific group or participants. In this regard, every aspect, which affects the subject of interest is analysed to determine patterns and causes for behaviour. A case study is depicted as a phenomenon of some sort occurring in a bounded context (Miles and Huberman, (2014). Yin (2014) further posits that in a case study a “how” or “why” question is being solicited with respect to a contemporary set from occasions which the agent

has practically no control by any stretch of the imagination. The motivation behind utilizing the case study was to get top to bottom points of interest however much as could reasonably be expected around an occasion, individual or process. Cherry (2010) posit that, the purpose of adopting a case study, is to learn from a case for the purpose of generalization for similar instances. The case study accordingly completes an all-encompassing request by taking a gander at the procedure or practice, the association inside such a procedure and the importance of such collaboration for a blander comprehension of the case under investigation.

### **3.3 Justification for Case Selected**

According to Yin (2014), the definition of population is identifiable total set of elements of interest being investigated by a researcher. Total Petroleum Ghana limited as the population is part of the Total Group, the fourth largest publicly traded integrated international Oil and Gas Company in the World and a key player in the Petroleum Downstream Industry in Ghana. TPGL has a wide retail network coverage of 244 service stations across the ten regions of Ghana. Aside from selling quality fuel, lubricants and car care products, the Company provides a wide range of services to various industries, including Aviation, Bitumen and Mining Industries. Total has achieved its leadership position through regular and significant investments and the consistent implementation of high quality and safety standards resulting in its ISO 9001:2015 certification in 2016 - the first Oil Marketing Company in Ghana to have attained this quality certification. Through the Company's operations, it continues to make a significant contribution to the employment of locals. About 3,000 Ghanaians in different parts of the country have gained employment through the widespread activities of the Company. The Company's recognition as the 4<sup>th</sup> best Company at the 2016 Ghana Club 100 awards and the 1st Oil Marketing Company adjudged at the



Ghana Oil and Gas Awards (GOGA). The Company operations are hugely dependent of the project management. Hence the choice of TPGL is appropriate.

The study population was the key and relevant officials of Engineering Department at TPGL such as project managers, project supervisors, project team members and other important individuals, Contractors and Suppliers deemed to possess information relevant for the study and were all in Greater Accra Region.

**Table 3. 1 Total Engineering Department:**

<b>Engineering Team</b>	<b>Number of Staff</b>
Projects Managers	5
Projects Supervisors	15
<b>Contractors</b>	
Civil Contractors	10
Electrical Contractors	5
Mechanical Contractors	10
Suppliers	5

**Source; Field Data, 2018**

### **3.4 Sample Size**

Sample size is the number of elements to be included in the study (Yin, 2014). In conducting a study, it was almost unbearable, time-consuming and too expensive to test every individual in the entire population and that there was the need to decrease the number to manageable size so as to augment effective sampling. Thus, the study cannot sample the entire

respondents in the organization, hence the sample size was 50. This sample size is very representative as it comprises of respondents across different sub-groups of the population.

### **3.5 Sampling Technique**

Sampling technique is the process of selecting a sample from the population to conduct the study upon (Yin, 2014). A non-probability sampling technique was employed in the study. Purposive sampling was used under this sampling technique. The purposive sampling technique is regarded the proper methods for getting respondents who are educated and well side by side with the topic of intrigue. This technique is a non-random sampling where the researcher establishes a criterion devoid of randomness for selecting the sample. The selection of respondents was founded on the way that the qualities of the potential respondents from the example estimate have been recognized to be important to the investigation. This sampling technique provided answers needed to achieve the research questions.

### **3.6 Sources of Data**

This research adopted data from a triangulated source that is data for the research was acquired from both primary and secondary sources. Primary sources of data include questionnaire to be administered to selected project managers, project supervisors, project team members and other important individuals. The questionnaire was developed and approve in consultation with the supervisor. The items subsequently altered and mindfully chosen remembering the examination questions. The secondary sources of data constituted data will be gathered from mainly world wide web (www), bulletins, in-house newsletters, books and journals, and unpublished theses.

### **3.7 Data Collection Instrument**

The study basically was a descriptive survey research; hence the study relied mainly on questionnaire in making sure the objectives underlining the research were answered. The questionnaire was used because it enables the respondents work at their own pace and convenience. Another justification for the usage of questionnaires is due to the great sense of anonymity of respondents that is attached to questionnaires administration. Also, questionnaires administration is best known for its open and honest responses and accepted for its effectiveness when collecting data from a pool of sample. It also facilitates the consolidation the varieties in respondents' views and perceptions. The study was brief and the respondents assured of confidentiality of any information that they will provide. More importantly, the questionnaire were structured questions that were basically closed-ended theme where the participants were asked to indicate their level of agreement via (Likert-scale) indicating the scale (5 -strongly agreed to strongly disagree-1).

### **3.8 Data Collection Procedures**

The researcher personally delivered the copies of the questionnaires to the respondents at their respective offices. The participation was voluntary that is, the consent of them for participation will be sought before administration of the questionnaires. Respondents were requested to carefully indicate the responses by marking the answer according to the available keys. The researcher was then guided the respondents to complete the instrument without inferring with the choice of responses. The assistance involved the explanation of instructions or terminologies so as to get the most valid data for inclusion in the analysis.

### **3.9 Validity and Reliability of Research Instrument**

To test the validity and the reliability of the data, pilot-testing of the instrument was conducted by the researcher. Ten (10) copies of sample questionnaires was pretested using

some selected employees from another company. The data obtained was tested to prove that it gave actual expected information. Improvements were done to the instrument for accuracy. These items were subsequently reconstructed to improve clarity. Further, corrections were made to set up the last poll for the information gathering process. It was after the pre-testing that the researcher decided to use the questionnaire just in gathering the last information for the examination in order to get the required data for the investigation. To prove the validity and reliability of the instruments, the questionnaire was given to my supervisor to study and criticize and then, advice the researcher. This helped the researcher get the needed information to achieve the objective of the research. The importance of this exercise will be that the questions that needed clarity will be amended to get the right information.

### **3.10 Data Analysis**

Data analysis is a statistical technique used in the analysis of data which helps make inferences from the results accrued from the data analysis (Sanders *et al.* 2009). He opines that the method of data analysis is systematic and independent identification of definite nit of analysis. Prior to handling the reactions, the finished surveys were altered for culmination and consistency and was ordered, categorized using statistical packages such as SPSS to make it easier, less costly and time saving. The quantitative data collected was analysed by descriptive analysis such as frequency distribution tables, rank score and percentages to summarize responses for further analysis and facilitate comparison.

### **3.11 Ethical Consideration**

In order to ensure a higher-level ethical consideration, the researcher approached respondents and briefly discussed to them the essence of the study. They were further required to fill the questionnaires designed for the study after while the right to anonymity was ensured. The questioners for the study were collected on the same day after being administered to

respondents. Participation in this study was voluntary and all respondents to be reminded of their right to withdraw at any time during the research.

## CHAPTER FOUR

### DATA PRESENTATION AND DISCUSSION OF RESULTS

#### 4.1 Introduction

This part covers the introduction and examination of the information accumulated from the field, which tries to answer the exploration inquiries in regard of the investigation aims. After the surveys were filled by the respondents and gathered back, they were screened and arranged by the researcher. The researcher gave out 50 questionnaires to the respondents and out of these 40 questionnaires were filled correctly and returned. Ten (10) questionnaires were not returned since the respondents were away on attachment duties outside their workstations. Because of this, the overall return rate was 80%. Subsequently according to the above statistics, the researcher found the return rate adequate for the study to provide valid and reliable conclusions from the data collected. The introduction and examination of the gathered information were done by the utilization of descriptive statistics analytical tools such as mean, standard deviation and rank score.

##### 4.1.1 Respondents' Background Information

Demographic characteristics of the respondents were of importance in this study. These include gender, age, highest level of education, and tenure. The findings are presented below:

Table 4. 1 Gender of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	33	82.5	82.5	82.5
Female	7	17.5	17.5	100.0
Total	40	100.0	100.0	

Source: Field Study (2018)

As reflected in Table 4.1 above, (33, 82.5%) of the entire respondents were males and (7, 17.5%) were females. This indicated that there were more male respondents than female at the Total Ghana's Engineering Services Department.

Table 4. 2 Age of respondents

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
18-25yrs	7	17.5	17.5	17.5
25-29yrs	8	20.0	20.0	37.5
30-34yrs	8	20.0	20.0	57.5
35-39yrs	14	35.0	35.0	92.5
Above 40 years	3	7.5	7.5	100.0
Total	40	100.0	100.0	

Source: Field Study (2018)

Table 4.2 above demonstrates the age distribution of respondents during the study. The results show that, (7, 17.5%) respondents fell within the lowest age group which was below 25 years while the majority of the respondents (14, 35%) were between the ages of 35 - 39, with (8, 20%) respondents indicating 30 to 34 and 25-29 as their age group range. Another set of (3, 7.5%) of Prior to handling the reactions, the finished surveys will be altered for culmination and consistency

Table 4. 3 Tenure of respondents

	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
1 year or less	6	15.0	15.0	15.0
2-3 years	7	17.5	17.5	32.5
3-4 years	13	32.5	32.5	65.0
Above 4 years	14	35.0	35.0	100.0
Total	40	100.0	100.0	

Source: Field Study (2018)

Table 4.3 above presents the discoveries on work involvement as far as the quantity of years that the respondent had work at Total Ghana's Engineering Services Department. The findings show that (14, 35%) of the respondents had worked at the organization for 5 – 7 years, (13, 32%) for at least 3-4 years while (7, 17.5%) had worked for 2-3 years, (6, 15%) for 1 year or less. Thus, majority of the respondents had Total Ghana's Engineering Services Department for somewhere around 4 years which focuses at their sufficient associate with the predominant authoritative culture.

#### **4.2 Analysis of Objectives**

The study articulated three main specific objectives for investigation. In the study, objective one identified the potential benefits of construction project team integration in Total. Objective two also identify the critical challenges associated with team integration in construction project management in Total. Objective three sought to establish strategies to improve construction project team integration in Total. The findings of the results are outlined beneath:



#### 4.2.1 Objective One: Significant benefits of construction project team integration in TPG

The researcher also sought information on significant benefits of construction project team integration in TPG. Table 4.4 present the result

Table 4. 4 Significant benefits of construction project team integration in TPGL

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank Score</b>
Guarantees that all the members support each other, and achievements are shared throughout the team	3.9750	1.12061	1 <sup>st</sup>
Operates in an atmosphere where relationships are equitable, and members are respected	3.9250	1.20655	2 <sup>nd</sup>
Project team integration brings together various skills and knowledge	3.9000	1.17233	3 <sup>rd</sup>
The collaborative objectives of a team building program teaches participants how to work together more effectively.	3.8250	1.27877	4 <sup>th</sup>
Improving team culture and professional attitudes	3.8000	1.13680	5 <sup>th</sup>
The collaborative nature of a team building integration teaches people how to work together more effectively	3.7500	1.25576	6 <sup>th</sup>
Shares information freely among its members	3.7250	1.30064	7 <sup>th</sup>
Project team integration allows employees to be more creative and to use their imagination to accomplish the tasks set before them.	3.7250	1.30064	8 <sup>th</sup>
Mobilization of collaborative efforts	3.6750	1.20655	9 <sup>th</sup>
The effective application of construction project team integration helps to improve co-ordination and flexibility amongst members.	3.6500	1.23101	10 <sup>th</sup>
Project team integration allows co-workers to see and understand that everyone has different skills and approaches to a problem	3.5500	1.29990	11 <sup>th</sup>
Team integration provides the opportunity for staff learn about each other and grow respect for each other in a non-threatening and fun environment.	3.5250	1.28078	12 <sup>th</sup>
Effective construction project team integration promotes a work environment that has a positive impact on both staff and clients	3.5000	1.33973	13 <sup>th</sup>
Complementary skills and expertise needed for the delivery of a project	3.4250	1.27877	14 <sup>th</sup>
Through construction project team integration employees obtain the necessary skills for better individual performance	3.3250	1.38467	15 <sup>th</sup>
Valid N (listwise)			

Source: Field Study (2018)

Analysis of the results on the significant benefits of construction project team integration in Total are presented. From Table 4.4 all the 15 significant benefits of construction project team integration recorded average mean and standard deviation scores as well as their rank scores. The findings show that the benefits of construction project team integration guarantee that every one of the individuals bolster each other and accomplishments are shared all through the group and operates in an atmosphere where relationships are equitable and members are respected with a mean ( $M=3.97$ ;  $SD=1.12$ ) and ( $M=3.92$ ;  $SD=1.2$ ) as shown in Table 4.4. From the findings it was indicated that majority of the respondents agreed that project team integration brings together various skills and knowledge and that collective destinations of a group building program encourages members how to cooperate all the more viably as attained in a mean of ( $M=3.90$ ;  $SD=1.17$ ) and ( $M=3.82$ ;  $SD=1.27$ ) respectively. Obviously, “Improving team culture and professional attitudes” recorded the mean of ( $M=3.80$ ;  $SD=1.36$ ), followed by “Shares information freely among its members” (Mean= $3.72$ ,  $SD=1.30$ ), “Project team integration allows employees to be more creative and to use their imagination to accomplish the tasks set before them” (Mean= $3.72$ ,  $SD=1.30$ ), “Mobilization of collaborative efforts” (Mean= $3.67$ ;  $SD=1.20$ ). The study similarly showed that “Project team integration helps employees to adequately conceptualize social dynamics among each other hence they are able to devise solutions to challenges” (Mean= $3.55$ ,  $SD=1.29$ ) and “Team integration provides the opportunity for staff learn about each other and grow respect for each other in a non-threatening and fun environment” (Mean= $3.52$ ,  $SD=1.28$ ) are the least potential benefits of construction project team integration in Total.

Based on the mean and rank criteria scores respectively, the significant benefits of construction project team integration in Total were; guarantee that every one of the individuals bolster each other and accomplishments are shared all through the group

(M=3.97, RS=1<sup>st</sup>), operates in an atmosphere where relationships are equitable and members are respected (M=3.92, RS=2<sup>nd</sup>), project team integration brings together various skills and knowledge (M=3.90, RS=3<sup>rd</sup>) and collective of a group building program encourages members how to cooperate all the more viably (M=3.82, RS=4<sup>th</sup>).

### **Objective Two: Challenges with team integration in construction project**

The researcher also sought identify the critical challenges associated with team integration in construction project management in Total. The respondents were asked to rank how they identify the challenges associated with team integration in construction project management in Total. Table 4.5 below shows the average mean score and standard deviation as well as rank score.

Table 4. 5 Challenges with team integration in construction project

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank Score</b>
Generally brief length of development venture and the impermanent idea of many task groups	3.9750	1.20868	1 <sup>st</sup>
Clashes cannot be settled when there are uplifted pressures and colleagues make individual assaults or forceful signals	3.9000	1.19400	2 <sup>nd</sup>
Inappropriate correspondence, absence of authority and the power war among the colleagues	3.9000	1.05733	2 <sup>nd</sup>
Employee resistance may result where employees are required to work with other employees with whom they are unfamiliar	3.8500	1.12204	3 <sup>rd</sup>
Absence of responsibility and exertion, struggle between group objectives and individuals' close to home objectives, or poor joint effort.	3.8250	1.15220	4 <sup>th</sup>
Changing piece of task groups over the venture life	3.7500	1.21423	5 <sup>th</sup>
Tight project schedule and budget constraints	3.7000	1.28502	6 <sup>th</sup>
Absence of trust, states of mind and doubts seen by the undertaking group cause pressures and issues among the colleagues	3.7000	1.26491	6 <sup>th</sup>
Not characterizing a convincing vision for the group, not designating, or not speaking to various voting demographics.	3.6250	1.29471	7 <sup>th</sup>
Distinctive standpoint or states of mind of the colleagues towards the undertaking objectives	3.5000	1.13228	8 <sup>th</sup>
Valid N (listwise)			

Source: Field Study (2018)

In view of the mean score obtained from the analysis of the data, the result shows that the challenges with team integration in construction project was the moderately brief length of construction project and the impermanent idea of many task groups as attained in a mean score of (Mean=3.97, SD=1.20). Interesting, a good number of respondents indicated “Improper communication, lack of leadership and the power war among the team members”, and “Conflicts cannot be resolved when there are heightened tensions and team members make personal attacks or aggressive gestures” recording mean score of (Mean=3.90, SD=1.05), and (Mean=3.90, SD=1.19) respectively. The mean score of (M=3.85; SD=1.12) was discovered to be respondents who agreed that workers opposition may result where they are required to work with different workers with whom they are new. According to the study majority agreed that absence of responsibility and exertion, strife between group objectives and individuals' close to home objectives, or poor joint effort attained a higher mean of (M=3.82; SD=1.15), followed by the respondents who agreed that “Changing composition of project teams over the project life” with a mean score of (M=3.75; SD=1.21). As shown in the study, the participants said that tight project schedule and budget constraints and lack of trust, attitudes and suspicions perceived by the project team cause tensions and problems among the team members attained a mean of (M=3.70; SD=1.28) and (M=3.70; SD=1.26) respectively. The study also showed that “Not defining a compelling vision for the team, not delegating, or not representing multiple constituencies” (Mean=3.62; SD=1.29) and “Different outlook or attitudes of the team members towards the project goal” (Mean=3.50, SD=1.13) are the least common challenges with team integration in construction project.

According to the mean and the rank scores, the criterial challenges with team integration in construction project in Total were; generally brief length of development venture and the

impermanent idea of many task group (M=3.97; RS=1<sup>st</sup>) inappropriate correspondence, absence of authority and the power war among the colleagues (M=3.90; RS=2<sup>nd</sup>), clashes cannot be settled when there are uplifted pressures and colleagues make individual assaults or forceful signals (M=3.90; RS=3<sup>rd</sup>) and employee resistance may result where employees are required to work with other employees with whom they are unfamiliar. (M=3.85; RS=4<sup>th</sup>).

#### 4.2.2 Objective Three: Strategies to improve construction project team integration

The researcher also sought to proffer strategies to improve construction project team integration in Total. Below shows the average mean score and standard deviation as well as rank score.

Table 4. 6 Strategies to improve construction project team integration

<b>Descriptive Statistics</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank Score</b>
Common comprehension and regard for the whole venture group must be consolidated with a specific end goal to accomplish the fruitful culmination of current development ventures	3.9250	1.16327	1 <sup>st</sup>
Building active correspondence frameworks amid the development inventory network to guarantee great and solid streams of data	3.8750	1.18078	2 <sup>nd</sup>
Founding components for issue goals and for producing included an incentive into ventures	3.8500	1.18862	3 <sup>rd</sup>
Building trust and regard among the colleagues	3.8250	1.37538	4 <sup>th</sup>
Diminish some of task group obligations or to change the arrangement of pay and rewards	3.7750	1.14326	5 <sup>th</sup>
Incorporated task group ought to be a domain for transparency, where shared data is fundamental for common regard and powerful coordinated effort	3.7750	1.32988	5 <sup>th</sup>
Adequate team training and preparation	3.6750	1.28876	6 <sup>th</sup>
Each colleague should meet consistently to share data, examine the venture designs, any issues brought and create thoughts up keeping in mind the end goal to accomplish the destinations of the undertaking	3.6750	1.26871	6 <sup>th</sup>
Project information should be accessible, open and reachable to all project team members for efficient decision making so as to create effective integrated project teams.	3.6500	1.23101	7 <sup>th</sup>
Create an estimation framework that gives a dependable appraisal of how well colleagues are cooperating	3.6250	1.21291	8 <sup>th</sup>
Valid N (listwise)			

Source: Field Study (2018)

From the data illustrated above, the respondents agreed that shared comprehension and regard for the whole project group must be joined keeping in mind the end goal to accomplish the fruitful consummation of current construction project; building dynamic correspondence frameworks amid the construction store network to guarantee great and dependable streams of data; and establishing systems for issue goals and for creating included an incentive into projects as shown by a mean of (M=3.92; SD=1.16), (M=3.87; SD=1.80) and (M=3.85; SD=1.18). The findings were (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>) highest ranked amongst the items in this segment. As reached in Table 4.6, majority of the respondents agreed (M=3.82; SD=1.37), (M=3.77; SD=1.32), and (M=3.77; SD=1.14), that building trust and regard among the colleagues, coordinated project group ought to be a situation for receptiveness, and decrease some of project team obligations or to change the arrangement of pay and rewards were some of the strategies to improve construction project team integration in Total. The fallouts were the 4<sup>th</sup> and 5<sup>th</sup> highest ranked amid the items in this section. Likewise, the respondents strongly agreed (M=3.67; SD=1.26), (M=3.65; SD=1.23), and (M=3.62; SD=1.21), that each colleague should meet frequently to share data, talk about the venture designs, any issues brought and produce thoughts up so as to accomplish the destinations of the undertaking; venture data ought to be available, open and reachable to all extend colleagues for proficient basic leadership in order to make viable incorporated task groups; and make an estimation framework that gives a solid evaluation of how well colleagues are cooperating. These outcomes were ranked 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> highest among the objects in this segment in the questionnaire administered to the respondents on the field.

Per the data of the mean and rank scores results, the sustainable strategies to improve construction project team integration were; common comprehension and regard for the whole venture group must be consolidated with a specific end goal to accomplish the fruitful

culmination of current development venture (M=3.92; RS=1<sup>st</sup>), building active correspondence frameworks amid the development inventory network to guarantee great and solid streams of data (M=3.87; RS=2<sup>nd</sup>), founding components for issue goals and for producing included an incentive into ventures (M=3.85; RS=3<sup>rd</sup>), and building trust and regard among the colleagues (M=3.82; RS=4<sup>th</sup>),

#### **4.3 Discussion of Results**

The discussion of the outcomes of the study was done in relation to the research objective in order to answer the research question. Based on that, the aim of the study was to examine the importance of construction project team integration in construction project delivery at Total Petroleum Ghana Limited. From the first objective, the study identified the potential benefits of construction project team integration in Total. It was found that project team integration guarantees that all the members support each other and achievements are shared throughout the team. The outcome showed that project team members operated in an air where connections were even-handed and individuals regarded. The research revealed that project team integration combines varieties of expertise and know-how. Findings of the study revealed that collective goals of a group building program instruct members how to cooperate all the more viably. Results obtained from the study revealed that project team integration improved team culture and professional attitudes. It was deduced that project team integration shared information freely among its members.

The discoveries concurred with Baiden et al. (2006) who said that the integration of project could be portrayed as the genesis of “working practices”, techniques and practices that make a habit of proficient and quality joint exertion by organizations and various personalities. Then again, in the work of Rahman and Kumaraswamy (2008) who posited that a genuine consolidation in building projects dictates preparation of cooperative endeavours from project

colleagues and congruity of their amicable connections to dispose of any erosion between them amid project execution to ensure a motivator for money and improved project conveyance.

From the second objective, the study identified the critical challenges associated with team integration in construction project management in Total. The outcome showed generally brief length of development venture and the impermanent idea of many task groups. The study deduced that clashes cannot be settled when there were elevated strains and colleagues make individual assaults or forceful signals. It was seen that inappropriate correspondence, absence of administration and the power war among the colleagues. It was revealed that worker obstruction may result where staff were required to work with different workers with whom they are new. The study found that absence of responsibility and exertion, struggle between group objectives and individuals' close to home objectives, or poor coordinated effort were the other challenges. It was gathered that altering piece of venture groups over the task life and not defining a compelling vision for the team, not delegating, or not representing multiple constituencies were the other the critical challenges associated with team integration in construction project management in Total.

The consequence of the examination validates with Dainty et al. (2001) who said that the key difficulties to team building are: tight project plan, spending imperatives, distinctive standpoint or states of mind of the colleagues towards the project objectives, ill-advised communication, absence of initiative and the power war among the colleagues. Besides, Askenazy (2001) additionally set that the zeal to under no less control or no supervision of teams and basic leadership on how the popularity can be met can prompt workers encountering abnormal amounts of pressure and work weight.



From the objective three, the study sought to establish strategies to improve construction project team integration in Total. It was found that shared comprehension and regard for the whole task group must be consolidated keeping in mind the end goal to accomplish the effective finish of present-day construction projects. The study was trying deduce that positive impact and importance of building an active communication system in process of a supply chain construction. It was gathered that building trust and regard among the colleagues and incorporated venture group ought to be a domain for receptiveness, where shared data was basic for common regard and compelling coordinated effort. The study further revealed that each colleague should meet routinely to share data, talk about the undertaking designs, any issues brought and produce thoughts up so as to accomplish the goals of the venture. Findings from the study indicated that venture data ought to be available, open and reachable to all extend colleagues for proficient basic leadership to make viable incorporated task groups.

The above discoveries concurred with discoveries of Moore and Dainty (2001) who proposed that experts need to consider themselves to be an individual from a project team as opposed to as individuals from their individual controls. Appropriately, the different gatherings that meet up to convey a venture need a reconstruction as a result of regarding every part as an equivalent partner and a key role in the team of project. These are critical manners by which singular commitments both at the individual and hierarchical level can be abused. On the off chance that ceaseless change in project conveyance is to be accomplished using teams in the construction, at that point there should be a formwork or methods for estimating how very much incorporated a team is and essentially, how this change after some time.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The objective of this research is to examine the importance of construction project team integration in construction project delivery at Total Petroleum Ghana Limited. This section takes into consideration the summary of the thesis, conclusions as well as recommendations to guide management.

#### **5.2 Summary of Findings**

As previously outline in the chapter one, the aim of the study was to examine the importance of construction project team integration in construction project delivery at TPGL. Bases on that, the study had three specific objectives; identify the significant benefits of construction project team integration in TPGL; identify the critical challenges associated with team integration in construction project management in TPGL and; establish sustainable strategies to improve construction project team integration in TPGL.

##### **5.2.1 Significant Benefits of Construction Project Team Integration in TPGL;**

With Objective one, the results of this study showed that the significant benefits of construction project team integration in TPGL were; guarantee that every one of the individuals bolster each other and accomplishments are shared all through the group (M=3.97, RS=1st), operates in an atmosphere where relationships are equitable and members are respected (M=3.92, RS=2nd), project team integration brings together various skills and knowledge (M=3.90, RS=3rd) and collective of a group building program encourages members how to cooperate all the more viably (M=3.82, RS=4th).

### **5.2.2 Critical challenges associated with team integration in construction project management in TPGL**

On objective two of this research, the researcher identified the critical challenges associated with team integration in construction project management in TPGL. The outcome shows that, the critical challenges with team integration in construction project in TPGL were; generally brief length of development venture and the impermanent idea of many task group (M=3.97; RS=1st) inappropriate correspondence, absence of authority and the power war among the colleagues (M=3.90; RS=2nd), clashes cannot be settled when there are uplifted pressures and colleagues make individual assaults or forceful signals (M=3.90; RS=3rd) and employee resistance may result where employees are required to work with other employees with whom they are unfamiliar. (M=3.85; RS=4th).

### **5.2.3 Strategies to improve construction project team integration in TPGL**

On the third objective, the study sought to establish strategies to improve construction project team integration in TPGL. The study showed that the sustainable strategies to improve construction project team integration were; common comprehension and regard for the whole venture group must be consolidated with a specific end goal to accomplish the fruitful culmination of current development venture (M=3.92; RS=1st), building active correspondence frameworks amid the development inventory network to guarantee great and solid streams of data (M=3.87; RS=2nd), founding components for issue goals and for producing included an incentive into ventures (M=3.85; RS=3rd), and building trust and regard among the colleague (M=3.82; RS=4th).

### **5.3 Conclusion**

Many exercises of companies are getting to be mind boggling every day because of trend setting innovation and thus emphasizes the importance of construction project team integration in construction project delivery. Project team integration ought to be tutored in the elements of understanding in this manner enhancing team members abilities which will in the end affect convenient conveyance of undertakings. What's more, through cooperation, representatives take in and secure different aptitudes from other colleagues to improve singular execution. Organizations that have established the culture of project team integration in construction project delivery do operate with high quality, speed and are more cost effective in their operations.

The findings of the study indicated that project team integration ensured individual cooperation among members of the team in order to share achievement at the team level. Also, project team ensured that projects are undertaken in an atmosphere where the development of relationships based on mutual respect is a necessity. Again, project team integration brought together various skills and knowledge hence the synergistic goals of a group building program encourages members how to cooperate all the more successfully and proficiently on schedule project delivery. Project team integration improved team culture and professional attitudes as well as the sharing of information among team members.

The findings of the study suggest that generally brief span of development venture and the impermanent idea of many undertaking groups added to inappropriate correspondence, absence of authority and power war among the colleagues, absence of responsibility and exertion, struggle between group objectives and individuals' close to home objectives. These critical challenges were associated with team integration in construction project management in Total Petroleum Ghana Limited (TPGL). The study further posited that common

comprehension and regard for the whole venture group must be consolidated to accomplish the effective fruition of present-day development ventures. Also, building trust and respect among team members in an incorporated undertaking group would flourish in a situation of transparency, shared data, common regard, viable coordinated effort. Besides, venture data ought to be available, open and reachable to all extend colleagues for productive basic leadership in order to make powerful incorporated task groups.

#### **5.4 Recommendations**

In view of the findings that emanated from the study, the following recommendations have been made for considerations in order to improve construction project team integration to ensure construction project delivery at Total Petroleum Ghana Limited.

- Management should provide adequate team building training with much emphasis on self-administration of group and relational aptitudes. These vital abilities improve correspondence and relational relationship in groups while upgrading collaboration and execution.
- It is also recommended that incorporated undertaking group condition ought to advance receptiveness through data sharing which is basic for common regard and compelling coordinated effort.
- Again, it is recommended that common comprehension and regard for the whole venture group must be joined so as to accomplish the effective culmination of present-day development ventures.
- Finally, it is recommended that venture data ought to be available, open and reachable to all extend colleagues for proficient basic leadership in order to make compelling incorporated task groups.

### **5.5 Limitation of the Study**

Throughout completing this examination, the researcher encountered some challenges. These incorporate a few representatives hesitant to discharge the required data for the investigation, inaccessibility of adequate finance, incapability to get to the required materials for the fulfilment of the work, the time slack in getting together with the due date for accommodation of the work and others. The study was carried out under a very limited time period of 2 weeks and as such hampered access to data sources from relevant key informants.

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## APPENDIX

### QUESTIONNAIRE

**Dear Respondent,**

I, JACQUELINE CATHERINE BHAKTA, is a MSc final year student of KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI, GHANA INSTITUTE OF DISTANCE LEARNING, undertaking a research titled “the importance of construction project team integration in construction project delivery at Total Ghana”. This questionnaire is strictly for academic purpose and confidential. Your willingness to respond to this questionnaire is much appreciated. Thank you

#### **Section A: Demographic Information**

1. Gender?

☐ Male      ☐ Female

2. Please indicate your age?

☐ 18-25yrs   ☐ 25-29yrs   ☐ 30-34yrs   ☐ 35-39yrs   ☐ Above 40 years

3. How long have you been employed within this organization?

☐ 1 year or less   ☐ 2-3 years   ☐ 3-4 years   ☐ Above 4 years

4. What is your academic qualification?

☐ Diploma

☐ HND

☐ Bachelor's Degree

☐ Master's Degree

Others (please specify) .....

## SECTION B: Potential benefits of construction project team integration in Total

Please indicate the extent to which you agree or disagree with the following statements which examine the benefits of construction project team integration in Total. Answer by ticking (✓) only one answer in each case. Use the scales below as a guide for all the questions stated below. 5- Strongly agree (SA), 4- Agree (A), 3- Neutral (N), 2 -Disagree (D), 1 -Strongly disagree (SD)

	Statements	SD	D	N	A	SA
1.	Mobilization of collaborative efforts	1	2	3	4	5
2.	Guarantees that all the members support each other, and achievements are shared throughout the team	1	2	3	4	5
3.	Shares information freely among its members	1	2	3	4	5
4.	Operates in an atmosphere where relationships are equitable, and members are respected	1	2	3	4	5
5.	Complementary skills and expertise needed for the delivery of a project	1	2	3	4	5
6.	Project team integration brings together various skills and knowledge	1	2	3	4	5
7.	Improving team culture and professional attitudes	1	2	3	4	5
8.	The collaborative nature of a team building integration teaches people how to work together more effectively	1	2	3	4	5
9.	The effective application of construction project team integration helps to improve co-ordination and flexibility amongst members.	1	2	3	4	5
10.	Project team integration allows employees to be more creative and to use their imagination to accomplish the tasks set before them.	1	2	3	4	5
11.	Through construction project team integration employees obtain the necessary skills for better individual performance.	1	2	3	4	5
12.	The collaborative objectives of a team building program teaches participants how to work together more effectively.	1	2	3	4	5
13.	Effective construction project team integration promotes a work environment that has a positive impact on both staff and clients	1	2	3	4	5
14.	Project team integration allows co-workers to see and understand that everyone has different skills and approaches to a problem	1	2	3	4	5
15.	Team integration provides the opportunity for staff learn about each other and grow respect for each other in a non-threatening and fun environment.	1	2	3	4	5



### Section C: Challenges with team integration in construction project management

Please indicate the extent to which you agree or disagree with the following statements which identify the challenges with team integration in construction project management. Answer by ticking (✓) only one answer in each case. Use the scales below as a guide for all the questions stated below.

5- Strongly agree (SA)

4- Agree (A)

3- Neutral (N)

2 -Disagree (D)

1 -Strongly disagree (SD)

	Statements	SD	D	N	A	SA
1.	Relatively short duration of construction project and the temporary nature of many project teams					
2.	Tight project schedule and budget constraints					
3.	Changing composition of project teams over the project life					
4.	Different outlook or attitudes of the team members towards the project goals	1	2	3	4	5
5.	Improper communication, lack of leadership and the power war among the team members	1	2	3	4	5
6.	Lack of commitment and effort, conflict between team goals and members' personal goals, or poor collaboration	1	2	3	4	5
7.	Lack of trust, attitudes and suspicions perceived by the project team cause tensions and problems among the team members.	1	2	3	4	5
8.	Not defining a compelling vision for the team, not delegating, or not representing multiple constituencies.	1	2	3	4	5
9.	Conflicts cannot be resolved when there are heightened tensions and team members make personal attacks or aggressive gestures	1	2	3	4	5
10.	Employee resistance may result where employees are required to work with other employees with whom they are unfamiliar	1	2	3	4	5

### Section D: Strategies to improve construction project team integration in Total

Please indicate the extent to which you agree or disagree with the following statements which examine the strategies to improve construction project team integration in. Answer by ticking (✓) only one answer in each case. Use the scales below as a guide for all the questions stated below.

5- Strongly agree (SA)

4- Agree (A)

3- Neutral (N)

2 -Disagree (D)

1 -Strongly disagree (SD)

	Statements	SA	A	N	D	SD
1.	Create a measurement system that provides a reliable assessment of how well team members are working together	1	2	3	4	5
2.	Building trust and respect amongst the team members	1	2	3	4	5
3.	Adequate team training and preparation					
4.	Founding mechanisms for problem resolution and for generating added-value into projects	1	2	3	4	5
5.	Building active communication systems during the construction supply chain to ensure good and reliable flows of information	1	2	3	4	5
6.	Project information should be accessible, open and reachable to all project team members for efficient decision making so as to create effective integrated project teams.	1	2	3	4	5
7.	Integrated project team should be an environment for openness, where shared information is essential for mutual respect and effective collaboration	1	2	3	4	5
8.	Each team member should meet regularly to share information, discuss the project plans, any issues raised and generate ideas in order to achieve the objectives of the project	1	2	3	4	5
9.	Mutual understanding and respect for the entire project team must be combined in order to achieve the successful completion of modern construction projects	1	2	3	4	5
10.	Reduce some of project team duties or to change the system of compensation and rewards					